US EPA RECORDS CENTER REGION 5
514055

ANNUAL MONITORING REPORT FOR 1993

REILLY TAR & CHEMICAL CORP. N.P.L. SITE ST. LOUIS PARK, MINNESOTA

SUBMITTED MARCH 15, 1994

ANNUAL MONITORING REPORT
FOR 1993
REILLY TAR & CHEMICAL CORP.
N.P.L. SITE
ST. LOUIS PARK, MINNESOTA
SUBMITTED MARCH 15, 1994
(INCLUDES APPENDICES D-E)

CITY

ENSR — RMAL

(INCLUDES APPENDICES D-E)

APPENDIX D
LABORATORY DATA SUMMARY PACKAGE:
ST. PETER AQUIFER

Well I	RAP S																							
	SLP3	W122	W125	W408	W411	P116	W24	W33	W13	W405	W410	W412		SLP3	W122	W125	W408	W411	P116	W24	W33	W13	W405	W410	W412

CITY OF ST. LOUIS PARK
ST. PETER AQUIFER 1993
QUALITY CONTROL SUMMARY
PPB-Phenolics

Well No	Sample Date	Method Blank	Field Duplicate	Matrix Spike	Matrix Spike Dup.	Field Blank
				1st Half		
W410	03/23/93	28256-BLK-01	DPV-W422TPD-032393	DPV-W422TPMS-032393	DPV-W422TPMSD-032393	DPV-W422TPFB-032393
W410	04/27/93	28978-BLK-01	DPV-W420TPD-042793	DPV-W420TPMS-042793	DPV-W420TPMSD-042793	DPV-W420TPFB-042793
				2nd Half		
W410	08/17/93	30729-BLK-01	STP-W410TPD-081793	STP-W410TPMS-081793	STP-W410TPMSD-081793	STP-W410TPFB-081793
W410	10/12/93	31565-BLK-01	DPV-W420TPD-101293	DPV-W420TPMS-101293	DPV-W420TPMSD-101293	DPV-W420TPFB-101293

1ST HALF MONITORING

Rocky Mountain
Analytical Laboratory

Enseco
A Corning Company

CASE NARRATIVE

FOR

City of St. Louis Park

May 18, 1993

Enseco - RMAL Project Number 028841

Introduction

Eleven aqueous samples (includes QC) were received at Enseco Rocky Mountain Analytical Laboratory on April 21, 1993. The samples were logged in under RMAL project number 028841. Sample STP-SLP3FBD-042093 was extracted and held per the April 1990 QAPP. A cross reference associating the RMAL sample numbers to the actual field sample numbers is included. The samples were analyzed for low level part-per-trillion (ppt) polynuclear aromatic hydrocarbons (PAH).

Data Quality Assessment

The results contained in this report were reviewed relative to data acceptance criteria as specified in the April, 1990 QAPP for completeness. precision, accuracy, representativeness and defensibility of the data. Unless otherwise stated below, no quality control problems or technical difficulties were encountered which would impact the interpretation or use of data in this report.

PPT PAH

Sample 28841-0005 was analyzed on three different occasions. There was only one problem in the initial analysis; the sample analysis was performed 4 minutes outside of the GC/MS 12 hour tune. The reanalysis (28841-0005_RR1) had internal standard #3 outside of QC limits. The second reanalysis (28841-0005_RR2) had internal standard #1 outside of QC limits. The target compounds associated with internal standard #1 and #2 have been reported on sample 28841-0005_RR1. The target compounds associated with internal standard #3 have been reported on sample 28841-0005_RR2. The original analysis of 28841-0005 had all of its internal standard areas within control. All analyses of sample 28841-0005 have similar results.

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

The 4800 ng/ml and the 2400 ng/ml calibration standards had excessive saturation, therefore they were not used as the upper range for the 5-point calibration curve. Instead, the calibration curve used was, 20 ng/ml, 40 ng/ml, 240 ng/ml, 600 ng/ml, and 1200 ng/ml.

All samples associated with project contained target compounds that do not meet secondary ion confirmation. In some instances, a compound that does not meet secondary ion confirmation criteria may still be determined to be present in the sample after close inspection of the data by the analyst. Supportive data includes mass chromatograms maxima at the same scan for primary and secondary ions, as well as discernible quantitation interference with the secondary ion. These compounds are flagged with the letter (R) on the data sheets (Form I) as per the 1990 QAPP.

This data package is in compliance with the terms and conditions of the 1990 QAPP, both technically and for completeness, for other than the conditions detailed above.

Reported by: Julieann L. Kramer Date: 05/19/93
Julieann L. Kramer
Program Manager

Approved by: Randy Greaves Date: 05/19/93
Randy Greaves
Program Manager

Enseco
A Corning Company

ANALYTICAL TEST REQUESTS
for
City of St. Louis Park

Lab ID: 028841	Group Code	Analysis Description	Custom Test?
0001 - 0006, 0006	A	Polynuclear Aromatic Hydrocarbons, SIM Low Level	N
		Prep - PAH/SIM by GC/MS Low Level	N
0006	B	Prep - PAH/SIM by GC/MS Low Level	N

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Qualifier Codes and Their Usage

U = Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture.

J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration of 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for dilution as discussed for the U flag.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results.

P = This flag is used for a pesticide/Aroclor target analyte when there is greater then 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

C = This flag applies to pesticide results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, do not apply this flag, instead use a laboratory-defined flag, discussed below.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified target compound.

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E = This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. If one or more compounds have a response greater than full scale, except as noted in Exhibit D, the sample or extract must be diluted and re-analyzed accordingly to the specifications in Exhibit D. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate copies of Form I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number. NOTE: For total xylenes, where three isomers are quantified as two peaks, the calibration range of each peak should be considered separately, e.g., a diluted analysis is not required for total xylenes unless the concentration of either peak separately exceeds 200 ug/L.

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag. This flag alerts data users that any discrepancies between the concentrations reported may be due to dilution of the sample or extract.

A = This flag indicates that a TIC is a suspected aldol-condensation product.

X = Other specific flags may be required to properly define the results. If used, they must be fully described, and such description attached to the Sample Data Summary Package and the SDG Narrative. Begin by using "X". If more than one flag is required, use "Y" and "Z" as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample. The laboratory-defined flags are limited to the letters "X", "Y", and "Z".

R = This flag is used for polyaromatic hydrocarbons which show target compounds that do not meet secondary ion confirmation. In some instances a compound that does not meet secondary ion confirmation criteria may still be determined to be present in the sample after close inspection of the data by the analyst. Supportive data includes mass chromatograms maxima at the same scan for primary and secondary ions, as well as discernible quantitation interference with the secondary ion.

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A Corning Company

SAMPLE DESCRIPTION INFORMATION
for
City of St. Louis Park

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
028841-0001-SA	STP-W408-042093	AQUEOUS	20 APR 93	10:00	21 APR 93
028841-0002-SA	STP-W122-042093	AQUEOUS	20 APR 93	11:00	21 APR 93
028841-0003-SA	STP-W411-042093	AQUEOUS	20 APR 93	12:40	21 APR 93
028841-0004-SA	STP-W129-042093	AQUEOUS	20 APR 93	13:20	21 APR 93
028841-0005-SA	STP-P116-042093	AQUEOUS	20 APR 93	14:15	21 APR 93
028841-0006-SA	STP-SLP3-042093	AQUEOUS	20 APR 93		21 APR 93
028841-0006-DU	STP-SLP3D-042093	AQUEOUS	20 APR 93		21 APR 93
028841-0006-MS	STP-SLP3MS-042093	AQUEOUS	20 APR 93		21 APR 93
028841-0006-SD	STP-SLP3MSD-042093	AQUEOUS	20 APR 93		21 APR 93
028841-0006-FB	STP-SLP3FB-042093	AQUEOUS	20 APR 93		21 APR 93
028841-0006-FD	STP-SLP3FBD-042093	AQUEOUS	20 APR 93		21 APR 93

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North[illegible] Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT	[illegible] Sites Park
PROJECT	
SAMPLING COMPANY	USE [illegible] Engineering
SAMPLING SITE	[illegible] Park
TEAM LEADER	[illegible]

SAMPLE SAFE™ CONDITIONS

PACKED BY: [illegible] Moore	SEAL NUMBER:
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:	CONDITION OF CONTENTS:
SEALED FOR SHIPPING BY: [illegible] Moore	INITIAL CONTENTS TEMP: °C
SEAL NUMBER: [illegible]	SAMPLING STATUS: ☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB: ☐ Yes ☐ No	CONTENTS TEMPERATURE UPON RECEIPT BY LAB: °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
[illegible]	[illegible]	STP-W[illegible]-040093	Water	6	PPT-PAH	PPT-5 01
[illegible]	[illegible]	STP-W122-040093	Water	6	PPT-PAH	PPT-5 02
[illegible]	[illegible]	STP-A116-040093	Water	3	PPT-PAH	PPT-5 (Cont. [illegible] Rocka) 0

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME
[illegible]			

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: [illegible] Moore / FEDEX	
METHOD OF SHIPMENT: FED EX	AIRBILL NUMBER: 2103420642
RECEIVED FOR LAB: ENSECO-RMAL	SIGNED: Alexandra E. Hall
DATE/TIME: 0900 7 APR 93	
ENSECO PROJECT NUMBER:	

ENS—4011

White – CLIENT Pink – LAB

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North [illegible] Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT	[illegible] of S[illegible] Park
PROJECT	
SAMPLING COMPANY	ENSR Consulting + Engineering
SAMPLING SITE	[illegible] Park
TEAM LEADER	Peter Moore

SAMPLE SAFE™ CONDITIONS

PACKED BY	Peter Moore
SEAL NUMBER	
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY	
CONDITION OF CONTENTS	
SEALED FOR SHIPPING BY	Peter Moore
INITIAL CONTENTS TEMP	°C
SEAL NUMBER	NA
SAMPLING STATUS	☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB	☐ Yes ☐ No
CONTENTS TEMPERATURE UPON RECEIPT BY LAB	°C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
[illegible]	2:40	STP-W411-042093	Water	Six	PPT-PAH	PPT-5 03
[illegible]/93	13:20	STP-W129-042093	Water	Six	PPT-PAH	PPT-5 04
[illegible]	14:~~20~~ 15PM	STP-P116-042093	Water	Three	PPT-PAH	PPT-5 (Bottle containers in second cooler) 05

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME
[illegible]			

SHIPPING DETAILS

DELIVERED TO SHIPPER BY	Peter Moore
METHOD OF SHIPMENT	FED EX
AIRBILL NUMBER	2103420642
RECEIVED FOR LAB	Enseco-RMAL
SIGNED	Alexandre C. Hall
DATE/TIME	21 APR 93 0900
ENSECO PROJECT NUMBER	

ENS-4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

CHAIN OF CUSTODY

ENSECO CLIENT: City of St Louis Park (Water Dept)

PROJECT:

SAMPLING COMPANY: SAME

SAMPLING SITE: SAME

TEAM LEADER: [illegible]

SAMPLE SAFE™ CONDITIONS

PACKED BY: [illegible]

SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:

SEALED FOR SHIPPING BY: [illegible]

SEAL NUMBER:

SAMPLING STATUS: ☐ Done ☐ Continuing Until

SEAL INTACT UPON RECEIPT BY LAB: ☐ Yes ☐ No

SEAL NUMBER:

CONDITION OF CONTENTS:

INITIAL CONTENTS TEMP: °C

CONTENTS TEMPERATURE UPON RECEIPT BY LAB: °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
4-20-93		STP-SLP3 - 042093	1XL AMBER	6	PPL PAH	PPL 5 06
4-20-93		STP-SLP3D - 042093	1XL AMBER	6	PPL PAH	PPL 5 06DU

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: [illegible]

METHOD OF SHIPMENT: FED EX

AIRBILL NUMBER: 2103420642

RECEIVED FOR LAB: Enseco-RMAL

SIGNED: Alexandra C. Hall

DATE/TIME: 0900 21APR93

ENSECO PROJECT NUMBER:

ENS—1133

White - CLIENT Pink - LAB

Enseco
A Corning Company

Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

CHAIN OF CUSTODY

ENSECO CLIENT	City of St Louis Park (Water Dept)
PROJECT	
SAMPLING COMPANY	SAME
SAMPLING SITE	SAME
TEAM LEADER	[illegible]

SAMPLE SAFE™ CONDITIONS

PACKED BY	[illegible]
SEAL NUMBER	
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY	
CONDITION OF CONTENTS	
SEALED FOR SHIPPING BY	[illegible]
INITIAL CONTENTS TEMP	°C
SEAL NUMBER	
SAMPLING STATUS	☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB	☐ Yes ☐ No
CONTENTS TEMPERATURE UPON RECEIPT BY LAB	°C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
4-20-93		STP-SLP3FB-042093	1XLAMBER	6	PPT PAH	PPT 5 06FB
4-20-93		STP-SLP3FBD-042093	1XLAMBER	6	PPT PAH	PPT 5 06FD

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY	[illegible]
METHOD OF SHIPMENT	FED EX
AIRBILL NUMBER	2103420642
RECEIVED FOR LAB	Enseco RMAL
SIGNED	Alexandre E. Hall
DATE/TIME	0900 21APR93
ENSECO PROJECT NUMBER	

ENS-1133

White - CLIENT Pink - LAB

Enseco
A Corning Company

Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

CHAIN OF CUSTODY

ENSECO CLIENT	CITY OF ST LOUIS PARK (WATER DEPT)
PROJECT	
SAMPLING COMPANY	SAME
SAMPLING SITE	SAME
TEAM LEADER	[illegible]

SAMPLE SAFE™ CONDITIONS

PACKED BY	[illegible]
SEAL NUMBER	
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY	
CONDITION OF CONTENTS	
SEALED FOR SHIPPING BY	[illegible]
INITIAL CONTENTS TEMP	°C
SEAL NUMBER	
SAMPLING STATUS	☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB	☐ Yes ☐ No
CONTENTS TEMPERATURE UPON RECEIPT BY LAB	°C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
4-20-93		STP-SLP3MS-042093	1XL AMBER	6	PPT PAH	PPT 5 06MS
4-20-93		STP-SLP3MSD-042093	1XL AMBER	6	PPT PAH	PPT 5 06SD

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY	[illegible]
METHOD OF SHIPMENT	FED EX
AIRBILL NUMBER	2103420 GH2
RECEIVED FOR LAB	Enseco-RMAL
SIGNED	Alexandra C. Hall
DATE/TIME	0900 21APR93
ENSECO PROJECT NUMBER	

ENS—1133

White – CLIENT Pink – LAB

Enseco
A Corning Company

TABLE OF CONTENTS

FOR

CITY OF ST. LOUIS PARK

RMAL PROJECT# 028841

PPT-PAH

QC Summary.....0001

Sample Data.....0012

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Raw QC Data.....0925

SUMMARY

DATA

PACKAGE

FOR

CITY OF SAINT LOUIS PARK

RMAL No: 28841

1X

ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-01

STP-W408-042093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-01

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7567

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/27/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	6	
95-13-6	1H-Indene	3	
91-20-3	Naphthalene	31	B
4565-32-6	Benzo(B)Thiophene	4	R
91-22-5	Quinoline	1	JR
120-72-9	1H-Indole	4	
91-57-6	2-Methylnaphthalene	11	BR
90-12-0	1-Methylnaphthalene	10	R
92-52-4	Biphenyl	5	R
208-96-8	Acenaphthylene	3	R
83-32-9	Acenaphthene	7	
132-64-9	Dibenzofuran	4	R
86-73-7	Fluorene	6	
132-65-0	Dibenzothiophene	5	R
85-01-8	Phenanthrene	13	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	12	R
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	4	R
129-00-0	Pyrene	22	
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	1	J
205-99-2	Benzo(B)Fluoranthene	1	JR
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	2	J

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-02

STP-W122-042093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-02

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7594

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/30/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	1	J
496-11-7	2,3-Dihydroindene	27	
95-13-6	1H-Indene	14	
91-20-3	Naphthalene	110	BR
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	3	R
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	45	BR
90-12-0	1-Methylnaphthalene	29	
92-52-4	Biphenyl	10	
208-96-8	Acenaphthylene	5	R
83-32-9	Acenaphthene	14	
132-64-9	Dibenzofuran	7	R
86-73-7	Fluorene	9	
132-65-0	Dibenzothiophene	8	R
85-01-8	Phenanthrene	22	B
120-12-7	Anthracene	1	JR
260-94-6	Acridine	27	R
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	13	
129-00-0	Pyrene	60	
56-55-3	Benzo(A)Anthracene	2	JR
218-01-9	Chrysene	4	
205-99-2	Benzo(B)Fluoranthene	3	
207-08-9	Benzo(K)Fluoranthene	6	R
192-97-2	Benzo(E)Pyrene	3	
50-32-8	Benzo(A)Pyrene	1	JR
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	3	
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	18	

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-03

STP-W411-042093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-03

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7585

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/29/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	9	
95-13-6	1H-Indene	9	
91-20-3	Naphthalene	33	B
4565-32-6	Benzo(B)Thiophene	5	R
91-22-5	Quinoline	1	JR
120-72-9	1H-Indole	3	
91-57-6	2-Methylnaphthalene	12	BR
90-12-0	1-Methylnaphthalene	10	R
92-52-4	Biphenyl	4	JR
208-96-8	Acenaphthylene	4	R
83-32-9	Acenaphthene	6	
132-64-9	Dibenzofuran	3	
86-73-7	Fluorene	4	
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	17	B
120-12-7	Anthracene	4	
260-94-6	Acridine	33	R
86-74-8	Carbazole	4	
206-44-0	Fluoranthene	6	R
129-00-0	Pyrene	25	
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	2	JR
205-99-2	Benzo(B)Fluoranthene	2	JR
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	2	JR

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-04

STP-W129-042093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-04

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7586

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/29/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	3	R
95-13-6	1H-Indene	1	
91-20-3	Naphthalene	20	BR
4565-32-6	Benzo(B)Thiophene	2	
91-22-5	Quinoline	1	JR
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	11	B
90-12-0	1-Methylnaphthalene	8	
92-52-4	Biphenyl	3	JR
208-96-8	Acenaphthylene	1	JR
83-32-9	Acenaphthene	4	R
132-64-9	Dibenzofuran	2	R
86-73-7	Fluorene	3	R
132-65-0	Dibenzothiophene	2	
85-01-8	Phenanthrene	11	B
120-12-7	Anthracene	2	R
260-94-6	Acridine	2	JR
86-74-8	Carbazole	4	
206-44-0	Fluoranthene	9	
129-00-0	Pyrene	29	
56-55-3	Benzo(A)Anthracene	1	JR
218-01-9	Chrysene	3	
205-99-2	Benzo(B)Fluoranthene	3	
207-08-9	Benzo(K)Fluoranthene	2	J
192-97-2	Benzo(E)Pyrene	2	
50-32-8	Benzo(A)Pyrene	1	J
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	1	J
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	5	

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-05

STP-P116-042093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-05

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7587

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/29/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	J
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	16	B
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	10	B
90-12-0	1-Methylnaphthalene	4	
92-52-4	Biphenyl	1	JR
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	JR
132-64-9	Dibenzofuran	1	R
86-73-7	Fluorene	2	R
132-65-0	Dibenzothiophene	1	J
85-01-8	Phenanthrene	8	BR
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	
206-44-0	Fluoranthene	3	
129-00-0	Pyrene	3	
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	1	JR
205-99-2	Benzo(B)Fluoranthene	3	
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	1	J

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-05_RR1

STP-P116-042093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-05_RR1

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7592

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/30/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	2	
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	18	B
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	11	B
90-12-0	1-Methylnaphthalene	5	
92-52-4	Biphenyl	2	JR
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	J
132-64-9	Dibenzofuran	1	R
86-73-7	Fluorene	2	R
132-65-0	Dibenzothiophene	2	
85-01-8	Phenanthrene	9	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	2	JR
86-74-8	Carbazole	4	R
206-44-0	Fluoranthene	4	
129-00-0	Pyrene	4	
56-55-3	Benzo(A)Anthracene	2	NA
218-01-9	Chrysene	3	NA
205-99-2	Benzo(B)Fluoranthene	2	NA
207-08-9	Benzo(K)Fluoranthene	2	NA
192-97-2	Benzo(E)Pyrene	2	NA
50-32-8	Benzo(A)Pyrene	2	NA
198-55-0	Perylene	2	NA
193-39-5	Indeno(1,2,3-CD)Pyrene	2	NA
53-70-3	Dibenz(A,H)Anthracene	2	NA
191-24-2	Benzo(G,H,I)Perylene	3	NA

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-05_RR2

Lab Name: ENSECO Contract: STP-P116-042093

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-05_RR2

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7596

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/30/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	NA
496-11-7	2,3-Dihydroindene	1	NA
95-13-6	1H-Indene	0.9	NA
91-20-3	Naphthalene	6	NA
4565-32-6	Benzo(B)Thiophene	0.9	NA
91-22-5	Quinoline	1	NA
120-72-9	1H-Indole	2	NA
91-57-6	2-Methylnaphthalene	0.9	NA
90-12-0	1-Methylnaphthalene	2	NA
92-52-4	Biphenyl	4	NA
208-96-8	Acenaphthylene	1	NA
83-32-9	Acenaphthene	1	NA
132-64-9	Dibenzofuran	1	NA
86-73-7	Fluorene	1	NA
132-65-0	Dibenzothiophene	1	NA
85-01-8	Phenanthrene	1	NA
120-12-7	Anthracene	1	NA
260-94-6	Acridine	3	NA
86-74-8	Carbazole	2	NA
206-44-0	Fluoranthene	1	NA
129-00-0	Pyrene	1	NA
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	2	JR
205-99-2	Benzo(B)Fluoranthene	2	JR
207-08-9	Benzo(K)Fluoranthene	1	JR
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	1	JR
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	2	JR

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-06

STP-SLP3-042093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-06

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7591

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/30/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	2	BJ
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	1	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	3	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	J
129-00-0	Pyrene	2	
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-06DU

STP-SLP3D-042093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-06DU

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7561

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/26/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	1	BJ
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	1	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	J
129-00-0	Pyrene	1	J
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-06FB

STP-SLP3FB-042093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-06FB

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7575

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/28/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	2	
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	2	BJ
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	2	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	3	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	J
129-00-0	Pyrene	1	J
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-06MS

STP-SLP3MS-042093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-06MS

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7559

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/26/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	9	
91-20-3	Naphthalene	9	B
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	8	
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	9	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	9	
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	3	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	J
129-00-0	Pyrene	1	J
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	6	
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	1	J
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28841-06MSD

STP-SLP3MSD-042093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28841-06MSD

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7560

Level: (low/med) LOW Date Received: 04/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/26/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	10	
91-20-3	Naphthalene	9	B
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	9	
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	9	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	10	
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	J
129-00-0	Pyrene	1	J
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	5	
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	1	J
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 28841-06

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC #	QC LIMITS REC.
1H-Indene	9.520	ND	8.996	94	20-150
Naphthalene	9.520	2.035	8.592	69	20-150
Quinoline	9.520	ND	7.652	80	20-150
2-Methylnaphthalene	9.520	1.392	8.842	78	20-150
Fluorene	9.520	ND	8.782	92	20-150
Chrysene	9.520	ND	5.676	60	20-150
Benzo(E)Pyrene	9.520	ND	1.175	12	10-150

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1H-Indene	9.520	10.16	107	13	28	20-150
Naphthalene	9.520	8.699	70	1	28	20-150
Quinoline	9.520	8.746	92	14	28	20-150
2-Methylnaphthalene	9.520	9.401	84	7	28	20-150
Fluorene	9.520	9.877	104	12	28	20-150
Chrysene	9.520	5.426	57	5	28	20-150
Benzo(E)Pyrene	9.520	1.130	12	0	28	10-150

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

BLK01

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Lab File ID: C7557 Lab Sample ID: BL042293

Instrument ID: 4500-C Date Extracted: 04/22/93

Matrix: (soil/water) WATER Date Analyzed: 04/26/93

Level:(low/med) LOW Time Analyzed: 1719

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	28841-01	28841-01	C7567	04/27/93
02	28841-02	28841-02	C7594	04/30/93
03	28841-03	28841-03	C7585	04/29/93
04	28841-04	28841-04	C7586	04/29/93
05	28841-05	28841-05	C7587	04/29/93
06	28841-05_RR1	28841-05_RR1	C7592	04/30/93
07	28841-05_RR2	28841-05_RR2	C7596	04/30/93
08	28841-06	28841-06	C7591	04/30/93
09	28841-06DU	28841-06DU	C7561	04/26/93
10	28841-06FB	28841-06FB	C7575	04/28/93
11	28841-06MS	28841-06MS	C7559	04/26/93
12	28841-06MSD	28841-06MSD	C7560	04/26/93

COMMENTS:

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BLK01

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: BL042293

Sample wt/vol: 4000 (g/mL) ML Lab File ID: C7557

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 04/22/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/26/93

Injection Volume: 2.0(uL) Dilution Factor: 0.125

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	2	J
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	1	
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	U
129-00-0	Pyrene	1	U
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Lab File ID (Standard): C7554 Date Analyzed: 04/26/93

Instrument ID: 4500-C Time Analyzed: 1405

		IS1(ACN) AREA #	RT #	IS2(PHN) AREA #	RT #	IS3(BAP) AREA #	RT #
	12 HOUR STD	278972	14.79	538736	18.64	385025	28.92
	UPPER LIMIT	557944	15.29	1077472	19.14	770050	29.42
	LOWER LIMIT	139486	14.29	269368	18.14	192512	28.42
	EPA SAMPLE NO.						
01	28841-01	525577	14.77	968688	18.67	528413	28.97
02	28841-06DU	499792	14.80	1001770	18.67	526888	28.94
03	28841-06MS	526887	14.80	974533	18.67	526941	28.96
04	28841-06MSD	508107	14.79	1007530	18.67	541585	28.94
05	BLK01	432925	14.79	932287	18.67	487143	28.94

IS1 (ACN) = Acenaphthene-D10
IS2 (PHN) = Phenanthrene-D10
IS3 (BAP) = Benzo(A)Pyrene-D10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Lab File ID (Standard): C7572 Date Analyzed: 04/28/93

Instrument ID: 4500-C Time Analyzed: 1546

		IS1(ACN) AREA #	RT #	IS2(PHN) AREA #	RT #	IS3(BAP) AREA #	RT #
	12 HOUR STD	357111	14.72	655537	18.50	361085	28.54
	UPPER LIMIT	714222	15.22	1311074	19.00	722170	29.04
	LOWER LIMIT	178556	14.22	327768	18.00	180542	28.04
	EPA SAMPLE NO.						
01	28841-03	422807	14.70	712704	18.49	369592	28.52
02	28841-04	353018	14.69	674721	18.47	407528	28.52
03	28841-05	531894	14.69	754591	18.47	446220	28.52
04	28841-06FB	371981	14.87	740352	18.64	349497	28.67

IS1 (ACN) = Acenaphthene-D10
IS2 (PHN) = Phenanthrene-D10
IS3 (BAP) = Benzo(A)Pyrene-D10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

Lab File ID (Standard): C7590 Date Analyzed: 04/30/93

Instrument ID: 4500-C Time Analyzed: 1025

		IS1(ACN) AREA #	RT #	IS2(PHN) AREA #	RT #	IS3(BAP) AREA #	RT #
	12 HOUR STD	269285	14.72	386616	18.50	206890	28.42
	UPPER LIMIT	538570	15.22	773232	19.00	413780	28.92
	LOWER LIMIT	134642	14.22	193308	18.00	103445	27.92
	EPA SAMPLE NO.						
01	28841-02	325394	14.67	491593	18.47	213170	28.46
02	28841-05_RR1	196654	14.69	224582	18.47	49684 *	28.37
03	28841-05_RR2	730740 *	14.70	542052	18.47	256448	28.47
04	28841-06	262903	14.72	390722	18.50	168696	28.41

IS1 (ACN) = Acenaphthene-D10
IS2 (PHN) = Phenanthrene-D10
IS3 (BAP) = Benzo(A)Pyrene-D10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (NAP) #	S2 (FLU) #	S3 (CHR) #	TOT OUT
01	28841-01	60	54	28	0
02	28841-02	75	62	17	0
03	28841-03	52	58	18	0
04	28841-04	77	84	71	0
05	28841-05	55	47	12	0
06	28841-05_RR1	57	47	370 *	1
07	28841-05_RR2	39	34 *	16	1
08	28841-06	79	78	51	0
09	28841-06DU	82	75	66	0
10	28841-06FB	83	86	108	0
11	28841-06MS	84	74	65	0
12	28841-06MSD	88	78	61	0
13	BLK01	91	83	117	0

	QC LIMITS
S1 (NAP) = Naphthalene-d8	(14-108)
S2 (FLU) = Fluorene-d10	(41-162)
S3 (CHR) = Chrysene-d12	(10-118)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28841 SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (NAP) #	S2 (FLU) #	S3 (CHR) #	TOT OUT
01	28841-01	60	54	28	0
02	28841-02	75	62	17	0
03	28841-03	52	58	18	0
04	28841-04	77	84	71	0
05	28841-05	55	47	12	0
06	28841-05_RR1	57	47	370 *	1
07	28841-05_RR2	39	34 *	16	1
08	28841-06	79	78	51	0
09	28841-06DU	82	75	66	0
10	28841-06FB	83	86	108	0
11	28841-06MS	84	74	65	0
12	28841-06MSD	88	78	61	0
13	BLK01	91	83	117	0

		QC LIMITS
S1 (NAP)	= Naphthalene-d8	(14-108)
S2 (FLU)	= Fluorene-d10	(41-162)
S3 (CHR)	= Chrysene-d12	(10-118)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

Enseco
A Corning Company

CASE NARRATIVE

FOR

City of St. Louis Park

May 28, 1993

Enseco - RMAL Project Number 028861

Introduction

Eleven aqueous samples (includes QC) were received at Enseco Rocky Mountain Analytical Laboratory on April 22, 1993. The samples were logged in under RMAL project number 028861. Sample STP-W410FBD-042193 was extracted and held per the April 1990 QAPP. A cross reference associating the RMAL sample numbers to the actual field sample numbers is included. The samples were analyzed for low level part-per-trillion (ppt) polynuclear aromatic hydrocarbons (PAH).

Data Quality Assessment

The results contained in this report were reviewed relative to data acceptance criteria as specified in the April, 1990 QAPP for completeness, precision, accuracy, representativeness and defensibility of the data. Unless otherwise stated below, no quality control problems or technical difficulties were encountered which would impact the interpretation or use of data in this report.

PPT PAH

Sample 028861-0001, and -0002 showed a surrogate which was below the lower control limits. All instrument calibration, surrogate standard concentration, etc. were checked and found to be in control. Both of these samples have components above linear range which necessitated a diluted analyses. It has been concluded that an interference specific to the surrogate is present which resulted in the low recoveries. This interference does not affect the quantitation of target components.

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4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

28861-006DL1MS/SD matrix spike percent recovery for 1H-Indene was reported as NC and outside of QC limits, due to the concentration of this component in the initial sample. The percent RPD for Naphthalene was above QC limits for this sample also. 028861-006DL2MS/SD matrix spike percent recovery for 1H-Indene was reported NC and outside of QC limits, due to the concentration of this component in the initial sample. This sample was analyzed at a 1:100 dilution, and the Benzo(E)Pyrene results were unrecoverable due to the dilution. Since good recovery was achieved for all other spike components (between the range of 50-100%), in both of the above sets of samples, quantitation was checked and no further action was taken.

Samples 028861-0003, -0004, -0005, -0006, -0006DU, -0006MS, and -0006SD, show target compounds above the upper calibration range. The samples were reanalyzed at multiple dilutions. Since these samples showed acceptable surrogate recovery with the dilutions, the original results were not reported. Samples 028861-0001, and -0002 showed target compounds above the upper calibration range, the samples were reanalyzed at a dilution. Both the original and reanalysis data are reported for each sample.

The 4800 ng/ml and the 2400 ng/ml standards had excessive saturation, therefore they were not used as the upper range for the 5-point calibration curve. Instead, the calibration curve used was, 20 ng/ml, 40 ng/ml, 240 ng/ml, 600 ng/ml, and 1200 ng/ml.

All samples associated with project 028861 show target compounds that do not meet secondary ion confirmation. In some instances a compound that does not meet secondary ion confirmation criteria may still be determined to be present in the sample after close inspection of the data by the analyst. Supportive data includes mass chromatograms maxima at the same scan for primary and secondary ions, as well as discernible quantitation interference with the secondary ion. These compounds are flagged with the letter (R) on the data sheets (Form I) as per the 1990 QAPP.

Case Narrative - RMAL #028861
May 28, 1993
Page Three

This data package is in compliance with the terms and conditions of the 1990 QAPP, both technically and for completeness, for other than the conditions detailed above.

Reported by: Julieann L Kramer Date: 6-2-93
Julieann L. Kramer
Program Manager

Approved by: Karen Hermann for Date: 6-2-93
Randy Greaves
Program Manager

Rocky Mountain
Analytical Laboratory

Enseco
A Corning Company

Qualifier Codes and Their Usage

U = Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture.

J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration of 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for dilution as discussed for the U flag.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results.

P = This flag is used for a pesticide/Aroclor target analyte when there is greater then 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

C = This flag applies to pesticide results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, do not apply this flag, instead use a laboratory-defined flag, discussed below.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified target compound.

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Arvada, Colorado 80002
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E = This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. If one or more compounds have a response greater than full scale, except as noted in Exhibit D, the sample or extract must be diluted and re-analyzed accordingly to the specifications in Exhibit D. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate copies of Form I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number. NOTE: For total xylenes, where three isomers are quantified as two peaks, the calibration range of each peak should be considered separately, e.g., a diluted analysis is not required for total xylenes unless the concentration of either peak separately exceeds 200 ug/L.

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag. This flag alerts data users that any discrepancies between the concentrations reported may be due to dilution of the sample or extract.

A = This flag indicates that a TIC is a suspected aldol-condensation product.

X = Other specific flags may be required to properly define the results. If used, they must be fully described, and such description attached to the Sample Data Summary Package and the SDG Narrative. Begin by using "X". If more than one flag is required, use "Y" and "Z" as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample. The laboratory-defined flags are limited to the letters "X", "Y", and "Z".

R = This flag is used for polyaromatic hydrocarbons which show target compounds that do not meet secondary ion confirmation. In some instances a compound that does not meet secondary ion confirmation criteria may still be determined to be present in the sample after close inspection of the data by the analyst. Supportive data includes mass chromatograms maxima at the same scan for primary and secondary ions, as well as discernible quantitation interference with the secondary ion.

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A Corning Company

SAMPLE DESCRIPTION INFORMATION
for
City of St. Louis Park

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
028861-0001-SA	STP-W133-042193	AQUEOUS	21 APR 93	10:30	22 APR 93
028861-0002-SA	STP-W412-042193	AQUEOUS	21 APR 93	11:45	22 APR 93
028861-0003-SA	STP-W409-042193	AQUEOUS	21 APR 93	13:30	22 APR 93
028861-0004-SA	STP-W33-042193	AQUEOUS	21 APR 93	14:50	22 APR 93
028861-0005-SA	STP-W24-042193	AQUEOUS	21 APR 93	16:00	22 APR 93
028861-0006-SA	STP-W410-042193	AQUEOUS	21 APR 93		22 APR 93
028861-0006-DU	STP-W410D-042193	AQUEOUS	21 APR 93		22 APR 93
028861-0006-MS	STP-W410MS-042193	AQUEOUS	21 APR 93		22 APR 93
028861-0006-SD	STP-W410MSD-042193	AQUEOUS	21 APR 93		22 APR 93
028861-0006-FB	STP-W410FB-042193	AQUEOUS	21 APR 93		22 APR 93
028861-0006-FD	STP-W410FBD-042193	AQUEOUS	21 APR 93		22 APR 93

Enseco
A Corning Company

ANALYTICAL TEST REQUESTS
for
City of St. Louis Park

Lab ID: 028861	Group Code	Analysis Description	Custom Test?
0001 - 0006, 0006	A	Polynuclear Aromatic Hydrocarbons, SIM Low Level	N
		Prep - PAH/SIM by GC/MS Low Level	N
0006	B	Prep - PAH/SIM by GC/MS Low Level	N

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile 303/431-7171

CHAIN OF CUSTODY

No.

Attn: _____

Enseco Client: City of St Louis Park

Project: _____

Sampling Co: ENSR C+E

Sampling Site: St Louis Park

Team Leader: Peter Moore

SAMPLE SAFE™ CONDITIONS

1. Packed by: Peter Moore Seal #: NA
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: _____
4. Sealed for Shipping by: Peter Moore
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
4/21/93	10:30	STP-W133-042193	Water	Six (6)	PPT-PAH	PPT-25	01
4/21/93	11:45	STP-W412-042193	Water	Six (6)	PPT-PAH	PPT-X	0

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by. (signed)	Date	Time
1	[signature]		4/21/93	16:30
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: Peter Moore

Method of Shipment: Fed Ex Airbill #: _____

Received for Lab: Enseco RMAL Signed: Alexandra C. Hall Date/Time: 22 APR 93 0845

Enseco Project No. 78861

White and Pink Copies to Lab Yellow to Sampler

SS-001

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile. 303/431-7171

CHAIN OF CUSTODY

No.

Attn: _____

Enseco Client: City of St Louis Park
Project: SLP
Sampling Co.: ENSR C+E
Sampling Site: St Louis Park
Team Leader: Peter Moore

SAMPLE SAFE™ CONDITIONS

1. Packed by: Peter Moore Seal # NA
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: _____
4. Sealed for Shipping by: Peter Moore
5. Initial Contents Temp: _____ °C Seal # _____
6. Sampling Status Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
4/21/93	13:30	STP-W409-042193	Water	Six (6)	PPT-PAH	PPT-75
4/21/93	14:50	STP-W33-042193	Water	Six (6)	PPT-PAH	PPT-75
4/21/93	16:00	STP-W24-042193	Water	Six (6)	PPT-PAH	PPT-75

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1	[signature]		4/21/93	16:30
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: Peter Moore
Method of Shipment: Fed Ex Airbill # _____
Received for Lab: Enseco - RMAL Signed: Alexandra E. Hall Date/Time: 22 APR 93 0845
Enseco Project No. 28861

White and Pink Copies to Lab Yellow to Sampler

SS-001

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
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☐ Enseco Houston
1420 East North Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX. 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: CITY OF ST LOUIS PARK (WATER DEPT)	SAMPLE SAFE™ CONDITIONS — PACKED BY: MZK; SEAL NUMBER:
PROJECT:	SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY: ; CONDITION OF CONTENTS:
SAMPLING COMPANY: SAME	SEALED FOR SHIPPING BY: MZK; INITIAL CONTENTS TEMP: °C
SAMPLING SITE: SAME	SEAL NUMBER: ; SAMPLING STATUS: ☐ Done ☐ Continuing Until
TEAM LEADER: MZK	SEAL INTACT UPON RECEIPT BY LAB: ☐ Yes ☐ No ; CONTENTS TEMPERATURE UPON RECEIPT BY LAB: °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
4-21-93		STP-W410 -042193	1XL AMBER	6	PPL PAH	PPL 75 06
4-21-93		STP-W410 D-042193	1XL AMBER	6	PPL PAH	PPL 75 06DU

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: MZK

METHOD OF SHIPMENT: FED EX

AIRBILL NUMBER: 2103420653

RECEIVED FOR LAB: Enseco-RMAL

SIGNED: Alexandra C. Hall

DATE/TIME: 0845 22 APR 93

ENSECO PROJECT NUMBER: 28861

ENS-4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX. 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT	City of St Louis Park (Water Dept)
PROJECT	
SAMPLING COMPANY	SAME
SAMPLING SITE	SAME
TEAM LEADER	M2H

SAMPLE SAFE™ CONDITIONS

PACKED BY	M2H
SEAL NUMBER	
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY	
CONDITION OF CONTENTS	
SEALED FOR SHIPPING BY	M2H
INITIAL CONTENTS TEMP	°C
SEAL NUMBER	
SAMPLING STATUS	☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB	☐ Yes ☐ No
CONTENTS TEMPERATURE UPON RECEIPT BY LAB	°C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
4-21-93		STP-W410MS-042193	1XL AMBER	6	PPT PAH	PPT 75 06MS
4-21-93		STP-W410MSD-042193	1XL AMBER	6	PPT PAH	PPT 75 06SD

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY	M2H
METHOD OF SHIPMENT	FED EX
AIRBILL NUMBER	2103420653
RECEIVED FOR LAB	ENSECO-RMAL
SIGNED	Alexandre E. Hall
DATE/TIME	0845 22APR93
ENSECO PROJECT NUMBER	28861

ENS-4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
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303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: City of St Louis Park (Water Dept)

PROJECT:

SAMPLING COMPANY: Same

SAMPLING SITE: Same

TEAM LEADER: M2H

SAMPLE SAFE™ CONDITIONS

PACKED BY: M2H

SEAL NUMBER:

SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:

CONDITION OF CONTENTS:

SEALED FOR SHIPPING BY: M2H

INITIAL CONTENTS TEMP: °C

SEAL NUMBER:

SAMPLING STATUS: ☐ Done ☐ Continuing Until

SEAL INTACT UPON RECEIPT BY LAB: ☐ Yes ☐ No

CONTENTS TEMPERATURE UPON RECEIPT BY LAB: °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
4-21-93		STP-W410FB-042193	1XL AMBER	6	PPT PAH	PPT 75 OGFB
4-21-93		STP-W410FBD-042193	1XL AMBER	6	PPT PAH	PPT 75 OGFD

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: M2H

METHOD OF SHIPMENT: FED EX

AIRBILL NUMBER: 2103420653

RECEIVED FOR LAB: Enseco-RMAL

SIGNED: Alexandra E. Hall

DATE/TIME: 0845 22APR93

ENSECO PROJECT NUMBER: 28861

ENS-4011

White - CLIENT Pink - LAB

SUMMARY

DATA

PACKAGE

FOR

CITY OF SAINT LOUIS PARK

RMAL No: 28861

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

28861-01

STP-W133-042193

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-01

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7582

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/29/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	260	ERT
95-13-6	1H-Indene	19	
91-20-3	Naphthalene	34	BR
4565-32-6	Benzo(B)Thiophene	14	R
91-22-5	Quinoline	1	J
120-72-9	1H-Indole	4	R
91-57-6	2-Methylnaphthalene	16	BR
90-12-0	1-Methylnaphthalene	12	
92-52-4	Biphenyl	3	J
208-96-8	Acenaphthylene	3	R
83-32-9	Acenaphthene	6	
132-64-9	Dibenzofuran	2	
86-73-7	Fluorene	5	
132-65-0	Dibenzothiophene	3	
85-01-8	Phenanthrene	11	B
120-12-7	Anthracene	3	
260-94-6	Acridine	21	
86-74-8	Carbazole	2	
206-44-0	Fluoranthene	4	B
129-00-0	Pyrene	15	B
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-01DL

Lab Name: ENSECO Contract: STP-W133-042193

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-01DL

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7600

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/30/93

Injection Volume: 2.0(uL) Dilution Factor: 1.19

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	49	U
496-11-7	2,3-Dihydroindene	870	D
95-13-6	1H-Indene	51	D
91-20-3	Naphthalene	45	BDJ
4565-32-6	Benzo(B)Thiophene	36	D
91-22-5	Quinoline	13	U
120-72-9	1H-Indole	24	U
91-57-6	2-Methylnaphthalene	19	BDR
90-12-0	1-Methylnaphthalene	27	D
92-52-4	Biphenyl	40	U
208-96-8	Acenaphthylene	13	U
83-32-9	Acenaphthene	28	D
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	16	BD
120-12-7	Anthracene	10	U
260-94-6	Acridine	23	DJ
86-74-8	Carbazole	18	U
206-44-0	Fluoranthene	13	U
129-00-0	Pyrene	19	BD
56-55-3	Benzo(A)Anthracene	24	U
218-01-9	Chrysene	26	U
205-99-2	Benzo(B)Fluoranthene	24	U
207-08-9	Benzo(K)Fluoranthene	21	U
192-97-2	Benzo(E)Pyrene	18	U
50-32-8	Benzo(A)Pyrene	21	U
198-55-0	Perylene	24	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	15	U
191-24-2	Benzo(G,H,I)Perylene	26	U

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-02

Lab Name: ENSECO Contract: STP-W412-042193

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-02

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7583

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/29/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	2	J
496-11-7	2,3-Dihydroindene	60	
95-13-6	1H-Indene	52	
91-20-3	Naphthalene	83	BERT
4565-32-6	Benzo(B)Thiophene	25	R
91-22-5	Quinoline	2	R
120-72-9	1H-Indole	3	
91-57-6	2-Methylnaphthalene	54	B
90-12-0	1-Methylnaphthalene	42	
92-52-4	Biphenyl	17	
208-96-8	Acenaphthylene	8	R
83-32-9	Acenaphthene	20	
132-64-9	Dibenzofuran	12	R
86-73-7	Fluorene	29	
132-65-0	Dibenzothiophene	33	
85-01-8	Phenanthrene	67	B
120-12-7	Anthracene	3	R
260-94-6	Acridine	36	
86-74-8	Carbazole	10	R
206-44-0	Fluoranthene	9	B
129-00-0	Pyrene	39	B
56-55-3	Benzo(A)Anthracene	2	J
218-01-9	Chrysene	2	J
205-99-2	Benzo(B)Fluoranthene	2	JR
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	2	J

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-02DL

STP-W412-042193

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-02DL

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7601

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/30/93

Injection Volume: 2.0(uL) Dilution Factor: 1.19

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	49	U
496-11-7	2,3-Dihydroindene	67	D
95-13-6	1H-Indene	62	D
91-20-3	Naphthalene	160	BD
4565-32-6	Benzo(B)Thiophene	29	DR
91-22-5	Quinoline	13	U
120-72-9	1H-Indole	24	DR
91-57-6	2-Methylnaphthalene	62	BD
90-12-0	1-Methylnaphthalene	48	D
92-52-4	Biphenyl	20	DJ
208-96-8	Acenaphthylene	10	DJR
83-32-9	Acenaphthene	24	D
132-64-9	Dibenzofuran	15	DR
86-73-7	Fluorene	35	D
132-65-0	Dibenzothiophene	46	D
85-01-8	Phenanthrene	84	BD
120-12-7	Anthracene	10	U
260-94-6	Acridine	36	DR
86-74-8	Carbazole	33	D
206-44-0	Fluoranthene	23	BD
129-00-0	Pyrene	64	BD
56-55-3	Benzo(A)Anthracene	24	U
218-01-9	Chrysene	31	D
205-99-2	Benzo(B)Fluoranthene	30	D
207-08-9	Benzo(K)Fluoranthene	30	D
192-97-2	Benzo(E)Pyrene	22	D
50-32-8	Benzo(A)Pyrene	21	U
198-55-0	Perylene	24	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	DJ
53-70-3	Dibenz(A,H)Anthracene	17	D
191-24-2	Benzo(G,H,I)Perylene	21	DJ

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-03DL1

Lab Name: ENSECO Contract: STP-W409-042193

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-03DL1

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7602

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/30/93

Injection Volume: 2.0(uL) Dilution Factor: 1.19

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	220	D
496-11-7	2,3-Dihydroindene	5400	DERT
95-13-6	1H-Indene	4800	DET
91-20-3	Naphthalene	2600	BDERT
4565-32-6	Benzo(B)Thiophene	2900	DERT
91-22-5	Quinoline	51	DR
120-72-9	1H-Indole	24	U
91-57-6	2-Methylnaphthalene	36	BDR
90-12-0	1-Methylnaphthalene	2900	DER
92-52-4	Biphenyl	840	D
208-96-8	Acenaphthylene	610	D
83-32-9	Acenaphthene	2700	DE
132-64-9	Dibenzofuran	1100	D
86-73-7	Fluorene	1200	D
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	560	BD
120-12-7	Anthracene	29	D
260-94-6	Acridine	88	D
86-74-8	Carbazole	1200	D
206-44-0	Fluoranthene	33	BD
129-00-0	Pyrene	62	BD
56-55-3	Benzo(A)Anthracene	24	U
218-01-9	Chrysene	26	U
205-99-2	Benzo(B)Fluoranthene	24	U
207-08-9	Benzo(K)Fluoranthene	21	U
192-97-2	Benzo(E)Pyrene	18	U
50-32-8	Benzo(A)Pyrene	21	U
198-55-0	Perylene	24	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	15	U
191-24-2	Benzo(G,H,I)Perylene	26	U

ORGANICS ANALYSIS DATA SHEET

28861-03DL2

Lab Name: ENSECO Contract: STP-W409-042193

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-03DL2

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7618

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 11.9

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	240	DJ
496-11-7	2,3-Dihydroindene	9900	D
95-13-6	1H-Indene	12000	D
91-20-3	Naphthalene	7000	BD
4565-32-6	Benzo(B)Thiophene	5200	D
91-22-5	Quinoline	130	U
120-72-9	1H-Indole	240	U
91-57-6	2-Methylnaphthalene	86	U
90-12-0	1-Methylnaphthalene	4700	D
92-52-4	Biphenyl	990	D
208-96-8	Acenaphthylene	690	D
83-32-9	Acenaphthene	3500	D
132-64-9	Dibenzofuran	1400	D
86-73-7	Fluorene	1400	D
132-65-0	Dibenzothiophene	100	U
85-01-8	Phenanthrene	830	BD
120-12-7	Anthracene	100	U
260-94-6	Acridine	150	DJR
86-74-8	Carbazole	1700	D
206-44-0	Fluoranthene	130	U
129-00-0	Pyrene	110	BDJ
56-55-3	Benzo(A)Anthracene	240	U
218-01-9	Chrysene	260	U
205-99-2	Benzo(B)Fluoranthene	240	U
207-08-9	Benzo(K)Fluoranthene	150	DJR
192-97-2	Benzo(E)Pyrene	180	U
50-32-8	Benzo(A)Pyrene	210	U
198-55-0	Perylene	240	U
193-39-5	Indeno(1,2,3-CD)Pyrene	200	U
53-70-3	Dibenz(A,H)Anthracene	150	U
191-24-2	Benzo(G,H,I)Perylene	260	U

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-04DL

Lab Name: ENSECO Contract: STP-W33-042193

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-04DL

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7603

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/30/93

Injection Volume: 2.0(uL) Dilution Factor: 1.19

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	49	U
496-11-7	2,3-Dihydroindene	540	D
95-13-6	1H-Indene	260	D
91-20-3	Naphthalene	160	BD
4565-32-6	Benzo(B)Thiophene	170	D
91-22-5	Quinoline	13	U
120-72-9	1H-Indole	34	D
91-57-6	2-Methylnaphthalene	52	BD
90-12-0	1-Methylnaphthalene	42	D
92-52-4	Biphenyl	40	U
208-96-8	Acenaphthylene	13	U
83-32-9	Acenaphthene	35	D
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	14	BDR
120-12-7	Anthracene	10	U
260-94-6	Acridine	27	U
86-74-8	Carbazole	10	DJ
206-44-0	Fluoranthene	13	U
129-00-0	Pyrene	20	BD
56-55-3	Benzo(A)Anthracene	24	U
218-01-9	Chrysene	26	U
205-99-2	Benzo(B)Fluoranthene	24	U
207-08-9	Benzo(K)Fluoranthene	21	U
192-97-2	Benzo(E)Pyrene	18	U
50-32-8	Benzo(A)Pyrene	21	U
198-55-0	Perylene	24	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	15	U
191-24-2	Benzo(G,H,I)Perylene	26	U

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-05DL1

STP-W24-042193

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-05DL1

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7619

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 1.19

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	49	U
496-11-7	2,3-Dihydroindene	2200	DE
95-13-6	1H-Indene	29	D
91-20-3	Naphthalene	62	U
4565-32-6	Benzo(B)Thiophene	9	U
91-22-5	Quinoline	13	U
120-72-9	1H-Indole	24	U
91-57-6	2-Methylnaphthalene	9	U
90-12-0	1-Methylnaphthalene	15	U
92-52-4	Biphenyl	40	U
208-96-8	Acenaphthylene	10	DJ
83-32-9	Acenaphthene	480	D
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	BDJR
120-12-7	Anthracene	23	D
260-94-6	Acridine	27	U
86-74-8	Carbazole	18	U
206-44-0	Fluoranthene	13	U
129-00-0	Pyrene	13	U
56-55-3	Benzo(A)Anthracene	24	U
218-01-9	Chrysene	26	U
205-99-2	Benzo(B)Fluoranthene	24	U
207-08-9	Benzo(K)Fluoranthene	21	U
192-97-2	Benzo(E)Pyrene	18	U
50-32-8	Benzo(A)Pyrene	21	U
198-55-0	Perylene	24	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	15	U
191-24-2	Benzo(G,H,I)Perylene	26	U

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-05DL2

Lab Name: ENSECO Contract: STP-W24-042193

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-05DL2

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7620

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 11.9

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	490	U
496-11-7	2,3-Dihydroindene	2500	D
95-13-6	1H-Indene	86	U
91-20-3	Naphthalene	620	U
4565-32-6	Benzo(B)Thiophene	86	U
91-22-5	Quinoline	130	U
120-72-9	1H-Indole	240	U
91-57-6	2-Methylnaphthalene	86	U
90-12-0	1-Methylnaphthalene	150	U
92-52-4	Biphenyl	400	U
208-96-8	Acenaphthylene	130	U
83-32-9	Acenaphthene	450	D
132-64-9	Dibenzofuran	95	U
86-73-7	Fluorene	95	U
132-65-0	Dibenzothiophene	100	U
85-01-8	Phenanthrene	120	U
120-12-7	Anthracene	100	U
260-94-6	Acridine	270	U
86-74-8	Carbazole	180	U
206-44-0	Fluoranthene	130	U
129-00-0	Pyrene	130	U
56-55-3	Benzo(A)Anthracene	240	U
218-01-9	Chrysene	260	U
205-99-2	Benzo(B)Fluoranthene	240	U
207-08-9	Benzo(K)Fluoranthene	210	U
192-97-2	Benzo(E)Pyrene	180	U
50-32-8	Benzo(A)Pyrene	210	U
198-55-0	Perylene	240	U
193-39-5	Indeno(1,2,3-CD)Pyrene	200	U
53-70-3	Dibenz(A,H)Anthracene	150	U
191-24-2	Benzo(G,H,I)Perylene	260	U

ORGANICS ANALYSIS DATA SHEET

28861-06DL2

Lab Name: ENSECO Contract: STP-W410-042193

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-06DL2

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7621

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 11.9

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	490	U
496-11-7	2,3-Dihydroindene	10000	D
95-13-6	1H-Indene	2800	D
91-20-3	Naphthalene	460	BDJ
4565-32-6	Benzo(B)Thiophene	1400	D
91-22-5	Quinoline	130	U
120-72-9	1H-Indole	240	U
91-57-6	2-Methylnaphthalene	86	U
90-12-0	1-Methylnaphthalene	900	D
92-52-4	Biphenyl	120	DJ
208-96-8	Acenaphthylene	100	DJ
83-32-9	Acenaphthene	1400	D
132-64-9	Dibenzofuran	95	U
86-73-7	Fluorene	95	U
132-65-0	Dibenzothiophene	100	U
85-01-8	Phenanthrene	120	U
120-12-7	Anthracene	100	U
260-94-6	Acridine	270	U
86-74-8	Carbazole	420	D
206-44-0	Fluoranthene	130	U
129-00-0	Pyrene	130	U
56-55-3	Benzo(A)Anthracene	240	U
218-01-9	Chrysene	260	U
205-99-2	Benzo(B)Fluoranthene	240	U
207-08-9	Benzo(K)Fluoranthene	210	U
192-97-2	Benzo(E)Pyrene	180	U
50-32-8	Benzo(A)Pyrene	210	U
198-55-0	Perylene	240	U
193-39-5	Indeno(1,2,3-CD)Pyrene	200	U
53-70-3	Dibenz(A,H)Anthracene	150	U
191-24-2	Benzo(G,H,I)Perylene	260	U

ORGANICS ANALYSIS DATA SHEET

28861-06DUDL1

Lab Name: ENSECO Contract:

STP-W410D-042193

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 29961-06DUDL1

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7597

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/30/93

Injection Volume: 2.0(uL) Dilution Factor: 1.19

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	12	DJ
496-11-7	2,3-Dihydroindene	4600	DERT
95-13-6	1H-Indene	2300	DE
91-20-3	Naphthalene	410	BD
4565-32-6	Benzo(B)Thiophene	1200	D
91-22-5	Quinoline	10	DJR
120-72-9	1H-Indole	12	DJR
91-57-6	2-Methylnaphthalene	9	U
90-12-0	1-Methylnaphthalene	810	D
92-52-4	Biphenyl	120	D
208-96-8	Acenaphthylene	94	D
83-32-9	Acenaphthene	1100	D
132-64-9	Dibenzofuran	20	D
86-73-7	Fluorene	72	D
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	25	BD
120-12-7	Anthracene	12	DR
260-94-6	Acridine	59	D
86-74-8	Carbazole	350	D
206-44-0	Fluoranthene	13	U
129-00-0	Pyrene	13	U
56-55-3	Benzo(A)Anthracene	24	U
218-01-9	Chrysene	26	U
205-99-2	Benzo(B)Fluoranthene	24	U
207-08-9	Benzo(K)Fluoranthene	21	U
192-97-2	Benzo(E)Pyrene	18	U
50-32-8	Benzo(A)Pyrene	21	U
198-55-0	Perylene	24	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	15	U
191-24-2	Benzo(G,H,I)Perylene	26	U

ORGANICS ANALYSIS DATA SHEET

28861-06DUDL2

Lab Name: ENSECO Contract: STP-W410D-042193

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-06DUDL2

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7622

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 11.9

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	490	U
496-11-7	2,3-Dihydroindene	10000	D
95-13-6	1H-Indene	2800	D
91-20-3	Naphthalene	480	BDJ
4565-32-6	Benzo(B)Thiophene	1500	D
91-22-5	Quinoline	130	U
120-72-9	1H-Indole	240	U
91-57-6	2-Methylnaphthalene	86	U
90-12-0	1-Methylnaphthalene	950	D
92-52-4	Biphenyl	140	DJ
208-96-8	Acenaphthylene	100	DJ
83-32-9	Acenaphthene	1400	D
132-64-9	Dibenzofuran	95	U
86-73-7	Fluorene	95	U
132-65-0	Dibenzothiophene	100	U
85-01-8	Phenanthrene	120	U
120-12-7	Anthracene	100	U
260-94-6	Acridine	270	U
86-74-8	Carbazole	420	D
206-44-0	Fluoranthene	130	U
129-00-0	Pyrene	130	U
56-55-3	Benzo(A)Anthracene	240	U
218-01-9	Chrysene	260	U
205-99-2	Benzo(B)Fluoranthene	240	U
207-08-9	Benzo(K)Fluoranthene	210	U
192-97-2	Benzo(E)Pyrene	180	U
50-32-8	Benzo(A)Pyrene	210	U
198-55-0	Perylene	240	U
193-39-5	Indeno(1,2,3-CD)Pyrene	200	U
53-70-3	Dibenz(A,H)Anthracene	150	U
191-24-2	Benzo(G,H,I)Perylene	260	U

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-06FB

STP-W410FB-042193

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-06FB

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7573

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/28/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	J
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	3	BJ
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	2	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	BJ
129-00-0	Pyrene	2	B
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

ORGANICS ANALYSIS DATA SHEET

28861-06FBD

STP=W410FBD=042193

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-06FBD

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7576

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/28/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	J
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	3	BJ
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	1	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	BJ
129-00-0	Pyrene	2	B
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	1	J

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-06MSDL1

STP-W410MS-042193

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-06MSDL1

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7598

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/30/93

Injection Volume: 2.0(uL) Dilution Factor: 1.19

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	13	DJ
496-11-7	2,3-Dihydroindene	4400	DERT
95-13-6	1H-Indene	2200	DE
91-20-3	Naphthalene	460	BD
4565-32-6	Benzo(B)Thiophene	1200	D
91-22-5	Quinoline	76	DR
120-72-9	1H-Indole	13	DJR
91-57-6	2-Methylnaphthalene	67	BDR
90-12-0	1-Methylnaphthalene	790	D
92-52-4	Biphenyl	120	D
208-96-8	Acenaphthylene	94	D
83-32-9	Acenaphthene	1100	D
132-64-9	Dibenzofuran	20	D
86-73-7	Fluorene	150	D
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	25	BD
120-12-7	Anthracene	12	D
260-94-6	Acridine	62	D
86-74-8	Carbazole	350	D
206-44-0	Fluoranthene	13	U
129-00-0	Pyrene	13	U
56-55-3	Benzo(A)Anthracene	24	U
218-01-9	Chrysene	31	D
205-99-2	Benzo(B)Fluoranthene	24	U
207-08-9	Benzo(K)Fluoranthene	21	U
192-97-2	Benzo(E)Pyrene	18	U
50-32-8	Benzo(A)Pyrene	21	U
198-55-0	Perylene	24	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	15	U
191-24-2	Benzo(G,H,I)Perylene	26	U

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-06MSDL2

STP-W410MS-042193

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-06MSDL2

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7623

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 11.9

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	490	U
496-11-7	2,3-Dihydroindene	11000	D
95-13-6	1H-Indene	2900	D
91-20-3	Naphthalene	560	BDJ
4565-32-6	Benzo(B)Thiophene	1500	D
91-22-5	Quinoline	130	U
120-72-9	1H-Indole	240	U
91-57-6	2-Methylnaphthalene	86	U
90-12-0	1-Methylnaphthalene	980	D
92-52-4	Biphenyl	140	DJ
208-96-8	Acenaphthylene	110	DJ
83-32-9	Acenaphthene	1500	D
132-64-9	Dibenzofuran	95	U
86-73-7	Fluorene	170	D
132-65-0	Dibenzothiophene	100	U
85-01-8	Phenanthrene	120	U
120-12-7	Anthracene	100	U
260-94-6	Acridine	270	U
86-74-8	Carbazole	460	D
206-44-0	Fluoranthene	130	U
129-00-0	Pyrene	130	U
56-55-3	Benzo(A)Anthracene	240	U
218-01-9	Chrysene	260	U
205-99-2	Benzo(B)Fluoranthene	240	U
207-08-9	Benzo(K)Fluoranthene	210	U
192-97-2	Benzo(E)Pyrene	180	U
50-32-8	Benzo(A)Pyrene	210	U
198-55-0	Perylene	240	U
193-39-5	Indeno(1,2,3-CD)Pyrene	200	U
53-70-3	Dibenz(A,H)Anthracene	150	U
191-24-2	Benzo(G,H,I)Perylene	260	U

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-06MSDDL1

STP=W410MSD=04219

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-06MSDDL1

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7599

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/30/93

Injection Volume: 2.0(uL) Dilution Factor: 1.19

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	12	DJ
496-11-7	2,3-Dihydroindene	4900	DERT
95-13-6	1H-Indene	2300	DE
91-20-3	Naphthalene	470	BD
4565-32-6	Benzo(B)Thiophene	1200	D
91-22-5	Quinoline	79	DR
120-72-9	1H-Indole	12	DJR
91-57-6	2-Methylnaphthalene	68	BDR
90-12-0	1-Methylnaphthalene	830	D
92-52-4	Biphenyl	120	D
208-96-8	Acenaphthylene	99	D
83-32-9	Acenaphthene	1200	D
132-64-9	Dibenzofuran	22	D
86-73-7	Fluorene	150	D
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	26	BD
120-12-7	Anthracene	13	D
260-94-6	Acridine	72	D
86-74-8	Carbazole	390	D
206-44-0	Fluoranthene	13	U
129-00-0	Pyrene	13	U
56-55-3	Benzo(A)Anthracene	24	U
218-01-9	Chrysene	27	D
205-99-2	Benzo(B)Fluoranthene	24	U
207-08-9	Benzo(K)Fluoranthene	21	U
192-97-2	Benzo(E)Pyrene	18	U
50-32-8	Benzo(A)Pyrene	21	U
198-55-0	Perylene	24	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	15	U
191-24-2	Benzo(G,H,I)Perylene	26	U

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

28861-06MSDDL2

Lab Name: ENSECO Contract: STP-W410MSD-042193

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28861-06MSDDL2

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7624

Level: (low/med) LOW Date Received: 04/22/93

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 11.9

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	490	U
496-11-7	2,3-Dihydroindene	11000	D
95-13-6	1H-Indene	3000	D
91-20-3	Naphthalene	590	BDJ
4565-32-6	Benzo(B)Thiophene	1600	D
91-22-5	Quinoline	130	U
120-72-9	1H-Indole	240	U
91-57-6	2-Methylnaphthalene	86	U
90-12-0	1-Methylnaphthalene	1000	D
92-52-4	Biphenyl	140	DJ
208-96-8	Acenaphthylene	120	DJ
83-32-9	Acenaphthene	1500	D
132-64-9	Dibenzofuran	95	U
86-73-7	Fluorene	170	D
132-65-0	Dibenzothiophene	100	U
85-01-8	Phenanthrene	120	U
120-12-7	Anthracene	100	U
260-94-6	Acridine	270	U
86-74-8	Carbazole	460	D
206-44-0	Fluoranthene	130	U
129-00-0	Pyrene	130	U
56-55-3	Benzo(A)Anthracene	240	U
218-01-9	Chrysene	260	U
205-99-2	Benzo(B)Fluoranthene	240	U
207-08-9	Benzo(K)Fluoranthene	210	U
192-97-2	Benzo(E)Pyrene	180	U
50-32-8	Benzo(A)Pyrene	210	U
198-55-0	Perylene	240	U
193-39-5	Indeno(1,2,3-CD)Pyrene	200	U
53-70-3	Dibenz(A,H)Anthracene	150	U
191-24-2	Benzo(G,H,I)Perylene	260	U

SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

BLK01

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: BL042493

Sample wt/vol: 4000 (g/mL) ML Lab File ID: C7577

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 04/24/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 04/28/93

Injection Volume: 2.0(uL) Dilution Factor: 0.125

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	2	JR
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	2	
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	3	
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	J
129-00-0	Pyrene	1	J
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (NAP) #	S2 (FLU) #	S3 (CHR) #	TOT OUT
01	28861-01	51	64	9 *	1
02	28861-01DL	64	74	21	0
03	28861-02	55	66	7 *	1
04	28861-02DL	68	77	94	0
05	28861-03DL1	69	77	11	0
06	28861-03DL2	75	78	99	0
07	28861-04DL	68	75	15	0
08	28861-05DL1	72	90	64	0
09	28861-05DL2	73	73	85	0
10	28861-06DL1	78	107	36	0
11	28861-06DL2	90	100	94	0
12	28861-06DUDL1	80	113	54	0
13	28861-06DUDL2	92	98	82	0
14	28861-06FB	70	72	88	0
15	28861-06FBD	70	76	91	0
16	28861-06MSDL1	79	112	58	0
17	28861-06MSDL2	98	103	99	0
18	28861-06MSDDL1	80	122	44	0
19	28861-06MSDDL2	86	107	74	0
20	BLK01	80	82	83	0

	QC LIMITS
S1 (NAP) = Naphthalene-d8	(14-108)
S2 (FLU) = Fluorene-d10	(41-162)
S3 (CHR) = Chrysene-d12	(10-118)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 28861-06DL1

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC #	QC LIMITS REC.
1H-Indene	71.4	2330	2230	NC	20-150
Naphthalene	71.4	429	456	38	20-150
Quinoline	71.4	12.2	76.1	89	20-150
2-Methylnaphthalene	71.4	ND	67.2	94	20-150
Fluorene	71.4	75.7	145	97	20-150
Chrysene	71.4	ND	31.4	44	20-150
Benzo(E)Pyrene	71.4	ND	7.31	10	10-150

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1H-Indene	71.4	2350	NC	NC	28	20-150
Naphthalene	71.4	469	56	38 *	28	20-150
Quinoline	71.4	78.5	93	4	28	20-150
2-Methylnaphthalene	71.4	68.4	96	2	28	20-150
Fluorene	71.4	154	110	13	28	20-150
Chrysene	71.4	27.4	38	14	28	20-150
Benzo(E)Pyrene	71.4	7.07	10	0	28	10-150

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ENSECO Contract:

Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 28861-06DL2

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC #	QC LIMITS REC.
1H-Indene	71.4	2790	2940	NC	20-150
Naphthalene	71.4	463	559	134	20-150
Quinoline	71.4	ND	70.8	99	20-150
2-Methylnaphthalene	71.4	ND	73.8	103	20-150
Fluorene	71.4	69.7	173	145	20-150
Chrysene	71.4	ND	35.3	49	20-150
Benzo(E)Pyrene	71.4	ND	ND	NC *	10-150

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1H-Indene	71.4	3030	NC	NC	28	20-150
Naphthalene	71.4	590	178 *	28	28	20-150
Quinoline	71.4	74.0	104	5	28	20-150
2-Methylnaphthalene	71.4	72.3	101	2	28	20-150
Fluorene	71.4	170	140	4	28	20-150
Chrysene	71.4	32.8	46	6	28	20-150
Benzo(E)Pyrene	72.4	ND	NC	0	28	10-150

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

BLK01

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Lab File ID: C7577 Lab Sample ID: BL042493

Instrument ID: 4500-C Date Extracted: 04/24/93

Matrix: (soil/water) WATER Date Analyzed: 04/28/93

Level:(low/med) LOW Time Analyzed: 2009

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	28861-01	28861-01	C7582	04/29/93
02	28861-01DL	28861-01DL	C7600	04/30/93
03	28861-02	28861-02	C7583	04/29/93
04	28861-02DL	28861-02DL	C7601	04/30/93
05	28861-03DL1	28861-03DL1	C7602	04/30/93
06	28861-03DL2	28861-03DL2	C7618	05/04/93
07	28861-04DL	28861-04DL	C7603	04/30/93
08	28861-05DL1	28861-05DL1	C7619	05/04/93
09	28861-05DL2	28861-05DL2	C7620	05/04/93
10	28861-06DL1	28861-06DL1	C7593	04/30/93
11	28861-06DL2	28861-06DL2	C7621	05/04/93
12	28861-06DUDL1	29961-06DUDL1	C7597	04/30/93
13	28861-06DUDL2	28861-06DUDL2	C7622	05/04/93
14	28861-06FB	28861-06FB	C7573	04/28/93
15	28861-06FBD	28861-06FBD	C7576	04/28/93
17	28861-06MSDL1	28861-06MSDL1	C7598	04/30/93
18	28861-06MSDL2	28861-06MSDL2	C7623	05/04/93
19	28861-06MSDDL1	28861-06MSDDL1	C7599	04/30/93
20	28861-06MSDDL2	28861-06MSDDL2	C7624	05/04/93

COMMENTS:

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Lab File ID (Standard): C7572 Date Analyzed: 04/28/93

Instrument ID: 4500-C Time Analyzed: 1546

		IS1(ACN) AREA #	RT #	IS2(PHN) AREA #	RT #	IS3(BAP) AREA #	RT #
	12 HOUR STD	357111	14.72	655537	18.50	361085	28.54
	UPPER LIMIT	714222	15.22	1311074	19.00	722170	29.04
	LOWER LIMIT	178556	14.22	327768	18.00	180542	28.04
	EPA SAMPLE NO.						
01	28861-01	482292	14.67	1021090	18.45	532248	28.51
02	28861-02	531159	14.69	1006910	18.47	606000	28.52
03	28861-06FB	353959	14.82	670211	18.62	321279	28.66
04	28861-06FBD	409600	14.87	813828	18.64	394982	28.67
05	BLK01	382056	14.87	755703	18.64	394929	28.67

IS1 (ACN) = Acenaphthene-D10
IS2 (PHN) = Phenanthrene-D10
IS3 (BAP) = Benzo(A)Pyrene-D10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Lab File ID (Standard): C7590 Date Analyzed: 04/30/93

Instrument ID: 4500-C Time Analyzed: 1025

		IS1(ACN) AREA #	RT #	IS2(PHN) AREA #	RT #	IS3(BAP) AREA #	RT #
	12 HOUR STD	269285	14.72	386616	18.50	206890	28.42
	UPPER LIMIT	538570	15.22	773232	19.00	413780	28.92
	LOWER LIMIT	134642	14.22	193308	18.00	103445	27.92
	EPA SAMPLE NO.						
01	28861-01DL	223524	14.67	425392	18.47	209432	28.37
02	28861-02DL	205317	14.67	375016	18.47	234056	28.37
03	28861-03DL1	187496	14.67	374601	18.47	197680	28.37
04	28861-04DL	162776	14.67	298417	18.47	175942	28.37
05	28861-06DL1	250244	14.67	453805	18.47	211160	28.52
06	28861-06DUDL1	242946	14.67	477240	18.47	240036	28.52
07	28861-06MSDL1	289110	14.67	562332	18.47	248332	28.52
08	28861-06MSDDL1	228488	14.67	453003	18.47	226832	28.37

IS1 (ACN) = Acenaphthene-D10
IS2 (PHN) = Phenanthrene-D10
IS3 (BAP) = Benzo(A)Pyrene-D10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28861 SAS No.: SDG No.:

Lab File ID (Standard): C7616 Date Analyzed: 05/04/93

Instrument ID: 4500-C Time Analyzed: 0958

		IS1(ACN) AREA #	RT #	IS2(PHN) AREA #	RT #	IS3(BAP) AREA #	RT #
	12 HOUR STD	223456	14.67	393131	18.47	460381	28.42
	UPPER LIMIT	446912	15.17	786262	18.97	920762	28.92
	LOWER LIMIT	111728	14.17	196566	17.97	230190	27.92
	EPA SAMPLE NO.						
01	28861-03DL2	259300	14.65	493782	18.52	449852	28.56
02	28861-05DL1	295704	14.67	553962	18.52	414417	28.57
03	28861-05DL2	255617	14.67	471655	18.52	415547	28.52
04	28861-06DL2	229218	14.64	406725	18.47	347252	28.37
05	28861-06DUDL	202707	14.67	371272	18.52	321986	28.57
06	28861-06MSDL2	196953	14.67	366946	18.52	311977	28.57
07	28861-06MSDDL2	210966	14.67	374943	18.52	325220	28.57

IS1 (ACN) = Acenaphthene-D10
IS2 (PHN) = Phenanthrene-D10
IS3 (BAP) = Benzo(A)Pyrene-D10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

2ND HALF MONITORING

Enseco
A Corning Company

CASE NARRATIVE

FOR

City of St. Louis Park

August 15, 1993

Enseco - RMAL Project Number 030216

Introduction

Twenty aqueous samples (includes QC) were received at Enseco Rocky Mountain Analytical Laboratory on July 20 and July 21, 1993. The samples were logged in under RMAL project number 030216. A cross reference associating the RMAL sample numbers to the actual field sample numbers is included. Samples were analyzed for low level part-per-trillion (ppt) polynuclear aromatic hydrocarbons (PAH) according to the ppt-5 and the ppt-75 protocols.

Data Quality Assessment

The results contained in this report were reviewed relative to data acceptance criteria as specified in the April, 1990 QAPP for completeness, precision, accuracy, representativeness and defensibility of the data. Unless otherwise stated below, no quality control problems or technical difficulties were encountered which would impact the interpretation or use of data in this report.

PPT PAH

The percent recovery for Benzo(E)pyrene was low (11% and 15%) but within specifications for samples 030216-0006MS/SD. The %RPDs for Chrysene and Benzo(e)pyrene were above the 28% limit for 030216-0006SD (30% and 31% respectively). Since good %RPDs were achieved for all other spike components (between the range of 6-20 %RPD) no further action was taken.

For all samples analyzed in this project, there were significant background chromatographic interferences. This interference contributed to the differences in ion ratios and in some cases, peak area integration.

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Arvada, Colorado 80002
303/421-6611 Fax 303/431-7171

The 4800 ng/ml and the 2400 ng/ml standards had excessive saturation; therefore, they were not used as the upper range for the 5-point calibration curve. Instead, the calibration curve used was, 20 ng/ml, 40 ng/ml, 240 ng/ml, 600 ng/ml, and 1200 ng/ml.

All samples in project 030216, with the exception of the 030216-0006FB and 030216-0012FD, show target compounds that do not meet secondary ion confirmation. In some instances a compound that does not meet secondary ion confirmation criteria may still be determined to be present in the sample after close inspection of the data by the analyst. Supportive data includes mass chromatograms maxima at the same scan for primary and secondary ions, as well as discernible quantitation interference with the secondary ion. These compounds are flagged with the letter (R) on the data sheets (Form I) as per the 1990 QAPP. In many instances, R values are related to internal standards or surrogates, and are not reflected on the data sheets.

Due to concentrations of target compounds present in samples 030216-0007 through 030216-0012 and 030216-0012DU, the extracts had to be diluted prior to analysis. Samples 030216-0009DL, 030216-0011, 030216-0012 and 030216-0012DU were diluted to the extent that the surrogates could no longer be reported. The reporting limits for these samples were adjusted according to the dilution required.

This data package is in compliance with the terms and conditions of the 1990 QAPP, both technically and for completeness, for other than the conditions detailed above.

Reported by: Karen F. Germann **Date:** 8/15/93
Karen F. Germann
Program Administrator

Approved by: Randy Greaves **Date:** 8/15/93
Randy Greaves
Program Manager

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SAMPLE DESCRIPTION INFORMATION
for
City of St. Louis Park

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
030216-0001-SA	STP-W408-071993	AQUEOUS	19 JUL 93	09:30	20 JUL 93
030216-0002-SA	STP-W129-071993	AQUEOUS	19 JUL 93	10:50	20 JUL 93
030216-0003-SA	STP-W411-071993	AQUEOUS	19 JUL 93	12:00	20 JUL 93
030216-0004-SA	STP-W122-071993	AQUEOUS	19 JUL 93	12:59	20 JUL 93
030216-0005-SA	STP-P116-071993	AQUEOUS	19 JUL 93	15:00	20 JUL 93
030216-0006-SA	STP-SLP3-071993	AQUEOUS	19 JUL 93		20 JUL 93
030216-0006-DU	STP-SLP3D-071993	AQUEOUS	19 JUL 93		20 JUL 93
030216-0006-MS	STP-SLP3MS-071993	AQUEOUS	19 JUL 93		20 JUL 93
030216-0006-SD	STP-SLP3MSD-071993	AQUEOUS	19 JUL 93		20 JUL 93
030216-0006-FB	STP-SLP3FB-071993	AQUEOUS	19 JUL 93		20 JUL 93
030216-0006-FD	STP-SLP3FBD-071993	AQUEOUS	19 JUL 93		20 JUL 93
030216-0007-SA	STP-W412-072093	AQUEOUS	20 JUL 93	09:45	21 JUL 93
030216-0008-SA	STP-W133-072093	AQUEOUS	20 JUL 93	09:45	21 JUL 93
030216-0009-SA	STP-W409-072093	AQUEOUS	20 JUL 93	09:45	21 JUL 93
030216-0010-SA	STP-W33-072093	AQUEOUS	20 JUL 93	12:50	21 JUL 93
030216-0011-SA	STP-W24-072093	AQUEOUS	20 JUL 93	15:10	21 JUL 93
030216-0012-SA	STP-W410-071993	AQUEOUS	20 JUL 93		21 JUL 93
030216-0012-DU	STP-W410D-071993	AQUEOUS	20 JUL 93		21 JUL 93
030216-0012-FB	STP-W410FB-071993	AQUEOUS	20 JUL 93		21 JUL 93
030216-0012-FD	STP-W410FBD-071993	AQUEOUS	20 JUL 93		21 JUL 93

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ANALYTICAL TEST REQUESTS
for
City of St. Louis Park

Lab ID: 030216	Group Code	Analysis Description	Custom Test?
0001 - 0006, 0006	A	Polynuclear Aromatic Hydrocarbons, SIM Low Level	N
		Prep - PAH/SIM by GC/MS Low Level	N
0006	B	Prep - PAH/SIM by GC/MS Low Level	N
0007 - 0012, 0012	C	Polynuclear Aromatic Hydrocarbons, SIM Low Level	N
		Prep - PAH/SIM by GC/MS Low Level	N
0012	D	Prep - PAH/SIM by GC/MS Low Level	N

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Qualifier Codes and Their Usage

U = Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture.

J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration of 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for dilution as discussed for the U flag.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results.

P = This flag is used for a pesticide/Aroclor target analyte when there is greater then 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

C = This flag applies to pesticide results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, do not apply this flag, instead use a laboratory-defined flag, discussed below.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified target compound.

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E = This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. If one or more compounds have a response greater than full scale, except as noted in Exhibit D, the sample or extract must be diluted and re-analyzed accordingly to the specifications in Exhibit D. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate copies of Form I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number. NOTE: For total xylenes, where three isomers are quantified as two peaks, the calibration range of each peak should be considered separately, e.g., a diluted analysis is not required for total xylenes unless the concentration of either peak separately exceeds 200 ug/L.

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag. This flag alerts data users that any discrepancies between the concentrations reported may be due to dilution of the sample or extract.

A = This flag indicates that a TIC is a suspected aldol-condensation product.

X = Other specific flags may be required to properly define the results. If used, they must be fully described, and such description attached to the Sample Data Summary Package and the SDG Narrative. Begin by using "X". If more than one flag is required, use "Y" and "Z" as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample. The laboratory-defined flags are limited to the letters "X", "Y", and "Z".

R = This flag is used for polyaromatic hydrocarbons which show target compounds that do not meet secondary ion confirmation. In some instances a compound that does not meet secondary ion confirmation criteria may still be determined to be present in the sample after close inspection of the data by the analyst. Supportive data includes mass chromatograms maxima at the same scan for primary and secondary ions, as well as discernible quantitation interference with the secondary ion.

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☐ Enseco Houston
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Suite 120
Houston, TX 77032
713/987-9767 FAX. 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: ENSR Consulting & Engineering
PROJECT: St. Louis Park
SAMPLING COMPANY: ENSR Consulting & Engineering
SAMPLING SITE: SLP
TEAM LEADER: Peter Moore

SAMPLE SAFE™ CONDITIONS

PACKED BY: Peter Moore
SEAL NUMBER:
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:
CONDITION OF CONTENTS:
SEALED FOR SHIPPING BY: Peter Moore
INITIAL CONTENTS TEMP: °C
SEAL NUMBER:
SAMPLING STATUS: ☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB: ☐ Yes ☐ No
CONTENTS TEMPERATURE UPON RECEIPT BY LAB: °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
7/19	9:30	STP-W408-071993	H_2O	6	PPT-PAH	PPT-5 -01
7/19	10:50	STP-W129-071993	H_2O	6	PPT-PAH	PPT-5 -02

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME
P. Moore		7/19/93	15:00

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: P. Moore
METHOD OF SHIPMENT: FED-EX
AIRBILL NUMBER: 2103420756
RECEIVED FOR LAB:
SIGNED:
ENSECO PROJECT NUMBER: 30216

RECEIVED JUL 20 1993 INTO THE CUSTODY OF ENSECO-RMAL, INC.

ENS-4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

☒ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX 303/431-7171

☐ Enseco Houston
1420 East North Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX. 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT	City of St Louis Park
PROJECT	SLP
SAMPLING COMPANY	ENSR Consulting + Engineering
SAMPLING SITE	SLP, MN
TEAM LEADER	Peter Moore

SAMPLE SAFE™ CONDITIONS

PACKED BY: Peter Moore	SEAL NUMBER: NA
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY	CONDITION OF CONTENTS
SEALED FOR SHIPPING BY: Peter Moore	INITIAL CONTENTS TEMP °C
SEAL NUMBER: NA	SAMPLING STATUS: ☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB: ☐ Yes ☐ No	CONTENTS TEMPERATURE UPON RECEIPT BY LAB °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
7/19/93	12:00	STP-W411-071993	H_2O	6	PPT-PAH	PPT-5 -03
7/19/93	12:59	STP-W122-071993	H_2O	6	PPT-PAH	PPT 5 -04

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME
Peter Moore		7/19/93	15:00

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: Peter Moore	
METHOD OF SHIPMENT: FEDEX	AIRBILL NUMBER: 2103420 [illegible]
RECEIVED FOR LAB	SIGNED: [signature]
ENSECO PROJECT NUMBER: 30216	

RECEIVED
JUL 20 1993
INTO THE CUSTODY OF ENSECO-RMAL
BY:

ENS-4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

☑ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North[illegible] Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: City of St Louis Park
PROJECT: SLP
SAMPLING COMPANY: ENSR Consulting + Engineering
SAMPLING SITE: SLP, MN
TEAM LEADER: Peter Moore

SAMPLE SAFE™ CONDITIONS

PACKED BY: Peter Moore
SEAL NUMBER: NA
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:
CONDITION OF CONTENTS:
SEALED FOR SHIPPING BY: Peter Moore
INITIAL CONTENTS TEMP: °C
SEAL NUMBER: NA
SAMPLING STATUS: ☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB: ☐ Yes ☐ No
CONTENTS TEMPERATURE UPON RECEIPT BY LAB: °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
7/19/93	15:10	STP-PW6-071993	H_2O	6	PPT-PAH	PPT-5 @ 7/16 -04 -05
NOTE: FED Ex AirBill # For Samples 13 Incorrect					STP-W411-07 1993 / STP-W1205-07 1993 / STP-W1226 07 1993 / STP-W1227-07 1993	

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME
[signature]		7/19/93	5:00

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: Peter Moore
METHOD OF SHIPMENT: FED EX
AIRBILL NUMBER:
RECEIVED FOR LAB:
SIGNED: [signature]
DATE:
ENSECO PROJECT NUMBER: 30216

RECEIVED JUL 20 1993

ENS-4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

CHAIN OF CUSTODY

ENSECO CLIENT: CITY OF ST LOUIS PARK (WATER DEPT)	SAMPLE SAFE™ CONDITIONS — PACKED BY: MZ
PROJECT:	SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:
SAMPLING COMPANY: SAME	SEALED FOR SHIPPING BY: MZ
SAMPLING SITE: SAME	SEAL NUMBER:
TEAM LEADER: MZ	SEAL INTACT UPON RECEIPT BY LAB: ☐ Yes ☐ No

SEAL NUMBER:
CONDITION OF CONTENTS:
INITIAL CONTENTS TEMP: °C
SAMPLING STATUS: ☐ Done ☐ Continuing Until
CONTENTS TEMPERATURE UPON RECEIPT BY LAB: °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
7-19-93		STP-SLP 3 -071993	1XLAMBER	6	PPL PAH	PPL 5 -06
7-19-93		STP-SLP 3 D-071993	1XLAMBER	6	PPL PAH	PPL 5 -06 DU

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: MZ
METHOD OF SHIPMENT: FED EX
AIRBILL NUMBER: 21234
RECEIVED FOR LAB: SIGNED:
DATE/TIME:
ENSECO PROJECT NUMBER: 30216

RECEIVED JUL 20 1993 INTO THE CUSTODY OF ENSECO/RMAL

ENS—1133 White – CLIENT Pink – LAB

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North [illegible] Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

SAMPLE SAFE™ CONDITIONS

ENSECO CLIENT: CITY OF ST LOUIS PARK (WATER DEPT)	PACKED BY: MZR	SEAL NUMBER:
PROJECT:	SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:	CONDITION OF CONTENTS:
SAMPLING COMPANY: SAME	SEALED FOR SHIPPING BY: MZR	INITIAL CONTENTS TEMP: °C
SAMPLING SITE: SAME	SEAL NUMBER:	SAMPLING STATUS: ☐ Done ☐ Continuing Until
TEAM LEADER: MZR	SEAL INTACT UPON RECEIPT BY LAB: ☐ Yes ☐ No	CONTENTS TEMPERATURE UPON RECEIPT BY LAB: °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
7-19-93		STP-SLP 3 FB -071993	IXL AMBER	6	PPC PAH	PPC 5 -06FB
7-19-93		STP-SLP3 FBD-071993	IXL AMBER	6	PPC PAH	PPC 5 -06FD

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: MZR	
METHOD OF SHIPMENT: FED EX	AIRBILL NUMBER: [illegible]
RECEIVED FOR LAB	SIGNED:
ENSECO PROJECT NUMBER: 30216	

RECEIVED
JUL 20 1993
INTO THE CUSTODY OF ENSECO-MAL INC

ENS-4011 White - CLIENT Pink - LAB

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No.

Attn:

Enseco Client: City of St Louis Park
Project: SLP
Sampling Co.: ENSR Consulting & Engineering
Sampling Site: SLP
Team Leader: Peter Moore

SAMPLE SAFE™ CONDITIONS

1 Packed by: Peter Moore Seal #
2. Seal Intact Upon Receipt by Sampling Co: NA Yes No
3 Condition of Contents:
4 Sealed for Shipping by: Peter Moore
5 Initial Contents Temp.: °C Seal # NA
6. Sampling Status: Done Continuing Until
7. Seal Intact Upon Receipt by Laboratory: Yes No
8 Contents Temperature Upon Receipt by Lab °C
9 Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/20/93	9:45	STP-W412-072093	H_2O	G	PPT-PAH	PPT-25-07
7/20/93	10:10	STP-W133-072093	H_2O	G	PPT-PAH	PPT-25-08
7/20/93	11:50	STP-W409-072093	H_2O	G	PPT-PAH	PPT-25-09

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1	Peter Moore	[signature] 072793		
2				
3				

RECEIVED JUL 21 1993 THIS THE CUSTODY OF ENSECO-RMAL BY

SHIPPING DETAILS

Delivered to Shipper by: Peter Moore
Method of Shipment: FED EX Airbill #
Received for Lab: Signed [signature] Date/Time
Enseco Project No: 30216

White and Pink Copies to Lab Yellow to Sampler

SS-001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No.

Attn:

Enseco Client: City of St Louis Park
Project: SLP
Sampling Co: ENSR Consulting & Engineering
Sampling Site: SLP
Team Leader: Peter Moore

SAMPLE SAFE™ CONDITIONS

1. Packed by: Peter Moore Seal # NA
2. Seal Intact Upon Receipt by Sampling Co.: NA Yes No
3. Condition of Contents:
4. Sealed for Shipping by: Peter Moore
5. Initial Contents Temp.: °C Seal # NA
6. Sampling Status: Done Continuing Until
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/20/93	12:50	STP-W33-072093	H_2O	6	PPT-PAH	PPT-25-10
7/20/93	15:00	STP-W24-072093	H_2O	6	PPT-PAH	PPT-25-11

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1	Peter Moore			
2				
3				

RECEIVED JUL 21 1993 INTO THE CUSTODY OF ENSECO-RMAL BY:

SHIPPING DETAILS

Delivered to Shipper by: Peter Moore
Method of Shipment: FEDEX Airbill #
Received for Lab: Signed: Date/Time
Enseco Project No: 30216

White and Pink Copies to Lab Yellow to Sampler

SS-001

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North Belt Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: CITY OF ST LOUIS PARK (WATER DEPT)	SAMPLE SAFE™ CONDITIONS
PROJECT	PACKED BY: MZH
SAMPLING COMPANY: SAME	SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY
SAMPLING SITE: SAME	SEALED FOR SHIPPING BY: MZH
TEAM LEADER: MZH	SEAL NUMBER
	SEAL NUMBER
	SEAL INTACT UPON RECEIPT BY LAB ☐ Yes ☐ No
	SEAL NUMBER
	CONDITION OF CONTENTS
	INITIAL CONTENTS TEMP °C
	SAMPLING STATUS ☐ Done ☐ Continuing Until
	CONTENTS TEMPERATURE UPON RECEIPT BY LAB °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
7-20-93		STP-W410-071993	IXL AMBER	6	PPC PAH	PPC 25 -12
7-20-93		STP-W410 D-071993	IXL AMBER	6	PPC PAH	PPC 25 -12DU

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

RECEIVED JUL 21 1993 INTO THE CUSTODY OF ENSECO-RMAL BY:

SHIPPING DETAILS

DELIVERED TO SHIPPER BY	MZH
METHOD OF SHIPMENT	FED EX
AIRBILL NUMBER	2103420756
RECEIVED FOR LAB	SIGNED / DATE/TIME
ENSECO PROJECT NUMBER	

ENS—4011 White – CLIENT Pink – LAB

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: CITY OF ST LOUIS PARK (WATER DEPT)	SAMPLE SAFE™ CONDITIONS — PACKED BY: MZK; SEAL NUMBER:
PROJECT:	SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY: ; CONDITION OF CONTENTS:
SAMPLING COMPANY: SAME	SEALED FOR SHIPPING BY: MZK; INITIAL CONTENTS TEMP: °C
SAMPLING SITE: SAME	SEAL NUMBER: ; SAMPLING STATUS: ☐ Done ☐ Continuing Until
TEAM LEADER: MZK	SEAL INTACT UPON RECEIPT BY LAB: ☐ Yes ☐ No; CONTENTS TEMPERATURE UPON RECEIPT BY LAB: °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
2-20-93		STP-W410FB-021993	1XL AMBER	6	PPL PAH	PPL 75 -12FB
2-20-93		STP-W410FBD-021993	1XL AMBER	6	PPL PAH	PPL 75 -12FBD

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

RECEIVED JUL 21 1993 INTO THE CUSTODY OF ENSECO-ARAL INC.

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: MZK

METHOD OF SHIPMENT: FED EX

AIRBILL NUMBER: 2103420756

RECEIVED FOR LAB: ; SIGNED: ; DATE/TIME:

ENSECO PROJECT NUMBER:

ENS—4011 White & Copy Pink = LAB

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North Belt Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX. 713/987-9769

CHAIN OF CUSTODY

SAMPLE SAFE™ CONDITIONS

ENSECO CLIENT: CITY OF ST LOUIS PARK (WATER DEPT)	PACKED BY: MZB	SEAL NUMBER:
PROJECT:	SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:	CONDITION OF CONTENTS:
SAMPLING COMPANY: SAME	SEALED FOR SHIPPING BY: MZB	INITIAL CONTENTS TEMP: °C
SAMPLING SITE: SAME	SEAL NUMBER:	SAMPLING STATUS: ☐ Done ☐ Continuing Until
TEAM LEADER: MZB	SEAL INTACT UPON RECEIPT BY LAB: ☐ Yes ☐ No	CONTENTS TEMPERATURE UPON RECEIPT BY LAB: °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
7-19-93		STP-SLP 3 MS -071993	1XL AMBER	6	PPC PAH	PPC 5 -06MS
7-19-93		STP-SLP 3 MSD-071993	1XL AMBER	6	PPC PAH	PPC 5 -06MSD

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: MZB	
METHOD OF SHIPMENT: FED EX	AIRBILL NUMBER: 210 342 [illegible]
RECEIVED FOR LAB	SIGNED:
ENSECO PROJECT NUMBER: 30216	

RECEIVED JUL 20 1993 INTO THE CUSTODY OF ENSECO-RMAL INC.

ENS-4011 White = CLIENT Pink = LAB

SUMMARY

DATA

PACKAGE

FOR

CITY OF SAINT LOUIS PARK

RMAL No: 30216

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-01

STP-W408-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-01

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7914

Level: (low/med) LOW Date Received: 07/20/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/02/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	11	B
95-13-6	1H-Indene	9	
91-20-3	Naphthalene	49	BR
4565-32-6	Benzo(B)Thiophene	9	R
91-22-5	Quinoline	2	R
120-72-9	1H-Indole	10	R
91-57-6	2-Methylnaphthalene	15	B
90-12-0	1-Methylnaphthalene	16	B
92-52-4	Biphenyl	4	J
208-96-8	Acenaphthylene	3	R
83-32-9	Acenaphthene	11	
132-64-9	Dibenzofuran	6	
86-73-7	Fluorene	6	
132-65-0	Dibenzothiophene	5	R
85-01-8	Phenanthrene	11	B
120-12-7	Anthracene	1	JR
260-94-6	Acridine	13	R
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	6	BR
129-00-0	Pyrene	32	B
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	4	BR

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-02

STP-WI29-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-02

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7925

Level: (low/med) LOW Date Received: 07/20/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/03/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	2	BR
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	11	BR
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	7	BR
90-12-0	1-Methylnaphthalene	4	BR
92-52-4	Biphenyl	1	JR
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	2	
132-64-9	Dibenzofuran	2	R
86-73-7	Fluorene	2	
132-65-0	Dibenzothiophene	1	J
85-01-8	Phenanthrene	8	B
120-12-7	Anthracene	1	JR
260-94-6	Acridine	3	U
86-74-8	Carbazole	1	JR
206-44-0	Fluoranthene	3	B
129-00-0	Pyrene	8	BR
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	BJR
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-03

STP-W411-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-03

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7918

Level: (low/med) LOW Date Received: 07/20/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/02/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	3	B
95-13-6	1H-Indene	5	
91-20-3	Naphthalene	14	B
4565-32-6	Benzo(B)Thiophene	2	R
91-22-5	Quinoline	1	JR
120-72-9	1H-Indole	4	R
91-57-6	2-Methylnaphthalene	7	BR
90-12-0	1-Methylnaphthalene	5	BR
92-52-4	Biphenyl	2	JR
208-96-8	Acenaphthylene	2	R
83-32-9	Acenaphthene	3	
132-64-9	Dibenzofuran	2	R
86-73-7	Fluorene	3	
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	8	BR
120-12-7	Anthracene	2	R
260-94-6	Acridine	26	
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	5	B
129-00-0	Pyrene	20	B
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	2	J
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	2	BJR

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-04

STP-WI22-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-04

Sample wt/vol: 4180 (g/mL) ML Lab File ID: C7887

Level: (low/med) LOW Date Received: 07/20/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/26/93

Injection Volume: 2.0(uL) Dilution Factor: 0.120

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	15	B
95-13-6	1H-Indene	11	
91-20-3	Naphthalene	54	BR
4565-32-6	Benzo(B)Thiophene	12	R
91-22-5	Quinoline	3	
120-72-9	1H-Indole	5	R
91-57-6	2-Methylnaphthalene	30	B
90-12-0	1-Methylnaphthalene	24	B
92-52-4	Biphenyl	7	
208-96-8	Acenaphthylene	4	R
83-32-9	Acenaphthene	16	
132-64-9	Dibenzofuran	8	
86-73-7	Fluorene	9	
132-65-0	Dibenzothiophene	5	R
85-01-8	Phenanthrene	20	BR
120-12-7	Anthracene	1	JR
260-94-6	Acridine	27	
86-74-8	Carbazole	14	R
206-44-0	Fluoranthene	13	B
129-00-0	Pyrene	53	BR
56-55-3	Benzo(A)Anthracene	1	JR
218-01-9	Chrysene	3	R
205-99-2	Benzo(B)Fluoranthene	5	BR
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	R
50-32-8	Benzo(A)Pyrene	2	JR
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	JR
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	10	B

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-05

STP-PI16-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-05

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7888

Level: (low/med) LOW Date Received: 07/20/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/26/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	2	B
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	9	B
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	4	R
91-57-6	2-Methylnaphthalene	9	B
90-12-0	1-Methylnaphthalene	4	B
92-52-4	Biphenyl	1	J
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	J
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	J
132-65-0	Dibenzothiophene	1	J
85-01-8	Phenanthrene	4	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	2	BR
129-00-0	Pyrene	1	U
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	2	BJ

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-06

STP-SLP3-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-06

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7889

Level: (low/med) LOW Date Received: 07/20/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/26/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	1	BJ
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	0.9	U
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	BJ
129-00-0	Pyrene	1	BJ
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-06DU

STP-SLP3D-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-06DU

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7911

Level: (low/med) LOW Date Received: 07/20/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/28/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	2	BJR
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	1	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	U
129-00-0	Pyrene	1	U
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-06FB

STP-SLP3FB-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-06FB

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7901

Level: (low/med) LOW Date Received: 07/20/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/27/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	2	BJ
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	1	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	1	BJ
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	U
129-00-0	Pyrene	1	U
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-06FBD

Lab Name: ENSECO Contract: STP-SLP3FBD-071993

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-06FBD

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7902

Level: (low/med) LOW Date Received: 07/20/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/27/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	BJ
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	2	BJ
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	1	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	U
129-00-0	Pyrene	1	U
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

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ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-07

STP-W412-072093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-07

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7947

Level: (low/med) LOW Date Received: 07/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/23/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/93

Injection Volume: 2.0(uL) Dilution Factor: 0.476

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	20	U
496-11-7	2,3-Dihydroindene	50	
95-13-6	1H-Indene	46	
91-20-3	Naphthalene	150	B
4565-32-6	Benzo(B)Thiophene	27	R
91-22-5	Quinoline	7	
120-72-9	1H-Indole	35	R
91-57-6	2-Methylnaphthalene	56	B
90-12-0	1-Methylnaphthalene	41	
92-52-4	Biphenyl	8	J
208-96-8	Acenaphthylene	5	U
83-32-9	Acenaphthene	22	
132-64-9	Dibenzofuran	10	
86-73-7	Fluorene	13	
132-65-0	Dibenzothiophene	20	
85-01-8	Phenanthrene	35	B
120-12-7	Anthracene	4	U
260-94-6	Acridine	38	
86-74-8	Carbazole	24	
206-44-0	Fluoranthene	16	
129-00-0	Pyrene	86	
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	9	U
192-97-2	Benzo(E)Pyrene	7	U
50-32-8	Benzo(A)Pyrene	9	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	8	U
53-70-3	Dibenz(A,H)Anthracene	6	U
191-24-2	Benzo(G,H,I)Perylene	9	J

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-08

STP-WI33-072093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-08

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7941

Level: (low/med) LOW Date Received: 07/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/23/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/93

Injection Volume: 2.0(uL) Dilution Factor: 0.595

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	24	U
496-11-7	2,3-Dihydroindene	580	
95-13-6	1H-Indene	23	
91-20-3	Naphthalene	92	B
4565-32-6	Benzo(B)Thiophene	19	R
91-22-5	Quinoline	7	U
120-72-9	1H-Indole	12	U
91-57-6	2-Methylnaphthalene	46	B
90-12-0	1-Methylnaphthalene	25	
92-52-4	Biphenyl	20	U
208-96-8	Acenaphthylene	7	U
83-32-9	Acenaphthene	7	
132-64-9	Dibenzofuran	5	U
86-73-7	Fluorene	5	U
132-65-0	Dibenzothiophene	5	U
85-01-8	Phenanthrene	12	B
120-12-7	Anthracene	5	U
260-94-6	Acridine	20	R
86-74-8	Carbazole	9	U
206-44-0	Fluoranthene	7	U
129-00-0	Pyrene	12	R
56-55-3	Benzo(A)Anthracene	12	U
218-01-9	Chrysene	13	U
205-99-2	Benzo(B)Fluoranthene	12	U
207-08-9	Benzo(K)Fluoranthene	11	U
192-97-2	Benzo(E)Pyrene	9	U
50-32-8	Benzo(A)Pyrene	11	U
198-55-0	Perylene	12	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	8	U
191-24-2	Benzo(G,H,I)Perylene	13	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-09

Lab Name: ENSECO Contract: STP-W409-072093

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-09

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7892

Level: (low/med) LOW Date Received: 07/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/23/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/26/93

Injection Volume: 2.0(uL) Dilution Factor: 1.19

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	190	
496-11-7	2,3-Dihydroindene	4100	ERT
95-13-6	1H-Indene	3600	ET
91-20-3	Naphthalene	1600	BERT
4565-32-6	Benzo(B)Thiophene	1900	ERT
91-22-5	Quinoline	25	R
120-72-9	1H-Indole	24	U
91-57-6	2-Methylnaphthalene	55	BR
90-12-0	1-Methylnaphthalene	2000	ERT
92-52-4	Biphenyl	700	
208-96-8	Acenaphthylene	470	
83-32-9	Acenaphthene	2400	ET
132-64-9	Dibenzofuran	930	
86-73-7	Fluorene	1000	
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	530	B
120-12-7	Anthracene	32	
260-94-6	Acridine	98	
86-74-8	Carbazole	1300	R
206-44-0	Fluoranthene	31	
129-00-0	Pyrene	50	
56-55-3	Benzo(A)Anthracene	24	U
218-01-9	Chrysene	26	U
205-99-2	Benzo(B)Fluoranthene	24	U
207-08-9	Benzo(K)Fluoranthene	21	U
192-97-2	Benzo(E)Pyrene	18	U
50-32-8	Benzo(A)Pyrene	21	U
198-55-0	Perylene	24	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	15	U
191-24-2	Benzo(G,H,I)Perylene	26	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-09DL

STP-W409-072093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-09DL

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7912

Level: (low/med) LOW Date Received: 07/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/23/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/28/93

Injection Volume: 2.0(uL) Dilution Factor: 11.9

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	390	DJR
496-11-7	2,3-Dihydroindene	9300	D
95-13-6	1H-Indene	11000	D
91-20-3	Naphthalene	4200	BD
4565-32-6	Benzo(B)Thiophene	4700	D
91-22-5	Quinoline	130	U
120-72-9	1H-Indole	240	U
91-57-6	2-Methylnaphthalene	86	U
90-12-0	1-Methylnaphthalene	4100	D
92-52-4	Biphenyl	880	D
208-96-8	Acenaphthylene	530	D
83-32-9	Acenaphthene	3200	D
132-64-9	Dibenzofuran	1100	D
86-73-7	Fluorene	1200	D
132-65-0	Dibenzothiophene	100	U
85-01-8	Phenanthrene	640	BD
120-12-7	Anthracene	100	U
260-94-6	Acridine	270	U
86-74-8	Carbazole	1200	D
206-44-0	Fluoranthene	130	U
129-00-0	Pyrene	130	U
56-55-3	Benzo(A)Anthracene	240	U
218-01-9	Chrysene	260	U
205-99-2	Benzo(B)Fluoranthene	240	U
207-08-9	Benzo(K)Fluoranthene	210	U
192-97-2	Benzo(E)Pyrene	180	U
50-32-8	Benzo(A)Pyrene	210	U
198-55-0	Perylene	240	U
193-39-5	Indeno(1,2,3-CD)Pyrene	200	U
53-70-3	Dibenz(A,H)Anthracene	150	U
191-24-2	Benzo(G,H,I)Perylene	260	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-10

STP-W33-072093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-10

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7919

Level: (low/med) LOW Date Received: 07/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/23/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/02/93

Injection Volume: 2.0(uL) Dilution Factor: 1.19

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	49	U
496-11-7	2,3-Dihydroindene	340	
95-13-6	1H-Indene	160	
91-20-3	Naphthalene	180	B
4565-32-6	Benzo(B)Thiophene	99	R
91-22-5	Quinoline	13	U
120-72-9	1H-Indole	22	JR
91-57-6	2-Methylnaphthalene	44	B
90-12-0	1-Methylnaphthalene	44	
92-52-4	Biphenyl	40	U
208-96-8	Acenaphthylene	13	U
83-32-9	Acenaphthene	28	
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	19	JR
86-74-8	Carbazole	18	U
206-44-0	Fluoranthene	13	J
129-00-0	Pyrene	64	
56-55-3	Benzo(A)Anthracene	24	U
218-01-9	Chrysene	26	U
205-99-2	Benzo(B)Fluoranthene	24	U
207-08-9	Benzo(K)Fluoranthene	21	U
192-97-2	Benzo(E)Pyrene	18	U
50-32-8	Benzo(A)Pyrene	21	U
198-55-0	Perylene	24	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	15	U
191-24-2	Benzo(G,H,I)Perylene	26	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-11

STP-W24-072093

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-11

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7929

Level: (low/med) LOW Date Received: 07/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/23/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/03/93

Injection Volume: 2.0(uL) Dilution Factor: 3.97

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	160	U
496-11-7	2,3-Dihydroindene	2800	
95-13-6	1H-Indene	44	
91-20-3	Naphthalene	210	U
4565-32-6	Benzo(B)Thiophene	29	U
91-22-5	Quinoline	44	U
120-72-9	1H-Indole	79	U
91-57-6	2-Methylnaphthalene	29	U
90-12-0	1-Methylnaphthalene	51	U
92-52-4	Biphenyl	130	U
208-96-8	Acenaphthylene	44	U
83-32-9	Acenaphthene	450	
132-64-9	Dibenzofuran	32	U
86-73-7	Fluorene	32	U
132-65-0	Dibenzothiophene	35	U
85-01-8	Phenanthrene	40	U
120-12-7	Anthracene	35	U
260-94-6	Acridine	91	U
86-74-8	Carbazole	59	U
206-44-0	Fluoranthene	44	U
129-00-0	Pyrene	44	U
56-55-3	Benzo(A)Anthracene	79	U
218-01-9	Chrysene	87	U
205-99-2	Benzo(B)Fluoranthene	79	U
207-08-9	Benzo(K)Fluoranthene	71	U
192-97-2	Benzo(E)Pyrene	59	U
50-32-8	Benzo(A)Pyrene	71	U
198-55-0	Perylene	79	U
193-39-5	Indeno(1,2,3-CD)Pyrene	67	U
53-70-3	Dibenz(A,H)Anthracene	51	U
191-24-2	Benzo(G,H,I)Perylene	87	U

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ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-12

STP-W410-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-12

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7939

Level: (low/med) LOW Date Received: 07/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/23/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/93

Injection Volume: 2.0(uL) Dilution Factor: 11.9

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	490	U
496-11-7	2,3-Dihydroindene	10000	
95-13-6	1H-Indene	2500	
91-20-3	Naphthalene	120	BJ
4565-32-6	Benzo(B)Thiophene	1400	
91-22-5	Quinoline	130	U
120-72-9	1H-Indole	240	U
91-57-6	2-Methylnaphthalene	86	U
90-12-0	1-Methylnaphthalene	810	
92-52-4	Biphenyl	110	J
208-96-8	Acenaphthylene	99	J
83-32-9	Acenaphthene	1200	
132-64-9	Dibenzofuran	95	U
86-73-7	Fluorene	95	U
132-65-0	Dibenzothiophene	100	U
85-01-8	Phenanthrene	120	U
120-12-7	Anthracene	100	U
260-94-6	Acridine	270	U
86-74-8	Carbazole	370	
206-44-0	Fluoranthene	130	U
129-00-0	Pyrene	130	U
56-55-3	Benzo(A)Anthracene	240	U
218-01-9	Chrysene	260	U
205-99-2	Benzo(B)Fluoranthene	240	U
207-08-9	Benzo(K)Fluoranthene	210	U
192-97-2	Benzo(E)Pyrene	180	U
50-32-8	Benzo(A)Pyrene	210	U
198-55-0	Perylene	240	U
193-39-5	Indeno(1,2,3-CD)Pyrene	200	U
53-70-3	Dibenz(A,H)Anthracene	150	U
191-24-2	Benzo(G,H,I)Perylene	260	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-12DU

Lab Name: ENSECO Contract: STP-W410D-071993

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-12DU

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7940

Level: (low/med) LOW Date Received: 07/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/23/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/93

Injection Volume: 2.0(uL) Dilution Factor: 11.9

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	490	U
496-11-7	2,3-Dihydroindene	12000	
95-13-6	1H-Indene	2900	
91-20-3	Naphthalene	120	BJ
4565-32-6	Benzo(B)Thiophene	1500	
91-22-5	Quinoline	130	U
120-72-9	1H-Indole	240	U
91-57-6	2-Methylnaphthalene	86	U
90-12-0	1-Methylnaphthalene	900	
92-52-4	Biphenyl	130	J
208-96-8	Acenaphthylene	110	J
83-32-9	Acenaphthene	1300	
132-64-9	Dibenzofuran	95	U
86-73-7	Fluorene	95	U
132-65-0	Dibenzothiophene	100	U
85-01-8	Phenanthrene	120	BJR
120-12-7	Anthracene	100	U
260-94-6	Acridine	99	JR
86-74-8	Carbazole	350	
206-44-0	Fluoranthene	130	U
129-00-0	Pyrene	130	U
56-55-3	Benzo(A)Anthracene	240	U
218-01-9	Chrysene	260	U
205-99-2	Benzo(B)Fluoranthene	240	U
207-08-9	Benzo(K)Fluoranthene	210	U
192-97-2	Benzo(E)Pyrene	180	U
50-32-8	Benzo(A)Pyrene	210	U
198-55-0	Perylene	240	U
193-39-5	Indeno(1,2,3-CD)Pyrene	200	U
53-70-3	Dibenz(A,H)Anthracene	150	U
191-24-2	Benzo(G,H,I)Perylene	260	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-12FB

STP-W410FB-041993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-12FB

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7903

Level: (low/med) LOW Date Received: 07/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/23/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/27/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	BJ
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	3	BJ
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	1	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	U
129-00-0	Pyrene	1	U
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-12FBD

STP-W410FBD-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-12FBD

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7904

Level: (low/med) LOW Date Received: 07/21/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/23/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/27/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	1	BJ
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	0.9	U
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	1	BJ
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	U
129-00-0	Pyrene	1	U
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	1	J

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-06MS

STP-SLP3MS-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30216-06MS

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7944

Level: (low/med) LOW Date Received: 07/20/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	9	
91-20-3	Naphthalene	8	B
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	7	
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	8	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	8	
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	B
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	U
129-00-0	Pyrene	1	U
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	1	J
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	1	BJ

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

30216-06MSD

STP-SLP3MSD-071993

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30215-06MSD

Sample wt/vol: 4200 (g/mL) ML Lab File ID: C7916

Level: (low/med) LOW Date Received: 07/20/93

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/02/93

Injection Volume: 2.0(uL) Dilution Factor: 0.119

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	BJ
95-13-6	1H-Indene	11	
91-20-3	Naphthalene	8	B
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	6	
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	7	B
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	7	
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	BR
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	2	B
129-00-0	Pyrene	1	BJ
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	5	
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	1	J
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (NAP)#	S2 (FLU)#	S3 (CHR)#	TOT OUT
01	30216-01	66	68	44	0
02	30216-02	60	58	42	0
03	30216-03	40	51	24	0
04	30216-04	41	52	10	0
05	30216-05	53	52	18	0
06	30216-06	60	64	33	0
07	30216-06DU	79	80	60	0
08	30216-06FB	69	67	82	0
09	30216-06FBD	74	72	76	0
10	30216-07	50	62	12	0
11	30216-08	55	64	17	0
12	30216-09	53	68	12	0
13	30216-09DL	0 D	0 D	0 D	0
14	30216-10	73	57	16	0
15	30216-11	0 D	0 D	0 D	0
16	30216-12	0 D	0 D	0 D	0
17	30216-12DU	0 D	0 D	0 D	0
18	30216-12FB	63	65	59	0
19	30216-12FBD	58	62	62	0
20	30216-06MS	69	70	85	0
21	30216-06MSD	75	58	80	0
22	BLK01	69	61	98	0
23	BLK02	66	66	59	0

		QC LIMITS
S1 (NAP)	= Naphthalene-d8	(14-108)
S2 (FLU)	= Fluorene-d10	(41-162)
S3 (CHR)	= Chrysene-d12	(10-118)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 30216-06

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC #	QC LIMITS REC.
1H-Indene	9.520	ND	8.806	92	20-150
Naphthalene	9.520	1.464	7.842	67	20-150
Quinoline	9.520	ND	7.461	78	20-150
2-Methylnaphthalene	9.520	ND	7.985	84	20-150
Fluorene	9.520	ND	8.259	87	20-150
Chrysene	9.520	ND	3.487	37	20-150
Benzo(E)Pyrene	9.520	ND	1.034	11	10-150

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1H-Indene	9.520	10.75	113	20	28	20-150
Naphthalene	9.520	8.247	71	6	28	20-150
Quinoline	9.520	6.188	65	18	28	20-150
2-Methylnaphthalene	9.520	7.188	76	10	28	20-150
Fluorene	9.520	6.819	72	19	28	20-150
Chrysene	9.520	4.760	50	30 *	28	20-150
Benzo(E)Pyrene	9.520	1.464	15	31 *	28	10-150

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

BLK01

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Lab File ID: C7899 Lab Sample ID: BL072193

Instrument ID: 4500-C Date Extracted: 07/21/93

Matrix: (soil/water) WATER Date Analyzed: 07/27/93

Level:(low/med) LOW Time Analyzed: 1600

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	30216-01	30216-01	C7914	08/02/93
02	30216-02	30216-02	C7925	08/03/93
03	30216-03	30216-03	C7918	08/02/93
04	30216-04	30216-04	C7887	07/26/93
05	30216-05	30216-05	C7888	07/26/93
06	30216-06	30216-06	C7889	07/26/93
07	30216-06DU	30216-06DU	C7911	07/28/93
08	30216-06FB	30216-06FB	C7901	07/27/93
09	30216-06FBD	30216-06FBD	C7902	07/27/93
10	30216-06MS	30216-06MS	C7944	08/04/93
11	30216-06MSD	30215-06MSD	C7916	08/02/93

COMMENTS:

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BLK01

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: BL072193

Sample wt/vol: 4000 (g/mL) ML Lab File ID: C7899

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/93

Concentrated Extract Volume: 1000(uL) Date Analyzed: 07/27/93

Injection Volume: 2.0(uL) Dilution Factor: 0.125

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	2	
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	3	J
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	3	
90-12-0	1-Methylnaphthalene	1	J
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	1	J
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	J
129-00-0	Pyrene	1	J
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	1	J
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	J

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

BLK02

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Lab File ID: C7900 Lab Sample ID: BL072393

Instrument ID: 4500-C Date Extracted: 07/23/93

Matrix: (soil/water) WATER Date Analyzed: 07/27/93

Level:(low/med) LOW Time Analyzed: 1647

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	30216-07	30216-07	C7947	08/04/93
02	30216-08	30216-08	C7941	08/04/93
03	30216-09	30216-09	C7892	07/26/93
04	30216-09DL	30216-09DL	C7912	07/28/93
05	30216-10	30216-10	C7919	08/02/93
06	30216-11	30216-11	C7929	08/03/93
07	30216-12	30216-12	C7939	08/04/93
08	30216-12DU	30216-12DU	C7940	08/04/93
09	30216-12FB	30216-12FB	C7903	07/27/93
10	30216-12FBD	30216-12FBD	C7904	07/27/93

COMMENTS:

1X
ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BLK02

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: BL072393

Sample wt/vol: 4000 (g/mL) ML Lab File ID: C7900

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 07/23/93

Concentrated Extract Volume: 1000(uL) Date Analyzed: 07/27/93

Injection Volume: 2.0(uL) Dilution Factor: 0.125

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ng/L or ug/Kg) ng/L	Q
271-89-6	2,3-Dibenzofuran	5	U
496-11-7	2,3-Dihydroindene	1	U
95-13-6	1H-Indene	0.9	U
91-20-3	Naphthalene	2	J
4565-32-6	Benzo(B)Thiophene	0.9	U
91-22-5	Quinoline	1	U
120-72-9	1H-Indole	2	U
91-57-6	2-Methylnaphthalene	2	
90-12-0	1-Methylnaphthalene	2	U
92-52-4	Biphenyl	4	U
208-96-8	Acenaphthylene	1	U
83-32-9	Acenaphthene	1	U
132-64-9	Dibenzofuran	1	U
86-73-7	Fluorene	1	U
132-65-0	Dibenzothiophene	1	U
85-01-8	Phenanthrene	2	
120-12-7	Anthracene	1	U
260-94-6	Acridine	3	U
86-74-8	Carbazole	2	U
206-44-0	Fluoranthene	1	U
129-00-0	Pyrene	1	U
56-55-3	Benzo(A)Anthracene	2	U
218-01-9	Chrysene	3	U
205-99-2	Benzo(B)Fluoranthene	2	U
207-08-9	Benzo(K)Fluoranthene	2	U
192-97-2	Benzo(E)Pyrene	2	U
50-32-8	Benzo(A)Pyrene	2	U
198-55-0	Perylene	2	U
193-39-5	Indeno(1,2,3-CD)Pyrene	2	U
53-70-3	Dibenz(A,H)Anthracene	2	U
191-24-2	Benzo(G,H,I)Perylene	3	U

8B
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Lab File ID (Standard): C7883 Date Analyzed: 07/26/93

Instrument ID: 4500-C Time Analyzed: 1634

		IS1(ACN) AREA #	RT #	IS2(PHN) AREA #	RT #	IS3(BAP) AREA #	RT #
	12 HOUR STD	299016	14.95	583744	18.72	324008	28.79
	UPPER LIMIT	598032	15.45	1167488	19.22	648016	29.29
	LOWER LIMIT	149508	14.45	291872	18.22	162004	28.29
	EPA SAMPLE NO.						
01	30216-04	535505	14.89	978752	18.67	328345	28.74
02	30216-05	549538	14.90	869308	18.69	328352	28.76
03	30216-06	247933	14.90	501199	18.69	323168	28.77
04	30216-09	230962	14.87	524438	18.67	227360	28.74

IS1 (ACN) = Acenaphthene-D10
IS2 (PHN) = Phenanthrene-D10
IS3 (BAP) = Benzo(A)Pyrene-D10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Lab File ID (Standard): C7898 Date Analyzed: 07/27/93

Instrument ID: 4500-C Time Analyzed: 1514

		IS1(ACN) AREA #	RT #	IS2(PHN) AREA #	RT #	IS3(BAP) AREA #	RT #
	12 HOUR STD	298219	14.80	530328	18.60	486816	28.67
	UPPER LIMIT	596438	15.30	1060656	19.10	973632	29.17
	LOWER LIMIT	149110	14.30	265164	18.10	243408	28.17
	EPA SAMPLE NO.						
01	30216-06DU	342542	14.75	690282	18.55	416770	28.62
02	30216-06FB	465385	14.79	796416	18.59	464554	28.66
03	30216-06FBD	475993	14.79	845408	18.59	522322	28.66
04	30216-09DL	464475	14.79	927994	18.57	553644	28.66
05	30216-12FB	464352	14.77	792205	18.57	470237	28.62
06	30216-12FBD	484555	14.77	847941	18.57	524548	28.66
07	BLK01	430444	14.82	860127	18.59	428923	28.67
08	BLK02	351918	14.80	632246	18.59	385699	28.67

IS1 (ACN) = Acenaphthene-D10
IS2 (PHN) = Phenanthrene-D10
IS3 (BAP) = Benzo(A)Pyrene-D10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Lab File ID (Standard): C7913 Date Analyzed: 08/02/93

Instrument ID: 4500-C Time Analyzed: 1825

		IS1(ACN) AREA #	RT #	IS2(PHN) AREA #	RT #	IS3(BAP) AREA #	RT #
	12 HOUR STD	289574	14.74	560764	18.52	373429	28.56
	UPPER LIMIT	579148	15.24	1121528	19.02	746858	29.06
	LOWER LIMIT	144787	14.24	280382	18.02	186714	28.06
	EPA SAMPLE NO.						
01	30216-01	154312	14.74	368816	18.52	212771	28.56
02	30216-03	396561	14.72	747099	18.52	406505	28.56
03	30216-10	224858	14.72	498420	18.52	356048	28.57
04	30216-06MSD	277141	14.72	595724	18.52	428849	28.56

IS1 (ACN) = Acenaphthene-D10
IS2 (PHN) = Phenanthrene-D10
IS3 (BAP) = Benzo(A)Pyrene-D10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Lab File ID (Standard): C7924 Date Analyzed: 08/03/93

Instrument ID: 4500-C Time Analyzed: 1226

		IS1(ACN) AREA #	RT #	IS2(PHN) AREA #	RT #	IS3(BAP) AREA #	RT #
	12 HOUR STD	739231	14.67	1410480	18.45	526262	28.34
	UPPER LIMIT	1478462	15.17	2820960	18.95	1052524	28.84
	LOWER LIMIT	369616	14.17	705240	17.95	263131	27.84
	EPA SAMPLE NO.						
01	30216-02	559513	14.69	927814	18.47	324728	28.36
02	30216-11	698138	14.67	1346510	18.45	592723	28.34

IS1 (ACN) = Acenaphthene-D10
IS2 (PHN) = Phenanthrene-D10
IS3 (BAP) = Benzo(A)Pyrene-D10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30216 SAS No.: SDG No.:

Lab File ID (Standard): C7938 Date Analyzed: 08/04/93

Instrument ID: 4500-C Time Analyzed: 1015

		IS1(ACN) AREA #	RT #	IS2(PHN) AREA #	RT #	IS3(BAP) AREA #	RT #
	12 HOUR STD	389936	14.69	641148	18.45	268234	28.46
	UPPER LIMIT	779872	15.19	1282296	18.95	536468	28.96
	LOWER LIMIT	194968	14.19	320574	17.95	134117	27.96
	EPA SAMPLE NO.						
01	30216-07	576706	14.70	1089880	18.45	391238	28.42
02	30216-08	774744	14.69	1258620	18.45	517502	28.44
03	30216-12	474362	14.69	688692	18.45	225181	28.46
04	30216-12DU	261054	14.67	408216	18.42	137165	28.44
05	30216-06MS	576506	14.67	1153500	18.42	449338	28.42

IS1 (ACN) = Acenaphthene-D10
IS2 (PHN) = Phenanthrene-D10
IS3 (BAP) = Benzo(A)Pyrene-D10

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

Enseco
A Corning Company

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FOR

CITY OF ST. LOUIS PARK

RMAL PROJECT# 030216

PPT-PAH

QC Summary.....0001

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ADDITIONAL MONITORING
WELL 410 PHENOLICS

03/23/93
04/27/93
08/17/93
10/12/93

Rocky Mountain
Analytical Laboratory

Enseco
A Corning Company

May 17, 1993

Mr. James Grube
City of St. Louis Park
5005 Minnetonka Blvd.
St. Louis Park, MN 55416

Dear Mr Grube:

Enclosed is the ppb phenol report for 10 aqueous samples, including matrix QC, received at Enseco-Rocky Mountain Analytical laboratory on March 24, 1993.

Please call if you have any questions.

Sincerely,

Karen F. Germann
Project Administrator

Reviewed by:

Julieann L. Kramer
Program Manager

KFG/JLK
Enclosures

RMAL #028256

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Enseco
A Corning Company

ANALYTICAL TEST REQUESTS
for
City of St. Louis Park

Lab ID: 028256	Group Code	Analysis Description	Custom Test?
0001 - 0005, 0005 , 0005, 0006	A	Phenolics (4-AAP)	N

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX. 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: CITY OF ST LOUIS PARK (WATER DEPT)

PROJECT:

SAMPLING COMPANY: SAME

SAMPLING SITE: SAME

TEAM LEADER: MJR

SAMPLE SAFE™ CONDITIONS

PACKED BY: MJR

SEAL NUMBER:

SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:

CONDITION OF CONTENTS:

SEALED FOR SHIPPING BY:

INITIAL CONTENTS TEMP: °C

SEAL NUMBER:

SAMPLING STATUS: ☐ Done ☐ Continuing Until

SEAL INTACT UPON RECEIPT BY LAB: ☑ Yes ☐ No

CONTENTS TEMPERATURE UPON RECEIPT BY LAB: 7.0 °C

DATE	TIME	SAMPLE ID/DESCRIPTION		SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
3-23-93		STF-ACFEPT-032393	01	8oz AMBER	1	PPB Phenolics	
		STP-W410TP-032393	02				
		DPV-W420TP-032393	03				
		DPV-W421TP-032393	04				
		DPV-W422TP-032393	05				
		DPV-W422TPD-032393	05DU				
		DPV-W422TPMS-032393	05MS				
		DPV-W422TPMSD-032393	05SD				
		DPV-W422TPFB-032393	05FB				
3-23-91		DPV-W422TPFBD-032393	05FBD	8oz Amber	1	PPB Phenolics	

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: MJR

METHOD OF SHIPMENT: FED EX

AIRBILL NUMBER: 2103420616

RECEIVED FOR LAB: ENSECO-RMAL

SIGNED: Alexandra C. Hall

DATE/TIME: 0845 24MAR93

ENSECO PROJECT NUMBER: 78256

ENS-4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North [illegible] Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: City of St Louis Park (Water Dept)

PROJECT:

SAMPLING COMPANY: Same

SAMPLING SITE: Same

TEAM LEADER: M2X

SAMPLE SAFE™ CONDITIONS

PACKED BY: M2X

SEAL NUMBER:

SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:

CONDITION OF CONTENTS:

SEALED FOR SHIPPING BY:

INITIAL CONTENTS TEMP: °C

SEAL NUMBER:

SAMPLING STATUS: ☐ Done ☐ Continuing Until

SEAL INTACT UPON RECEIPT BY LAB: ☑ Yes ☐ No

CONTENTS TEMPERATURE UPON RECEIPT BY LAB: 35 °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
3-23-93		EAC-SLP4T-032393	1YL AMBER	6	PPT PAH	PPT 5
3-23-93		PCJ-SLP4TP-032393 06	8oz AMBER	1	Phenolics (28256)	

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: M2X

METHOD OF SHIPMENT: FED EX

AIRBILL NUMBER: 2103420620

RECEIVED FOR LAB: Enseco-RMAL

SIGNED: Alexandra C. Hall

DATE/TIME: 24 MAR 93 0845

ENSECO PROJECT NUMBER: 28256

ENS-4011

White - CLIENT Pink - LAB

Enseco
A Cummins Company

SAMPLE DESCRIPTION INFORMATION
for
City of St. Louis Park

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
028256-0001-SA	GTF-ACFEPT-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0002-SA	STP-W410TP-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0003-SA	DPV-W420TP-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0004-SA	DPV-W421TP-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-SA	DPV-W422TP-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-DU	DPV-W422TPD-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-MS	DPV-W422TPMS-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-SD	DPV-W422TPMSD-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-FB	DPV-W422TPFB-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-FD	DPV-W422TPFBD-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0006-SA	PCJ-SLP4TP-032393	AQUEOUS	23 MAR 93		24 MAR 93

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.:

SOW No.: 3/90

EPA Sample No.	Lab Sample ID.
GTF-ACFEPT-032393	28256-01
STP-W410TP-032393	28256-02
DPV-W420TP-032393	28256-03
DPV-W421TP-032393	28256-04
DPV-W422TP-032393	28256-05
DPV-W422TPD-032393	28256-05DU
DPV-W422TPMS-032393	28256-05MS
DPV-W422TPMSD-032393	28256-05MSD
DPV-W422TPFB-032393	28256-05FB
PCJ-SLP4TP-032393	28256-06

Parameters	Method No.	Detection Limits	Source
PHENOL	420.1	5 ug/L	1

Comments:
TEN WATER SAMPLES FOR PHENOL ANALYSIS.
RMAL QC#028256

Sources:
1="Methods for the Chemical Analysis of Water and Wastes", USEPA-EMSL, Cincinnati.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Will Pratt Name: Will Pratt

Date: 5-10-93 Title: Group Leader

EPA SAMPLE NO.

STP-W410TP-032393

000003

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 28256-02

Level (low/med): LOW Date Received: 03/24/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	ND			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Rocky Mountain
Analytical Laboratory

Enseco
A Corning Company

June 08, 1993

Mr. James Grube
City of St. Louis Park
5005 Minnetonka Blvd.
St. Louis Park, MN 55416

Dear Mr Grube:

Enclosed is the ppb phenol report for 12 aqueous samples, including matrix QC, received at Enseco-Rocky Mountain Analytical laboratory on April 30, 1993.

Please call if you have any questions.

Sincerely,

Karen F. Germann
Project Administrator

Reviewed by:

Julieann L. Kramer
Program Manager

KFG/JLK
Enclosures

RMAL #029019

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: SAS No.: N/A SDG No.: 29019

SOW No.: 3/90

EPA Sample No.	Lab Sample ID.
PCJ-SLP4TP-042993	29019-01
DPV-W420TP-042993	29019-02
DPV-W420TPD-042993	29019-02DU
DPV-W420TPMS-042993	29019-02MS
DPV-W420TPMSD-042993	29019-02MSD
DPV-W420TPFB-042993	29019-02FB
DPV-W420TPFBD-042993	29019-02FD
DPV-W421TP-042993	29019-03
DPV-W422TP-042993	29019-04
STP-W410TP-042993	29019-05
GTF-ACFETP-042993	29019-06
GTF-SFRTP-042993	29019-07

Parameters	Method No.	Detection Limits	Source
PHENOL	420.1	5 ug/L	1

Comments:

TWELVE WATER SAMPLES FOR PHENOL ANALYSIS.
RMAL QC#029019

Sources:

1="Methods for the Chemical Analysis of Water and Wastes", USEPA-EMSL, Cincinnati.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Will Pratt Name: Will Pratt

Date: 6/7/93 Title: Group Leader

U.S. EPA - CLP
1

EPA SAMPLE NO.

STP-W410TP-042993

INORGANIC ANALYSIS DATA SHEET

000011

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 29019 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 29019-05

Level (low/med): LOW Date Received: 04/30/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	ND			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Rocky Mountain
Analytical Laboratory

Enseco
A Corning Company

October 28, 1993

Mr. James Grube
City of St. Louis Park
5005 Minnetonka Blvd.
St. Louis Park, MN 55416

Dear Mr Grube:

Enclosed is the ppb phenol report for 11 aqueous samples, including matrix QC, received at Enseco-Rocky Mountain Analytical laboratory on August 18, 1993.

Please call if you have any questions.

Sincerely,

Karen F. Germann

Karen F. Germann
Project Administrator

Reviewed by:

Julieann L. Kramer

Julieann L. Kramer
Program Manager

KFG/JLK
Enclosures

RMAL #030729

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Enseco
A Corning Company

SAMPLE DESCRIPTION INFORMATION
for
City of St. Louis Park

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
030729-0001-SA	PCJ-SLP4TP-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0002-SA	DPV-W420TP-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0003-SA	DPV-W421TP-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0004-SA	DPV-W422TP-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-SA	STP-W410TP-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-DU	STP-W410TPD-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-MS	STP-W410TPMS-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-SD	STP-W410TPMSD-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-FB	STP-W410TPFB-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-FD	STP-W410TPFBD-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0006-SA	GTF-SFR-081793	AQUEOUS	17 AUG 93		18 AUG 93

Enseco
A Corning Company

Lab Name: ROCKY
Lab Code: ENSEC
SOW No.: 7/88_

ANALYTICAL TEST REQUESTS
for
City of St. Louis Park

Lab ID: 030729	Group Code	Analysis Description	Custom Test?
0001 - 0005, 0005 , 0005, 0006	A	Phenolics (4-AAP)	N

Were ICP intere
e ICP backgr d c
If yes - w
applicatio

Comments:
SIX WATER S
DUE TO ANAL
OCCURED OUT
CCBS WERE L

I certify that
conditions of t
other than the
in this hardcop
on floppy diske
Manager's desig

Signature:

Date:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

STP-W410TP-

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Matrix (soil/water): WATER Lab Sample ID: 3072905___

Level (low/med): LOW__ Date Received: 08/18/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	14.0			C_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
EPA_SAMPLE_STP-W410TP-081793

FORM I - IN

7/88

November

Mr. James
City of S
5005 Minn
St. Louis

Dear Mr G

Enclo 1 is
QC, recei
1993.

Pleas

U.S. EPA - CLP

000001

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.:31656_

SOW No.: ILM02

EPA Sample No.	Lab Sample ID
3165601	3165601
3165601	3165601D
3165601	3165601SD
3165601	3165601S
3165601	3165601FB
3165601	3165601FD
3165602	3165602
3165603	3165603
3165604	3165604
3165605	3165605
3165606	3165606
3165607	3165607

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:
____SEVEN_WATER_SAMPLES_FOR_PHENOLIC_ANALYSIS.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Will Pratt Name: Will Pratt

Date: 11-19-93 Title: Inorganics Group Leader

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

3165604

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656

Matrix (soil/water): WATER Lab Sample ID: 3165604___

Level (low/med): LOW__ Date Received: 10/13/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	7.2		N	C

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
DPV-W410TP-101293

APPENDIX E
LABORATORY DATA SUMMARY PACKAGE: DRIFT–PLATTEVILLE AQUIFER

CITY OF ST. LOUIS PARK
DRIFT PLATTEVILLE AQUIFER 1993
QUALITY CONTROL SUMMARY
PPB-PAH

Well No	Sample Date	Method Blank	Field Duplicate	Matrix Spike	Matrix Spike Dup.	Field Blank
RAP Section 9.1.3 & 9.2.3				1st Quarter		
W420	03/23/93	28255-BLK-01	DPV-W422D-032393	DPV-W422MS-032393	DPV-W422MSD-032393	DPV-W422FB-032393
W421	03/23/93	28255-BLK-01	DPV-W422D-032393	DPV-W422MS-032393	DPV-W422MSD-032393	DPV-W422FB-032393
W422	03/23/93	28255-BLK-01	DPV-W422D-032393	DPV-W422MS-032393	DPV-W422MSD-032393	DPV-W422FB-032393
				2nd Quarter		
W420	04/27/93	28980-BLK-01	DPV-W422D-042793	DPV-W422MS-042793	DPV-W422MSD-042793	DPV-W422FB-042793
W421	04/27/93	28980-BLK-01	DPV-W422D-042793	DPV-W422MS-042793	DPV-W422MSD-042793	DPV-W422FB-042793
W422	04/27/93	28980-BLK-01	DPV-W422D-042793	DPV-W422MS-042793	DPV-W422MSD-042793	DPV-W422FB-042793
				3rd Quarter		
W420	08/17/93	30724-BLK-01	STP-W410D-081793	STP-W410MS-081793	STP-W410MSD-081793	STP-W410FB-081793
W421	08/17/93	30724-BLK-01	STP-W410D-081793	STP-W410MS-081793	STP-W410MSD-081793	STP-W410FB-081793
W422	08/17/93	30724-BLK-01	STP-W410D-081793	STP-W410MS-081793	STP-W410MSD-081793	STP-W410FB-081793
				4th Quarter		
W420	10/12/93	31655-BLK-01	DPV-W420D-101293	DPV-W420MS-101293	DPV-W420MSD-101293	SPV-W420FB-101293
W421	10/12/93	31655-BLK-01	DPV-W420D-101293	DPV-W420MS-101293	DPV-W420MSD-101293	SPV-W420FB-101293
W422	10/12/93	31655-BLK-01	DPV-W420D-101293	DPV-W420MS-101293	DPV-W420MSD-101293	SPV-W420FB-101293

CITY OF ST. LOUIS PARK
DRIFT PLATTEVILLE AQUIFER 1993
QUALITY CONTROL SUMMARY
PPB–Phenolics

Well No.	Sample Date	Method Blank	Field Duplicate	Matrix Spike	Matrix Spike Dup.	Field Blank
RAP Sections 9.1.3 & 9.2.3				1st Quarter		
W420	03/23/93	28256–BLK	DPV–W422TPD–032393	DPV–W422TPMS–032393	DPV–W422TPMSD–032393	DPV–W422TPFB–032393
W421	03/23/93	28256–BLK	DPV–W422TPD–032393	DPV–W422TPMS–032393	DPV–W422TPMSD–032393	DPV–W422TPFB–032393
W422	03/23/93	28256–BLK	DPV–W422TPD–032393	DPV–W422TPMS–032393	DPV–W422TPMSD–032393	DPV–W422TPFB–032393
				2nd Quarter		
W420	04/27/93	28978–BLK	DPV–W420TPD–042793	DPV–W420TPMS–042793	DPV–W420TPMSD–042793	DPV–W420TPFB–042793
W421	04/27/93	28978–BLK	DPV–W420TPD–042793	DPV–W420TPMS–042793	DPV–W420TPMSD–042793	DPV–W420TPFB–042793
W422	04/27/93	28978–BLK	DPV–W420TPD–042793	DPV–W420TPMS–042793	DPV–W420TPMSD–042793	DPV–W420TPFB–042793
				3rd Quarter		
W420	08/17/93	30729–BLK	DPV–W410TPD–081793	DPV–W410TPMS–081793	DPV–W410TPMSD–081793	DPV–W410TPFB–081793
W421	08/17/93	30729–BLK	DPV–W410TPD–081793	DPV–W410TPMS–081793	DPV–W410TPMSD–081793	DPV–W410TPFB–081793
W422	08/17/93	30729–BLK	DPV–W410TPD–081793	DPV–W410TPMS–081793	DPV–W410TPMSD–081793	DPV–W410TPFB–081793
				4th Quarter		
W420	10/12/93	31656–BLK	DPV–W420TPD–101293	DPV–W420TPMS–101293	DPV–W420TPMSD–101293	DPV–W420TPFB–101293
W421	10/12/93	31656–BLK	DPV–W420TPD–101293	DPV–W420TPMS–101293	DPV–W420TPMSD–101293	DPV–W420TPFB–101293
W422	10/12/93	31656–BLK	DPV–W420TPD–101293	DPV–W420TPMS–101293	DPV–W420TPMSD–101293	DPV–W420TPFB–101293

1ST QUARTER MONITORING

PAH MONITORING

Enseco
A Corning Company

CASE NARRATIVE

FOR

City of St. Louis Park

April 23, 1993

Enseco - RMAL Project Number 028255

Introduction

Ten aqueous samples (includes QC) were received at Enseco Rocky Mountain Analytical Laboratory on March 24, 1993. The samples were logged in under RMAL project number 028255. A cross reference associating the RMAL sample numbers to the actual field sample numbers is included. Sample DPV-W422FBD-032393 was extracted and held per the April 1990 QAPP. The samples were analyzed for part-per-billion (ppb) polynuclear aromatic hydrocarbons (PAH).

Data Quality Assessment

The results contained in this report were reviewed relative to data acceptance criteria as specified in the April, 1990 QAPP for completeness, precision, accuracy, representativeness and defensibility of the data. Unless otherwise stated below, no quality control problems or technical difficulties were encountered which would impact the interpretation or use of data in this report.

PPB PAH

Samples 028255-0003, and -0004, show target compounds above the upper calibration range. The samples were analyzed at dilutions. Surrogates could not be measured in sample 028255-0003, and -0004 due to the level of dilutions performed.

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303/421-6611 Fax: 303/431-7171

Case Narrative - RMAL #028255
April 23, 1993
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028255-0001MS and -0001SD matrix spike recoveries for IH-Indene and Quinoline, and -0001SD matrix spike recoveries for Quinoline were outside of advisory limits high. Quantitation was checked and this high recoveries were attributed to sample matrix interference.

This data package is in compliance with the terms and conditions of the 1990 QAPP, both technically and for completeness, for other than the conditions detailed above.

Reported by: Julieann L. Kramer
Julieann L. Kramer
Program Manager

Date: April 30, 1993

Approved by: Randy Greaves
Randy Greaves
Program Manager

Date: 5/6/93

Enseco
A Corning Company

SAMPLE DESCRIPTION INFORMATION
for
City of St. Louis Park

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
028255-0001-SA	GTF-ACFE-032393	AQUEOUS	23 MAR 93		24 MAR 93
028255-0002-SA	STP-W410-032393	AQUEOUS	23 MAR 93		24 MAR 93
028255-0003-SA	DPV-W420-032393	AQUEOUS	23 MAR 93		24 MAR 93
028255-0004-SA	DPV-W421-032393	AQUEOUS	23 MAR 93		24 MAR 93
028255-0005-SA	DPV-W422-032393	AQUEOUS	23 MAR 93		24 MAR 93
028255-0005-DU	DPV-W422D-032393	AQUEOUS	23 MAR 93		24 MAR 93
028255-0005-MS	DPV-W422MS-032393	AQUEOUS	23 MAR 93		24 MAR 93
028255-0005-SD	DPV-W422MSD-032393	AQUEOUS	23 MAR 93		24 MAR 93
028255-0005-FB	DPV-W422FB-032393	AQUEOUS	23 MAR 93		24 MAR 93
028255-0005-FD	DPV-W422FBD-032393	AQUEOUS	23 MAR 93		24 MAR 93

ANALYTICAL TEST REQUESTS
for
City of St. Louis Park

Lab ID: 028255	Group Code	Analysis Description	Custom Test?
0001 - 0005,	A	CLP/PAH Semivolatile Organics High Level PPB	N
0005		CLP Prep - PAH Semivolatile Organics by GC/MS High Level PPB	N
0005	B	CLP Prep - PAH Semivolatile Organics by GC/MS High Level PPB	N

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Qualifier Codes and Their Usage

U = Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture.

J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration of 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for dilution as discussed for the U flag.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results.

P = This flag is used for a pesticide/Aroclor target analyte when there is greater then 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

C = This flag applies to pesticide results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, do not apply this flag, instead use a laboratory-defined flag, discussed below.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified target compound.

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Arvada, Colorado 80002
303/421-6611 Fax 303/431-7171

E = This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. If one or more compounds have a response greater than full scale, except as noted in Exhibit D, the sample or extract must be diluted and re-analyzed accordingly to the specifications in Exhibit D. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate copies of Form I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number. NOTE: For total xylenes, where three isomers are quantified as two peaks, the calibration range of each peak should be considered separately, e.g., a diluted analysis is not required for total xylenes unless the concentration of either peak separately exceeds 200 ug/L.

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag. This flag alerts data users that any discrepancies between the concentrations reported may be due to dilution of the sample or extract.

A = This flag indicates that a TIC is a suspected aldol-condensation product.

X = Other specific flags may be required to properly define the results. If used, they must be fully described, and such description attached to the Sample Data Summary Package and the SDG Narrative. Begin by using "X". If more than one flag is required, use "Y" and "Z" as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample. The laboratory-defined flags are limited to the letters "X", "Y", and "Z".

R = This flag is used for polyaromatic hydrocarbons which show target compounds that do not meet secondary ion confirmation. In some instances a compound that does not meet secondary ion confirmation criteria may still be determined to be present in the sample after close inspection of the data by the analyst. Supportive data includes mass chromatograms maxima at the same scan for primary and secondary ions, as well as discernible quantitation interference with the secondary ion.

Enseco
A Corning Company

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713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: CITY OF ST LOUIS PARK (WATER DEPT)

PROJECT:

SAMPLING COMPANY: SAME

SAMPLING SITE: SAME

TEAM LEADER: 7728

SAMPLE SAFE™ CONDITIONS

PACKED BY: 7728

SEAL NUMBER:

SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:

CONDITION OF CONTENTS:

SEALED FOR SHIPPING BY:

INITIAL CONTENTS TEMP: °C

SEAL NUMBER:

SAMPLING STATUS: ☐ Done ☐ Continuing Until

SEAL INTACT UPON RECEIPT BY LAB: ☑ Yes ☐ No

CONTENTS TEMPERATURE UPON RECEIPT BY LAB: 10.0 °C

DATE	TIME	SAMPLE ID/DESCRIPTION		SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
-23-93		BTF-ACFE -032393	01	1XL AMBER	2	PPB PAH	
		STP-W410 -032393	02				
		DPV-W420-032393	03				
		DPV-W421-032393	04				
		DPV-W422 -032393	05				
		DPV-W422D-032393	05dup				
		DPV-W422MS-032393	05ms				
		DPV-W422MSD-032393	05msD				
		DPV-W422FB-032393	06FB				
-23-93		DPV-W422FBD-032393	06FBD	1XL AMBER	2	PPB PAH	

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: 7728

METHOD OF SHIPMENT: FED EX

AIRBILL NUMBER: 2103420616

RECEIVED FOR LAB: Enseco-RMAL

SIGNED: Alexandra E. Hall

DATE/TIME: 24MAR93 0845

ENSECO PROJECT NUMBER: 028255

IS-4011

White - CLIENT - LAB

Enseco-RMAL

BNA CONTINUOUS EXTRACTOR WORKSHEET

Project # 28255
1 of

Analyte: Base/Neutral Refinery
Acid
BNA(combined)
TCLP (combined)
OTHER PAH HL

CH_2Cl_2 Brand BAKER Lot No. F46274

QC LOT NO: N/A
QC RUN NO: N/A
TCLP/LBL NO: N/A

LIMS Test Code: P-PAH-SAS. HL-A

SCS ID HL SCS (SLP)
CONC 20 ug/ml
Ver.No. 7083
Amount added: 1.0 ml per 2 l
Date made: 02/19/93
Made by: SM
Date added: 03/26/93
Added by: SM

DCS ID HL DCS (SLP)
CONC 50 ug/ml
Ver.No. 6557
Amount added: 1.0 ml per 2 l
Date made: 09/18/92
Made by: BZ
Date added: 03/26/93
Added by: SM

Standard Witnessed by —

Sample No.	Sample + Bottle (g)	Bottle (g)	Amt. Ext. (ml)	Vol. CF H_2O (ml)	Init pH	B/N pH	Amt. Base (ml)	B/N D/T Start	By	B/N D/T Stop	chk	Acid pH	Amt. Acid (ml)	Acid D/T Start	By	Acid D/T Stop	chk	Clean up needed	Final Vol. (ml)	Date Conc	Conc By
01			1000	N/A	7.0	>10.0	5	03/26/93 17:00	SM	03/27/93 11:00	✓								1.0	3/3/93	KAT
02																					
03																					
04																					
05																					
05DU																					
05FB																					
05FD																					
05MS																					
05SD																					
BL 03/26																					

Reviewed by: SAB
Date: 4/1/93

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FOR

CITY OF ST. LOUIS PARK

RMAL PROJECT# 028255

PPT-PAH

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SUMMARY

DATA

PACKAGE

FOR

CITY OF SAINT LOUIS PARK

RMAL No: 28255

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

28255-03

Lab Name: ENSECO Contract No.:

DPV-W420-032393

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28255-03

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R4425

Level: (low/med/high) HIGH Date Received: 03/24/93

% Moisture: not dec. dec. Date Extracted: 03/26/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/14/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	400	U
496-11-7	2,3-Dihydroindene	290	J
95-13-6	1H-Indene	130	J
91-20-3	Naphthalene	1800	
4565-32-6	Benzo(B)Thiophene	110	J
91-22-5	Quinoline	400	U
120-72-9	1H-Indole	400	U
91-57-6	2-Methylnaphthalene	65	J
90-12-0	1-Methylnaphthalene	65	J
92-52-4	Biphenyl	400	U
208-96-8	Acenaphthylene	400	U
83-32-9	Acenaphthene	77	J
132-64-9	Dibenzofuran	400	U
86-73-7	Fluorene	400	U
132-65-0	Dibenzothiophene	400	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
260-94-6	Acridine	400	U
86-74-8	Carbazole	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
56-55-3	Benzo(A)Anthracene	400	U
218-01-9	Chrysene	400	U
205-99-2	Benzo(B)Fluoranthene	400	U
207-08-9	Benzo(K)Fluoranthene	400	U
192-97-2	Benzo(E)Pyrene	400	U
50-32-8	Benzo(A)Pyrene	400	U
198-55-0	Perylene	400	U
193-39-5	Indeno(1,2,3-CD)Pyrene	400	U
53-70-3	Dibenz(A,H)Anthracene	400	U
191-24-2	Benzo(G,H,I)Perylene	400	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

28255-04

Lab Name: ENSECO Contract No.:

DPV-W421-032393

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28255-04

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R4426

Level: (low/med/high) HIGH Date Received: 03/24/93

% Moisture: not dec. dec. Date Extracted: 03/26/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/14/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	130	U
496-11-7	2,3-Dihydroindene	160	
95-13-6	1H-Indene	93	J
91-20-3	Naphthalene	910	
4565-32-6	Benzo(B)Thiophene	74	J
91-22-5	Quinoline	130	U
120-72-9	1H-Indole	130	U
91-57-6	2-Methylnaphthalene	130	U
90-12-0	1-Methylnaphthalene	36	J
92-52-4	Biphenyl	130	U
208-96-8	Acenaphthylene	130	U
83-32-9	Acenaphthene	38	J
132-64-9	Dibenzofuran	130	U
86-73-7	Fluorene	130	U
132-65-0	Dibenzothiophene	130	U
85-01-8	Phenanthrene	130	U
120-12-7	Anthracene	130	U
260-94-6	Acridine	130	U
86-74-8	Carbazole	21	J
206-44-0	Fluoranthene	130	U
129-00-0	Pyrene	130	U
56-55-3	Benzo(A)Anthracene	130	U
218-01-9	Chrysene	130	U
205-99-2	Benzo(B)Fluoranthene	130	U
207-08-9	Benzo(K)Fluoranthene	130	U
192-97-2	Benzo(E)Pyrene	130	U
50-32-8	Benzo(A)Pyrene	130	U
198-55-0	Perylene	130	U
193-39-5	Indeno(1,2,3-CD)Pyrene	130	U
53-70-3	Dibenz(A,H)Anthracene	130	U
191-24-2	Benzo(G,H,I)Perylene	130	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

28255-05

Lab Name: ENSECO Contract No.:

DPV-W422-032393

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28255-05

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R4413

Level: (low/med/high) HIGH Date Received: 03/24/93

% Moisture: not dec. dec. Date Extracted: 03/26/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/13/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	67	
95-13-6	1H-Indene	10	U
91-20-3	Naphthalene	15	
4565-32-6	Benzo(B)Thiophene	2	J
91-22-5	Quinoline	10	U
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	10	U
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	9	J
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	1	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	10	U
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

28255-05DU

Lab Name: ENSECO Contract No.:

DPV-W422D-032393

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28255-05DU

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R4414

Level: (low/med/high) HIGH Date Received: 03/24/93

% Moisture: not dec. dec. Date Extracted: 03/26/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/13/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	65	
95-13-6	1H-Indene	10	U
91-20-3	Naphthalene	14	
4565-32-6	Benzo(B)Thiophene	2	J
91-22-5	Quinoline	10	U
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	10	U
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	9	J
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	1	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	10	U
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28255-05FB

Lab Name: ENSECO Contract No.:

DPV-W422FB-032393

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28255-05FB

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R4415

Level: (low/med/high) HIGH Date Received: 03/24/93

% Moisture: not dec. dec. Date Extracted: 03/26/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/13/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	73	
95-13-6	1H-Indene	10	U
91-20-3	Naphthalene	16	
4565-32-6	Benzo(B)Thiophene	2	J
91-22-5	Quinoline	10	U
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	10	U
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	J
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	2	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	10	U
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

28255-05MS

Lab Name: ENSECO Contract No.:

DPV-W422MS-032393

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28255-05MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R4417

Level: (low/med/high) HIGH Date Received: 03/24/93

% Moisture: not dec. dec. Date Extracted: 03/26/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/13/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	10	U
95-13-6	1H-Indene	64	
91-20-3	Naphthalene	52	
4565-32-6	Benzo(B)Thiophene	10	U
91-22-5	Quinoline	98	
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	41	
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	48	
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	47	
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	43	
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

28255-05MSD

Lab Name: ENSECO Contract No.:

DPV-W422MSD-032393

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28255-05MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R4418

Level: (low/med/high) HIGH Date Received: 03/24/93

% Moisture: not dec. dec. Date Extracted: 03/26/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/13/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	10	U
95-13-6	1H-Indene	53	
91-20-3	Naphthalene	40	
4565-32-6	Benzo(B)Thiophene	10	U
91-22-5	Quinoline	87	
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	38	
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	44	
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	43	
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	40	
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BLK01

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: BL032693

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R4419

Level: (low/med/high) HIGH Date Received:

% Moisture: not dec. dec. Date Extracted: 03/26/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/13/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	10	U
95-13-6	1H-Indene	10	U
91-20-3	Naphthalene	10	U
4565-32-6	Benzo(B)Thiophene	10	U
91-22-5	Quinoline	10	U
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	10	U
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	10	U
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Level: HIGH

	EPA SAMPLE NO.	S1 (NAP) #	S2 (FLU) #	S3 (CHR) #
1	28255-01	74	69	59
2	28255-02	78	69	38
3	28255-03	0 D	0 D	0 D
4	28255-04	0 D	0 D	0 D
5	28255-05	76	72	53
6	28255-05DU	74	72	48
7	28255-05FB	85	82	60
8	28255-05MS	87	86	95
9	28255-05MSD	79	78	84
10	BLK01	102	94	102

	QC LIMITS
S1 (NAP) = D8-NAPHTHALENE	(25-175)
S2 (FLU) = D10-FLUORENE	(25-175)
S3 (CHR) = D12-CHRYSENE	(25-175)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 28255-05 LEVEL: HIGH

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC
1H-Indene	50.0	0.546	63.7	126*
Naphthalene	50.0	14.7	52.4	75
Quinoline	50.0	ND	97.5	195*
2-Methylnaphthalene	50.0	ND	41.5	83
Fluorene	50.0	0.353	47.9	95
Chrysene	50.0	ND	47.1	94
Benzo(E)Pyrene	50.0	ND	43.5	87

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD
1H-Indene	50.0	53.2	105	18
Naphthalene	50.0	40.5	52	36
Quinoline	50.0	86.9	174 *	11
2-Methylnaphthalene	50.0	38.4	77	8
Fluorene	50.0	44.3	88	8
Chrysene	50.0	43.4	87	8
Benzo(E)Pyrene	50.0	40.2	80	8

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Lab File ID: R4419 Lab Sample ID: BL032693

Date Extracted: 03/26/94 Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/13/93 Time Analyzed: 2139

Matrix: (soil/water) WATER Level: (low/med/high) HIGH

Instrument ID: 4500-R

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	28255-01	28255-01	R4411	04/13/93
02	28255-02	28255-02	R4412	04/13/93
03	28255-03	28255-03	R4425	04/14/93
04	28255-04	28255-04	R4426	04/14/93
05	28255-05	28255-05	R4413	04/13/93
06	28255-05DU	28255-05DU	R4414	04/13/93
07	28255-05FB	28255-05FB	R4415	04/13/93
08	28255-05MS	28255-05MS	R4417	04/13/93
09	28255-05MSD	28255-05MSD	R4418	04/13/93

COMMENTS:

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Lab File ID: R4400 DFTPP Injection Date: 04/12/93

Instrument ID: 4500-R DFTPP Injection Time: 1509

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	30.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	40.8
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	46.1
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	23.9
365	Greater than 1.00% of mass 198	2.2
441	100% of mass 443	9.9
442	40.0% of mass 198	72.1
443	17.0 - 23.0% of mass 442	17.7 (16.4)2

1-Value is % mass 69 2-Value is % mass 442

HIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD020	20_PPB_PAH	R4405	04/12/93	2003
02	SSTD050	50_PPB_PAH	R4401	04/12/93	1642
03	SSTD080	80_PPB_PAH	R4404	04/12/93	1918
04	SSTD120	120_PPB_PAH	R4403	04/12/93	1833
05	SSTD160	160_PPB_PAH	R4402	04/12/93	1748

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Lab File ID: R4406 DFTPP Injection Date: 04/13/93

Instrument ID: 4500-R DFTPP Injection Time: 1110

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.7
68	Less than 2.0% of mass 69	0.0 (1.0)1
69	Mass 69 relative abundance	40.8
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	47.9
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	22.2
365	Greater than 1.00% of mass 198	2.6
441	100% of mass 443	10.8
442	40.0% of mass 198	60.1
443	17.0 - 23.0% of mass 442	16.8 (17.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	50_PPB_PAH	R4407	04/13/93	1140
02	GTF-ACFE-032393	28255-01	R4411	04/13/93	1537
03	STP-W410-032393	28255-02	R4412	04/13/93	1622
04	DPV-W422-032393	28255-05	R4413	04/13/93	1707
05	DPV-W422D-032393	28255-05DU	R4414	04/13/93	1753
06	DPV-W422FB-032393	28255-05FB	R4415	04/13/93	1838
07	DPV-W422MS-032393	28255-05MS	R4417	04/13/93	2008
08	DPV-W422MSD-032393	28255-05MSD	R4418	04/13/93	2053
09	BLK01	BL032693	R4419	04/13/93	2139

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28255 SAS No.: SDG No.:

Lab File ID: R4423 DFTPP Injection Date: 04/14/93

Instrument ID: 4500-R DFTPP Injection Time: 0935

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	45.3
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	47.4
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.4
275	10.0 - 30.0% of mass 198	24.0
365	Greater than 1.00% of mass 198	2.1
441	100% of mass 443	11.9
442	40.0% of mass 198	65.4
443	17.0 - 23.0% of mass 442	16.8 (16.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSDT050	50_PPB_PAH	R4424	04/14/93	0950
02	DPV-W420-032393	28255-03	R4425	04/14/93	1113
03	DPV-W421-032393	28255-04	R4426	04/14/93	1158

6B
INITIAL CALIBRATION DATA
PAH COMPOUNDS

Lab Name: ENSECO Lab Code: ENSECO Case No: 28255

Instrument ID: 4500-R Calibration Date(s): 04/12/93
04/12/93

Maximum % RSD =35%

Lab File ID: RRF 20 = R4405 RRF 50 = R4407
RRF 80 = R4404 RRF 120 = R4403 RRF 160 = R4402

COMPOUND	20 RRF	50 RRF	80 RRF	120 RRF	160 RRF	AVE RRF	% RSD
2,3-Benzofuran	1.403	1.273	1.297	1.556	1.466	1.399	8.4
2,3-Dihydroindene	1.078	0.983	1.006	1.026	1.043	1.027	3.5
1H-Indene	1.436	1.332	1.355	1.594	1.512	1.446	7.5
Naphthalene	2.200	2.039	2.416	2.711	2.539	2.381	11.2
Benzo(B)Thiophene	1.708	1.604	1.610	1.998	1.956	1.775	10.7
Quinoline	1.559	1.502	1.501	1.761	1.895	1.644	10.7
IH-Indole	1.613	1.547	1.554	1.769	1.909	1.678	9.3
2-Methylnaphthalene	1.458	1.356	1.375	1.468	1.659	1.463	8.2
1-Methylnaphthalene	1.846	1.717	1.726	2.129	2.125	1.909	10.8
Biphenyl	1.873	1.709	1.734	2.209	2.125	1.930	11.8
Acenaphthylene	2.025	1.901	1.931	2.422	2.293	2.114	10.9
Acenaphthene	1.115	1.027	1.038	1.047	1.032	1.052	3 4
Dibenzofuran	2.041	1.855	1.878	2.146	2.300	2.044	9.1
Fluorene	1.382	1.274	1.282	1.300	1.382	1.324	4.1
Dibenzothiophene	0.981	0.923	0.924	1.013	1.031	0.974	5.1
Phenanthrene	1.012	0.912	0.900	1.024	1.101	0.990	8.5
Anthracene	1.050	0.987	0.978	1.086	1.172	1.055	7.5
Acridine	0.891	0.831	0.826	0.891	1.074	0.903	11.2
Carbazole	1.149	1.076	1.083	1.255	1.338	1.180	9.6
Fluoranthene	0.878	0.841	0.878	0.873	0.895	0.873	2.3
Pyrene	0.934	0.868	0.893	0.971	0.985	0.930	5.4
Benzo(A)Anthracene	1.357	1.293	1.355	1.370	1.323	1.340	2.3
Chrysene	1.264	1.136	1.073	1.083	1.049	1.121	7.7
Benzo(B)Fluoranthene	1.352	1.232	1.309	1.328	1.318	1.308	3.5
Benzo(K)Fluoranthene	1.120	1.059	0.999	0.983	0.913	1.015	7.7
Benzo(E)Pyrene	1.356	1.257	1.254	1.235	1.225	1.265	4.1
Benzo(A)Pyrene	1.020	1.037	1.033	1.020	0.982	1.018	2.1
Perylene	1.054	1.020	1.012	1.013	0.987	1.017	2.4
Indeno(1,2,3-CD)Pyrene	1.061	1.042	1.066	1.063	1.057	1.058	0.9
Dibenz(A,H)Anthracene	0.952	0.877	0.911	0.907	0.901	0.910	3.0
Benzo(G,H,I)Perylene	0.952	0.907	0.924	0.930	0.908	0.924	2.0
D8-Naphthalene	1.972	1.823	1.922	2.366	2.157	2.048	10.5
D10-Fluorene	1.242	1.175	1.190	1.204	1.180	1.198	2.2
D12-Chrysene	1.154	1.071	1.096	1.094	1.052	1.093	3.5

7B
CONTINUING CALIBRATION DATA
PAH COMPOUNDS

Lab Name: ENSECO Lab Code: ENSECO Case No: 28255

Instrument ID: 4500-R Calibration Date(s): 04/13/93 Time: 1140

Lab ID: R4407 Initial Calibration Date(s): 04/12/93 04/12/93

Maximum %D = 35%

COMPOUND	$\overline{RRF}$	50 PPM RRF	%D
2,3-Benzofuran	1.399	1.306	6.6
2,3-Dihydroindene	1.027	0.998	2.8
1H-Indene	1.446	1.354	6.4
Naphthalene	2.381	2.063	13.4
Benzo(B)Thiophene	1.775	1.614	9.1
Quinoline	1.644	1.532	6.8
1H-Indole	1.678	1.538	8.3
2-Methylnaphthalene	1.463	1.368	6.5
1-Methylnaphthalene	1.909	1.751	8.3
Biphenyl	1.930	1.714	11.2
Acenaphthylene	2.114	1.870	11.5
Acenaphthene	1.052	1.044	0.8
Dibenzofuran	2.044	1.880	8.0
Fluorene	1.324	1.288	2.7
Dibenzothiophene	0.974	0.911	6.5
Phenanthrene	0.990	0.921	7.0
Anthracene	1.055	0.979	7.2
Acridine	0.903	0.833	7.8
Carbazole	1.180	1.072	9.2
Fluoranthene	0.873	0.828	5.2
Pyrene	0.930	0.865	7.0
Benzo(A)Anthracene	1.340	1.240	7.5
Chrysene	1.121	1.172	-4.5
Benzo(B)Fluoranthene	1.308	1.235	5.6
Benzo(K)Fluoranthene	1.015	1.075	-5.9
Benzo(E)Pyrene	1.265	1.252	1.0
Benzo(A)Pyrene	1.018	1.051	-3.2
Perylene	1.017	1.026	-0.9
Indeno(1,2,3-CD)Pyrene	1.058	1.057	0.1
Dibenz(A,H)Anthracene	0.910	0.886	2.6
Benzo(G,H,I)Perylene	0.924	0.894	3.2
D8-Naphthalene	2.048	1.859	9.2
D10-Fluorene	1.198	1.191	0.6
D12-Chrysene	1.093	1.077	1.5

7B
CONTINUING CALIBRATION DATA
PAH COMPOUNDS

Lab Name: ENSECO Lab Code: ENSECO Case No: 28255

Instrument ID: 4500-R Calibration Date(s): 04/14/93 Time: 0950

Lab ID: R4424 Initial Calibration Date(s): 04/12/93 04/12/93

Maximum %D = 35%

COMPOUND	RRF	50 PPM RRF	%D
2,3-Benzofuran	1.399	1.300	7.1
2,3-Dihydroindene	1.027	0.989	3.7
1H-Indene	1.446	1.340	7.3
Naphthalene	2.381	2.052	13.8
Benzo(B)Thiophene	1.775	1.591	10.4
Quinoline	1.644	1.510	8.2
1H-Indole	1.678	1.608	4.2
2-Methylnaphthalene	1.463	1.373	6.2
1-Methylnaphthalene	1.909	1.760	7.8
Biphenyl	1.930	1.713	11.2
Acenaphthylene	2.114	1.902	10.0
Acenaphthene	1.052	1.039	1.2
Dibenzofuran	2.044	1.868	8.6
Fluorene	1.324	1.265	4.5
Dibenzothiophene	0.974	0.909	6.7
Phenanthrene	0.990	0.905	8.6
Anthracene	1.055	0.984	6.7
Acridine	0.903	0.836	7.4
Carbazole	1.180	1.103	6.5
Fluoranthene	0.873	0.868	0.6
Pyrene	0.930	0.907	2.5
Benzo(A)Anthracene	1.340	1.289	3.8
Chrysene	1.121	1.196	-6.7
Benzo(B)Fluoranthene	1.308	1.199	8.3
Benzo(K)Fluoranthene	1.015	1.080	-6.4
Benzo(E)Pyrene	1.265	1.256	0.7
Benzo(A)Pyrene	1.018	1.021	-0.3
Perylene	1.017	1.024	-0.7
Indeno(1,2,3-CD)Pyrene	1.058	1.028	2.8
Dibenz(A,H)Anthracene	0.910	0.878	3.5
Benzo(G,H,I)Perylene	0.924	0.870	5.8
D8-Naphthalene	2.048	1.842	10.1
D10-Fluorene	1.198	1.194	0.3
D12-Chrysene	1.093	1.099	-0.5

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No: 28255 SAS No.: SDG No:

Lab File ID (Standard): R4407 Date Analyzed: 04/13/93

Instrument ID: 4500-R Time Analyzed: 1140

	IS#1 (ACN) AREA #	IS#2 (PHN) AREA #	IS#3 (BAP) AREA #
12 HOUR STD	11594	20638	11868
UPPER LIMIT	23188	41276	23736
LOWER LIMIT	5797	10319	5934
SAMPLE NO.			
28255-01	8537	14395	6823
28255-02	9617	16412	7991
28255-05	10393	18180	9103
28255-05DU	9664	16671	8147
28255-05FB	10023	17226	8532
28255-05MS	13189	23117	12025
28255-05MSD	12017	21302	10804
BLK01	11509	19504	10052

IS#1 (ACN) = D10-ACENAPHTHENE
IS#2 (PHN) = D10-PHENANTHRENE
IS#3 (BAP) = D12-BENZO(A)PYRENE

UPPER LIMIT = + 100% of internal standard area
LOWER LIMIT = - 50% of internal standard area

Column used to flag internal standard area values with an asterisk

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No: 28255 SAS No.: SDG No:

Lab File ID (Standard): R4424 Date Analyzed: 04/14/93

Instrument ID: 4500-R Time Analyzed: 0950

	IS#1 (ACN) AREA #	IS#2 (PHN) AREA #	IS#3 (BAP) AREA #
12 HOUR STD	13329	23597	13489
UPPER LIMIT	22658	47194	26978
LOWER LIMIT	6664	11798	6744
SAMPLE NO.			
28255-03	9964	16238	7416
28255-04	10867	17721	8011

IS#1 (ACN) = D10-ACENAPHTHENE
IS#2 (PHN) = D10-PHENANTHRENE
IS#3 (BAP) = D12-BENZO(A)PYRENE

UPPER LIMIT = + 100% of internal standard area
LOWER LIMIT = - 50% of internal standard area

Column used to flag internal standard area values with an asterisk

PHENOLICS MONITORING

Rocky Mountain
Analytical Laboratory

Enseco
A Corning Company

May 17, 1993

Mr. James Grube
City of St. Louis Park
5005 Minnetonka Blvd.
St. Louis Park, MN 55416

Dear Mr Grube:

Enclosed is the ppb phenol report for 10 aqueous samples, including matrix QC, received at Enseco-Rocky Mountain Analytical laboratory on March 24, 1993.

Please call if you have any questions.

Sincerely,

Karen F. Germann
Project Administrator

Reviewed by:

Julieann L. Kramer
Program Manager

KFG/JLK
Enclosures

RMAL #028256

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Enseco
A Corning Company

ANALYTICAL TEST REQUESTS
for
City of St. Louis Park

Lab ID: 028256	Group Code	Analysis Description	Custom Test?
0001 - 0005, 0005 , 0005, 0006	A	Phenolics (4-AAP)	N

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North[illegible] Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: CITY OF ST LOUIS PARK (WATER DEPT)	
PROJECT:	
SAMPLING COMPANY: SAME	
SAMPLING SITE: SAME	
TEAM LEADER: MZR	

SAMPLE SAFE™ CONDITIONS

PACKED BY: MZR	SEAL NUMBER:
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:	CONDITION OF CONTENTS:
SEALED FOR SHIPPING BY:	INITIAL CONTENTS TEMP: °C
SEAL NUMBER:	SAMPLING STATUS: ☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB: ☑ Yes ☐ No	CONTENTS TEMPERATURE UPON RECEIPT BY LAB: 7.0 °C

DATE	TIME	SAMPLE ID/DESCRIPTION		SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
3-23-93		GTF-ACFEPT-032393	01	8oz Amber	1	PPB Phenolics	
		STP-W410TP-032393	02				
		DPV-W420TP-032393	03				
		DPV-W421TP-032393	04				
		DPV-W422TP-032393	05				
		DPV-W422TPD-032393	05DU				
		DPV-W422TPMS-032393	05MS				
		DPV-W422TPMSD-032393	05SD				
		DPV-W422TPFB-032393	05FB				
3-23-91		DPV-W422TPFBD-032393	05FBD	8oz Amber	1	PPB Phenolics	

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: MZR		
METHOD OF SHIPMENT: FED EX		AIRBILL NUMBER: 2103420616
RECEIVED FOR LAB: Enseco-RMAL	SIGNED: Alexandra C. Hall	DATE/TIME: 0845 24MAR93
ENSECO PROJECT NUMBER: 78256		

ENS-4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North Belt Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX. 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: CITY OF ST LOUIS PARK (WATER DEPT)

PROJECT:

SAMPLING COMPANY: SAME

SAMPLING SITE: SAME

TEAM LEADER: MZK

SAMPLE SAFE™ CONDITIONS

PACKED BY: MZK

SEAL NUMBER:

SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:

CONDITION OF CONTENTS:

SEALED FOR SHIPPING BY:

INITIAL CONTENTS TEMP: °C

SEAL NUMBER:

SAMPLING STATUS: ☐ Done ☐ Continuing Until

SEAL INTACT UPON RECEIPT BY LAB: ☑ Yes ☐ No

CONTENTS TEMPERATURE UPON RECEIPT BY LAB: 32° °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
3-23-93		EAC-SLP4T-032393	1YL AMBER	6	PPL PAH	PPL 5
3-23-93		PCJ-SLP4TP-032393 OL	8oz AMBER	1	Phenolics (28252)	

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: MZK

METHOD OF SHIPMENT: FED EX

AIRBILL NUMBER: 2103420620

RECEIVED FOR LAB: Enseco-RMAL

SIGNED: Alexandra C. Hall

DATE/TIME: 0845 24MAR93

ENSECO PROJECT NUMBER: 78256

ENS-4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

SAMPLE DESCRIPTION INFORMATION
for
City of St. Louis Park

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
028256-0001-SA	GTF-ACFEPT-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0002-SA	STP-W410TP-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0003-SA	DPV-W420TP-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0004-SA	DPV-W421TP-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-SA	DPV-W422TP-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-DU	DPV-W422TPD-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-MS	DPV-W422TPMS-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-SD	DPV-W422TPMSD-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-FB	DPV-W422TPFB-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0005-FD	DPV-W422TPFBD-032393	AQUEOUS	23 MAR 93		24 MAR 93
028256-0006-SA	PCJ-SLP4TP-032393	AQUEOUS	23 MAR 93		24 MAR 93

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.:

SOW No.: 3/90

EPA Sample No.	Lab Sample ID.
GTF-ACFEPT-032393	28256-01
STP-W410TP-032393	28256-02
DPV-W420TP-032393	28256-03
DPV-W421TP-032393	28256-04
DPV-W422TP-032393	28256-05
DPV-W422TPD-032393	28256-05DU
DPV-W422TPMS-032393	28256-05MS
DPV-W422TPMSD-032393	28256-05MSD
DPV-W422TPFB-032393	28256-05FB
PCJ-SLP4TP-032393	28256-06

Parameters	Method No.	Detection Limits	Source
PHENOL	420.1	5 ug/L	1

Comments:
TEN WATER SAMPLES FOR PHENOL ANALYSIS.
RMAL QC#028256

Sources:
1="Methods for the Chemical Analysis of Water and Wastes", USEPA-EMSL, Cincinnati.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Will Pratt Name: Will Pratt

Date: 5-10-93 Title: Group Leader

EPA SAMPLE NO.

DPV-W420TP-032303

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 28256-03

Level (low/med): LOW Date Received: 03/24/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	18.3			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.

DPV-W421TP-032393

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 28256-04

Level (low/med): LOW Date Received: 03/24/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	15.1			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.
000006
DPV-W423TP-032393

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 28256-05

Level (low/med): LOW Date Received: 03/24/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	ND			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.

DPV-W423-TPD-032982

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 28256-05DU

Level (low/med): LOW Date Received: 03/24/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	ND			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP
1

EPA SAMPLE NO.

DPV-W422TPMS-032393

INORGANIC ANALYSIS DATA SHEET

000008

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 28256-05MS

Level (low/med): LOW Date Received: 03/24/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	98.0			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO. 000003

DPV-W421TPMSD-032393

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 28256-05MSD

Level (low/med): LOW Date Received: 03/24/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	97.4			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP
I

EPA SAMPLE NO. 090010

DPV-W423TPFB-032393

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 28256-05FB

Level (low/med): LOW Date Received: 03/24/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	ND			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.

PCJ-SLP4TP-032393

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 28256-06

Level (low/med): LOW Date Received: 03/24/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	ND			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

CALIBRATION AND BLANKS

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract:

Lab Code: ENSECO Case No.: 28256 SAS No.: N/A SDG No.: N/A

Calibration Date: April 19, 1993

Initial Calibration Source: RMAL PHENOL 6707

Continuing Calibration Source: RMAL PHENOL 6707

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)
Phenol	200	194	97	20	20.3	102	20.3	102
Phenol	200	199	100					

BLANKS

Blank Matrix (soil/water): water

Blank Concentration Units: ug/L

Preparation Blank Concentration Units: ug/L

Analyte	Initial Calib. Blank (mg/L)	C	Continuing Calibration Blank (mg/L) 1	C	2	C	3	C	Preparation Blank	C
Phenol	ND		ND		ND				ND	

SPIKE - DUPLICATES

Lab Name: ROCKY MOUNTAIN ANALYTICAL Project No.: 28256

Matrix (soil/water): WATER

RMA SAMPLE NO
28256-05MS
28256-05MSD

CLIENT ID NO
DPV-W422TPMS-032393
DPV-W422TPMSD-032393

Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spike Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
PHENOL	+/-25	98.0		ND		100.0	98		
PHENOL	+/-25	97.4		ND		100.0	97		

RMA SAMPLE NO
28256-05DU

CLIENT ID NO
DPV-W421TPD-032393

% Solids for Sample: NA

% Solids for Duplicate: NA

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
PHENOL	70	ND		ND				

COMMENTS:

INORGANIC NONMETALS SAMPLE PREPARATION

PARAMETER ~~Ø~~ H ANALYST S. Moroschan / M Barnes DATE 04-09-93

SAMPLE	PH	BOTTLE TYPE	INTERFERENCE CHECKS SAMPLE PRETREATMENT	INITIAL WT OR VOL	FINAL WT OR VOL	PREP D.F.
BLANK				200	200	1x
DCS 1		400µl H_2SO_4	4ml of #6707 10mg/L (0.2mg/L)			
DCS 2			↓			
28256-01	<2	#2				
-02						
-03						
-04						
-05						
-05DU						
-05MS			2ml of #6707 (10mg/L) (0.1mg/L)			
-05SD			↓			
-05FB						
-05FBD						
-06	↓	↓		↓	↓	↓

COLORIMETRIC ANALYSIS

000015

PARAMETER Phen-Spr-MP-A CONTROL #L707 DATE 04-21-93

ANALYST STM SPIKE 0.200 UNITS mg/L

	Concentration	Absorbance
Blank	0.000	0.061
STD 1	0.005	0.068
STD 2	0.010	0.088
STD 3	0.020	0.120
STD 4	0.050	0.221
STD 5	0.100	0.362

Corr. Coef. = 0.9990

Slope = 3.074

Intercept = 0.0586

SAMPLE ID	BOTL. TYPE	pH	INTER CHECK	ABSORBANCE SAMPLE	ABSORBANCE COLOR B	CURVE CONC.	DILUTIONS PREP	DILUTIONS ANALYT	REPORTED CONC.	% REC.
BLANK				0.060		ND	1x	1x	ND(0.005)	
ICV/DCS				0.178		0.0388		5x	0.194	97%
ICV/DCS				0.181		0.0398		5x	0.199	100%
ICV/DCS				—		—				
28256-01				0.050		ND		1x	ND(0.005)	
-02				0.021		ND			ND(0.005)	
-03				0.115		0.0183			0.018 (0.005)	
-04				0.105		0.0151			0.015 (0.005)	
-05				0.069		ND			ND(0.005)	
-05DV				0.070		ND			ND(0.005)	
-05MS			STM	~~0.0360~~	0.360	0.0980			0.098 (0.10)	
-05SD			04-20-93	~~0.03~~	0.358	0.0974			0.097 (0.10)	
-05FB				0.035		ND			ND(0.005)	
-05FD				0.040		ND			ND (0.005)	
CCV				0.121		0.0203			0.020	100%
CCB				0.061		ND			ND	
28[illegible]-06				0.038		ND			ND(0.005)	
CCV				0.121		0.0203			0.020	100%
CCB				0.061		ND	▼	▼	ND	
CCV										
CCB										

2ND QUARTER MONITORING

PAH MONITORING

Enseco
A Corning Company

CASE NARRATIVE

FOR

City of St. Louis Park

May 28, 1993

Enseco - RMAL Project Number 028980

Introduction

Nine aqueous samples (includes QC) were received at Enseco Rocky Mountain Analytical Laboratory on April 28, 1993. The samples were logged in under RMAL project number 028980. A cross reference associating the RMAL sample numbers to the actual field sample numbers is included. Sample DPV-W422FBD-042793 was extracted and held per the April 1990 QAPP. The samples were analyzed for part-per-billion (ppb) polynuclear aromatic hydrocarbons (PAH).

Data Quality Assessment

The results contained in this report were reviewed relative to data acceptance criteria as specified in the April, 1990 QAPP for completeness, precision, accuracy, representativeness and defensibility of the data. Unless otherwise stated below, no quality control problems or technical difficulties were encountered which would impact the interpretation or use of data in this report.

PPB PAH

Samples 028980-0001, -0002, and -0003 show target compounds above the upper calibration range. The samples were analyzed at dilutions. Surrogates could not be measured in sample 028980-0001, -0001DU, and -0002DL due to the level of dilutions performed.

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax. 303/431-7171

Case Narrative - RMAL #028980
May 28, 1993
Page Two

028980-0003MS and -0003SD matrix spike recoveries were outside of advisory limits for 2-Methylnaphthalene, and 1H-Indene. These samples were analyzed at a dilution due to the concentration of target components present. Quantitation was checked and no further action was taken.

This data package is in compliance with the terms and conditions of the 1990 QAPP, both technically and for completeness, for other than the conditions detailed above.

Reported by: Julieann L. Kramer Date: 6-2-93
Julieann L. Kramer
Program Manager

Approved by: Karen Hermann for Date: 6-2-93
Randy Greaves
Program Manager

Enseco
A Corning Company

ANALYTICAL TEST REQUESTS
for
City of St. Louis Park

Lab ID: 028980	Group Code	Analysis Description	Custom Test?
0001 - 0003,	A	CLP/PAH Semivolatile Organics High Level PPB	N
0003 - 0004		CLP Prep - PAH Semivolatile Organics by GC/MS High Level PPB	N
0003	B	CLP Prep - PAH Semivolatile Organics by GC/MS High Level PPB	N

Enseco
A Corning Company

☐ Rocky Mountain Analytical Laboratory
4955 Yarrow Street
Arvada, CO 80002
303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North Belt Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT	CITY OF ST LOUIS PARK (WATER DEPT)
PROJECT	
SAMPLING COMPANY	SAME
SAMPLING SITE	SAME
TEAM LEADER	MZH

SAMPLE SAFE™ CONDITIONS

PACKED BY	MZH
SEAL NUMBER	
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY	
CONDITION OF CONTENTS	
SEALED FOR SHIPPING BY	MZH
INITIAL CONTENTS TEMP	°C
SEAL NUMBER	
SAMPLING STATUS	☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB	☐ Yes ☐ No
CONTENTS TEMPERATURE UPON RECEIPT BY LAB	°C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
4-27-93		DPV-W420-042793 01	1XL AMBER	2	PPB PAH	
		DPV-W421-042793 02				
		DPV-W422-042793 03				
		DPV-W422D-042793 03DU				
		DPV-W422MS-042793 03MS				
		DPV-W422MSD-042793 03SD				
		DPV-W422FB-042793 03FB				
		DPV-W422FBD-042793 03FD				
4-27-93		GTF-ACFE-042793 04	1XL AMBER	2		
					PPB PAH	

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY	MZH	
METHOD OF SHIPMENT	FED EX	AIRBILL NUMBER 2103420664
RECEIVED FOR LAB	ENSECO - RMAL	SIGNED Alexandra E. Hall
DATE/TIME	0845 28 APR 93	
ENSECO PROJECT NUMBER	28980	

ENS—4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

Qualifier Codes and Their Usage

U = Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture.

J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration of 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for dilution as discussed for the U flag.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results.

P = This flag is used for a pesticide/Aroclor target analyte when there is greater then 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

C = This flag applies to pesticide results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, do not apply this flag, instead use a laboratory-defined flag, discussed below.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified target compound.

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

E = This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. If one or more compounds have a response greater than full scale, except as noted in Exhibit D, the sample or extract must be diluted and re-analyzed accordingly to the specifications in Exhibit D. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate copies of Form I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number. NOTE: For total xylenes, where three isomers are quantified as two peaks, the calibration range of each peak should be considered separately, e.g., a diluted analysis is not required for total xylenes unless the concentration of either peak separately exceeds 200 ug/L.

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag. This flag alerts data users that any discrepancies between the concentrations reported may be due to dilution of the sample or extract.

A = This flag indicates that a TIC is a suspected aldol-condensation product.

X = Other specific flags may be required to properly define the results. If used, they must be fully described, and such description attached to the Sample Data Summary Package and the SDG Narrative. Begin by using "X". If more than one flag is required, use "Y" and "Z" as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample. The laboratory-defined flags are limited to the letters "X", "Y", and "Z".

R = This flag is used for polyaromatic hydrocarbons which show target compounds that do not meet secondary ion confirmation. In some instances a compound that does not meet secondary ion confirmation criteria may still be determined to be present in the sample after close inspection of the data by the analyst. Supportive data includes mass chromatograms maxima at the same scan for primary and secondary ions, as well as discernible quantitation interference with the secondary ion.

SUMMARY

DATA

PACKAGE

FOR

CITY OF SAINT LOUIS PARK

RMAL No: 28980

Enseco
A Corning Company

SAMPLE DESCRIPTION INFORMATION
for
City of St. Louis Park

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
028980-0001-SA	DPV-W420-042793	AQUEOUS	27 APR 93		28 APR 93
028980-0002-SA	DPV-W421-042793	AQUEOUS	27 APR 93		28 APR 93
028980-0003-SA	DPV-W422-042793	AQUEOUS	27 APR 93		28 APR 93
028980-0003-DU	DPV-W422D-042793	AQUEOUS	27 APR 93		28 APR 93
028980-0003-MS	DPV-W422MS-042793	AQUEOUS	27 APR 93		28 APR 93
028980-0003-SD	DPV-W422MSD-042793	AQUEOUS	27 APR 93		28 APR 93
028980-0003-FB	DPV-W422FB-042793	AQUEOUS	27 APR 93		28 APR 93
028980-0003-FD	DPV-W422FBD-042793	AQUEOUS	27 APR 93		28 APR 93
028980-0004-SA	GTF-ACFE-042793	AQUEOUS	27 APR 93		28 APR 93

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-01

Lab Name: ENSECO Contract No.: DPV-W420-042793

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-01

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R4760

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/04/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 19.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	47	J
496-11-7	2,3-Dihydroindene	360	
95-13-6	1H-Indene	140	J
91-20-3	Naphthalene	2500	E
4565-32-6	Benzo(B)Thiophene	130	J
91-22-5	Quinoline	190	U
120-72-9	1H-Indole	190	U
91-57-6	2-Methylnaphthalene	82	J
90-12-0	1-Methylnaphthalene	77	J
92-52-4	Biphenyl	190	U
208-96-8	Acenaphthylene	190	U
83-32-9	Acenaphthene	87	J
132-64-9	Dibenzofuran	25	J
86-73-7	Fluorene	25	J
132-65-0	Dibenzothiophene	190	U
85-01-8	Phenanthrene	190	U
120-12-7	Anthracene	190	U
260-94-6	Acridine	190	U
86-74-8	Carbazole	39	J
206-44-0	Fluoranthene	190	U
129-00-0	Pyrene	190	U
56-55-3	Benzo(A)Anthracene	190	U
218-01-9	Chrysene	190	U
205-99-2	Benzo(B)Fluoranthene	190	U
207-08-9	Benzo(K)Fluoranthene	190	U
192-97-2	Benzo(E)Pyrene	190	U
50-32-8	Benzo(A)Pyrene	190	U
198-55-0	Perylene	190	U
193-39-5	Indeno(1,2,3-CD)Pyrene	190	U
53-70-3	Dibenz(A,H)Anthracene	190	U
191-24-2	Benzo(G,H,I)Perylene	190	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-01DL

Lab Name: ENSECO Contract No.: DPV-W420-042793

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-01DL

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R4772

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/04/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 47.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	480	U
496-11-7	2,3-Dihydroindene	330	J
95-13-6	1H-Indene	130	J
91-20-3	Naphthalene	2100	
4565-32-6	Benzo(B)Thiophene	120	J
91-22-5	Quinoline	480	U
120-72-9	1H-Indole	480	U
91-57-6	2-Methylnaphthalene	83	J
90-12-0	1-Methylnaphthalene	79	J
92-52-4	Biphenyl	480	U
208-96-8	Acenaphthylene	480	U
83-32-9	Acenaphthene	87	J
132-64-9	Dibenzofuran	480	U
86-73-7	Fluorene	480	U
132-65-0	Dibenzothiophene	480	U
85-01-8	Phenanthrene	480	U
120-12-7	Anthracene	480	U
260-94-6	Acridine	480	U
86-74-8	Carbazole	480	U
206-44-0	Fluoranthene	480	U
129-00-0	Pyrene	480	U
56-55-3	Benzo(A)Anthracene	480	U
218-01-9	Chrysene	480	U
205-99-2	Benzo(B)Fluoranthene	480	U
207-08-9	Benzo(K)Fluoranthene	480	U
192-97-2	Benzo(E)Pyrene	480	U
50-32-8	Benzo(A)Pyrene	480	U
198-55-0	Perylene	480	U
193-39-5	Indeno(1,2,3-CD)Pyrene	480	U
53-70-3	Dibenz(A,H)Anthracene	480	U
191-24-2	Benzo(G,H,I)Perylene	480	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-02

Lab Name: ENSECO Contract No.: DPV-W421-042793

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-02

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R4761

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/04/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 4.76

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	48	U
496-11-7	2,3-Dihydroindene	200	
95-13-6	1H-Indene	110	
91-20-3	Naphthalene	1000	E
4565-32-6	Benzo(B)Thiophene	86	
91-22-5	Quinoline	48	U
120-72-9	1H-Indole	48	U
91-57-6	2-Methylnaphthalene	5.2	J
90-12-0	1-Methylnaphthalene	44	J
92-52-4	Biphenyl	7.5	J
208-96-8	Acenaphthylene	48	U
83-32-9	Acenaphthene	46	J
132-64-9	Dibenzofuran	8.9	J
86-73-7	Fluorene	12	J
132-65-0	Dibenzothiophene	48	U
85-01-8	Phenanthrene	48	U
120-12-7	Anthracene	48	U
260-94-6	Acridine	48	U
86-74-8	Carbazole	25	J
206-44-0	Fluoranthene	48	U
129-00-0	Pyrene	48	U
56-55-3	Benzo(A)Anthracene	48	U
218-01-9	Chrysene	48	U
205-99-2	Benzo(B)Fluoranthene	48	U
207-08-9	Benzo(K)Fluoranthene	48	U
192-97-2	Benzo(E)Pyrene	48	U
50-32-8	Benzo(A)Pyrene	48	U
198-55-0	Perylene	48	U
193-39-5	Indeno(1,2,3-CD)Pyrene	48	U
53-70-3	Dibenz(A,H)Anthracene	48	U
191-24-2	Benzo(G,H,I)Perylene	48	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-02DL

Lab Name: ENSECO Contract No.:

DPV-W421-042793

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-02DL

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R4773

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/05/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 47.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	480	U
496-11-7	2,3-Dihydroindene	180	J
95-13-6	1H-Indene	100	J
91-20-3	Naphthalene	820	
4565-32-6	Benzo(B)Thiophene	84	J
91-22-5	Quinoline	480	U
120-72-9	1H-Indole	480	U
91-57-6	2-Methylnaphthalene	480	U
90-12-0	1-Methylnaphthalene	480	U
92-52-4	Biphenyl	480	U
208-96-8	Acenaphthylene	480	U
83-32-9	Acenaphthene	480	U
132-64-9	Dibenzofuran	480	U
86-73-7	Fluorene	480	U
132-65-0	Dibenzothiophene	480	U
85-01-8	Phenanthrene	480	U
120-12-7	Anthracene	480	U
260-94-6	Acridine	480	U
86-74-8	Carbazole	480	U
206-44-0	Fluoranthene	480	U
129-00-0	Pyrene	480	U
56-55-3	Benzo(A)Anthracene	480	U
218-01-9	Chrysene	480	U
205-99-2	Benzo(B)Fluoranthene	480	U
207-08-9	Benzo(K)Fluoranthene	480	U
192-97-2	Benzo(E)Pyrene	480	U
50-32-8	Benzo(A)Pyrene	480	U
198-55-0	Perylene	480	U
193-39-5	Indeno(1,2,3-CD)Pyrene	480	U
53-70-3	Dibenz(A,H)Anthracene	480	U
191-24-2	Benzo(G,H,I)Perylene	480	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-03

DPV-W422-042793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-03

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R4762

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/04/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: .952

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	9.5	U
496-11-7	2,3-Dihydroindene	89	E
95-13-6	1H-Indene	9.5	U
91-20-3	Naphthalene	15	
4565-32-6	Benzo(B)Thiophene	9.5	U
91-22-5	Quinoline	2.0	J
120-72-9	1H-Indole	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
90-12-0	1-Methylnaphthalene	9.5	U
92-52-4	Biphenyl	9.5	U
208-96-8	Acenaphthylene	9.5	U
83-32-9	Acenaphthene	10	
132-64-9	Dibenzofuran	9.5	U
86-73-7	Fluorene	9.5	U
132-65-0	Dibenzothiophene	9.5	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
260-94-6	Acridine	9.5	U
86-74-8	Carbazole	1.6	J
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
56-55-3	Benzo(A)Anthracene	9.5	U
218-01-9	Chrysene	9.5	U
205-99-2	Benzo(B)Fluoranthene	9.5	U
207-08-9	Benzo(K)Fluoranthene	9.5	U
192-97-2	Benzo(E)Pyrene	9.5	U
50-32-8	Benzo(A)Pyrene	9.5	U
198-55-0	Perylene	9.5	U
193-39-5	Indeno(1,2,3-CD)Pyrene	9.5	U
53-70-3	Dibenz(A,H)Anthracene	9.5	U
191-24-2	Benzo(G,H,I)Perylene	9.5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-03DU

Lab Name: ENSECO Contract No.: DPV-W422DU-042793

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-03DU

Sample wt/vol: 1040 (g/mL) ML Lab File ID: R4788

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/05/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.962

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	9.6	U
496-11-7	2,3-Dihydroindene	62	
95-13-6	1H-Indene	9.6	U
91-20-3	Naphthalene	13	
4565-32-6	Benzo(B)Thiophene	1.8	J
91-22-5	Quinoline	9.6	U
120-72-9	1H-Indole	9.6	U
91-57-6	2-Methylnaphthalene	9.6	U
90-12-0	1-Methylnaphthalene	9.6	U
92-52-4	Biphenyl	9.6	U
208-96-8	Acenaphthylene	9.6	U
83-32-9	Acenaphthene	8.8	J
132-64-9	Dibenzofuran	9.6	U
86-73-7	Fluorene	9.6	U
132-65-0	Dibenzothiophene	9.6	U
85-01-8	Phenanthrene	9.6	U
120-12-7	Anthracene	9.6	U
260-94-6	Acridine	9.6	U
86-74-8	Carbazole	1.6	U
206-44-0	Fluoranthene	9.6	J
129-00-0	Pyrene	9.6	U
56-55-3	Benzo(A)Anthracene	9.6	U
218-01-9	Chrysene	9.6	U
205-99-2	Benzo(B)Fluoranthene	9.6	U
207-08-9	Benzo(K)Fluoranthene	9.6	U
192-97-2	Benzo(E)Pyrene	9.6	U
50-32-8	Benzo(A)Pyrene	9.6	U
198-55-0	Perylene	9.6	U
193-39-5	Indeno(1,2,3-CD)Pyrene	9.6	U
53-70-3	Dibenz(A,H)Anthracene	9.6	U
191-24-2	Benzo(G,H,I)Perylene	9.6	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-03DUDL

DPV-W422D-042793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-03DUDL

Sample wt/vol: 1040 (g/mL) ML Lab File ID: R4775

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/05/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.92

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	19	U
496-11-7	2,3-Dihydroindene	65	
95-13-6	1H-Indene	19	U
91-20-3	Naphthalene	13	J
4565-32-6	Benzo(B)Thiophene	19	U
91-22-5	Quinoline	19	U
120-72-9	1H-Indole	19	U
91-57-6	2-Methylnaphthalene	19	U
90-12-0	1-Methylnaphthalene	19	U
92-52-4	Biphenyl	19	U
208-96-8	Acenaphthylene	19	U
83-32-9	Acenaphthene	9.1	J
132-64-9	Dibenzofuran	19	U
86-73-7	Fluorene	19	U
132-65-0	Dibenzothiophene	19	U
85-01-8	Phenanthrene	19	U
120-12-7	Anthracene	19	U
260-94-6	Acridine	19	U
86-74-8	Carbazole	19	U
206-44-0	Fluoranthene	19	U
129-00-0	Pyrene	19	U
56-55-3	Benzo(A)Anthracene	19	U
218-01-9	Chrysene	19	U
205-99-2	Benzo(B)Fluoranthene	19	U
207-08-9	Benzo(K)Fluoranthene	19	U
192-97-2	Benzo(E)Pyrene	19	U
50-32-8	Benzo(A)Pyrene	19	U
198-55-0	Perylene	19	U
193-39-5	Indeno(1,2,3-CD)Pyrene	19	U
53-70-3	Dibenz(A,H)Anthracene	19	U
191-24-2	Benzo(G,H,I)Perylene	19	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-03FB

DPV-W422FB-042793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-03FB

Sample wt/vol: 1040 (g/mL) ML Lab File ID: R4783

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/05/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.962

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	9.6	U
496-11-7	2,3-Dihydroindene	9.6	U
95-13-6	1H-Indene	9.6	U
91-20-3	Naphthalene	9.6	U
4565-32-6	Benzo(B)Thiophene	9.6	U
91-22-5	Quinoline	9.6	U
120-72-9	1H-Indole	9.6	U
91-57-6	2-Methylnaphthalene	9.6	U
90-12-0	1-Methylnaphthalene	9.6	U
92-52-4	Biphenyl	9.6	U
208-96-8	Acenaphthylene	9.6	U
83-32-9	Acenaphthene	9.6	U
132-64-9	Dibenzofuran	9.6	U
86-73-7	Fluorene	9.6	U
132-65-0	Dibenzothiophene	9.6	U
85-01-8	Phenanthrene	9.6	U
120-12-7	Anthracene	9.6	U
260-94-6	Acridine	9.6	U
86-74-8	Carbazole	9.6	U
206-44-0	Fluoranthene	9.6	U
129-00-0	Pyrene	9.6	U
56-55-3	Benzo(A)Anthracene	9.6	U
218-01-9	Chrysene	9.6	U
205-99-2	Benzo(B)Fluoranthene	9.6	U
207-08-9	Benzo(K)Fluoranthene	9.6	U
192-97-2	Benzo(E)Pyrene	9.6	U
50-32-8	Benzo(A)Pyrene	9.6	U
198-55-0	Perylene	9.6	U
193-39-5	Indeno(1,2,3-CD)Pyrene	9.6	U
53-70-3	Dibenz(A,H)Anthracene	9.6	U
191-24-2	Benzo(G,H,I)Perylene	9.6	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-03MS

DPV-W422MS-042793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-03MS

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R4763

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/04/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.952

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	9.5	U
496-11-7	2,3-Dihydroindene	75	
95-13-6	1H-Indene	68	
91-20-3	Naphthalene	70	
4565-32-6	Benzo(B)Thiophene	2.0	J
91-22-5	Quinoline	42	
120-72-9	1H-Indole	9.5	U
91-57-6	2-Methylnaphthalene	47	
90-12-0	1-Methylnaphthalene	1.2	J
92-52-4	Biphenyl	9.5	U
208-96-8	Acenaphthylene	9.5	U
83-32-9	Acenaphthene	9.6	
132-64-9	Dibenzofuran	9.5	U
86-73-7	Fluorene	48	
132-65-0	Dibenzothiophene	9.5	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
260-94-6	Acridine	9.5	U
86-74-8	Carbazole	1.5	J
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
56-55-3	Benzo(A)Anthracene	9.5	U
218-01-9	Chrysene	30	
205-99-2	Benzo(B)Fluoranthene	9.5	U
207-08-9	Benzo(K)Fluoranthene	9.5	U
192-97-2	Benzo(E)Pyrene	28	
50-32-8	Benzo(A)Pyrene	9.5	U
198-55-0	Perylene	9.5	U
193-39-5	Indeno(1,2,3-CD)Pyrene	9.5	U
53-70-3	Dibenz(A,H)Anthracene	9.5	U
191-24-2	Benzo(G,H,I)Perylene	9.5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-03MSDL

DPV-W422MS-042793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-03MSDL

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R4776

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/05/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.90

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	19	U
496-11-7	2,3-Dihydroindene	64	
95-13-6	1H-Indene	56	
91-20-3	Naphthalene	52	
4565-32-6	Benzo(B)Thiophene	19	U
91-22-5	Quinoline	39	
120-72-9	1H-Indole	19	U
91-57-6	2-Methylnaphthalene	44	
90-12-0	1-Methylnaphthalene	19	U
92-52-4	Biphenyl	19	U
208-96-8	Acenaphthylene	19	U
83-32-9	Acenaphthene	9.5	J
132-64-9	Dibenzofuran	19	U
86-73-7	Fluorene	48	
132-65-0	Dibenzothiophene	19	U
85-01-8	Phenanthrene	19	U
120-12-7	Anthracene	19	U
260-94-6	Acridine	19	U
86-74-8	Carbazole	19	U
206-44-0	Fluoranthene	19	U
129-00-0	Pyrene	19	U
56-55-3	Benzo(A)Anthracene	19	U
218-01-9	Chrysene	31	
205-99-2	Benzo(B)Fluoranthene	19	U
207-08-9	Benzo(K)Fluoranthene	19	U
192-97-2	Benzo(E)Pyrene	27	
50-32-8	Benzo(A)Pyrene	19	U
198-55-0	Perylene	19	U
193-39-5	Indeno(1,2,3-CD)Pyrene	19	U
53-70-3	Dibenz(A,H)Anthracene	19	U
191-24-2	Benzo(G,H,I)Perylene	19	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-03MSD

Lab Name: ENSECO Contract No.:

DPV-W422MSD-042793

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-03MSD

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R4764

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/04/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: .952

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	9.5	U
496-11-7	2,3-Dihydroindene	79	
95-13-6	1H-Indene	76	
91-20-3	Naphthalene	78	
4565-32-6	Benzo(B)Thiophene	2.1	J
91-22-5	Quinoline	43	
120-72-9	1H-Indole	9.5	U
91-57-6	2-Methylnaphthalene	48	
90-12-0	1-Methylnaphthalene	1.2	J
92-52-4	Biphenyl	9.5	U
208-96-8	Acenaphthylene	9.5	U
83-32-9	Acenaphthene	10	
132-64-9	Dibenzofuran	9.5	U
86-73-7	Fluorene	51	
132-65-0	Dibenzothiophene	9.5	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
260-94-6	Acridine	9.5	U
86-74-8	Carbazole	1.6	J
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
56-55-3	Benzo(A)Anthracene	9.5	U
218-01-9	Chrysene	41	
205-99-2	Benzo(B)Fluoranthene	9.5	U
207-08-9	Benzo(K)Fluoranthene	9.5	U
192-97-2	Benzo(E)Pyrene	38	
50-32-8	Benzo(A)Pyrene	9.5	U
198-55-0	Perylene	9.5	U
193-39-5	Indeno(1,2,3-CD)Pyrene	9.5	U
53-70-3	Dibenz(A,H)Anthracene	9.5	U
191-24-2	Benzo(G,H,I)Perylene	9.5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

28980-03MSDDL

Lab Name: ENSECO Contract No.:

DPV-W422MSD-042793

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 28980-03MSDDL

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R4777

Level: (low/med) LOW Date Received: 04/28/93

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/05/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.90

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	19	U
496-11-7	2,3-Dihydroindene	70	
95-13-6	1H-Indene	59	
91-20-3	Naphthalene	55	
4565-32-6	Benzo(B)Thiophene	1.9	J
91-22-5	Quinoline	39	
120-72-9	1H-Indole	19	U
91-57-6	2-Methylnaphthalene	47	
90-12-0	1-Methylnaphthalene	19	U
92-52-4	Biphenyl	19	U
208-96-8	Acenaphthylene	19	U
83-32-9	Acenaphthene	9.9	J
132-64-9	Dibenzofuran	19	U
86-73-7	Fluorene	50	
132-65-0	Dibenzothiophene	19	U
85-01-8	Phenanthrene	19	U
120-12-7	Anthracene	19	U
260-94-6	Acridine	19	U
86-74-8	Carbazole	19	U
206-44-0	Fluoranthene	19	U
129-00-0	Pyrene	19	U
56-55-3	Benzo(A)Anthracene	19	U
218-01-9	Chrysene	39	
205-99-2	Benzo(B)Fluoranthene	19	U
207-08-9	Benzo(K)Fluoranthene	19	U
192-97-2	Benzo(E)Pyrene	34	
50-32-8	Benzo(A)Pyrene	19	U
198-55-0	Perylene	19	U
193-39-5	Indeno(1,2,3-CD)Pyrene	19	U
53-70-3	Dibenz(A,H)Anthracene	19	U
191-24-2	Benzo(G,H,I)Perylene	19	U

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Level: LOW

	EPA SAMPLE NO.	S1 (NAP) #	S2 (FLU) #	S3 (CHR) #
1	28980-01	D	D	D
2	28980-01DL	D	D	D
3	28980-02	89	78	78
4	28980-02DL	D	D	D
5	28980-03	94	85	75
6	28980-03DL	90	86	69
7	28980-03DU	77	74	76
8	28980-03DUDL	79	78	72
9	28980-03MS	90	80	46
10	28980-03MSDL	82	79	47
11	28980-03MSD	91	84	69
12	28980-03MSDDL	82	81	64
13	28980-03FB	77	78	102
14	28980-04	84	78	40
15	BLK01	81	75	86

	QC LIMITS
S1 (NAP) = D8-NAPHTHALENE	(25-175)
S2 (FLU) = D10-FLUORENE	(25-175)
S3 (CHR) = D12-CHRYSENE	(25-175)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 28980-03 LEVEL: LOW

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC
1H-Indene	47.6	15.1	69.8	114
Naphthalene	47.6	0.449	48.4	100
Quinoline	47.6	ND	30.3	63
2-Methylnaphthalene	47.6	0.617	67.6	139*
Fluorene	47.6	ND	41.7	87
Chrysene	47.6	ND	28.4	59
Benzo(E)Pyrene	47.6	ND	47.0	98

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD
1H-Indene	47.6	77.7	132 *	15
Naphthalene	47.6	50.7	106	6
Quinoline	47.6	41.1	86	31
2-Methylnaphthalene	47.6	75.6	158 *	13
Fluorene	47.6	43.4	91	4
Chrysene	47.6	38.0	80	30
Benzo(E)Pyrene	47.6	48.2	101	3

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 28980-03DL LEVEL: LOW

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC
1H-Indene	47.5	14.0	52.0	80
Naphthalene	47.5	0.541	48.3	101
Quinoline	47.5	ND	31.2	66
2-Methylnaphthalene	47.5	0.601	55.5	116*
Fluorene	47.5	ND	38.6	81
Chrysene	47.5	ND	27.3	57
Benzo(E)Pyrene	47.5	ND	44.0	93

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD
1H-Indene	47.5	55.4	87	8
Naphthalene	47.5	50.3	105	4
Quinoline	47.5	38.6	81	20
2-Methylnaphthalene	47.5	59.1	123 *	6
Fluorene	47.5	38.9	82	1
Chrysene	47.5	34.3	72	23
Benzo(E)Pyrene	47.5	46.8	99	6

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Lab File ID: R4759 Lab Sample ID: BLK01

Date Extracted: 04/29/93 Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 05/04/93 Time Analyzed: 1603

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: 4500-R

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	28980-01	28980-01	R4760	05/04/93
02	28980-01DL	28980-01DL	R4772	05/04/93
03	28980-02	28980-02	R4761	05/04/93
04	28980-02DL	28980-02DL	R4773	05/05/93
05	28980-03	28980-03	R4762	05/04/93
06	28980-03DL	28980-03DL	R4774	05/05/93
07	28980-03DU	28980-03DU	R4788	05/05/93
08	28980-03DUDL	28980-03DUDL	R4775	05/05/93
09	28980-03FB	28980-03FB	R4783	05/05/93
10	28980-03MS	28980-03MS	R4763	05/04/93
11	28980-03MSDL	28980-03MSDL	R4776	05/05/93
12	28980-03MSD	28980-03MSD	R4764	05/04/93
13	28980-03MSDDL	28980-03MSDDL	R4777	05/05/93
14	28980-04	28980-04	R4780	05/05/93

COMMENTS:

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BLK01

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 28980 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: BL042993

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R4759

Level: (low/med) LOW Date Received:

% Moisture: not dec. dec. Date Extracted: 04/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/04/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	10	U
95-13-6	1H-Indene	10	U
91-20-3	Naphthalene	10	U
4565-32-6	Benzo(B)Thiophene	10	U
91-22-5	Quinoline	10	U
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	10	U
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	10	U
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No: 28980 SAS No.: SDG No:

Lab File ID (Standard): R4758 Date Analyzed: 05/04/93

Instrument ID: 4500-R Time Analyzed: 1343

	IS#1 (ACN) AREA #	IS#2 (PHN) AREA #	IS#3 (BAP) AREA #
12 HOUR STD	12989	22890	12428
UPPER LIMIT	25987	45780	24856
LOWER LIMIT	6494	11445	6214
SAMPLE NO.			
28980-01	12747	20028	10197
28980-02	12396	20320	10135
28980-03	15922	27182	10230
28980-03MS	13182	22449	11817
28980-03MSD	13146	22756	11038
BLK01	12233	19995	10096

IS#1 (ACN) = D10-ACENAPHTHENE
IS#2 (PHN) = D10-PHENANTHRENE
IS#3 (BAP) = D12-BENZO(A)PYRENE

UPPER LIMIT = + 100% of internal standard area
LOWER LIMIT = - 50% of internal standard area

Column used to flag internal standard area values with an asterisk

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No: 28980 SAS No.: SDG No:

Lab File ID (Standard): R4770 Date Analyzed: 05/04/93

Instrument ID: 4500-R Time Analyzed: 2154

	IS#1 (ACN) AREA #	IS#2 (PHN) AREA #	IS#3 (BAP) AREA #
12 HOUR ST	12936	21690	11427
UPPER LIMIT	25872	43380	22854
LOWER LIMIT	6468	10845	5714
SAMPLE NO.			
28980-01DL	12456	18855	9145
28980-02DL	12147	18320	9242
28980-03DL	12227	19236	8924
28980-03DUDL	12405	19158	7853
28980-03MSDL	14485	24016	9807
28980-03MSDDL	11710	18803	9547
28980-04	11872	16946	7686

IS#1 (ACN) = D10-ACENAPHTHENE
IS#2 (PHN) = D10-PHENANTHRENE
IS#3 (BAP) = D12-BENZO(A)PYRENE

UPPER LIMIT = + 100% of internal standard area
LOWER LIMIT = - 50% of internal standard area

Column used to flag internal standard area values with an asterisk

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No: 28980 SAS No.: SDG No:

Lab File ID (Standard): R4782 Date Analyzed: 05/05/93

Instrument ID: 4500-R Time Analyzed: 0926

	IS#1 (ACN) AREA #	IS#2 (PHN) AREA #	IS#3 (BAP) AREA #
12 HOUR ST	12042	20438	10707
UPPER LIMIT	24084	40876	21414
LOWER LIMIT	6021	10219	5354
SAMPLE NO.			
28980-03DU	13150	20845	8591
28980-03FB	12678	19195	7500

IS#1 (ACN) = D10-ACENAPHTHENE
IS#2 (PHN) = D10-PHENANTHRENE
IS#3 (BAP) = D12-BENZO(A)PYRENE

UPPER LIMIT = + 100% of internal standard area
LOWER LIMIT = - 50% of internal standard area

Column used to flag internal standard area values with an asterisk

Enseco
A Corning Company

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FOR

CITY OF ST. LOUIS PARK

RMAL PROJECT# 028980

PPT-PAH

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PHENOLICS MONITORING

Rocky Mountain
Analytical Laboratory

Enseco
A Corning Company

June 08, 1993

Mr. James Grube
City of St. Louis Park
5005 Minnetonka Blvd.
St. Louis Park, MN 55416

Dear Mr Grube:

Enclosed is the ppb phenol report for 12 aqueous samples, including matrix QC, received at Enseco-Rocky Mountain Analytical laboratory on April 30, 1993.

Please call if you have any questions.

Sincerely,

Karen F. Germann
Project Administrator

Reviewed by:

Julieann L. Kramer
Program Manager

KFG/JLK
Enclosures

RMAL #029019

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: SAS No.: N/A SDG No.: 29019

SOW No.: 3/90

EPA Sample No.	Lab Sample ID.
PCJ-SLP4TP-042993	29019-01
DPV-W420TP-042993	29019-02
DPV-W420TPD-042993	29019-02DU
DPV-W420TPMS-042993	29019-02MS
DPV-W420TPMSD-042993	29019-02MSD
DPV-W420TPFB-042993	29019-02FB
DPV-W420TPFBD-042993	29019-02FD
DPV-W421TP-042993	29019-03
DPV-W422TP-042993	29019-04
STP-W410TP-042993	29019-05
GTF-ACFETP-042993	29019-06
GTF-SFRTP-042993	29019-07

Parameters	Method No.	Detection Limits	Source
PHENOL	420.1	5 ug/L	1

Comments:

TWELVE WATER SAMPLES FOR PHENOL ANALYSIS.
RMAL QC#029019

Sources:

1="Methods for the Chemical Analysis of Water and Wastes", USEPA-EMSL, Cincinnati.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Will Pratt Name: Will Pratt

Date: 6/7/93 Title: Group Leader

U.S. EPA - CLP
1

EPA SAMPLE NO.

DPV-W420TP-042993

000603

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 29019 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 29019-02

Level (low/med): LOW Date Received: 04/30/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	207			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP
I

EPA SAMPLE NO. 000004

DPV-W420TPD-042993

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 29019 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 29019-02DU

Level (low/med): LOW Date Received: 04/30/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	212			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO. 000005

DPV-W420TPFB-042993

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 29019 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 29019-02FB

Level (low/med): LOW Date Received: 04/30/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	ND			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

DPV-W420TPFBD-042993

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 29019 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 29019-02FD

Level (low/med): LOW Date Received: 04/30/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	ND			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.

DPV-W420TPMS-042999 000007

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 29019 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 29019-02MS

Level (low/med): LOW Date Received: 04/30/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	224			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.

DPV-W420TPMSD-042993

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 29019 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 29019-02MSD

Level (low/med): LOW Date Received: 04/30/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	231			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.

DPV-W421TP-04290009

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 29019 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 29019-03

Level (low/med): LOW Date Received: 04/30/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	21.2			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.

DPV-W422TP-042993

000010

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: City of St. Louis Park

Lab Code: ENSECO Case No.: 29019 SAS No.: N/A SDG No.:

Matrix (soil/water): WATER Lab Sample ID: 29019-04

Level (low/med): LOW Date Received: 04/30/93

% Solids: N/A

Concentration Units: ug/L

Analyte	Concentration	C	Q	M
Phenol	9.8			

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

CALIBRATION AND BLANKS

GCC014

Lab Name: ROCKY MOUNTAIN ANALYTICAL Project No.: 29019

Initial Calibration Source: RMAL 6707

Continuing Calibration Source: RMAL 6707

Calibration Date: May 27, 1993

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)
PHENOL	20	19.7	98	20	19.0	95	19.0	95

BLANKS

Blank Matrix (soil/water): WATER

Blank Concentration Units: ug/L

Analyte	Initial Calib. Blank	C	Continuing Calibration Blank 1	C	2	C	3	C	Prepa-ration Blank	C
PHENOL			5	U	5	U			5	U

SPIKE - DUPLICATES

CCC015

Lab Name: ROCKY MOUNTAIN ANALYTICAL Project No.: 29019

Matrix (soil/water): WATER

RMA SAMPLE NO
29109-02MS

CLIENT ID NO
DPV-W420TPMS-042993

Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spike Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Phenol	75-125	224		207		20.0	85.0		

RMA SAMPLE NO
29019-02DU

CLIENT ID NO
DPV-W420TPD-042993

% Solids for Sample: NA

% Solids for Duplicate: NA

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Phenol	20	207		212		2		

COMMENTS:

FORM V - IN

3RD QUARTER MONITORING

PAH MONITORING

Enseco
A Corning Company

CASE NARRATIVE

FOR

City of St. Louis Park

October 04, 1993

Enseco - RMAL Project Number 030724

Introduction

Ten aqueous samples (includes QC) were received at Enseco Rocky Mountain Analytical Laboratory on August 18, 1993. The samples were logged in under RMAL project number 030724. A cross reference associating the RMAL sample numbers to the actual field sample numbers is included. Sample STP-W410FBD-081793 was extracted and held per the April 1990 QAPP. The samples were analyzed for part-per-billion (ppb) polynuclear aromatic hydrocarbons (PAH).

Data Quality Assessment

The results contained in this report were reviewed relative to data acceptance criteria as specified in the April, 1990 QAPP for completeness, precision, accuracy, representativeness and defensibility of the data. Unless otherwise stated below, no quality control problems or technical difficulties were encountered which would impact the interpretation or use of data in this report.

PPB PAH

Samples 030724-0001, -0002, and -0005 show target compounds above the upper calibration range. The samples were analyzed at dilutions. Surrogates could not be measured in sample 030724-0001, and -0002 due to the level of dilutions performed.

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4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax 303/431-7171

030724-0004MS and -0004SD matrix spike recoveries were outside of advisory limits for 1H-Indene. Quantitation was checked, all other spike recoveries and RPD's were witin advisory limits, and no further action was taken.

This data package is in compliance with the terms and conditions of the 1990 QAPP, both technically and for completeness, for other than the conditions detailed above.

Reported by: Julieann L. Kramer — **Date:** Oct 04, 1993
Julieann L. Kramer
Program Manager

Approved by: Karen Germann — **Date:** Oct 04, 1993
Karen Germann
Project Administrator

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A Corning Company

ANALYTICAL TEST REQUESTS
for
City of St. Louis Park

Lab ID: 030724	Group Code	Analysis Description	Custom Test?
0001 - 0004,	A	CLP/PAH Semivolatile Organics High Level PPB	N
0004 - 0005		CLP Prep - PAH Semivolatile Organics by GC/MS High Level PPB	N
0004	B	CLP Prep - PAH Semivolatile Organics by GC/MS High Level PPB	N

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TABLE OF CONTENTS

FOR

CITY OF ST. LOUIS PARK

RMAL PROJECT# 030724

PPT-PAH

QC Summary.....0001

Sample Data.....0010

Standards Data.....0174

Raw QC Data.....0228

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Qualifier Codes and Their Usage

U = Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture.

J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration of 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for dilution as discussed for the U flag.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results.

P = This flag is used for a pesticide/Aroclor target analyte when there is greater then 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

C = This flag applies to pesticide results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, do not apply this flag, instead use a laboratory-defined flag, discussed below.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified target compound.

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E = This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. If one or more compounds have a response greater than full scale, except as noted in Exhibit D, the sample or extract must be diluted and re-analyzed accordingly to the specifications in Exhibit D. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate copies of Form I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number. NOTE: For total xylenes, where three isomers are quantified as two peaks, the calibration range of each peak should be considered separately, e.g., a diluted analysis is not required for total xylenes unless the concentration of either peak separately exceeds 200 ug/L.

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag. This flag alerts data users that any discrepancies between the concentrations reported may be due to dilution of the sample or extract.

A = This flag indicates that a TIC is a suspected aldol-condensation product.

X = Other specific flags may be required to properly define the results. If used, they must be fully described, and such description attached to the Sample Data Summary Package and the SDG Narrative. Begin by using "X". If more than one flag is required, use "Y" and "Z" as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample. The laboratory-defined flags are limited to the letters "X", "Y", and "Z".

R = This flag is used for polyaromatic hydrocarbons which show target compounds that do not meet secondary ion confirmation. In some instances a compound that does not meet secondary ion confirmation criteria may still be determined to be present in the sample after close inspection of the data by the analyst. Supportive data includes mass chromatograms maxima at the same scan for primary and secondary ions, as well as discernible quantitation interference with the secondary ion.

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A Corning Company

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☐ Enseco Houston
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713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT	CITY OF ST LOUIS PARK (WATER DEPT)
PROJECT	
SAMPLING COMPANY	SAME
SAMPLING SITE	SAME
TEAM LEADER	[illegible]

SAMPLE SAFE™ CONDITIONS

PACKED BY	[illegible]
SEAL NUMBER	
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY	
CONDITION OF CONTENTS	
SEALED FOR SHIPPING BY	[illegible]
INITIAL CONTENTS TEMP	°C
SEAL NUMBER	
SAMPLING STATUS	☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB	☐ Yes ☐ No
CONTENTS TEMPERATURE UPON RECEIPT BY LAB	°C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
8-17-93		DPV-W420 -081793	1X 2 AMBER	2	PPB PAH	-01
		DPV-W421 -081793				-02
		DPV-W422 -081793				-03
		STP-W410 -081793				-04
		STP-W410D -081793				-04 94
		STP-W410MS -081793				-04 MS
		STP-W410MSD -081793				-04 SD
		STP-W410FB -081793				-04 FB
		STP-W410FBD -081793				-04 FD
8-17-93		GTF-SFR-081793	1X 2 AMBER	2	PPB PAH	-05

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY	[illegible]
METHOD OF SHIPMENT	FED EX
AIRBILL NUMBER	
RECEIVED FOR LAB	
SIGNED	[illegible]
DATE/TIME	
ENSECO PROJECT NUMBER	30724

RECEIVED
AUG 18 1993
INTO THE CUSTODY OF ENSECO-RMAL
BY:

ENS—4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

SAMPLE DESCRIPTION INFORMATION
for
City of St. Louis Park

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
030724-0001-SA	DPV-W420-081793	AQUEOUS	17 AUG 93		18 AUG 93
030724-0002-SA	DPV-W421-081793	AQUEOUS	17 AUG 93		18 AUG 93
030724-0003-SA	DPV-W422-081793	AQUEOUS	17 AUG 93		18 AUG 93
030724-0004-SA	STP-W410-081793	AQUEOUS	17 AUG 93		18 AUG 93
030724-0004-DU	STP-W410D-081793	AQUEOUS	17 AUG 93		18 AUG 93
030724-0004-MS	STP-W410MS-081793	AQUEOUS	17 AUG 93		18 AUG 93
030724-0004-SD	STP-W410MSD-081793	AQUEOUS	17 AUG 93		18 AUG 93
030724-0004-FB	STP-W410FB-081793	AQUEOUS	17 AUG 93		18 AUG 93
030724-0004-FD	STP-W410FBD-081793	AQUEOUS	17 AUG 93		18 AUG 93
030724-0005-SA	GTF-SFR-081793	AQUEOUS	17 AUG 93		18 AUG 93

SUMMARY

DATA

PACKAGE

FOR

City of Saint Louis Park

RMAL No: 30724

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

30724-01

DPV-W420-081793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30724-01

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R6077

Level: (low/med) LOW Date Received: 08/18/93

% Moisture: not dec. dec. Date Extracted: 08/22/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 09/29/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 19.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	190	U
496-11-7	2,3-Dihydroindene	200	
95-13-6	1H-Indene	69	J
91-20-3	Naphthalene	1300	
4565-32-6	Benzo(B)Thiophene	75	J
91-22-5	Quinoline	190	U
120-72-9	1H-Indole	190	U
91-57-6	2-Methylnaphthalene	46	J
90-12-0	1-Methylnaphthalene	48	J
92-52-4	Biphenyl	190	U
208-96-8	Acenaphthylene	190	U
83-32-9	Acenaphthene	52	J
132-64-9	Dibenzofuran	190	U
86-73-7	Fluorene	190	U
132-65-0	Dibenzothiophene	190	U
85-01-8	Phenanthrene	190	U
120-12-7	Anthracene	190	U
260-94-6	Acridine	190	U
86-74-8	Carbazole	35	J
206-44-0	Fluoranthene	190	U
129-00-0	Pyrene	190	U
56-55-3	Benzo(A)Anthracene	190	U
218-01-9	Chrysene	190	U
205-99-2	Benzo(B)Fluoranthene	190	U
207-08-9	Benzo(K)Fluoranthene	190	U
192-97-2	Benzo(E)Pyrene	190	U
50-32-8	Benzo(A)Pyrene	190	U
198-55-0	Perylene	190	U
193-39-5	Indeno(1,2,3-CD)Pyrene	190	U
53-70-3	Dibenz(A,H)Anthracene	190	U
191-24-2	Benzo(G,H,I)Perylene	190	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

30724-02

DPV-W421-081793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30724-02

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R6078

Level: (low/med) LOW Date Received: 08/18/93

% Moisture: not dec. dec. Date Extracted: 08/22/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 09/29/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 15.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	160	U
496-11-7	2,3-Dihydroindene	120	J
95-13-6	1H-Indene	72	J
91-20-3	Naphthalene	680	
4565-32-6	Benzo(B)Thiophene	61	J
91-22-5	Quinoline	160	U
120-72-9	1H-Indole	160	U
91-57-6	2-Methylnaphthalene	160	U
90-12-0	1-Methylnaphthalene	33	J
92-52-4	Biphenyl	160	U
208-96-8	Acenaphthylene	160	U
83-32-9	Acenaphthene	35	J
132-64-9	Dibenzofuran	160	U
86-73-7	Fluorene	160	U
132-65-0	Dibenzothiophene	160	U
85-01-8	Phenanthrene	160	U
120-12-7	Anthracene	160	U
260-94-6	Acridine	160	U
86-74-8	Carbazole	24	J
206-44-0	Fluoranthene	160	U
129-00-0	Pyrene	160	U
56-55-3	Benzo(A)Anthracene	160	U
218-01-9	Chrysene	160	U
205-99-2	Benzo(B)Fluoranthene	160	U
207-08-9	Benzo(K)Fluoranthene	160	U
192-97-2	Benzo(E)Pyrene	160	U
50-32-8	Benzo(A)Pyrene	160	U
198-55-0	Perylene	160	U
193-39-5	Indeno(1,2,3-CD)Pyrene	160	U
53-70-3	Dibenz(A,H)Anthracene	160	U
191-24-2	Benzo(G,H,I)Perylene	160	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

30724-03

DPV-W422-081793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30724-03

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R6069

Level: (low/med) LOW Date Received: 08/18/93

% Moisture: not dec. dec. Date Extracted: 08/22/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 09/29/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.82

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	8	U
496-11-7	2,3-Dihydroindene	63	
95-13-6	1H-Indene	8	U
91-20-3	Naphthalene	8.3	
4565-32-6	Benzo(B)Thiophene	0.9	J
91-22-5	Quinoline	8	U
120-72-9	1H-Indole	8	U
91-57-6	2-Methylnaphthalene	8	U
90-12-0	1-Methylnaphthalene	8	U
92-52-4	Biphenyl	8	U
208-96-8	Acenaphthylene	8	U
83-32-9	Acenaphthene	7.4	J
132-64-9	Dibenzofuran	8	U
86-73-7	Fluorene	8	U
132-65-0	Dibenzothiophene	8	U
85-01-8	Phenanthrene	8	U
120-12-7	Anthracene	8	U
260-94-6	Acridine	8	U
86-74-8	Carbazole	1.5	J
206-44-0	Fluoranthene	8	U
129-00-0	Pyrene	8	U
56-55-3	Benzo(A)Anthracene	8	U
218-01-9	Chrysene	8	U
205-99-2	Benzo(B)Fluoranthene	8	U
207-08-9	Benzo(K)Fluoranthene	8	U
192-97-2	Benzo(E)Pyrene	8	U
50-32-8	Benzo(A)Pyrene	8	U
198-55-0	Perylene	8	U
193-39-5	Indeno(1,2,3-CD)Pyrene	8	U
53-70-3	Dibenz(A,H)Anthracene	8	U
191-24-2	Benzo(G,H,I)Perylene	8	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

30724-04

STP-W410-081793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30724-04

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R6070

Level: (low/med) LOW Date Received: 08/18/93

% Moisture: not dec. dec. Date Extracted: 08/22/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 09/29/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.74

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	7	U
496-11-7	2,3-Dihydroindene	8.5	
95-13-6	1H-Indene	1.9	J
91-20-3	Naphthalene	7	U
4565-32-6	Benzo(B)Thiophene	1.0	J
91-22-5	Quinoline	7	U
120-72-9	1H-Indole	7	U
91-57-6	2-Methylnaphthalene	7	U
90-12-0	1-Methylnaphthalene	7	U
92-52-4	Biphenyl	7	U
208-96-8	Acenaphthylene	7	U
83-32-9	Acenaphthene	0.9	J
132-64-9	Dibenzofuran	7	U
86-73-7	Fluorene	7	U
132-65-0	Dibenzothiophene	7	U
85-01-8	Phenanthrene	7	U
120-12-7	Anthracene	7	U
260-94-6	Acridine	7	U
86-74-8	Carbazole	7	U
206-44-0	Fluoranthene	7	U
129-00-0	Pyrene	7	U
56-55-3	Benzo(A)Anthracene	7	U
218-01-9	Chrysene	7	U
205-99-2	Benzo(B)Fluoranthene	7	U
207-08-9	Benzo(K)Fluoranthene	7	U
192-97-2	Benzo(E)Pyrene	7	U
50-32-8	Benzo(A)Pyrene	7	U
198-55-0	Perylene	7	U
193-39-5	Indeno(1,2,3-CD)Pyrene	7	U
53-70-3	Dibenz(A,H)Anthracene	7	U
191-24-2	Benzo(G,H,I)Perylene	7	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

30724-04DU

STP-W410D-081793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30724-04DU

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R6071

Level: (low/med) LOW Date Received: 08/18/93

% Moisture: not dec. dec. Date Extracted: 08/22/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 09/29/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.80

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	8	U
496-11-7	2,3-Dihydroindene	9.1	
95-13-6	1H-Indene	2.1	J
91-20-3	Naphthalene	8	U
4565-32-6	Benzo(B)Thiophene	1.1	J
91-22-5	Quinoline	8	U
120-72-9	1H-Indole	8	U
91-57-6	2-Methylnaphthalene	8	U
90-12-0	1-Methylnaphthalene	8	U
92-52-4	Biphenyl	8	U
208-96-8	Acenaphthylene	8	U
83-32-9	Acenaphthene	1.1	J
132-64-9	Dibenzofuran	8	U
86-73-7	Fluorene	8	U
132-65-0	Dibenzothiophene	8	U
85-01-8	Phenanthrene	8	U
120-12-7	Anthracene	8	U
260-94-6	Acridine	8	U
86-74-8	Carbazole	8	U
206-44-0	Fluoranthene	8	U
129-00-0	Pyrene	8	U
56-55-3	Benzo(A)Anthracene	8	U
218-01-9	Chrysene	8	U
205-99-2	Benzo(B)Fluoranthene	8	U
207-08-9	Benzo(K)Fluoranthene	8	U
192-97-2	Benzo(E)Pyrene	8	U
50-32-8	Benzo(A)Pyrene	8	U
198-55-0	Perylene	8	U
193-39-5	Indeno(1,2,3-CD)Pyrene	8	U
53-70-3	Dibenz(A,H)Anthracene	8	U
191-24-2	Benzo(G,H,I)Perylene	8	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

30724-04FB

STP-W410FB-081793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30724-04FB

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R6072

Level: (low/med) LOW Date Received: 08/18/93

% Moisture: not dec. dec. Date Extracted: 08/22/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 09/29/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.84

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	8	U
496-11-7	2,3-Dihydroindene	8	U
95-13-6	1H-Indene	8	U
91-20-3	Naphthalene	8	U
4565-32-6	Benzo(B)Thiophene	8	U
91-22-5	Quinoline	8	U
120-72-9	1H-Indole	8	U
91-57-6	2-Methylnaphthalene	8	U
90-12-0	1-Methylnaphthalene	8	U
92-52-4	Biphenyl	8	U
208-96-8	Acenaphthylene	8	U
83-32-9	Acenaphthene	8	U
132-64-9	Dibenzofuran	8	U
86-73-7	Fluorene	8	U
132-65-0	Dibenzothiophene	8	U
85-01-8	Phenanthrene	8	U
120-12-7	Anthracene	8	U
260-94-6	Acridine	8	U
86-74-8	Carbazole	8	U
206-44-0	Fluoranthene	8	U
129-00-0	Pyrene	8	U
56-55-3	Benzo(A)Anthracene	8	U
218-01-9	Chrysene	8	U
205-99-2	Benzo(B)Fluoranthene	8	U
207-08-9	Benzo(K)Fluoranthene	8	U
192-97-2	Benzo(E)Pyrene	8	U
50-32-8	Benzo(A)Pyrene	8	U
198-55-0	Perylene	8	U
193-39-5	Indeno(1,2,3-CD)Pyrene	8	U
53-70-3	Dibenz(A,H)Anthracene	8	U
191-24-2	Benzo(G,H,I)Perylene	8	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

30724-04MS

STP-W410MS-081793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30724-04MS

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R6074

Level: (low/med) LOW Date Received: 08/18/93

% Moisture: not dec. dec. Date Extracted: 08/22/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 09/29/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.83

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	8	U
496-11-7	2,3-Dihydroindene	9.1	
95-13-6	1H-Indene	60	
91-20-3	Naphthalene	38	
4565-32-6	Benzo(B)Thiophene	1.0	J
91-22-5	Quinoline	32	
120-72-9	1H-Indole	8	U
91-57-6	2-Methylnaphthalene	40	
90-12-0	1-Methylnaphthalene	8	U
92-52-4	Biphenyl	8	U
208-96-8	Acenaphthylene	8	U
83-32-9	Acenaphthene	1.0	J
132-64-9	Dibenzofuran	8	U
86-73-7	Fluorene	43	
132-65-0	Dibenzothiophene	8	U
85-01-8	Phenanthrene	8	U
120-12-7	Anthracene	8	U
260-94-6	Acridine	8	U
86-74-8	Carbazole	8	U
206-44-0	Fluoranthene	8	U
129-00-0	Pyrene	8	U
56-55-3	Benzo(A)Anthracene	8	U
218-01-9	Chrysene	34	
205-99-2	Benzo(B)Fluoranthene	8	U
207-08-9	Benzo(K)Fluoranthene	8	U
192-97-2	Benzo(E)Pyrene	28	
50-32-8	Benzo(A)Pyrene	8	U
198-55-0	Perylene	8	U
193-39-5	Indeno(1,2,3-CD)Pyrene	8	U
53-70-3	Dibenz(A,H)Anthracene	8	U
191-24-2	Benzo(G,H,I)Perylene	8	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

30724-04MSD

STP-W410MSD-081793

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 30724-04MSD

Sample wt/vol: 1050 (g/mL) ML Lab File ID: R6075

Level: (low/med) LOW Date Received: 08/18/93

% Moisture: not dec. dec. Date Extracted: 08/22/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 09/29/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.85

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	8	U
496-11-7	2,3-Dihydroindene	8.6	
95-13-6	1H-Indene	57	
91-20-3	Naphthalene	33	
4565-32-6	Benzo(B)Thiophene	1.0	J
91-22-5	Quinoline	30	
120-72-9	1H-Indole	8	U
91-57-6	2-Methylnaphthalene	37	
90-12-0	1-Methylnaphthalene	8	U
92-52-4	Biphenyl	8	U
208-96-8	Acenaphthylene	8	U
83-32-9	Acenaphthene	1.0	J
132-64-9	Dibenzofuran	8	U
86-73-7	Fluorene	41	
132-65-0	Dibenzothiophene	8	U
85-01-8	Phenanthrene	8	U
120-12-7	Anthracene	8	U
260-94-6	Acridine	8	U
86-74-8	Carbazole	8	U
206-44-0	Fluoranthene	8	U
129-00-0	Pyrene	8	U
56-55-3	Benzo(A)Anthracene	8	U
218-01-9	Chrysene	32	
205-99-2	Benzo(B)Fluoranthene	8	U
207-08-9	Benzo(K)Fluoranthene	8	U
192-97-2	Benzo(E)Pyrene	27	
50-32-8	Benzo(A)Pyrene	8	U
198-55-0	Perylene	8	U
193-39-5	Indeno(1,2,3-CD)Pyrene	8	U
53-70-3	Dibenz(A,H)Anthracene	8	U
191-24-2	Benzo(G,H,I)Perylene	8	U

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Level: LOW

	EPA SAMPLE NO.	S1 (NAP) #	S2 (FLU) #	S3 (CHR) #
1	30724-01	D	D	D
2	30724-02	D	D	D
3	30724-03	63	53	53
4	30724-04	68	56	35
5	30724-04DU	72	60	40
6	30724-04FB	69	57	85
7	30724-04MS	70	57	53
8	30724-04MSD	67	54	48
9	30724-05	70	59	59
10	30724-05DL	70	56	56
11	BLK01	66	53	79

	QC LIMITS
S1 (NAP) = D8-NAPHTHALENE	(25-175)
S2 (FLU) = D10-FLUORENE	(25-175)
S3 (CHR) = D12-CHRYSENE	(25-175)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Matrix Spike Sample No.: 30724-04 LEVEL: LOW

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC
1H-Indene	47.6	1.87	60.4	123*
Naphthalene	47.6	ND	38.1	80
Quinoline	47.6	ND	31.7	67
2-Methylnaphthalene	47.6	ND	40.2	84
Fluorene	47.6	ND	43.2	91
Chrysene	47.6	ND	34.5	72
Benzo(E)Pyrene	47.6	ND	27.7	58

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD
1H-Indene	47.6	56.6	115*	7
Naphthalene	47.6	33.2	70	13
Quinoline	47.6	29.9	63	6
2-Methylnaphthalene	47.6	37.3	78	7
Fluorene	47.6	40.6	85	7
Chrysene	47.6	32.0	67	7
Benzo(E)Pyrene	47.6	26.5	56	4

Comments:

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Lab File ID: R6066 Lab Sample ID: BLK01

Date Extracted: 08/22/93 Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 09/29/93 Time Analyzed: 1047

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: 4500-R

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	30724-01	30724-01	R6077	09/29/93
02	30724-02	30724-02	R6078	09/29/93
03	30724-03	30724-03	R6069	09/29/93
04	30724-04	30724-04	R6070	09/29/93
05	30724-04DU	30724-04DU	R6071	09/29/93
06	30724-04FB	30724-04FB	R6072	09/29/93
07	30724-04MS	30724-04MS	R6074	09/29/93
08	30724-04MSD	30724-04MSD	R6075	09/29/93
09	30724-05	30724-05	R6076	09/29/93
10	30724-05DL	30724-05DL	R6082	09/30/93

COMMENTS:

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BLK01

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 30724 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: BL082293

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R6066

Level: (low/med) LOW Date Received:

% Moisture: not dec. dec. Date Extracted: 08/22/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 09/29/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.83

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	8	U
496-11-7	2,3-Dihydroindene	8	U
95-13-6	1H-Indene	8	U
91-20-3	Naphthalene	8	U
4565-32-6	Benzo(B)Thiophene	8	U
91-22-5	Quinoline	8	U
120-72-9	1H-Indole	8	U
91-57-6	2-Methylnaphthalene	8	U
90-12-0	1-Methylnaphthalene	8	U
92-52-4	Biphenyl	8	U
208-96-8	Acenaphthylene	8	U
83-32-9	Acenaphthene	8	U
132-64-9	Dibenzofuran	8	U
86-73-7	Fluorene	8	U
132-65-0	Dibenzothiophene	8	U
85-01-8	Phenanthrene	8	U
120-12-7	Anthracene	8	U
260-94-6	Acridine	8	U
86-74-8	Carbazole	8	U
206-44-0	Fluoranthene	8	U
129-00-0	Pyrene	8	U
56-55-3	Benzo(A)Anthracene	8	U
218-01-9	Chrysene	8	U
205-99-2	Benzo(B)Fluoranthene	8	U
207-08-9	Benzo(K)Fluoranthene	8	U
192-97-2	Benzo(E)Pyrene	8	U
50-32-8	Benzo(A)Pyrene	8	U
198-55-0	Perylene	8	U
193-39-5	Indeno(1,2,3-CD)Pyrene	8	U
53-70-3	Dibenz(A,H)Anthracene	8	U
191-24-2	Benzo(G,H,I)Perylene	8	U

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No: 30724 SAS No.: SDG No:

Lab File ID (Standard): R6065 Date Analyzed: 09/29/93

Instrument ID: 4500-R Time Analyzed: 0914

		IS#1 (ACN) AREA #	IS#2 (PHN) AREA #	IS#3 (BAP) AREA #
	12 HOUR STD	23505	42400	22330
	UPPER LIMIT	47010	84800	44660
	LOWER LIMIT	11752	21200	11165
	SAMPLE NO.			
01	30724-01	22737	33709	16519
02	30724-02	23662	35181	16823
03	30724-03	24728	36884	17468
04	30724-04	16594	25947	13954
05	30724-04DU	23663	36428	18811
06	30724-04FB	22278	33589	17502
07	30724-04MS	18400	27416	13183
08	30724-04MSD	18429	26918	13308
09	30724-05	20459	30551	14947
10	BLK01	19310	28635	12709

IS#1 (ACN) = D10-ACENAPHTHENE
IS#2 (PHN) = D10-PHENANTHRENE
IS#3 (BAP) = D12-BENZO(A)PYRENE

UPPER LIMIT = + 100% of internal standard area
LOWER LIMIT = - 50% of internal standard area

Column used to flag internal standard area values with an asterisk

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No: 30724 SAS No.: SDG No:

Lab File ID (Standard): R6080 Date Analyzed: 09/30/93

Instrument ID: 4500-R Time Analyzed: 0931

		IS#1 (ACN) AREA #	IS#2 (PHN) AREA #	IS#3 (BAP) AREA #
	12 HOUR STD	22131	38922	21170
	UPPER LIMIT	44262	77844	42340
	LOWER LIMIT	11066	19461	10585
	SAMPLE NO.			
01	30724-05DL	23276	35174	17852

IS#1 (ACN) = D10-ACENAPHTHENE
IS#2 (PHN) = D10-PHENANTHRENE
IS#3 (BAP) = D12-BENZO(A)PYRENE

UPPER LIMIT = + 100% of internal standard area
LOWER LIMIT = - 50% of internal standard area

Column used to flag internal standard area values with an asterisk

PHENOLICS MONITORING

Rocky Mountain
Analytical Laboratory

Enseco
A Corning Company

October 28, 1993

Mr. James Grube
City of St. Louis Park
5005 Minnetonka Blvd.
St. Louis Park, MN 55416

Dear Mr Grube:

Enclosed is the ppb phenol report for 11 aqueous samples, including matrix QC, received at Enseco-Rocky Mountain Analytical laboratory on August 18, 1993.

Please call if you have any questions.

Sincerely,

Karen F. Germann

Karen F. Germann
Project Administrator

Reviewed by:

Julieann L. Kramer

Julieann L. Kramer
Program Manager

KFG/JLK
Enclosures

RMAL #030729

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Enseco
A Corning Company

SAMPLE DESCRIPTION INFORMATION
for
City of St. Louis Park

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
030729-0001-SA	PCJ-SLP4TP-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0002-SA	DPV-W420TP-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0003-SA	DPV-W421TP-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0004-SA	DPV-W422TP-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-SA	STP-W410TP-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-DU	STP-W410TPD-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-MS	STP-W410TPMS-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-SD	STP-W410TPMSD-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-FB	STP-W410TPFB-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0005-FD	STP-W410TPFBD-081793	AQUEOUS	17 AUG 93		18 AUG 93
030729-0006-SA	GTF-SFR-081793	AQUEOUS	17 AUG 93		18 AUG 93

Enseco
A Coming Company

ANALYTICAL TEST REQUESTS
for
City of St. Louis Park

Lab ID: 030729	Group Code	Analysis Description	Custom Test?
0001 - 0005, 0005 , 0005, 0006	A	Phenolics (4-AAP)	N

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.:30729_

SOW No.: 7/88_

EPA Sample No.	Lab Sample ID
DPV-W42	3072902
DPV-W42	3072903
DPV-W42	3072904
GTF-SFR	3072906
PCJ-SLP	3072901
STP-W41	3072905
STP-W41	3072905D
STP-W41	3072905SD
STP-W41	3072905S
STP-W41	3072905FD
STP-W41	3072905FB

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:
SIX WATER SAMPLES FOR PHENOLIC ANALYSIS.
DUE TO ANALYST ERROR, AN ICB WAS NOT ANALYZED - REANALYSIS WOULD HAVE OCCURED OUTSIDE OF HOLDING TIMES AND THUS, WAS NOT PERFORMED. ALL CCBS WERE LESS THAN THE CRDL.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Will Pratt Name: Will Pratt

Date: 10/27/93 Title: Group Leader, Inorganics

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DPV-W420TP-

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Matrix (soil/water): WATER Lab Sample ID: 3072902___

Level (low/med): LOW__ Date Received: 08/18/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	136			C_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
EPA_SAMPLE_DPV-W420TP-081793

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DPV-W421TP-

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Matrix (soil/water): WATER Lab Sample ID: 3072903___

Level (low/med): LOW__ Date Received: 08/18/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	32.0			C_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
EPA_SAMPLE_DPV-W421TP-081793

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DPV-W422TP-

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Matrix (soil/water): WATER Lab Sample ID: 3072904___

Level (low/med): LOW__ Date Received: 08/18/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	16.0			C_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
EPA_SAMPLE_DPV-W422TP-081793

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

STP-W410TP-

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Matrix (soil/water): WATER Lab Sample ID: 3072905___

Level (low/med): LOW__ Date Received: 08/18/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	14.0			C_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
EPA_SAMPLE_STP-W410TP-081793

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

STP-W410TPFB

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Matrix (soil/water): WATER Lab Sample ID: 3072905FD_

Level (low/med): LOW__ Date Received: 08/18/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	5.0	U		C_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
EPA_SAMPLE_STP-W410TPFBD-081793

FORM I - IN

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

STP-W410TPFB

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Matrix (soil/water): WATER Lab Sample ID: 3072905FB_

Level (low/med): LOW__ Date Received: 08/18/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	5.0	U		C_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
EPA_SAMPLE_STP-W410TPFB-081793

FORM I - IN

7/88

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Initial Calibration Source: SEE ADDENDUM

Continuing Calibration Source: SEE ADDENDUM

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Phenolics	200.0	198.00	99.0	20.0	20.50	102.5	20.50	102.5	C

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

3
BLANKS

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Phenolics			5.0	U	5.0	U			5.0	U	C

FORM III - IN

7/88

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__ STP-W410TP-

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Matrix: __WATER_____ Level (low/med): _LOW____

% Solids for Sample: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Phenolics	75-125	210.0000		14.0000		200.00	98.0		C

Comments:
EPA_SAMPLE_STP-W410TPMS-081793

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract:CITY_SLP__ STP-W410TP-

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Matrix: __WATER_____ Level (low/med): _LOW____

% Solids for Sample: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Phenolics	75-125	185.0000		14.0000		200.00	85.5		C

Comments:
EPA_SAMPLE_STP-W410TPMSD-081793

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

STP-W410TP-

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Matrix (soil/water): WATER Level (low/med): _LOW__

% Solids for Sample: __0.0 % Solids for Duplicate: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Phenolics	5.0	14.0000		13.0000		7.4		C

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 30729_

Solid LCS Source: ERA LOT 213_

Aqueous LCS Source: SEE ADDENDUM

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Phenolics	200.0	193.00	96.5						

U.S. EPA - CLP

13
PREPARATION LOG

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.:_____ SAS No.: _____ SDG No.:30729_

Method: C_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
DPV-W42	09/13/93		200
DPV-W42	09/13/93		200
DPV-W42	09/13/93		200
GTF-SFR	09/13/93		200
LCSW	09/13/93		200
PBW	09/13/93		200
PCJ-SLP	09/13/93		200
STP-W41	09/13/93		200
STP-W41	09/13/93		200
STP-W41	09/13/93		200
STP-W41	09/13/93		200
STP-W41	09/13/93		200
STP-W41	09/13/93		200

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.:30729_

Instrument ID Number: SPEC 88_____ Method: C_

Start Date: 09/14/93 End Date: 09/14/93

EPA Sample No.	D/F	Time	% R	Analytes PH
S0.0	1.00	1912		X
S5.0	1.00	1912		X
S10.0	1.00	1913		X
S20.0	1.00	1913		X
S50.0	1.00	1914		X
S100.0	1.00	1914		X
PBW	1.00	1915		X
ICV	5.00	1915		X
LCSW	5.00	1916		X
3072901	1.00	1916		X
3072902	2.00	1917		X
3072903	1.00	1917		X
3072904	1.00	1918		X
3072905	1.00	1918		X
3072906	1.00	1919		X
3072905D	1.00	1919		X
3072905F	1.00	1920		X
3072905F	1.00	1920		X
3072905S	5.00	1921		X
CCV	1.00	1921		X
CCB	1.00	1922		X
3072905S	5.00	1922		X
CCV	1.00	1923		X
CCB	1.00	1923		X

U.S. EPA - CLP

ADDENDUM

STOCK STANDARD SOURCES

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY__SLP____

Lab Code: ENSECO Case No.: _____ SAS No.: N/A___ SDG No.: 30729_

STANDARD	SOURCE/LOT	EXPIRATION DATE
CALIBRATION	LabChem 3102-6	4/8/95
ICV SOLUTION	Ricca F148	2/95
CCV SOLUTION	(same as calibration source above)	
LCS SOLUTION	(same as ICV solution above)	
MATRIX SPIKE SOLUTION	(same as ICV solution above)	

INORGANIC NONMETALS SAMPLE PREPARATION

PARAMETER Phenol ANALYST [illegible] DATE 9-13-93

SAMPLE	PH	BOTTLE TYPE	INTERFERENCE CHECKS SAMPLE PRETREATMENT	INITIAL WT OR VOL	FINAL WT OR VOL	PREP D.F.
BLANK				200	200	
OCS 1			#7352 0.20mg/L			
OCS 2			" "			
30729-01	<2	#2				
02			2ml Copper Sulfate			
03			50% H_2SO_4 added			
04	>2					
05	<2					
05DU						
05FB						
05FD						
05MS			#7352 0.20mg/L			
05SD			"			
06						

COLORIMETRIC ANALYSIS

RAMETER Prod - CLP A CONTROL #7352 DATE 09-~~15~~ 14 93 STM

LYST STM SPIKE 0.20 UNITS mg/L

	Concentration	Absorbance
Blank	0.000	0.058
STD 1	0.005	0.075
STD 2	0.010	0.101
STD 3	0.020	0.123
STD 4	0.050	0.190
STD 5	0.100	0.358

Corr. Coef. = 0.99810

Slope = 2.922

Intercept = 0.06206

SAMPLE ID	BOTL. TYPE	pH	INTER CHECK	ABSORBANCE SAMPLE	ABSORBANCE COLOR B	CURVE CONC.	DILUTIONS PREP	DILUTIONS ANALYT	REPORTED CONC.	% REC.
BLANK (Prep)				0.051		ND	1x	1x	ND (0.005)	→ Prep?
ICV/DCS				0.178	STM 09-14-93	~~0.040~~ 0.0396		5x	0.198 (0.200)	99% No ZHB
ICV/DCS				0.175		0.0386		5x	0.193 (0.200)	97%
ICV/DCS				—		—		—	—	
30729-01				0.062		ND		1x	ND (0.005)	
-02				0.260		0.068		2x	~~0.136~~ (0.010)	0.135
-03				0.155		0.032		1x	0.032 (0.005)	
-04				0.109		0.016			0.016 (0.005)	
-05				0.102		0.014			0.014 (0.005)	
-06				0.304		0.083			0.083 (0.005)	
-05DV				0.100		0.013			0.013 (0.005)	
-05FB				0.068		ND			ND (0.005)	
-05FD				0.060		ND			ND (0.005)	
-05MS				0.184		0.042		5x	0.210 (0.200)	
CCV (0.020)				0.122		0.0205		1x	0.0205	102%
CCB				0.058		ND		1x	ND (0.005)	
30729-05SD				0.170		0.037		5x	0.185 (0.200)	
CV				0.122		0.0205		1x	0.0205	102%
CB				0.058		ND		1x	ND (0.005)	
CV										
CB										

Enseco
A Corning Company

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303/421-6611 FAX: 303/431-7171

☐ Enseco Houston
1420 East North Drive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT	City of St Louis Park (Water Dept)
PROJECT	
SAMPLING COMPANY	Same
SAMPLING SITE	Same
TEAM LEADER	MZB

SAMPLE SAFE™ CONDITIONS

PACKED BY	MZB
SEAL NUMBER	
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY	
CONDITION OF CONTENTS	
SEALED FOR SHIPPING BY	MZB
INITIAL CONTENTS TEMP.	°C
SEAL NUMBER	
SAMPLING STATUS	☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB	☐ Yes ☐ No
CONTENTS TEMPERATURE UPON RECEIPT BY LAB	°C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
8-17-93		PCJ-SLP4TP-081793	1XLAMBER	1	PPB Phenolics	-01
		DPV-W420TP-081793				-02
		DPV-W421TP-081793				-03
		DPV-W422TP-081793				-04
		STP-W410TP-081793				-05
		STP-W410TPD-081793				-05 DU
		STP-W410TPMS-081793				-05 MS
		STP-W410TPMSD-081793				-05 SD
		STP-W410TPFB-081793				-05 FB
		STP-W410TPFBD-081793				-05 FD
8-17-93		GTF-SFR-081793	1XLAMBER	1	PPB Phenolics	-06

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY	MZB
METHOD OF SHIPMENT	FED EX
AIRBILL NUMBER	210342
RECEIVED FOR LAB	
SIGNED	[signature]
ENSECO PROJECT NUMBER	30729

RECEIVED AUG 18 1993 INTO THE CUSTODY OF ENSECO-RMAL, INC.

ENS-4011

White - CLIENT Pink - LAB

000025

4TH QUARTER MONITORING

PAH MONITORING

Rocky Mountain
Analytical Laboratory

Enseco
A Corning Company

CASE NARRATIVE

FOR

City of St. Louis Park

October 28, 1993

Enseco - RMAL Project Number 031655

Introduction

Ten aqueous samples (includes QC) were received at Enseco Rocky Mountain Analytical Laboratory on October 13, 1993. The samples were logged in under RMAL project number 031655. A cross reference associating the RMAL sample numbers to the actual field sample numbers is included. Sample DPV-W420FBD-101293 was extracted and held per the April 1990 QAPP. The samples were analyzed for part-per-billion (ppb) polynuclear aromatic hydrocarbons (PAH).

Data Quality Assessment

The results contained in this report were reviewed relative to data acceptance criteria as specified in the April, 1990 QAPP for completeness, precision, accuracy, representativeness and defensibility of the data. Unless otherwise stated below, no quality control problems or technical difficulties were encountered which would impact the interpretation or use of data in this report.

PPB PAH

Samples 031655-0001, -0002, and -0001DU showed target compounds above the upper calibration range. The samples were analyzed at dilutions. Both the original and reanalysis data are reported for each sample.

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4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

031655-0001MS and -0001SD matrix spike recoveries were outside of advisory limits for Naphthalene, and 1H-Indene. Sample 031655-0001 had concentrations of naphthalene above instrument linear range. The recovery of 1H-Indene in sample 031655-0001MS was just below QC limits. Quantitation was checked and no further action was taken.

This data package is in compliance with the terms and conditions of the 1990 QAPP, both technically and for completeness, for other than the conditions detailed above.

Reported by: Karen F. Germann **Date:** October 28, 1993
Karen F. Germann
Project Administrator

Approved by: Julieann L. Kramer **Date:** October 28 1993
Julieann L. Kramer
Program Manager

Enseco
A Corning Company

SAMPLE DESCRIPTION INFORMATION
for
City of St. Louis Park

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
031655-0001-SA	DPV-W420-101293	AQUEOUS	12 OCT 93		13 OCT 93
031655-0001-DU	DPV-W420D-101293	AQUEOUS	12 OCT 93		13 OCT 93
031655-0001-SD	DPV-W420MSD-101293	AQUEOUS	12 OCT 93		13 OCT 93
031655-0001-MS	DPV-W420MS-101293	AQUEOUS	12 OCT 93		13 OCT 93
031655-0001-FB	DPV-W420FB-101293	AQUEOUS	12 OCT 93		13 OCT 93
031655-0001-FD	DPV-W420FBD-101293	AQUEOUS	12 OCT 93		13 OCT 93
031655-0002-SA	DPV-W421-101293	AQUEOUS	12 OCT 93		13 OCT 93
031655-0003-SA	DPV-W422-101293	AQUEOUS	12 OCT 93		13 OCT 93
031655-0004-SA	STP-W410-101293	AQUEOUS	12 OCT 93		13 OCT 93
031655-0005-SA	GTF-SFR-101293	AQUEOUS	12 OCT 93		13 OCT 93
031655-0006-SA	GTF-ACFE-101293	AQUEOUS	12 OCT 93		13 OCT 93

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A Coming Company

ANALYTICAL TEST REQUESTS
for
City of St. Louis Park

Lab ID: 031655	Group Code	Analysis Description	Custom Test?
0001 , 0001, 0002 - 0006	A	CLP/PAH Semivolatile Organics High Level PPB	N
		CLP Prep - PAH Semivolatile Organics by GC/MS High Level PPB	N
0001	B	CLP Prep - PAH Semivolatile Organics by GC/MS High Level PPB	N

Rocky Mountain
Analytical Laboratory

Enseco
A Corning Company

Qualifier Codes and Their Usage

U = Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture.

J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration of 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for dilution as discussed for the U flag.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results.

P = This flag is used for a pesticide/Aroclor target analyte when there is greater then 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

C = This flag applies to pesticide results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, do not apply this flag, instead use a laboratory-defined flag, discussed below.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified target compound.

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E = This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. If one or more compounds have a response greater than full scale, except as noted in Exhibit D, the sample or extract must be diluted and re-analyzed accordingly to the specifications in Exhibit D. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate copies of Form I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number. NOTE: For total xylenes, where three isomers are quantified as two peaks, the calibration range of each peak should be considered separately, e.g., a diluted analysis is not required for total xylenes unless the concentration of either peak separately exceeds 200 ug/L.

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag. This flag alerts data users that any discrepancies between the concentrations reported may be due to dilution of the sample or extract.

A = This flag indicates that a TIC is a suspected aldol-condensation product.

X = Other specific flags may be required to properly define the results. If used, they must be fully described, and such description attached to the Sample Data Summary Package and the SDG Narrative. Begin by using "X". If more than one flag is required, use "Y" and "Z" as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample. The laboratory-defined flags are limited to the letters "X", "Y", and "Z".

R = This flag is used for polyaromatic hydrocarbons which show target compounds that do not meet secondary ion confirmation. In some instances a compound that does not meet secondary ion confirmation criteria may still be determined to be present in the sample after close inspection of the data by the analyst. Supportive data includes mass chromatograms maxima at the same scan for primary and secondary ions, as well as discernible quantitation interference with the secondary ion.

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CHAIN OF CUSTODY

ENSECO CLIENT: CITY OF ST LOUIS PARK WATER DEPT	SAMPLE SAFE™ CONDITIONS — PACKED BY: [illegible]
PROJECT:	SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:
SAMPLING COMPANY: SAME	SEALED FOR SHIPPING BY: [illegible]
SAMPLING SITE: SAME	SEAL NUMBER:
TEAM LEADER: [illegible]	SEAL INTACT UPON RECEIPT BY LAB: ☑ Yes ☐ No

SEAL NUMBER:
CONDITION OF CONTENTS:
INITIAL CONTENTS TEMP: °C
SAMPLING STATUS: ☐ Done ☐ Continuing Until
CONTENTS TEMPERATURE UPON RECEIPT BY LAB: 13.4 °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
10-12-93		DPV-W420-101293	1XL AMBER	2	PPB PAH	-01
		DPV-W420D-101293				-01D
		DPV-W420MS-101293				-01MS
		DPV-W420MSD-101293				-01SD
		DPV-W420FB-101293				-01FB
		DPV-W420FBD-101293				-01FD
		DPV-W421-101293				-02
		DPV-W422-101293				-03
		STP-W410-101293				-04
10-12-93		ETF-SFR-101293	1XL AMBER	2	PPB PAH	-05

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: [illegible]
METHOD OF SHIPMENT: FED EX
AIRBILL NUMBER: 2103420874
RECEIVED FOR LAB: RMAL
SIGNED: [illegible]
DATE/TIME: 10/13/93 830
ENSECO PROJECT NUMBER: 31655

ENS-4011

White - CLIENT Pink - LAB

Enseco
A Corning Company

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☐ Enseco Houston
1420 East North [illegible]rive
Suite 120
Houston, TX 77032
713/987-9767 FAX: 713/987-9769

CHAIN OF CUSTODY

ENSECO CLIENT: CITY OF ST LOUIS PARK WATER DEPT

PROJECT:

SAMPLING COMPANY: SAME

SAMPLING SITE: SAME

TEAM LEADER: MZB

SAMPLE SAFE™ CONDITIONS

PACKED BY: MZB

SEAL NUMBER:

SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:

CONDITION OF CONTENTS:

SEALED FOR SHIPPING BY: MZB

INITIAL CONTENTS TEMP: °C

SEAL NUMBER:

SAMPLING STATUS: ☐ Done ☐ Continuing Until

SEAL INTACT UPON RECEIPT BY LAB: ☑ Yes ☐ No

CONTENTS TEMPERATURE UPON RECEIPT BY LAB: 9.5 °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
10-12-93		ETF-ACFE-101293	1XL AMBER	2	PPB PAH	-06

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: MZB

METHOD OF SHIPMENT: FED EX

AIRBILL NUMBER: 2103420374

RECEIVED FOR LAB: PMAL

SIGNED: [illegible]

DATE/TIME: 10/13/93 830

ENSECO PROJECT NUMBER: 31655

ENS—4011

White – CLIENT Pink – LAB

SUMMARY

DATA

PACKAGE

FOR

CITY OF SAINT LOUIS PARK

RMAL NO: 31655

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-04

DPV-W410-101293

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-04

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6476

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/21/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.952

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	10	J
95-13-6	1H-Indene	2	J
91-20-3	Naphthalene	10	U
4565-32-6	Benzo(B)Thiophene	1	J
91-22-5	Quinoline	10	U
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	10	U
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	1	J
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	10	U
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-03

Lab Name: ENSECO Contract No.:

DPV-W422-101293

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-03

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6475

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/21/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.952

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	54	
95-13-6	1H-Indene	10	U
91-20-3	Naphthalene	11	
4565-32-6	Benzo(B)Thiophene	10	U
91-22-5	Quinoline	10	U
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	10	U
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	8	J
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	1	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	10	U
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-01

DPV-W420-101293

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-01

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6488

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/22/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.90

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	24	
496-11-7	2,3-Dihydroindene	247	
95-13-6	1H-Indene	74	
91-20-3	Naphthalene	781	ET
4565-32-6	Benzo(B)Thiophene	86	
91-22-5	Quinoline	20	U
120-72-9	1H-Indole	20	U
91-57-6	2-Methylnaphthalene	53	
90-12-0	1-Methylnaphthalene	78	
92-52-4	Biphenyl	12	J
208-96-8	Acenaphthylene	20	U
83-32-9	Acenaphthene	64	
132-64-9	Dibenzofuran	19	J
86-73-7	Fluorene	22	
132-65-0	Dibenzothiophene	4	J
85-01-8	Phenanthrene	12	J
120-12-7	Anthracene	20	U
260-94-6	Acridine	20	U
86-74-8	Carbazole	29	
206-44-0	Fluoranthene	20	U
129-00-0	Pyrene	20	U
56-55-3	Benzo(A)Anthracene	20	U
218-01-9	Chrysene	20	U
205-99-2	Benzo(B)Fluoranthene	20	U
207-08-9	Benzo(K)Fluoranthene	20	U
192-97-2	Benzo(E)Pyrene	20	U
50-32-8	Benzo(A)Pyrene	20	U
198-55-0	Perylene	20	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	20	U
191-24-2	Benzo(G,H,I)Perylene	20	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-01DL

Lab Name: ENSECO Contract No.:

DPV-W420-101293

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-01DL

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6494

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/22/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 19.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	22	J
496-11-7	2,3-Dihydroindene	234	
95-13-6	1H-Indene	70	J
91-20-3	Naphthalene	1399	
4565-32-6	Benzo(B)Thiophene	85	J
91-22-5	Quinoline	190	U
120-72-9	1H-Indole	190	U
91-57-6	2-Methylnaphthalene	52	J
90-12-0	1-Methylnaphthalene	78	J
92-52-4	Biphenyl	190	U
208-96-8	Acenaphthylene	190	U
83-32-9	Acenaphthene	64	J
132-64-9	Dibenzofuran	190	U
86-73-7	Fluorene	21	J
132-65-0	Dibenzothiophene	190	U
85-01-8	Phenanthrene	190	U
120-12-7	Anthracene	190	U
260-94-6	Acridine	190	U
86-74-8	Carbazole	27	J
206-44-0	Fluoranthene	190	U
129-00-0	Pyrene	190	U
56-55-3	Benzo(A)Anthracene	190	U
218-01-9	Chrysene	190	U
205-99-2	Benzo(B)Fluoranthene	190	U
207-08-9	Benzo(K)Fluoranthene	190	U
192-97-2	Benzo(E)Pyrene	190	U
50-32-8	Benzo(A)Pyrene	190	U
198-55-0	Perylene	190	U
193-39-5	Indeno(1,2,3-CD)Pyrene	190	U
53-70-3	Dibenz(A,H)Anthracene	190	U
191-24-2	Benzo(G,H,I)Perylene	190	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-01DU

Lab Name: ENSECO Contract No.: DPV-W420D-101293

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-01DU

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6491

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/22/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.90

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	25	
496-11-7	2,3-Dihydroindene	259	
95-13-6	1H-Indene	78	
91-20-3	Naphthalene	767	ET
4565-32-6	Benzo(B)Thiophene	89	
91-22-5	Quinoline	20	U
120-72-9	1H-Indole	20	U
91-57-6	2-Methylnaphthalene	55	
90-12-0	1-Methylnaphthalene	82	
92-52-4	Biphenyl	12	J
208-96-8	Acenaphthylene	20	U
83-32-9	Acenaphthene	66	
132-64-9	Dibenzofuran	20	
86-73-7	Fluorene	23	
132-65-0	Dibenzothiophene	3	J
85-01-8	Phenanthrene	12	J
120-12-7	Anthracene	20	U
260-94-6	Acridine	20	U
86-74-8	Carbazole	30	
206-44-0	Fluoranthene	20	U
129-00-0	Pyrene	20	U
56-55-3	Benzo(A)Anthracene	20	U
218-01-9	Chrysene	20	U
205-99-2	Benzo(B)Fluoranthene	20	U
207-08-9	Benzo(K)Fluoranthene	20	U
192-97-2	Benzo(E)Pyrene	20	U
50-32-8	Benzo(A)Pyrene	20	U
198-55-0	Perylene	20	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	20	U
191-24-2	Benzo(G,H,I)Perylene	20	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-01DUDL

DPV-W420D-101293

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-01DUDL

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6495

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/22/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 19.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	21	J
496-11-7	2,3-Dihydroindene	231	
95-13-6	1H-Indene	69	J
91-20-3	Naphthalene	1380	
4565-32-6	Benzo(B)Thiophene	83	J
91-22-5	Quinoline	190	U
120-72-9	1H-Indole	190	U
91-57-6	2-Methylnaphthalene	50	J
90-12-0	1-Methylnaphthalene	76	J
92-52-4	Biphenyl	190	U
208-96-8	Acenaphthylene	190	U
83-32-9	Acenaphthene	62	J
132-64-9	Dibenzofuran	190	U
86-73-7	Fluorene	20	J
132-65-0	Dibenzothiophene	190	U
85-01-8	Phenanthrene	190	U
120-12-7	Anthracene	190	U
260-94-6	Acridine	190	U
86-74-8	Carbazole	27	J
206-44-0	Fluoranthene	190	U
129-00-0	Pyrene	190	U
56-55-3	Benzo(A)Anthracene	190	U
218-01-9	Chrysene	190	U
205-99-2	Benzo(B)Fluoranthene	190	U
207-08-9	Benzo(K)Fluoranthene	190	U
192-97-2	Benzo(E)Pyrene	190	U
50-32-8	Benzo(A)Pyrene	190	U
198-55-0	Perylene	190	U
193-39-5	Indeno(1,2,3-CD)Pyrene	190	U
53-70-3	Dibenz(A,H)Anthracene	190	U
191-24-2	Benzo(G,H,I)Perylene	190	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-01FB

Lab Name: ENSECO Contract No.:

DPV-W420FB-101293

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-01FB

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6474

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/21/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.952

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	10	U
95-13-6	1H-Indene	10	U
91-20-3	Naphthalene	10	U
4565-32-6	Benzo(B)Thiophene	10	U
91-22-5	Quinoline	10	U
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	10	U
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	10	U
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-02

DPV-W421-101293

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-02

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6478

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/21/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.90

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	20	U
496-11-7	2,3-Dihydroindene	146	
95-13-6	1H-Indene	78	
91-20-3	Naphthalene	467	E
4565-32-6	Benzo(B)Thiophene	67	
91-22-5	Quinoline	20	U
120-72-9	1H-Indole	20	U
91-57-6	2-Methylnaphthalene	6	J
90-12-0	1-Methylnaphthalene	51	
92-52-4	Biphenyl	7	
208-96-8	Acenaphthylene	20	U
83-32-9	Acenaphthene	39	
132-64-9	Dibenzofuran	8	
86-73-7	Fluorene	11	J
132-65-0	Dibenzothiophene	20	U
85-01-8	Phenanthrene	5	J
120-12-7	Anthracene	20	U
260-94-6	Acridine	20	U
86-74-8	Carbazole	21	
206-44-0	Fluoranthene	20	U
129-00-0	Pyrene	20	U
56-55-3	Benzo(A)Anthracene	20	U
218-01-9	Chrysene	20	U
205-99-2	Benzo(B)Fluoranthene	20	U
207-08-9	Benzo(K)Fluoranthene	20	U
192-97-2	Benzo(E)Pyrene	20	U
50-32-8	Benzo(A)Pyrene	20	U
198-55-0	Perylene	20	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	20	U
191-24-2	Benzo(G,H,I)Perylene	20	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-02DL

Lab Name: ENSECO Contract No.:

DPV-W421-101293

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-02DL

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6493

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/22/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 9.52

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	100	U
496-11-7	2,3-Dihydroindene	129	
95-13-6	1H-Indene	67	J
91-20-3	Naphthalene	648	
4565-32-6	Benzo(B)Thiophene	62	J
91-22-5	Quinoline	100	U
120-72-9	1H-Indole	100	U
91-57-6	2-Methylnaphthalene	100	U
90-12-0	1-Methylnaphthalene	47	J
92-52-4	Biphenyl	100	U
208-96-8	Acenaphthylene	100	U
83-32-9	Acenaphthene	36	J
132-64-9	Dibenzofuran	100	U
86-73-7	Fluorene	10	J
132-65-0	Dibenzothiophene	100	U
85-01-8	Phenanthrene	100	U
120-12-7	Anthracene	100	U
260-94-6	Acridine	100	U
86-74-8	Carbazole	18	J
206-44-0	Fluoranthene	100	U
129-00-0	Pyrene	100	U
56-55-3	Benzo(A)Anthracene	100	U
218-01-9	Chrysene	100	U
205-99-2	Benzo(B)Fluoranthene	100	U
207-08-9	Benzo(K)Fluoranthene	100	U
192-97-2	Benzo(E)Pyrene	100	U
50-32-8	Benzo(A)Pyrene	100	U
198-55-0	Perylene	100	U
193-39-5	Indeno(1,2,3-CD)Pyrene	100	U
53-70-3	Dibenz(A,H)Anthracene	100	U
191-24-2	Benzo(G,H,I)Perylene	100	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-05

GTF-SFR-101293

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-05

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6503

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/25/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.952

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	29	
95-13-6	1H-Indene	2	J
91-20-3	Naphthalene	10	U
4565-32-6	Benzo(B)Thiophene	7	J
91-22-5	Quinoline	10	U
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	10	U
90-12-0	1-Methylnaphthalene	8	J
92-52-4	Biphenyl	5	J
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	29	
132-64-9	Dibenzofuran	9	J
86-73-7	Fluorene	15	
132-65-0	Dibenzothiophene	2	J
85-01-8	Phenanthrene	6	J
120-12-7	Anthracene	10	U
260-94-6	Acridine	1	J
86-74-8	Carbazole	18	
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	10	U
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-06

GTF-ACFE-101293

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-06

Sample wt/vol: 1020 (g/mL) ML Lab File ID: X6477

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/21/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.980

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	10	U
95-13-6	1H-Indene	10	U
91-20-3	Naphthalene	10	U
4565-32-6	Benzo(B)Thiophene	10	U
91-22-5	Quinoline	10	U
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	10	U
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	10	U
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-01MS

DPV-W420MS-101293

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-01MS

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6489

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/22/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.90

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	20	U
496-11-7	2,3-Dihydroindene	226	
95-13-6	1H-Indene	97	
91-20-3	Naphthalene	768	
4565-32-6	Benzo(B)Thiophene	80	
91-22-5	Quinoline	32	
120-72-9	1H-Indole	20	U
91-57-6	2-Methylnaphthalene	80	
90-12-0	1-Methylnaphthalene	74	
92-52-4	Biphenyl	11	J
208-96-8	Acenaphthylene	20	U
83-32-9	Acenaphthene	59	
132-64-9	Dibenzofuran	17	J
86-73-7	Fluorene	54	
132-65-0	Dibenzothiophene	2	J
85-01-8	Phenanthrene	11	J
120-12-7	Anthracene	20	U
260-94-6	Acridine	20	U
86-74-8	Carbazole	27	
206-44-0	Fluoranthene	20	U
129-00-0	Pyrene	20	U
56-55-3	Benzo(A)Anthracene	20	U
218-01-9	Chrysene	29	
205-99-2	Benzo(B)Fluoranthene	20	U
207-08-9	Benzo(K)Fluoranthene	20	U
192-97-2	Benzo(E)Pyrene	29	
50-32-8	Benzo(A)Pyrene	20	U
198-55-0	Perylene	20	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	20	U
191-24-2	Benzo(G,H,I)Perylene	20	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

31655-01MSD

Lab Name: ENSECO Contract No.:

DPV-W420MSD-101293

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 31655-01MSD

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6490

Level: (low/med) LOW Date Received: 10/13/93

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/22/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.90

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	23	
496-11-7	2,3-Dihydroindene	240	
95-13-6	1H-Indene	104	
91-20-3	Naphthalene	771	
4565-32-6	Benzo(B)Thiophene	83	
91-22-5	Quinoline	35	
120-72-9	1H-Indole	20	U
91-57-6	2-Methylnaphthalene	86	
90-12-0	1-Methylnaphthalene	79	
92-52-4	Biphenyl	12	J
208-96-8	Acenaphthylene	20	U
83-32-9	Acenaphthene	63	
132-64-9	Dibenzofuran	18	J
86-73-7	Fluorene	59	
132-65-0	Dibenzothiophene	20	U
85-01-8	Phenanthrene	12	J
120-12-7	Anthracene	20	U
260-94-6	Acridine	20	U
86-74-8	Carbazole	28	
206-44-0	Fluoranthene	20	U
129-00-0	Pyrene	20	U
56-55-3	Benzo(A)Anthracene	20	U
218-01-9	Chrysene	32	
205-99-2	Benzo(B)Fluoranthene	20	U
207-08-9	Benzo(K)Fluoranthene	20	U
192-97-2	Benzo(E)Pyrene	32	
50-32-8	Benzo(A)Pyrene	20	U
198-55-0	Perylene	20	U
193-39-5	Indeno(1,2,3-CD)Pyrene	20	U
53-70-3	Dibenz(A,H)Anthracene	20	U
191-24-2	Benzo(G,H,I)Perylene	20	U

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Level: LOW

	EPA SAMPLE NO.	S1 (NAP) #	S2 (FLU) #	S3 (CHR) #
1	31655-01	84	80	76
2	31655-01DL	D	D	D
3	31655-01DU	91	84	63
4	31655-01DUDL	D	D	D
5	31655-01FB	90	70	81
6	31655-01MS	77	73	54
7	31655-01MSD	81	74	57
8	31655-02	83	74	67
9	31655-02DL	72	68	62
10	31655-03	90	75	69
11	31655-04	84	68	53
12	31655-05	81	78	56
13	31655-06	100	82	56
14	BLK01	84	68	78

	QC LIMITS
S1 (NAP) = D8-NAPHTHALENE	(25-175)
S2 (FLU) = D10-FLUORENE	(25-175)
S3 (CHR) = D12-CHRYSENE	(25-175)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix Spike Sample No.: 31655-01 LEVEL: LOW

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC
1H-Indene	47.5	73.9	96.7	48 *
Naphthalene	47.5	781	768	-27 *
Quinoline	47.5	ND	32.4	68
2-Methylnaphthalene	47.5	52.7	79.8	57
Fluorene	47.5	21.8	54.3	68
Chrysene	47.5	ND	29.1	61
Benzo(E)Pyrene	47.5	ND	29.2	61

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD
1H-Indene	47.5	104	63	7
Naphthalene	47.5	771	-21 *	0
Quinoline	47.5	34.6	73	7
2-Methylnaphthalene	47.5	86.1	70	8
Fluorene	47.5	59.1	79	8
Chrysene	47.5	31.7	67	9
Benzo(E)Pyrene	47.5	32.2	68	10

Comments:

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Lab File ID: X6473 Lab Sample ID: BLK01

Date Extracted: 10/14/93 Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 10/21/93 Time Analyzed: 1222

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: 4500-X

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	31655-01	31655-01	X6488	10/22/93
02	31655-01DL	31655-01DL	X6494	10/22/93
03	31655-01DU	31655-01DU	X6491	10/22/93
04	31655-01DUDL	31655-01DUDL	X6495	10/22/93
05	31655-01FB	31655-01FB	X6474	10/21/93
06	31655-01MS	31655-01MS	X6489	10/22/93
07	31655-01MSD	31655-01MSD	X6490	10/22/93
08	31655-02	31655-02	X6478	10/21/93
09	31655-02DL	31655-02DL	X6493	10/22/93
10	31655-03	31655-03	X6475	10/21/93
11	31655-04	31655-04	X6476	10/21/93
12	31655-05	31655-05	X6503	10/25/93
13	31655-06	31655-06	X6477	10/21/93

COMMENTS:

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BLK01

Lab Name: ENSECO Contract No.:

Lab Code: ENSECO Case No.: 31655 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: BL101493

Sample wt/vol: 1050 (g/mL) ML Lab File ID: X6473

Level: (low/med) LOW Date Received:

% Moisture: not dec. dec. Date Extracted: 10/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 10/21/93

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.952

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
271-89-6	2,3-Benzofuran	10	U
496-11-7	2,3-Dihydroindene	10	U
95-13-6	1H-Indene	10	U
91-20-3	Naphthalene	10	U
4565-32-6	Benzo(B)Thiophene	10	U
91-22-5	Quinoline	10	U
120-72-9	1H-Indole	10	U
91-57-6	2-Methylnaphthalene	10	U
90-12-0	1-Methylnaphthalene	10	U
92-52-4	Biphenyl	10	U
208-96-8	Acenaphthylene	10	U
83-32-9	Acenaphthene	10	U
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
132-65-0	Dibenzothiophene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
260-94-6	Acridine	10	U
86-74-8	Carbazole	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
192-97-2	Benzo(E)Pyrene	10	U
50-32-8	Benzo(A)Pyrene	10	U
198-55-0	Perylene	10	U
193-39-5	Indeno(1,2,3-CD)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No: 31655 SAS No.: SDG No:

Lab File ID (Standard): X6472 Date Analyzed: 10/21/93

Instrument ID: 4500-X Time Analyzed: 1121

		IS#1 (ACN) AREA #	IS#2 (PHN) AREA #	IS#3 (BAP) AREA #
	12 HOUR STD	20727	33385	18901
	UPPER LIMIT	41454	66770	37802
	LOWER LIMIT	10364	16692	9450
	SAMPLE NO.			
01	BLK01	21017	32131	17261
02	31655-01FB	21094	31901	17615
03	31655-03	20706	33233	18703
04	31655-04	21469	33692	18179
05	31655-06	19369	30023	16416
06	31655-02	19262	30447	15898

IS#1 (ACN) = D10-ACENAPHTHENE
IS#2 (PHN) = D10-PHENANTHRENE
IS#3 (BAP) = D12-BENZO(A)PYRENE

UPPER LIMIT = + 100% of internal standard area
LOWER LIMIT = - 50% of internal standard area

Column used to flag internal standard area values with an asterisk

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No: 31655 SAS No.: SDG No:

Lab File ID (Standard): X6486 Date Analyzed: 10/22/93

Instrument ID: 4500-X Time Analyzed: 1355

		IS#1 (ACN) AREA #	IS#2 (PHN) AREA #	IS#3 (BAP) AREA #
	12 HOUR STD	16881	26386	13186
	UPPER LIMIT	33762	52772	26372
	LOWER LIMIT	8440	13193	6593
	SAMPLE NO.			
01	31655-01	16559	26065	13543
02	31655-01MS	15984	25738	13550
03	31655-01MSD	18092	29502	15286
04	31655-01DU	19640	31459	15718
05	31655-02DL	20227	32242	15749
06	31655-01DL	19340	31432	15738
07	31655-01DUDL	20660	33104	16555

IS#1 (ACN) = D10-ACENAPHTHENE
IS#2 (PHN) = D10-PHENANTHRENE
IS#3 (BAP) = D12-BENZO(A)PYRENE

UPPER LIMIT = + 100% of internal standard area
LOWER LIMIT = - 50% of internal standard area

Column used to flag internal standard area values with an asterisk

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: ENSECO Contract:

Lab Code: ENSECO Case No: 31655 SAS No.: SDG No:

Lab File ID (Standard): X6501 Date Analyzed: 10/25/93

Instrument ID: 4500-X Time Analyzed: 1006

		IS#1 (ACN) AREA #	IS#2 (PHN) AREA #	IS#3 (BAP) AREA #
	12 HOUR STD	20983	34280	18947
	UPPER LIMIT	41966	68560	37894
	LOWER LIMIT	10492	17140	9474
	SAMPLE NO.			
01	31655-05	18828	31078	15961

IS#1 (ACN) = D10-ACENAPHTHENE
IS#2 (PHN) = D10-PHENANTHRENE
IS#3 (BAP) = D12-BENZO(A)PYRENE

UPPER LIMIT = + 100% of internal standard area
LOWER LIMIT = - 50% of internal standard area

Column used to flag internal standard area values with an asterisk

PHENOLICS MONITORING

Rocky Mountain
Analytical Laboratory

Enseco
A Corning Company

November 17, 1993

Mr. James Grube
City of St. Louis Park
5005 Minnetonka Blvd.
St. Louis Park, MN 55416

Dear Mr Grube:

Enclosed is the ppb phenol report for 12 aqueous samples, including matrix QC, received at Enseco-Rocky Mountain Analytical laboratory on October 13, 1993.

Please call if you have any questions.

Sincerely,

Karen F. Germann
Project Administrator

Reviewed by:

Julieann L. Kramer
Program Manager

KFG/JLK
Enclosures

RMAL #031656

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

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000001

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.:31656_

SOW No.: ILM02

EPA Sample No.	Lab Sample ID
3165601	3165601
3165601	3165601D
3165601	3165601SD
3165601	3165601S
3165601	3165601FB
3165601	3165601FD
3165602	3165602
3165603	3165603
3165604	3165604
3165605	3165605
3165606	3165606
3165607	3165607

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:
SEVEN_WATER_SAMPLES_FOR_PHENOLIC_ANALYSIS.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Will Pratt Name: Will Pratt

Date: 11-19-93 Title: Inorganics Group Leader

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO. 000002

3165601
W420

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656_

Matrix (soil/water): WATER Lab Sample ID: 3165601___

Level (low/med): LOW__ Date Received: 10/13/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	148		N	C

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
DPV-W420TP-101293

FORM I - IN

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000003

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

3165601FB
W420

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656_

Matrix (soil/water): WATER Lab Sample ID: 3165601FB_

Level (low/med): LOW__ Date Received: 10/13/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	5.0	U	N	C_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
DPV-W420TPFB-101293

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

3165601FD

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656_

Matrix (soil/water): WATER Lab Sample ID: 3165601FD_

Level (low/med): LOW__ Date Received: 10/13/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	5.0	U	N	C_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
DPV-W420TPFD-101293

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO. 000005

3165602

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656_

Matrix (soil/water): WATER Lab Sample ID: 3165602___

Level (low/med): LOW__ Date Received: 10/13/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	29.0		N	C

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
DPV-W421TP-101293

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

3165603

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656_

Matrix (soil/water): WATER Lab Sample ID: 3165603___

Level (low/med): LOW__ Date Received: 10/13/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
54-30-0__	Phenolics	15.6		N	C

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
DPV-W422TP-101293

FORM I - IN

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656_

Initial Calibration Source: SEE ADDENDUM

Continuing Calibration Source: SEE ADDENDUM

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Phenolics	50.0	43.71	87.4	20.0	21.23	106.2	21.23	106.2	C

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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3
BLANKS

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656_

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Phenolics	5.0	U	5.0	U	5.0	U			5.000	U	C

FORM III - IN

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract:CITY_SLP__ 3165601S

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656_

Matrix: __WATER_____ Level (low/med): _LOW____

% Solids for Sample: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Phenolics	75-125	186.5000		147.8400		50.00	77.3		C

Comments:
DPV-W420TPMS-101293

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract:CITY_SLP__ 3165601SD

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656_

Matrix: __WATER_____ Level (low/med): _LOW___

% Solids for Sample: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Phenolics	75-125	182.9800		147.8400		50.00	70.3	N	C

Comments:
DPV-W420TPMSD-101293

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6
DUPLICATES

EPA SAMPLE NO.

3165601D

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656_

Matrix (soil/water): WATER Level (low/med): _LOW__

% Solids for Sample: __0.0 % Solids for Duplicate: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Phenolics		147.8400		130.9800		12.1		C

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LABORATORY CONTROL SAMPLE

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.: 31656_

Solid LCS Source: ERA LOT 213_

Aqueous LCS Source: SEE ADDENDUM

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Phenolics	50.0	46.88	93.8						

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ANALYSIS RUN LOG

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY_SLP__

Lab Code: ENSECO Case No.: _____ SAS No.: _____ SDG No.:31656_

Instrument ID Number: SPEC 88_____ Method: C_

Start Date: 11/09/93 End Date: 11/09/93

EPA Sample No.	D/F	Time	% R	Analytes: PH
S0.0	1.00	2242		X
S5.0	1.00	2243		X
S10.0	1.00	2244		X
S20.0	1.00	2245		X
S50.0	1.00	2246		X
S100.0	1.00	2247		X
ICV	1.00	2248		X
ICB	1.00	2249		X
PBW	1.00	2249		X
LCSW	1.00	2250		X
3165601	2.00	2251		X
3165601D	2.00	2252		X
3165601F	1.00	2252		X
3165601F	1.00	2252		X
3165601S	2.00	2253		X
3165601S	2.00	2253		X
3165602	1.00	2254		X
3165603	1.00	2256		X
CCV	1.00	2256		X
CCB	1.00	2257		X
3165604	1.00	2258		X
3165605	1.00	2258		X
3165606	1.00	2258		X
3165607	1.00	2259		X
CCV	1.00	2301		X
CCB	1.00	2301		X

U.S. EPA - CLP

ADDENDUM

STOCK STANDARD SOURCES

Lab Name: ROCKY_MOUNTAIN_ANALYTICAL Contract: CITY__SLP____

Lab Code: ENSECO Case No.: _____ SAS No.: N/A___ SDG No.: 31656_

STANDARD	SOURCE/LOT	EXPIRATION DATE
CALIBRATION	LabChem 3102-6	4/8/95
ICV SOLUTION	LabChem 3102-6	4/8/95
CCV SOLUTION	(same as calibration source above)	
LCS SOLUTION	Ricca F148	2/95
MATRIX SPIKE SOLUTION	(same as LCS solution above)	

INORGANIC NONMETALS SAMPLE PREPARATION

PARAMETER ØOH ANALYST M.Barnes DATE 11-09-93

SAMPLE	PH	BOTTLE TYPE	INTERFERENCE CHECKS SAMPLE PRETREATMENT	INITIAL WT OR VOL	FINAL WT OR VOL	PREP D.F.
BLANK				200ml	200ml	1x
OCS 1			1.0ml of 10.0mg/L Lot F148			
ICV ~~OCS 2~~			1.0ml of 10.0mg/L Lot #3102-6			
316526-01DU	<2	#2	Neg Cl/S Clear & Colorless			
-01FB						
-01FD						
-01MS			1.0ml of 10.0mg/L of Lot F148			
-01SD			↓			
-01SA						
-02						
-03						
-04						
-05						
-06						
-07	↓	↓	↓	↓	↓	↓

Enseco - Rocky Mountain Analytical Lab
Sample Preparation Sheet

Project 031656 Case/SAS No. /NA

SDG No. Conc./Matrix /AQUEOUS

SAMPLE	LIMS SAMPLE	DATE RECD	PARAMETERS	ICP METALS		FURNACE METALS		MERCURY		CYANIDE		pH
				g/mL	mL	g/mL	mL	g/mL	mL	g/mL	mL	
PBW	--------	------										
LCS	--------	------	OCH									<2
DPV-W420TP	0316560001DU	10/13/93										
DPV-W420TP	0316560001FB	10/13/93										
DPV-W420TP	0316560001FD	10/13/93										
DPV-W420TP	0316560001MS	10/13/93										
DPV-W420TP	0316560001SA	10/13/93										
DPV-W420TP	0316560001SD	10/13/93										
DPV-W421TP	0316560002SA	10/13/93										
DPV-W422TP	0316560003SA	10/13/93										
GTF-ACFETP	0316560006SA	10/13/93										
GTF-SFRTP-	0316560005SA	10/13/93										
PCJ-SLP4TD	0316560007SA	10/13/93										
STP-W410TP	0316560004SA	10/13/93	✓									✓
DATE / INITIALS:				/		/		/		/		MB / 11/9/93

SPECIAL INSTRUCTIONS and/or CAUTIONS:

Enseco - Rocky Mountain Analytical Lab
Sample Description Sheet

Project 031656 Case/SAS No. /NA

SDG No. Conc./Matrix /AQUEOUS

SAMPLE	LIMS SAMPLE	BEFORE DIGESTION COLOR	BEFORE DIGESTION CLARITY	AFTER DIGESTION COLOR	AFTER DIGESTION CLARITY
DPV-W420TP	0316560001DU	Colorless	Clear	Colorless	Clear
DPV-W420TP	0316560001FB				
DPV-W420TP	0316560001FD				
DPV-W420TP	0316560001MS				
DPV-W420TP	0316560001SA				
DPV-W420TP	0316560001SD				
DPV-W421TP	0316560002SA				
DPV-W422TP	0316560003SA				
GTF-ACFETP	0316560006SA				
GTF-SFRTP-	0316560005SA				
SLP4TD	0316560007SA				
STP-W410TP	0316560004SA				

DESCRIPTION KEY:

COLOR:

1.RED	4.GREEN	7.WHITE	10.GREY
2.BLUE	5.ORANGE	8.COLORLESS	11.BLACK
3.YELLOW	6.VIOLET	9.BROWN	

CLARITY:
1.CLEAR
2.CLOUDY
3.OPAQUE

COMMENTS:

COLORIMETRIC ANALYSIS

PARAMETER CSLP- Phenolics CONTROL # 3102-6 DATE 11-09-93

ANALYST STM SPIKE 50.0 UNITS ppb

	Concentration	Absorbance
Blank	0.00 ppb	0.045
STD 1	5.00 ppb	0.062
STD 2	10.00 ppb	0.070
STD 3	20.00 ppb	0.103
STD 4	50.00 ppb	0.183
STD 5	100.00 ppb	0.331

Corr. Coef. = 0.99966

Slope = .2846

Intercept = 0.04456

SAMPLE ID	TIME	pH	INTER CHECK	ABSORBANCE SAMPLE	ABSORBANCE COLOR B	CURVE CONC (ppb)	DILUTIONS PREP	DILUTIONS ANALYT	REPORTED CONC (ppb)	% REC.
ICV	22:48			0.169		43.71	1x	1x	43.7 (50.0)	87%
ICB	22:49			0.046		ND			ND (5.0)	
PBlank	22:49			0.043		ND			ND (5.0)	
LCS	22:50			0.178		46.88			46.9 (50.0)	94%
31656-01	22:51			0.255		73.92		2x	148 (10.0)	
-01DV	22:52			0.231		65.49		2x	131 (10.0)	
-01FB	22:52			0.039		ND		1x	ND (5.0)	
-01FD	22:52			0.045		ND		1x	ND (5.0)	
-01MS	22:53			0.310		93.25		2x	186 (50.0)	
-01SD	22:53			0.305		91.49		2x	183 (50.0)	
-02	22:54			0.127		28.96		1x	29.0 (5.0)	
-03	22:56			0.089		15.61			15.6 (5.0)	
CCV	22:56			0.105		21.23			21.2 (5.0)	106%
CCB	22:57			0.044		ND			ND (5.0)	
31656-04	22:58			0.065		7.17			7.2 (5.0)	
-05	22:58			0.288		85.52			85.5 (5.0)	
-06	22:58			0.042		ND			ND (5.0)	
-07	22:59			0.048		ND			ND (5.0)	
CCV	23:01			0.105		21.23			21.2	106%
CCB	23:01			0.043		ND			ND (5.0)	

INORGANIC NON-METALS ANOMALY FORM

Document anomalies, deviations from method, and other observations below:

Parameter	Sample No.(s)	Discussion
ØOH	311656-01MS/SD	MS/SD slightly low (avg. 73%) (recovery limits 75%-125%) due to high levels of phenol in the sample.

Approved by: _____ Date: _____

Enseco
A Corning Company

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Houston, TX 77032
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CHAIN OF CUSTODY

SAMPLE SAFE™ CONDITIONS

ENSECO CLIENT: CITY OF ST LOUIS PARK WATER DEPT	PACKED BY: MZR
	SEAL NUMBER:
PROJECT:	SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:
	CONDITION OF CONTENTS:
SAMPLING COMPANY: SAME	SEALED FOR SHIPPING BY: MZR
	INITIAL CONTENTS TEMP: °C
SAMPLING SITE: SAME	SEAL NUMBER:
	SAMPLING STATUS: ☐ Done ☐ Continuing Until
TEAM LEADER: MZR	SEAL INTACT UPON RECEIPT BY LAB: ☑ Yes ☐ No
	CONTENTS TEMPERATURE UPON RECEIPT BY LAB: 9.5 °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
10-12-93		GTF-ACFETP-101293	16oz AMBER	1	PPB Phenolics	-06
10-12-93		PCJ-BLP4TP-101293	16oz AMBER	1	PPB Phenolics	-07

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: MZR		
METHOD OF SHIPMENT: FED EX		AIRBILL NUMBER: 2103420874
RECEIVED FOR LAB: RMAL	SIGNED: [illegible]	DATE/TIME: 10/13/93 1330
ENSECO PROJECT NUMBER: 31656		

000024

White - CLIENT Pink - LAB

Enseco
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CHAIN OF CUSTODY

ENSECO CLIENT: CITY OF ST LOUIS PARK WATER DEPT	
PROJECT:	
SAMPLING COMPANY: SAME	
SAMPLING SITE: SAME	
TEAM LEADER: MZ	

SAMPLE SAFE™ CONDITIONS

PACKED BY: MZ	SEAL NUMBER:
SEAL INTACT UPON RECEIPT BY SAMPLING COMPANY:	CONDITION OF CONTENTS:
SEALED FOR SHIPPING BY: MZ	INITIAL CONTENTS TEMP: °C
SEAL NUMBER:	SAMPLING STATUS: ☐ Done ☐ Continuing Until
SEAL INTACT UPON RECEIPT BY LAB: ☑ Yes ☐ No	CONTENTS TEMPERATURE UPON RECEIPT BY LAB: 9.5 °C

DATE	TIME	SAMPLE ID/DESCRIPTION	SAMPLE TYPE	# CONTAINERS	ANALYSIS PARAMETERS	REMARKS
10-12-93		DPV-W420TP-101293	16oz AMBER	1	PPB Phenolics	-01
		DPV-W420TPD-101293				-01DU
		DPV-W420MSTP-101293				-01MS
		DPV-W420MSDTP-101293				-01MS
		DPV-W420FBTP-101293				-01FB
		DPV-W420FBDTP-101293				-01FD
		DPV-W421TP-101293				-02
		DPV-W422TP-101293				-03
		STP-W410TP-101293				-04
10-12-93		ETF-SFRTP-101293	16oz AMBER	1	PPB Phenolics	-05

CUSTODY TRANSFERS PRIOR TO SHIPPING

RELINQUISHED BY (SIGNED)	RECEIVED BY (SIGNED)	DATE	TIME

SHIPPING DETAILS

DELIVERED TO SHIPPER BY: MZ		
METHOD OF SHIPMENT: FED EX		AIRBILL NUMBER: 2103420874
RECEIVED FOR LAB: RMAL	SIGNED: [illegible]	DATE/TIME: 10/13/93 830
ENSECO PROJECT NUMBER: 31656		

000025

ENS-4011

White - CLIENT Pink - LAB