W03158A

0053631

SEVERN TRENT SERVICES

STL St. Louis

CASE NARRATIVE

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

RECEIVED SEP 07 2000 EDMC

July 19, 2000

Attention: Joan Kessner

RECEIVED JUL 2000

Project Number	:	34666
SDG	:	W03158A
Number of Samples	:	one (1)
Sample Matrix	:	Soil
Data Deliverable	:	Summary
Date SDG Closed	:	May 19, 2000

II. Introduction

On May 19, 2000, one (1) "soil" sample was received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. The samples were received at the St. Louis lab on 5/20/00 at 3 degrees C. See the attached Sample Summary form for the Lab ID's and corresponding Client Ids. A re-analysis of the sample was requested on June 16, 2000.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits.

Analyses requested: 8310 SVOA HPLC

Deviation from Request: None

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
MS- Matrix Spike.
DUP- Matrix Duplicate
MSD- Matrix Spike Duplicate.

V. Comments

General: The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

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Bechtel Hanford Incorporated
July 19, 2000
Project Number: 34666
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Please refer to the attached cross-reference table for the standard preparation methods used at Quanterra, St. Louis.

The results reported in this package are from the re-analysis of the sample.

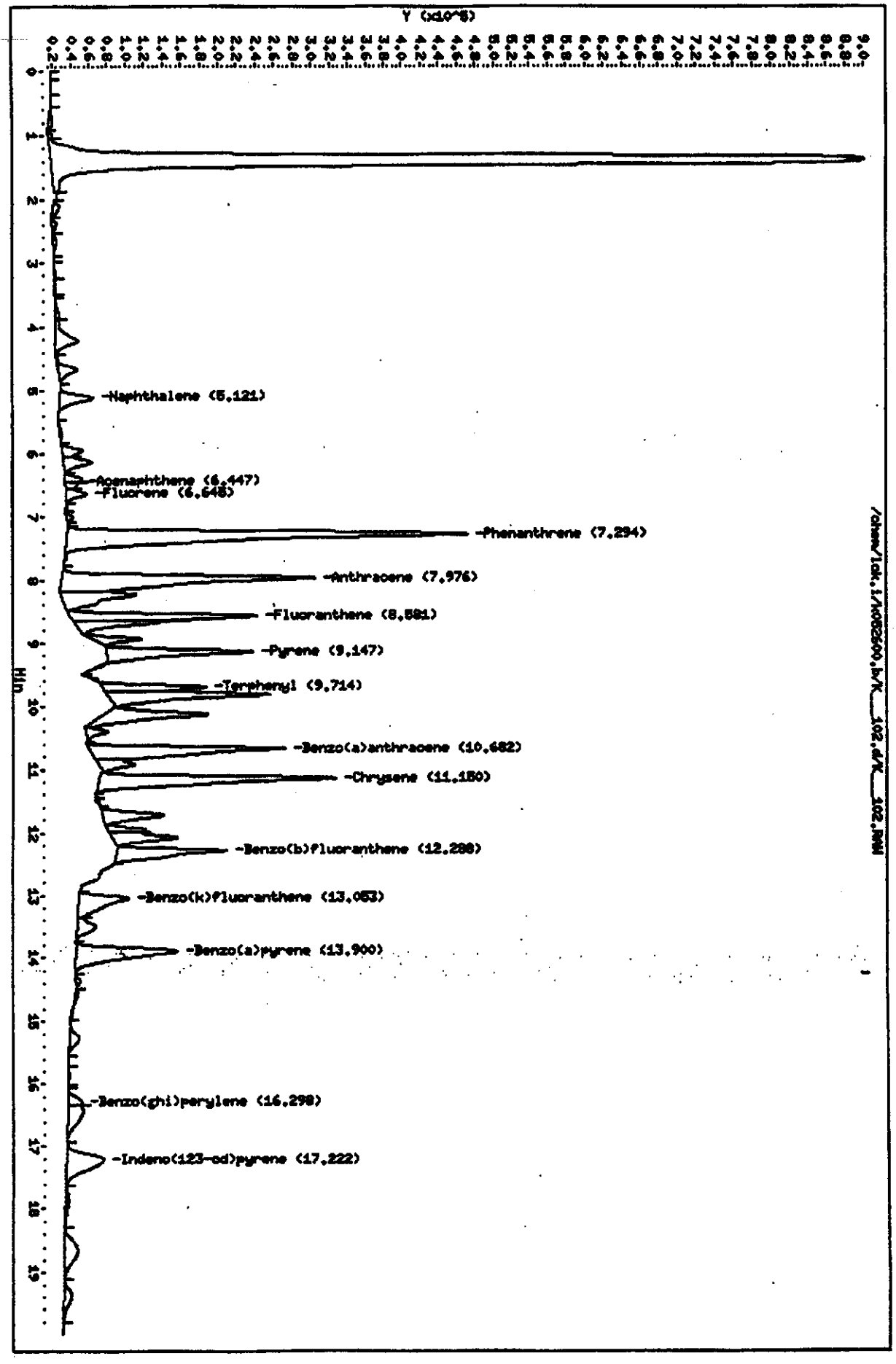
PAH: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

The re-analysis of the sample resulted in much lower levels of the detected compounds than originally reported. The analyst attributes this to "hot spots" in the sample. The sample was homogenized as best as possible before each analysis. Soil samples are difficult to completely mix. The attached chromatograms show the same patterns, indicating the same compounds were present in each analysis. The re-analysis has several compounds on the chromatograms that calculate out below the reporting limits.

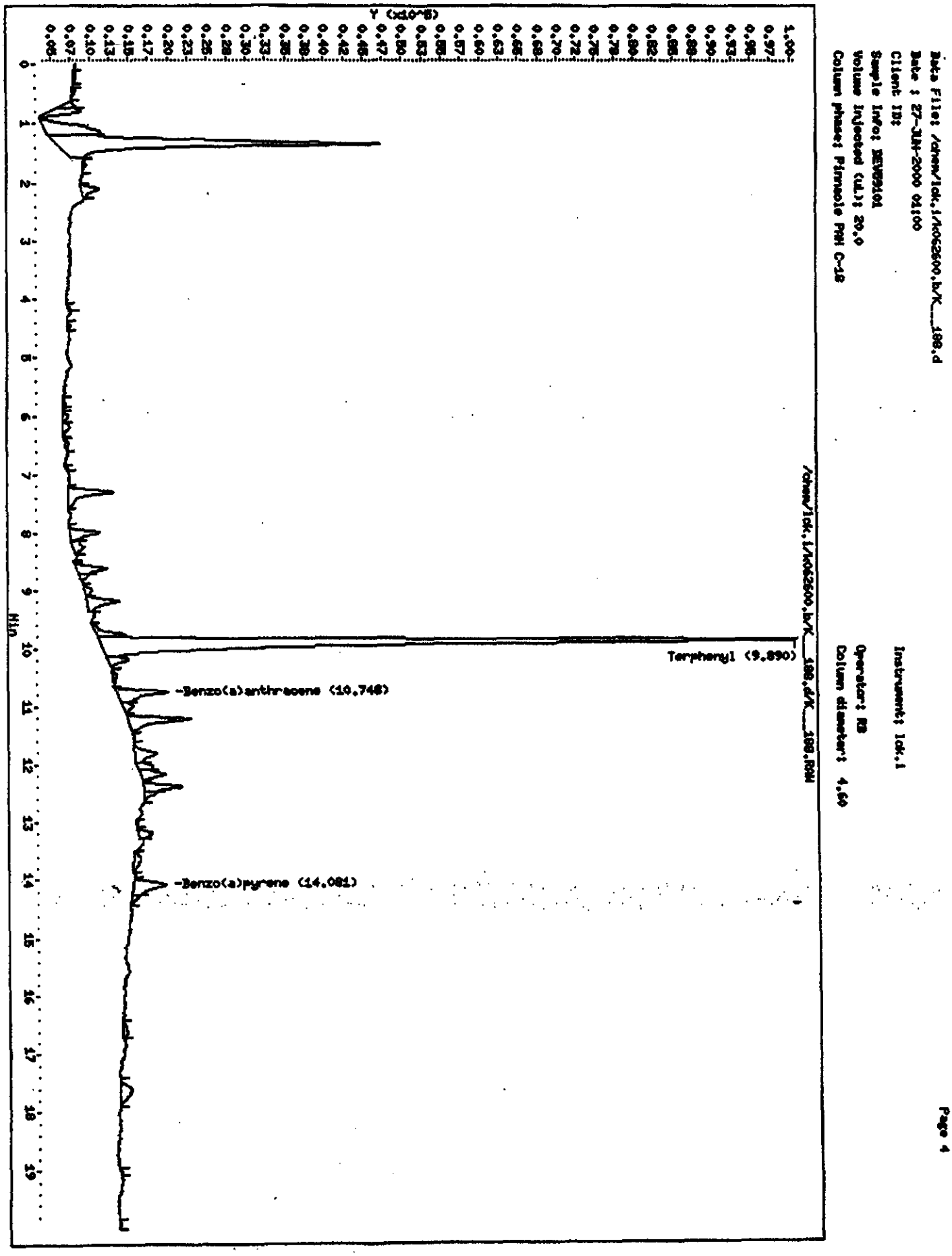
I certify that this Summary is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Marti Ward
St. Louis Project Manager



Initial Analysis


Data File: /chem/1ck.i/k062600.b/K__198.d
Date : 27-JUN-2000 04:00
Client ID:
Sample Info: BEW8101
Volume Injected (uL): 20.0
Column phase: Pinnacle PAH C-18
Instrument: 1ck.i
Operator: RB
Column diameter: 4.60
/chem/1ck.i/k062600.b/K__198.d/K__198.RAW
Y (x10^8)
Min
Terphenyl (9.890)
-Benzo(a)anthracene (10.748)
-Benzo(a)pyrene (14.081)

Re-analysis

SAMPLE SUMMARY

F0F160275

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
DEV59	001	B0X4W1	05/18/00	12:36

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F0F160275

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Polynuclear Aromatic Hydrocarbons by HPLC	SW846 8310	SW846 3550

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 6/16/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 15:15:00
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 34666
PROJECT MANAGER: MARTI WARD LAB ID: F-0F160275-001
PROJECT #: 100H AREA FULL WORK ORDER: DEV59
REPORT TO: Joan Kessner RECEIVING DATE: 6/16/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 5/18/00
SITE: B99-042 ANALYTICAL DUE DATE: 7/04/00N
AMOUNT REC"D: 120G REPORT DUE DATE: 7/07/00
STORAGE LOC: S16E PRIORITY: 18
LOT COMMENTS: QC is billable SAMPLING TIME: 12:36
MATRIX: SOLID RECEIVING TIME:
SAMPLE ID: B0X4W1
QC PACKAGE: Special Report - see checklist SDG# : W03158A
SAMPLE COMMENTS:

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Hydrocarbons, Polynuclear Aromatic (HPLC SONICATION - Low Level STL: 8310 PAH	06	6/16/00	6/01/00	7/11/00

(A-13-SG-01) DEV59-1-01 Protocol: A QC Program: STANDARD TEST SET

PSL20300
Page 1

SEVERN TRENT LABORATORIES, INC
CLIENT ANALYSIS SUMMARY
STL St. Louis

Run Date: 6/16/00
Time: 15:15:00
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 100H AREA FULL
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: B99-042
AMOUNT REC"D: 120G
STORAGE LOC: S16E
LOT COMMENTS: QC is billable
MATRIX: SOLID
SAMPLE ID: B0X4W1
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 34666
LAB ID: F-0F160275-001-D
WORK ORDER: DEV59 MSD
RECEIVING DATE: 6/16/00
SAMPLING DATE: 5/18/00
ANALYTICAL DUE DATE: 7/04/00N
REPORT DUE DATE: 7/07/00
PRIORITY: 18
SAMPLING TIME: 12:36
RECEIVING TIME:

SDG# : W03158A

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Hydrocarbons, Polynuclear Aromatic (HPLC SONICATION - Low Level	06	6/16/00	6/01/00	7/11/00

STL: 8310 PAH
(A-13-SG-01) DEV59-1-03 Protocol: A QC Program: STANDARD TEST SET

PSL20300
Page 1

SEVERN TRENT LABORATORIES, INC
CLIENT ANALYSIS SUMMARY
STL St. Louis

Run Date: 6/16/00
Time: 15:15:00
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 100H AREA FULL
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: B99-042
AMOUNT REC'D: 120G
STORAGE LOC: S16E
LOT COMMENTS: QC is billable
MATRIX: SOLID
SAMPLE ID: B0X4W1
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 34666
LAB ID: F-0F160275-001-S
WORK ORDER: DEV59 MS
RECEIVING DATE: 6/16/00
SAMPLING DATE: 5/18/00
ANALYTICAL DUE DATE: 7/04/00N
REPORT DUE DATE: 7/07/00
PRIORITY: 18
SAMPLING TIME: 12:36
RECEIVING TIME:

SDG# : W03158A

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Hydrocarbons, Polynuclear Aromatic (HPLC SONICATION - Low Level STL: 8310 PAH	06	6/16/00	6/01/00	7/11/00

(A-13-SG-01) DEV59-1-02 Protocol: A QC Program: STANDARD TEST SET

Second (Logan) Lot # F0F160275. 06.16.00 HYKBORNE 401 2700510 5 CUR#624

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-042-026	Page 1 of 1
Collector: Renee Nielson	Company Contact: Mike Stankovich	Telephone No.: 531-7620	Project Coordinator: TRENT, SJ	Price Code: 8L; Data Turnaround: 21 Days; Air Quality ☐
Project Designation: 100 H Area - Full Protocol	Sampling Location: 1607-H4		SAF No.: B99-042	
Ice Chest No.: ERC99.033	Field Logbook No.: EL-1500-1	COA: R607H42600	Method of Shipment: Hand deliver - Govt. vehicle	
Shipped To: Severn Trent Incorporated Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

Preservation	Cool 4C										
Type of Container	aG										
No. of Container(s)	1										
Volume	120mL										
SAMPLE ANALYSIS	8310_SVOA_HPLC										

Reanalysis Requested by R. Weiss 6/16/00 MW

W03158

Sample No.	Matrix *	Sample Date	Sample Time									
B0X4W1	Soil	5-18-00	1236	X								

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By: Renee Nielson / R. Nielson	Date/Time: 5/18/00 1445	Received By: R. Thoren	Date/Time: 5.18.00 1445
Relinquished By: R. Thoren	Date/Time: 5/19/00 1030	Received By: L. DeHenling	Date/Time: 5-19-00 1030
Relinquished By: L. DeHenling	Date/Time: 5-19-00 1030	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS

Sample originated in non RAD Controlled area NOTA Req. < 2000 pCi/g

Matrix *: S=Soil, SE=Sediment, SD=Solid, S=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, T=Tissue, WI=Wipe, L=Liquid, V=Vegetation, X=Other

LABORATORY SECTION	Received By: Marissa [signature] STL	Title: Sample Control Supervisor	Date/Time: 05-20-00 0930	
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time	

BHI-EE-011 (10/99)

HPLC

BECHTEL HANFORD, INC.

Client Sample ID: B0X4W1

HPLC

Lot-Sample #...: F0F160275-001 Work Order #...: DEV59101 Matrix.....: SOLID
Date Sampled...: 05/18/00 Date Received..: 06/16/00
Prep Date.....: 06/19/00 Analysis Date..: 06/27/00
Prep Batch #...: 0171233
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8310

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	30	ug/kg	21
Acenaphthylene	ND	30	ug/kg	8.2
Anthracene	ND	30	ug/kg	11
Benzo(a)anthracene	19	15	ug/kg	14
Benzo(a)pyrene	15	15	ug/kg	13
Benzo(b)fluoranthene	ND	15	ug/kg	14
Benzo(ghi)perylene	ND	30	ug/kg	11
Benzo(k)fluoranthene	ND	15	ug/kg	14
Chrysene	ND	15	ug/kg	5.8
Dibenz(a,h)anthracene	ND	30	ug/kg	14
Fluoranthene	ND	30	ug/kg	17
Fluorene	ND	30	ug/kg	6.5
Indeno(1,2,3-cd)pyrene	ND	15	ug/kg	8.7
Naphthalene	ND	30	ug/kg	28
Phenanthrene	ND	30	ug/kg	12
Pyrene	ND	30	ug/kg	18

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
p-Terphenyl	69	(44 - 140)

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: F0F160275 Work Order #...: DEV59102-MS Matrix.....: SOLID
MS Lot-Sample #: F0F160275-001 DEV59103-MSD
Date Sampled...: 05/18/00 Date Received..: 06/16/00
Prep Date.....: 06/19/00 Analysis Date..: 06/27/00
Prep Batch #...: 0171233
Dilution Factor: 1 % Moisture.....:

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Acenaphthene	ND	1000	631	ug/kg	63		SW846 8310
	ND	1000	568	ug/kg	57	10	SW846 8310
Acenaphthylene	ND	1000	704	ug/kg	70		SW846 8310
	ND	1000	606	ug/kg	61	15	SW846 8310
Anthracene	ND	1000	629	ug/kg	63		SW846 8310
	ND	1000	611	ug/kg	61	3.0	SW846 8310
Benzo(a)anthracene	19	1000	739	ug/kg	72		SW846 8310
	19	1000	778	ug/kg	76	5.2	SW846 8310
Benzo(a)pyrene	15	1000	722	ug/kg	71		SW846 8310
	15	1000	736	ug/kg	72	2.0	SW846 8310
Benzo(b)fluoranthene	ND	1000	754	ug/kg	75		SW846 8310
	ND	1000	790	ug/kg	79	4.7	SW846 8310
Benzo(ghi)perylene	ND	1000	755	ug/kg	76		SW846 8310
	ND	1000	757	ug/kg	76	0.31	SW846 8310
Benzo(k)fluoranthene	ND	1000	733	ug/kg	73		SW846 8310
	ND	1000	732	ug/kg	73	0.17	SW846 8310
Chrysene	ND	1000	765	ug/kg	77		SW846 8310
	ND	1000	792	ug/kg	79	3.4	SW846 8310
Dibenz(a,h)anthracene	ND	1000	958	ug/kg	96		SW846 8310
	ND	1000	1000	ug/kg	100	4.7	SW846 8310
Fluoranthene	ND	1000	792	ug/kg	79		SW846 8310
	ND	1000	823	ug/kg	82	3.8	SW846 8310
Fluorene	ND	1000	653	ug/kg	65		SW846 8310
	ND	1000	598	ug/kg	60	8.8	SW846 8310
Indeno(1,2,3-cd)pyrene	ND	1000	785	ug/kg	78		SW846 8310
	ND	1000	801	ug/kg	80	2.1	SW846 8310
Naphthalene	ND	1000	594	ug/kg	59		SW846 8310
	ND	1000	573	ug/kg	57	3.6	SW846 8310
Phenanthrene	ND	1000	702	ug/kg	70		SW846 8310
	ND	1000	682	ug/kg	68	2.9	SW846 8310
Pyrene	ND	1000	660	ug/kg	66		SW846 8310
	ND	1000	685	ug/kg	68	3.6	SW846 8310

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
p-Terphenyl	73	(44 - 140)
	72	(44 - 140)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

HPLC

Client Lot #...: F0F160275 Work Order #...: DEX99101 Matrix.....: SOLID
MB Lot-Sample #: F0F190000-233

Prep Date.....: 06/19/00
Analysis Date..: 06/27/00 Prep Batch #...: 0171233
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	30	ug/kg	SW846 8310
Acenaphthylene	ND	30	ug/kg	SW846 8310
Anthracene	ND	30	ug/kg	SW846 8310
Benzo(a)anthracene	ND	15	ug/kg	SW846 8310
Benzo(a)pyrene	ND	15	ug/kg	SW846 8310
Benzo(b)fluoranthene	ND	15	ug/kg	SW846 8310
Benzo(ghi)perylene	ND	30	ug/kg	SW846 8310
Benzo(k)fluoranthene	ND	15	ug/kg	SW846 8310
Chrysene	ND	15	ug/kg	SW846 8310
Dibenz(a,h)anthracene	ND	30	ug/kg	SW846 8310
Fluoranthene	ND	30	ug/kg	SW846 8310
Fluorene	ND	30	ug/kg	SW846 8310
Indeno(1,2,3-cd)pyrene	ND	15	ug/kg	SW846 8310
Naphthalene	ND	30	ug/kg	SW846 8310
Phenanthrene	ND	30	ug/kg	SW846 8310
Pyrene	ND	30	ug/kg	SW846 8310

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
p-Terphenyl	66	(44 - 140)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: F0F160275 **Work Order #...:** DEX99102 **Matrix.....:** SOLID
LCS Lot-Sample#: F0F190000-233
Prep Date.....: 06/19/00 **Analysis Date..:** 06/27/00
Prep Batch #...: 0171233
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Acenaphthene	333	109	ug/kg	33	SW846 8310
Acenaphthylene	333	143	ug/kg	43	SW846 8310
Anthracene	333	183	ug/kg	55	SW846 8310
Benzo(a)anthracene	333	215	ug/kg	64	SW846 8310
Benzo(a)pyrene	333	213	ug/kg	64	SW846 8310
Benzo(b)fluoranthene	333	221	ug/kg	66	SW846 8310
Benzo(ghi)perylene	333	221	ug/kg	66	SW846 8310
Benzo(k)fluoranthene	333	226	ug/kg	68	SW846 8310
Chrysene	333	233	ug/kg	70	SW846 8310
Dibenz(a,h)anthracene	333	332	ug/kg	100	SW846 8310
Fluoranthene	333	222	ug/kg	67	SW846 8310
Fluorene	333	166	ug/kg	50	SW846 8310
Indeno(1,2,3-cd)pyrene	333	234	ug/kg	70	SW846 8310
Naphthalene	333	80.6	ug/kg	24	SW846 8310
Phenanthrene	333	202	ug/kg	61	SW846 8310
Pyrene	333	185	ug/kg	55	SW846 8310

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
p-Terphenyl	71	(44 - 140)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters