W03153

Quanterra

Quanterra Incorporated
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ANALYTICAL REPORT

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PROJECT NO. PERMIT MONITOR

B99-018

Lot #: F0E060133
SDG #: W03153

Bechtel Hanford, Inc.

Bechtel Hanford, Inc.

SEVERN TRENT LABORATORIES, INC.

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MARTI WARD
Project Manager

June 5, 2000

Quanterra

CASE NARRATIVE

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

June 5, 2000

Attention: Joan Kessner

Project Number	:	33548
SAF	:	B99-018
SDG	:	W03153
Number of Samples	:	one (1)
Sample Matrix	:	Water
Data Deliverable	:	Summary
Date SDG Closed	:	May 4, 2000

II. Introduction

On May 4, 2000, one (1) "water" sample was received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. The samples were received within temperature criteria. See the attached Sample Summary sheet for the client and lab Ids for these samples.

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:

pH – 150.1
Sulfate – 375.4
TDS – 160.1
TSS – 160.2
Arsenic – 7060 (GFAA)
ICP Metals – 6010 TAL
Chlorine (Total Residual) – 330.3
Acrylamide – 8316
VOA – 8240 (Appen IX)
VOA – 8260A (TCL)

Deviation from Request: There were no deviations.

Quanterra

Bechtel Hanford Incorporated
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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.

Please refer to the attached cross-reference table for the standard preparation methods used at Quanterra, St. Louis.

VOA:

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 detection limit for Isobutanol was raised to 400 ug/l due to a loss of sensitivity on the instrument. The client was informed of this on 5/12/00.

The RPD for TCE in the 8240 analysis was outside the control limits. The individual spike recoveries were within criteria.

Acrylamide:

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

There were no comments or non-conformances associated with this data.

Metals:

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

The spike recoveries for Cadmium were above the QC criteria and were flagged with an "N" qualifier. LCS recoveries wee acceptable.

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Bechtel Hanford Incorporated
June 5, 2000
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Wet Chemistry: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Duplicate were analyzed with the Sulfate preparation batch per the protocol for this analysis. A duplicate was analyzed as QC for the pH, TSS, TDS and Residual Chlorine analyses.

The spike recovery for Sulfate was above the control limit. The data was given an "N" qualifier.

I certify that this Data package 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

SAMPLE SUMMARY

F0E060133

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
DCVJ4	001	B0Y317	05/03/00	09:39

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

F0E060133

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH (Electrometric)	MCAWW 150.1	MCAWW 150.1
Acrylamide, Acrylonitrile and Acrolein by HPLC	SWDFT 8316	
Arsenic (AA, Furnace Technique)	SW846 7060	SW846 7060
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
Non-Filterable Residue (TSS)	MCAWW 160.2	MCAWW 160.2
Residual Chlorine 330.3	MCAWW 330.3	
Sulfate	MCAWW 375.4	MCAWW 375.4
Volatile Organics by GC/MS	SW846 8240A	SW846 8240A
Volatile Organics by GC/MS	SW846 8260A	SW846 5030/8260

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SWDFT "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Draft Methods.

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

VOLATILE ORGANICS

BECHTEL HANFORD, INC.

Client Sample ID: B0Y317

GC/MS Volatiles

Lot-Sample #...: F0E060133-001 **Work Order #...:** DCVJ4101 **Matrix.....:** WATER
Date Sampled...: 05/03/00 **Date Received..:** 05/04/00
Prep Date.....: 05/11/00 **Analysis Date..:** 05/11/00
Prep Batch #...: 0133134
Dilution Factor: 1 **Method.....:** SW846 8260A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Chloromethane	ND	10	ug/L	1.6
Vinyl chloride	ND	10	ug/L	4.1
Bromomethane	ND	10	ug/L	2.0
Chloroethane	ND	10	ug/L	2.3
Acetone	ND	20	ug/L	6.9
1,1-Dichloroethene	ND	5.0	ug/L	2.2
Methylene chloride	ND	5.0	ug/L	1.8
Carbon disulfide	ND	5.0	ug/L	2.1
1,1-Dichloroethane	ND	5.0	ug/L	1.2
2-Butanone	ND	20	ug/L	6.8
1,2-Dichloroethene (total)	ND	5.0	ug/L	2.7
Chloroform	9.3	5.0	ug/L	1.5
1,1,1-Trichloroethane	ND	5.0	ug/L	1.3
Carbon tetrachloride	ND	5.0	ug/L	1.3
1,2-Dichloroethane	ND	5.0	ug/L	1.6
Benzene	ND	5.0	ug/L	1.9
Trichloroethene	ND	5.0	ug/L	1.8
1,2-Dichloropropane	ND	5.0	ug/L	1.7
Bromodichloromethane	ND	5.0	ug/L	2.7
4-Methyl-2-pentanone	ND	20	ug/L	3.5
cis-1,3-Dichloropropene	ND	5.0	ug/L	2.0
Toluene	ND	5.0	ug/L	1.6
trans-1,3-Dichloropropene	ND	5.0	ug/L	2.5
1,1,2-Trichloroethane	ND	5.0	ug/L	3.6
2-Hexanone	ND	20	ug/L	4.6
Tetrachloroethene	ND	5.0	ug/L	2.7
Dibromochloromethane	ND	5.0	ug/L	3.2
Chlorobenzene	ND	5.0	ug/L	2.8
Ethylbenzene	ND	5.0	ug/L	2.4
Xylenes (total)	ND	10	ug/L	6.6
Styrene	ND	5.0	ug/L	3.0
Bromoform	ND	5.0	ug/L	3.1
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	3.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	107	(71 - 118)
Toluene-d8	108	(78 - 124)
Dibromofluoromethane	88	(77 - 138)

BECHTEL HANFORD, INC.

B0Y317

GC/MS Volatiles

Lot-Sample #: F0E060133-001 **Work Order #:** DCVJ4101 **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
UNKNOWN		5.8	M	4.28	ug/L
UNKNOWN		11	M	4.723	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: F0E060133 **Work Order #...:** DCVJ4102-MS **Matrix.....:** WATER
MS Lot-Sample #: F0E060133-001 DCVJ4103-MSD
Date Sampled...: 05/03/00 **Date Received..:** 05/04/00
Prep Date.....: 05/11/00 **Analysis Date..:** 05/11/00
Prep Batch #...: 0133134
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,1-Dichloroethene	ND	50.0	43.4	ug/L	87		SW846 8260A
	ND	50.0	38.1	ug/L	76	13	SW846 8260A
Benzene	ND	50.0	50.7	ug/L	101		SW846 8260A
	ND	50.0	49.2	ug/L	98	3.1	SW846 8260A
Trichloroethene	ND	50.0	48.8	ug/L	98		SW846 8260A
	ND	50.0	45.5	ug/L	91	7.1	SW846 8260A
Toluene	ND	50.0	51.6	ug/L	103		SW846 8260A
	ND	50.0	48.4	ug/L	97	6.3	SW846 8260A
Chlorobenzene	ND	50.0	54.8	ug/L	110		SW846 8260A
	ND	50.0	53.9	ug/L	108	1.7	SW846 8260A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	110	(71 - 118)
	106	(71 - 118)
Toluene-d8	105	(78 - 124)
	98	(78 - 124)
Dibromofluoromethane	91	(77 - 138)
	80	(77 - 138)

NOTE(S):

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

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0E060133 **Work Order #...:** DD400101 **Matrix.....:** WATER
MB Lot-Sample #: F0E120000-134

Prep Date.....: 05/11/00
Analysis Date..: 05/11/00 **Prep Batch #...:** 0133134
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Chloromethane	ND	10	ug/L	SW846 8260A
Vinyl chloride	ND	10	ug/L	SW846 8260A
Bromomethane	ND	10	ug/L	SW846 8260A
Chloroethane	ND	10	ug/L	SW846 8260A
Acetone	ND	20	ug/L	SW846 8260A
1,1-Dichloroethene	ND	5.0	ug/L	SW846 8260A
Methylene chloride	ND	5.0	ug/L	SW846 8260A
Carbon disulfide	ND	5.0	ug/L	SW846 8260A
1,1-Dichloroethane	ND	5.0	ug/L	SW846 8260A
2-Butanone	ND	20	ug/L	SW846 8260A
1,2-Dichloroethene (total)	ND	5.0	ug/L	SW846 8260A
Chloroform	ND	5.0	ug/L	SW846 8260A
1,1,1-Trichloroethane	ND	5.0	ug/L	SW846 8260A
Carbon tetrachloride	ND	5.0	ug/L	SW846 8260A
1,2-Dichloroethane	ND	5.0	ug/L	SW846 8260A
Benzene	ND	5.0	ug/L	SW846 8260A
Trichloroethene	ND	5.0	ug/L	SW846 8260A
1,2-Dichloropropane	ND	5.0	ug/L	SW846 8260A
Bromodichloromethane	ND	5.0	ug/L	SW846 8260A
4-Methyl-2-pentanone	ND	20	ug/L	SW846 8260A
cis-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8260A
Toluene	ND	5.0	ug/L	SW846 8260A
trans-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8260A
1,1,2-Trichloroethane	ND	5.0	ug/L	SW846 8260A
2-Hexanone	ND	20	ug/L	SW846 8260A
Tetrachloroethene	ND	5.0	ug/L	SW846 8260A
Dibromochloromethane	ND	5.0	ug/L	SW846 8260A
Chlorobenzene	ND	5.0	ug/L	SW846 8260A
Ethylbenzene	ND	5.0	ug/L	SW846 8260A
Xylenes (total)	ND	10	ug/L	SW846 8260A
Styrene	ND	5.0	ug/L	SW846 8260A
Bromoform	ND	5.0	ug/L	SW846 8260A
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	SW846 8260A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	106	(71 - 118)
Toluene-d8	112	(78 - 124)
Dibromofluoromethane	84	(77 - 138)

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0E060133 **Work Order #...:** DD400101 **Matrix.....:** WATER

NOTE(S):

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

BECHTEL HANFORD, INC.

Method Blank Report

GC/MS Volatiles

Lot-Sample #: F0E120000-134 B **Work Order #:** DD400101 **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
UNKNOWN		7.9	M	4.738	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: F0E060133 **Work Order #...:** DD400102 **Matrix.....:** WATER
LCS Lot-Sample#: F0E120000-134
Prep Date.....: 05/11/00 **Analysis Date..:** 05/11/00
Prep Batch #...: 0133134
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
1,1-Dichloroethene	**50.0**	**45.9**	**ug/L**	**92**	**SW846 8260A**
Benzene	**50.0**	**52.3**	**ug/L**	**105**	**SW846 8260A**
Trichloroethene	**50.0**	**51.8**	**ug/L**	**104**	**SW846 8260A**
Toluene	**50.0**	**52.6**	**ug/L**	**105**	**SW846 8260A**
Chlorobenzene	**50.0**	**54.3**	**ug/L**	**109**	**SW846 8260A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	108	(71 - 118)
Toluene-d8	109	(78 - 124)
Dibromofluoromethane	94	(77 - 138)

NOTE(S):

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

Bold print denotes control parameters

RECHTEL HANFORD, INC.

Client Sample ID: B0Y317

GC/MS Volatiles

Lot-Sample #...: F0E060133-001 Work Order #...: DCVJ412L Matrix.....: WATER
Date Sampled...: 05/03/00 Date Received..: 05/04/00
Prep Date.....: 05/12/00 Analysis Date..: 05/12/00
Prep Batch #...: 0135126
Dilution Factor: 1 Method.....: SW846 8240A

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Chloromethane	ND	10	ug/L	2.7
Vinyl chloride	ND	10	ug/L	2.6
Bromomethane	ND	10	ug/L	2.0
Chloroethane	ND	10	ug/L	1.9
Acetone	ND	20	ug/L	1.3
1,1-Dichloroethene	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	1.5
Carbon disulfide	ND	5.0	ug/L	1.3
1,1-Dichloroethane	ND	5.0	ug/L	1.3
2-Butanone	ND	20	ug/L	2.2
1,2-Dichloroethene (total)	ND	5.0	ug/L	5.0
Chloroform	14	5.0	ug/L	1.7
1,1,1-Trichloroethane	ND	5.0	ug/L	5.0
Carbon tetrachloride	ND	5.0	ug/L	1.2
1,2-Dichloroethane	ND	5.0	ug/L	1.9
Benzene	ND	5.0	ug/L	1.6
Trichloroethene	ND	5.0	ug/L	1.3
1,2-Dichloropropane	ND	5.0	ug/L	2.2
Bromodichloromethane	ND	5.0	ug/L	1.2
4-Methyl-2-pentanone	ND	20	ug/L	1.6
cis-1,3-Dichloropropene	ND	5.0	ug/L	1.3
Toluene	ND	5.0	ug/L	1.7
trans-1,3-Dichloropropene	ND	5.0	ug/L	1.3
1,1,2-Trichloroethane	ND	5.0	ug/L	1.2
2-Hexanone	ND	20	ug/L	1.7
Tetrachloroethene	ND	5.0	ug/L	2.0
Dibromochloromethane	ND	5.0	ug/L	5.0
Chlorobenzene	ND	5.0	ug/L	2.7
Ethylbenzene	ND	5.0	ug/L	1.1
Xylenes (total)	ND	5.0	ug/L	1.2
Styrene	ND	5.0	ug/L	1.2
Bromoform	ND	5.0	ug/L	0.97
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	0.97
Acrolein	ND	100	ug/L	100
Acetonitrile	ND	100	ug/L	100
Iodomethane	ND	5.0	ug/L	5.0
Allyl chloride	ND	10	ug/L	10
2-Chloro-1,3-butadiene	ND	5.0	ug/L	5.0

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BECHTEL HANFORD, INC.

Client Sample ID: B0Y317

GC/MS Volatiles

Lot-Sample #...: F0E060133-001 Work Order #...: DCVJ412L Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Propionitrile	ND	20	ug/L	20
Methacrylonitrile	ND	5.0	ug/L	5.0
Isobutanol	ND	400	ug/L	200
1,4-Dioxane	ND	500	ug/L	500
Methyl methacrylate	ND	5.0	ug/L	5.0
Dibromomethane	ND	5.0	ug/L	5.0
Ethyl methacrylate	ND	5.0	ug/L	5.0
1,2-Dibromoethane	ND	5.0	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	5.0
1,2,3-Trichloropropane	ND	5.0	ug/L	5.0
1,2-Dibromo-3-chloro-propane	ND	10	ug/L	10
Dichlorodifluoromethane	ND	10	ug/L	10
Trichlorofluoromethane	ND	10	ug/L	10

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	87	(69 - 113)
Toluene-d8	98	(68 - 132)
1,2-Dichloroethane-d4	72	(72 - 147)

BECHTEL HANFORD, INC.

B0Y317

GC/MS Volatiles

Lot-Sample #: F0E060133-001 **Work Order #:** DCVJ412L **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: F0E060133 **Work Order #...:** DCVJ412M-MS **Matrix.....:** WATER
MS Lot-Sample #: F0E060133-001 DCVJ412N-MSD
Date Sampled...: 05/03/00 **Date Received..:** 05/04/00
Prep Date.....: 05/12/00 **Analysis Date..:** 05/12/00
Prep Batch #...: 0135126
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	ND	50.0	58.0	ug/L	116		SW846 8240A
	ND	50.0	59.5	ug/L	119	2.5	SW846 8240A
Trichloroethene	ND	50.0	68.1	ug/L	136		SW846 8240A
	ND	50.0	45.8	ug/L	92 p	39	SW846 8240A
1,1-Dichloroethene	ND	50.0	43.7	ug/L	87		SW846 8240A
	ND	50.0	51.9	ug/L	104	17	SW846 8240A
Toluene	ND	50.0	46.3	ug/L	93		SW846 8240A
	ND	50.0	49.3	ug/L	99	6.3	SW846 8240A
Chlorobenzene	ND	50.0	50.8	ug/L	102		SW846 8240A
	ND	50.0	51.9	ug/L	104	2.1	SW846 8240A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	87	(69 - 113)
	88	(69 - 113)
Toluene-d8	96	(68 - 132)
	99	(68 - 132)
1,2-Dichloroethane-d4	89	(72 - 147)
	92	(72 - 147)

NOTE(S):

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

Bold print denotes control parameters

p Relative percent difference (RPD) is outside stated control limits.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0E060133 **Work Order #...:** DD6HP101 **Matrix.....:** WATER
MB Lot-Sample #: F0E140000-126

Prep Date.....: 05/12/00
Analysis Date..: 05/12/00 **Prep Batch #...:** 0135126
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	20	ug/L	SW846 8240A
Acetonitrile	ND	100	ug/L	SW846 8240A
Acrolein	ND	100	ug/L	SW846 8240A
Benzene	ND	5.0	ug/L	SW846 8240A
Bromodichloromethane	ND	5.0	ug/L	SW846 8240A
Bromoform	ND	5.0	ug/L	SW846 8240A
Bromomethane	ND	10	ug/L	SW846 8240A
2-Butanone	ND	20	ug/L	SW846 8240A
Carbon disulfide	ND	5.0	ug/L	SW846 8240A
Carbon tetrachloride	ND	5.0	ug/L	SW846 8240A
Chlorobenzene	ND	5.0	ug/L	SW846 8240A
2-Chloro-1,3-butadiene	ND	5.0	ug/L	SW846 8240A
Dibromochloromethane	ND	5.0	ug/L	SW846 8240A
1,2-Dibromo-3-chloro-propane	ND	10	ug/L	SW846 8240A
Chloroethane	ND	10	ug/L	SW846 8240A
Chloroform	ND	5.0	ug/L	SW846 8240A
Chloromethane	ND	10	ug/L	SW846 8240A
Allyl chloride	ND	10	ug/L	SW846 8240A
1,2-Dibromoethane	ND	5.0	ug/L	SW846 8240A
Dibromomethane	ND	5.0	ug/L	SW846 8240A
trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	SW846 8240A
Dichlorodifluoromethane	ND	10	ug/L	SW846 8240A
1,1-Dichloroethane	ND	5.0	ug/L	SW846 8240A
1,2-Dichloroethane	ND	5.0	ug/L	SW846 8240A
1,1-Dichloroethene	ND	5.0	ug/L	SW846 8240A
1,2-Dichloroethene (total)	ND	5.0	ug/L	SW846 8240A
1,2-Dichloropropane	ND	5.0	ug/L	SW846 8240A
1,4-Dioxane	ND	500	ug/L	SW846 8240A
Ethylbenzene	ND	5.0	ug/L	SW846 8240A
Ethyl methacrylate	ND	5.0	ug/L	SW846 8240A
cis-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8240A
trans-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8240A
Trichlorofluoromethane	ND	10	ug/L	SW846 8240A
2-Hexanone	ND	20	ug/L	SW846 8240A
Iodomethane	ND	5.0	ug/L	SW846 8240A
Isobutanol	ND	400	ug/L	SW846 8240A
Methacrylonitrile	ND	5.0	ug/L	SW846 8240A
Methylene chloride	ND	5.0	ug/L	SW846 8240A

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0E060133 **Work Order #...:** DD6HP101 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methyl methacrylate	ND	5.0	ug/L	SW846 8240A
4-Methyl-2-pentanone	ND	20	ug/L	SW846 8240A
Propionitrile	ND	20	ug/L	SW846 8240A
Styrene	ND	5.0	ug/L	SW846 8240A
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L	SW846 8240A
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	SW846 8240A
Tetrachloroethene	ND	5.0	ug/L	SW846 8240A
Toluene	ND	5.0	ug/L	SW846 8240A
1,1,1-Trichloroethane	ND	5.0	ug/L	SW846 8240A
1,1,2-Trichloroethane	ND	5.0	ug/L	SW846 8240A
Trichloroethene	ND	5.0	ug/L	SW846 8240A
1,2,3-Trichloropropane	ND	5.0	ug/L	SW846 8240A
Vinyl chloride	ND	10	ug/L	SW846 8240A
Xylenes (total)	ND	5.0	ug/L	SW846 8240A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	87	(69 - 113)
Toluene-d8	98	(68 - 132)
1,2-Dichloroethane-d4	93	(72 - 147)

NOTE(S):

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

BECHTEL HANFORD, INC.

Method Blank Report

GC/MS Volatiles

Lot-Sample #: F0E140000-126 B **Work Order #:** DD6HP101 **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: F0E060133 **Work Order #...:** DD6HP102 **Matrix.....:** WATER
LCS Lot-Sample#: F0E140000-126
Prep Date.....: 05/12/00 **Analysis Date..:** 05/12/00
Prep Batch #...: 0135126
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	50.0	48.0	ug/L	96	SW846 8240A
Trichloroethene	50.0	46.9	ug/L	94	SW846 8240A
1,1-Dichloroethene	50.0	48.3	ug/L	97	SW846 8240A
Toluene	50.0	48.0	ug/L	96	SW846 8240A
Chlorobenzene	50.0	48.4	ug/L	97	SW846 8240A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	88	(69 - 113)
Toluene-d8	100	(68 - 132)
1,2-Dichloroethane-d4	94	(72 - 147)

NOTE(S):

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

Bold print denotes control parameters

GC

BECHTEL HANFORD, INC.

Client Sample ID: B0Y317

HPLC

Lot-Sample #...: F0E060133-001 Work Order #...: DCVJ4104 Matrix.....: WATER
Date Sampled...: 05/03/00 Date Received..: 05/04/00
Prep Date.....: 05/23/00 Analysis Date..: 05/23/00
Prep Batch #...: 0145174
Dilution Factor: 1 Method.....: SWDFT 8316

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acrylamide	ND	100	ug/L	100

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: F0E060133 **Work Order #...:** DCVJ4105-MS **Matrix.....:** WATER
MS Lot-Sample #: F0E060133-001 DCVJ4106-MSD
Date Sampled...: 05/03/00 **Date Received..:** 05/04/00
Prep Date.....: 05/23/00 **Analysis Date..:** 05/23/00
Prep Batch #...: 0145174
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Acrylamide	ND	1000	800	ug/L	80		SWDFT 8316
	ND	1000	790	ug/L	79	1.2	SWDFT 8316

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 #...: F0E060133 **Work Order #...:** DDL7N101 **Matrix.....:** WATER
MB Lot-Sample #: F0E240000-174

Prep Date.....: 05/23/00
Analysis Date..: 05/23/00 **Prep Batch #...:** 0145174
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acrylamide	ND	100	ug/L	SWDFT 8316

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: F0E060133 **Work Order #...:** DDL7N102 **Matrix.....:** WATER
LCS Lot-Sample#: F0E240000-174
Prep Date.....: 05/23/00 **Analysis Date..:** 05/23/00
Prep Batch #...: 0145174
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Acrylamide	1000	960	ug/L	96	SWDFT 8316

NOTE(S):

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

Bold print denotes control parameters

METALS

BECHTEL HANFORD, INC.

Client Sample ID: B0Y317

TOTAL Metals

Lot-Sample #...: F0E060133-001 **Matrix.....:** WATER
Date Sampled...: 05/03/00 **Date Received..:** 05/04/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0132313						
Aluminum	170 B	200	ug/L	SW846 6010B	05/11-05/19/00	DCVJ4107
		Dilution Factor: 1		MDL.....: 26.5		
Antimony	ND	60.0	ug/L	SW846 6010B	05/11-05/19/00	DCVJ410A
		Dilution Factor: 1		MDL.....: 19.7		
Barium	23.4 B	200	ug/L	SW846 6010B	05/11-05/19/00	DCVJ410E
		Dilution Factor: 1		MDL.....: 0.90		
Beryllium	0.56 B	5.0	ug/L	SW846 6010B	05/11-05/19/00	DCVJ410H
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	2.8 B	5.0	ug/L	SW846 6010B	05/11-05/19/00	DCVJ410L
		Dilution Factor: 1		MDL.....: 2.0		
Calcium	22600	5000	ug/L	SW846 6010B	05/11-05/19/00	DCVJ410P
		Dilution Factor: 1		MDL.....: 65.3		
Chromium	ND	10.0	ug/L	SW846 6010B	05/11-05/19/00	DCVJ410T
		Dilution Factor: 1		MDL.....: 2.7		
Cobalt	ND	50.0	ug/L	SW846 6010B	05/11-05/19/00	DCVJ410W
		Dilution Factor: 1		MDL.....: 2.5		
Copper	ND	25.0	ug/L	SW846 6010B	05/11-05/19/00	DCVJ4111
		Dilution Factor: 1		MDL.....: 4.0		
Iron	157	100	ug/L	SW846 6010B	05/11-05/19/00	DCVJ4114
		Dilution Factor: 1		MDL.....: 30.3		
Magnesium	4610 B	5000	ug/L	SW846 6010B	05/11-05/19/00	DCVJ4117
		Dilution Factor: 1		MDL.....: 101		
Manganese	4.3 B	15.0	ug/L	SW846 6010B	05/11-05/19/00	DCVJ411A
		Dilution Factor: 1		MDL.....: 0.90		
Nickel	ND	40.0	ug/L	SW846 6010B	05/11-05/19/00	DCVJ411E
		Dilution Factor: 1		MDL.....: 10.0		
Potassium	ND	5000	ug/L	SW846 6010B	05/11-05/19/00	DCVJ411H
		Dilution Factor: 1		MDL.....: 1810		

(Continued on next page)

BECHTEL HANFORD, INC.

Client Sample ID: B0Y317

TOTAL Metals

Lot-Sample #...: F0E060133-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	ND	10.0	ug/L	SW846 6010B	05/11-05/19/00	DCVJ411L
		Dilution Factor: 1		MDL.....: 8.0		
Sodium	3280 B	5000	ug/L	SW846 6010B	05/11-05/16/00	DCVJ411P
		Dilution Factor: 1		MDL.....: 44.2		
Vanadium	ND	50.0	ug/L	SW846 6010B	05/11-05/21/00	DCVJ411T
		Dilution Factor: 1		MDL.....: 4.7		
Zinc	6.2 B	20.0	ug/L	SW846 6010B	05/11-05/19/00	DCVJ411W
		Dilution Factor: 1		MDL.....: 4.2		
Prep Batch #...: 0137173						
Arsenic	ND	10.0	ug/L	SW846 7060	05/16-05/27/00	DCVJ4121
		Dilution Factor: 1		MDL.....: 1.0		

NOTE(S):

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F0E060133 **Matrix.....:** WATER
Date Sampled...: 05/03/00 **Date Received..:** 05/04/00

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F0E060133-001 **Prep Batch #...:** 0132313									
Aluminum									
	170	2000	2200	ug/L	102		SW846 6010B	05/11-05/19/00	DCVJ4108
	170	2000	2180	ug/L	101	0.98	SW846 6010B	05/11-05/19/00	DCVJ4109
				Dilution Factor: 1					
Antimony									
	ND	500	494	ug/L	99		SW846 6010B	05/11-05/19/00	DCVJ410C
	ND	500	478	ug/L	96	3.4	SW846 6010B	05/11-05/19/00	DCVJ410D
				Dilution Factor: 1					
Barium									
	23.4	2000	2010	ug/L	99		SW846 6010B	05/11-05/19/00	DCVJ410F
	23.4	2000	2010	ug/L	99	0.13	SW846 6010B	05/11-05/19/00	DCVJ410G
				Dilution Factor: 1					
Beryllium									
	0.56	50.0	52.5	ug/L	104		SW846 6010B	05/11-05/19/00	DCVJ410J
	0.56	50.0	52.9	ug/L	105	0.79	SW846 6010B	05/11-05/19/00	DCVJ410K
				Dilution Factor: 1					
Cadmium									
	2.8	50.0	72.8 N	ug/L	140		SW846 6010B	05/11-05/19/00	DCVJ410M
	2.8	50.0	73.3 N	ug/L	141	0.62	SW846 6010B	05/11-05/19/00	DCVJ410N
				Dilution Factor: 1					
Calcium									
	22600	50000	72300	ug/L	99		SW846 6010B	05/11-05/19/00	DCVJ410Q
	22600	50000	72700	ug/L	100	0.46	SW846 6010B	05/11-05/19/00	DCVJ410R
				Dilution Factor: 1					
Chromium									
	ND	200	195	ug/L	98		SW846 6010B	05/11-05/19/00	DCVJ410U
	ND	200	194	ug/L	97	0.50	SW846 6010B	05/11-05/19/00	DCVJ410V
				Dilution Factor: 1					
Cobalt									
	ND	500	511	ug/L	102		SW846 6010B	05/11-05/19/00	DCVJ410X
	ND	500	511	ug/L	102	0.0	SW846 6010B	05/11-05/19/00	DCVJ4110
				Dilution Factor: 1					
Copper									
	ND	250	254	ug/L	102		SW846 6010B	05/11-05/19/00	DCVJ4112
	ND	250	252	ug/L	101	0.80	SW846 6010B	05/11-05/19/00	DCVJ4113
				Dilution Factor: 1					

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F0E060133 **Matrix.....:** WATER
Date Sampled...: 05/03/00 **Date Received..:** 05/04/00

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron									
	157	1000	1200	ug/L	104		SW846 6010B	05/11-05/19/00	DCVJ4115
	157	1000	1200	ug/L	104	0.38	SW846 6010B	05/11-05/19/00	DCVJ4116
				Dilution Factor: 1					
Magnesium									
	4610	50000	54800	ug/L	100		SW846 6010B	05/11-05/19/00	DCVJ4118
	4610	50000	55100	ug/L	101	0.49	SW846 6010B	05/11-05/19/00	DCVJ4119
				Dilution Factor: 1					
Manganese									
	4.3	500	509	ug/L	101		SW846 6010B	05/11-05/19/00	DCVJ411C
	4.3	500	511	ug/L	101	0.50	SW846 6010B	05/11-05/19/00	DCVJ411D
				Dilution Factor: 1					
Nickel									
	ND	500	495	ug/L	99		SW846 6010B	05/11-05/19/00	DCVJ411F
	ND	500	493	ug/L	99	0.34	SW846 6010B	05/11-05/19/00	DCVJ411G
				Dilution Factor: 1					
Potassium									
	ND	50000	52500	ug/L	105		SW846 6010B	05/11-05/19/00	DCVJ411J
	ND	50000	52200	ug/L	104	0.48	SW846 6010B	05/11-05/19/00	DCVJ411K
				Dilution Factor: 1					
Silver									
	ND	50.0	52.2	ug/L	104		SW846 6010B	05/11-05/19/00	DCVJ411M
	ND	50.0	50.5	ug/L	101	3.2	SW846 6010B	05/11-05/19/00	DCVJ411N
				Dilution Factor: 1					
Sodium									
	3280	50000	54800	ug/L	103		SW846 6010B	05/11-05/16/00	DCVJ411Q
	3280	50000	55200	ug/L	104	0.65	SW846 6010B	05/11-05/16/00	DCVJ411R
				Dilution Factor: 1					
Vanadium									
	ND	500	492	ug/L	98		SW846 6010B	05/11-05/21/00	DCVJ411U
	ND	500	494	ug/L	99	0.37	SW846 6010B	05/11-05/21/00	DCVJ411V
				Dilution Factor: 1					
Zinc									
	6.2	500	516	ug/L	102		SW846 6010B	05/11-05/19/00	DCVJ411X
	6.2	500	520	ug/L	103	0.64	SW846 6010B	05/11-05/19/00	DCVJ4120
				Dilution Factor: 1					

MS Lot-Sample #: F0E060133-001 **Prep Batch #...:** 0137173

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F0E060133 **Matrix.....:** WATER
Date Sampled...: 05/03/00 **Date Received..:** 05/04/00

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic									
	ND	40.0	41.0	ug/L	103		SW846 7060	05/16-05/27/00	DCVJ4122
	ND	40.0	41.6	ug/L	104	1.4	SW846 7060	05/16-05/27/00	DCVJ4123

Dilution Factor: 1

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F0E060133 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F0E110000-313 Prep Batch #...: 0132313						
Aluminum	77.7 B	200	ug/L	SW846 6010B	05/11-05/19/00	DD32210C
		Dilution Factor: 1				
Antimony	ND	60.0	ug/L	SW846 6010B	05/11-05/19/00	DD322104
		Dilution Factor: 1				
Barium	ND	200	ug/L	SW846 6010B	05/11-05/19/00	DD322105
		Dilution Factor: 1				
Beryllium	0.54 B	5.0	ug/L	SW846 6010B	05/11-05/19/00	DD322106
		Dilution Factor: 1				
Cadmium	ND	5.0	ug/L	SW846 6010B	05/11-05/19/00	DD322107
		Dilution Factor: 1				
Calcium	ND	5000	ug/L	SW846 6010B	05/11-05/19/00	DD322108
		Dilution Factor: 1				
Chromium	ND	10.0	ug/L	SW846 6010B	05/11-05/19/00	DD322109
		Dilution Factor: 1				
Cobalt	ND	50.0	ug/L	SW846 6010B	05/11-05/19/00	DD32210A
		Dilution Factor: 1				
Copper	ND	25.0	ug/L	SW846 6010B	05/11-05/19/00	DD32210K
		Dilution Factor: 1				
Iron	38.3 B	100	ug/L	SW846 6010B	05/11-05/19/00	DD32210L
		Dilution Factor: 1				
Magnesium	ND	5000	ug/L	SW846 6010B	05/11-05/19/00	DD32210M
		Dilution Factor: 1				
Manganese	ND	15.0	ug/L	SW846 6010B	05/11-05/19/00	DD32210D
		Dilution Factor: 1				
Nickel	ND	40.0	ug/L	SW846 6010B	05/11-05/19/00	DD32210E
		Dilution Factor: 1				
Potassium	ND	5000	ug/L	SW846 6010B	05/11-05/19/00	DD32210F
		Dilution Factor: 1				
Silver	ND	10.0	ug/L	SW846 6010B	05/11-05/19/00	DD32210G
		Dilution Factor: 1				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F0E060133 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	ND	5000	ug/L	SW846 6010B	05/11-05/16/00	DD322101
		Dilution Factor: 1				
Vanadium	ND	50.0	ug/L	SW846 6010B	05/11-05/21/00	DD32210H
		Dilution Factor: 1				
Zinc	ND	20.0	ug/L	SW846 6010B	05/11-05/19/00	DD32210J
		Dilution Factor: 1				

MB Lot-Sample #: F0E160000-173 **Prep Batch #...:** 0137173

Arsenic	ND	10.0	ug/L	SW846 7060	05/16-05/27/00	DD7NH103
		Dilution Factor: 1				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: F0E060133 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Aluminum	1000	1080	ug/L	108		SW846 6010B	05/11-05/19/00	0132313
	1000	1070	ug/L	107	0.53	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Antimony	1000	1050	ug/L	105		SW846 6010B	05/11-05/19/00	0132313
	1000	1030	ug/L	103	1.8	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Barium	1000	997	ug/L	100		SW846 6010B	05/11-05/19/00	0132313
	1000	1010	ug/L	101	0.86	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Beryllium	1000	1010	ug/L	101		SW846 6010B	05/11-05/19/00	0132313
	1000	1020	ug/L	102	0.43	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Cadmium	1000	1020	ug/L	102		SW846 6010B	05/11-05/19/00	0132313
	1000	1040	ug/L	104	1.2	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Calcium	20000	20600	ug/L	103		SW846 6010B	05/11-05/19/00	0132313
	20000	20700	ug/L	104	0.75	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Chromium	1000	998	ug/L	100		SW846 6010B	05/11-05/19/00	0132313
	1000	1010	ug/L	101	1.0	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Cobalt	1000	1010	ug/L	101		SW846 6010B	05/11-05/19/00	0132313
	1000	1020	ug/L	102	0.73	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Copper	1000	1020	ug/L	102		SW846 6010B	05/11-05/19/00	0132313
	1000	1040	ug/L	104	1.3	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Iron	1000	1070	ug/L	106		SW846 6010B	05/11-05/19/00	0132313
	1000	1060	ug/L	106	0.42	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: F0E060133 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Magnesium	20000	20500	ug/L	102		SW846 6010B	05/11-05/19/00	0132313
	20000	20700	ug/L	104	1.2	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Manganese	1000	1000	ug/L	100		SW846 6010B	05/11-05/19/00	0132313
	1000	1010	ug/L	101	0.62	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Nickel	1000	1020	ug/L	102		SW846 6010B	05/11-05/19/00	0132313
	1000	1020	ug/L	102	0.04	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Potassium	20000	20800	ug/L	104		SW846 6010B	05/11-05/19/00	0132313
	20000	22400	ug/L	112	7.3	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Silver	250	233	ug/L	93		SW846 6010B	05/11-05/19/00	0132313
	250	237	ug/L	95	1.9	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					
Sodium	20000	20700	ug/L	104		SW846 6010B	05/11-05/16/00	0132313
	20000	21100	ug/L	106	2.0	SW846 6010B	05/11-05/16/00	0132313
			Dilution Factor: 1					
Vanadium	1000	1030	ug/L	103		SW846 6010B	05/11-05/21/00	0132313
	1000	1010	ug/L	101	2.1	SW846 6010B	05/11-05/21/00	0132313
			Dilution Factor: 1					
Zinc	1000	1030	ug/L	103		SW846 6010B	05/11-05/19/00	0132313
	1000	1030	ug/L	103	0.42	SW846 6010B	05/11-05/19/00	0132313
			Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F0E060133 Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F0E160000-173 Prep Batch #...: 0137173							
Arsenic	40.0	37.3	ug/L	93	SW846 7060	05/16-05/27/00	DD7NH104
Dilution Factor: 1							

NOTE(S):

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

WET CHEMISTRY

BECHTEL HANFORD, INC.

Client Sample ID: B0Y317

General Chemistry

Lot-Sample #...: F0E060133-001 **Work Order #...:** DCVJ4 **Matrix.....:** WATER
Date Sampled...: 05/03/00 **Date Received..:** 05/04/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.2		No Units	MCAWW 150.1	05/22/00	0143486
		Dilution Factor: 1		MDL.....: 0.010		
Sulfate	17.8	5.0	mg/L	MCAWW 375.4	05/31/00	0153134
		Dilution Factor: 1		MDL.....: 0.90		
Total Dissolved Solids	105	5.0	mg/L	MCAWW 160.1	05/10/00	0131407
		Dilution Factor: 1		MDL.....: 4.2		
Total Residual Chlorine	0.10 <	0.10	mg/L	MCAWW 330.3	05/18/00	0139427
		Dilution Factor: 1		MDL.....: 0.089		
Total Suspended Solids	6.0	1.0	mg/L	MCAWW 160.2	05/10/00	0131410
		Dilution Factor: 1		MDL.....:		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F0E060133 **Work Order #...:** DCVJ4-SMP DCVJ4-DUP **Matrix.....:** WATER

Date Sampled...: 05/03/00 **Date Received..:** 05/04/00

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)						SD Lot-Sample #:	F0E060133-001	
	7.2	7.2	No Units	0.28	(0-20)	MCAWW 150.1	05/22/00	0143486
		Dilution Factor: 1						
Total Dissolved Solids						SD Lot-Sample #:	F0E060133-001	
	105	106	mg/L	0.95	(0-20)	MCAWW 160.1	05/10/00	0131407
		Dilution Factor: 1						
Total Residual Chlorine						SD Lot-Sample #:	F0E060133-001	
	0.10 <	0.10 <	mg/L	0.0	(0-20)	MCAWW 330.3	05/18/00	0139427
		Dilution Factor: 1						
Sulfate						SD Lot-Sample #:	F0E060133-001	
	17.8	17.8	mg/L	0.45	(0-20)	MCAWW 375.4	05/31/00	0153134
		Dilution Factor: 1						
Total Suspended Solids						SD Lot-Sample #:	F0E060133-001	
	6.0	6.0	mg/L	0.0	(0-20)	MCAWW 160.2	05/10/00	0131410
		Dilution Factor: 1						

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F0E060133 **Matrix.....:** WATER
Date Sampled...: 05/03/00 **Date Received..:** 05/04/00

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate			Work Order #...: DCVJ412F			MS Lot-Sample #: F0E060133-001		
	17.8	25.0	52.6 N	mg/L	139	MCAWW 375.4	05/31/00	0153134
			Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F0E060133 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)		Work Order #: DDJ50101		MB Lot-Sample #:	F0E220000-486	
	5.4		No Units	MCAWW 150.1	05/22/00	0143486
		Dilution Factor: 1				
Sulfate		Work Order #: DE1L2101		MB Lot-Sample #:	F0F010000-134	
	ND	5.0	mg/L	MCAWW 375.4	05/31/00	0153134
		Dilution Factor: 1				
Total Dissolved Solids		Work Order #: DD3P6101		MB Lot-Sample #:	F0E100000-407	
	5.0 <	5.0	mg/L	MCAWW 160.1	05/10/00	0131407
		Dilution Factor: 1				
Total Residual Chlorine		Work Order #: DDDM9101		MB Lot-Sample #:	F0E180000-427	
	0.10 <	0.10	mg/L	MCAWW 330.3	05/18/00	0139427
		Dilution Factor: 1				
Total Suspended Solids		Work Order #: DD367101		MB Lot-Sample #:	F0E100000-410	
	1.0 <	1.0	mg/L	MCAWW 160.2	05/10/00	0131410
		Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F0E060133 Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate			Work Order #: DE1L2102		LCS Lot-Sample#:	F0F010000-134	
	30.0	27.8	mg/L	93	MCAWW 375.4	05/31/00	0153134
			Dilution Factor: 1				
Total Dissolved Solids			Work Order #: DD3P6102		LCS Lot-Sample#:	F0E100000-407	
	500	487	mg/L	97	MCAWW 160.1	05/10/00	0131407
			Dilution Factor: 1				
Total Residual Chlorine			Work Order #: DDDM9102		LCS Lot-Sample#:	F0E180000-427	
	7.13	6.92	mg/L	97	MCAWW 330.3	05/18/00	0139427
			Dilution Factor: 1				
Total Suspended Solids			Work Order #: DD367102		LCS Lot-Sample#:	F0E100000-410	
	500	445	mg/L	89	MCAWW 160.2	05/10/00	0131410
			Dilution Factor: 1				

NOTE(S):

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

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 5/06/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 10:58:30
STL St. Louis User Id.: PACEM

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 33548
PROJECT MANAGER: MARTI WARD LAB ID: F-0E060133-001
PROJECT #: PERMIT MONITOR WORK ORDER: DCVJ4
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 5/04/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 5/03/00
SITE: B99-018 ANALYTICAL DUE DATE: 6/02/00N
AMOUNT REC"D: 9X40ML,125P,250P,500P,LP REPORT DUE DATE: 6/19/00
STORAGE LOC: T11A,V5A PRIORITY: 29
LOT COMMENTS: Hanford EDD and Package Format required SAMPLING TIME: 9:39
MATRIX: WATER RECEIVING TIME: 13:30
SAMPLE ID: B0Y317
QC PACKAGE: Special Report - see checklist SDG# : W03153
SAMPLE COMMENTS:
PH,TDS,TSS,& RCL REQUIRE DUP FOR QC, SULFATE REQUIRES MS/DUP FOR QC
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06	5/06/00	0/00/00	5/17/00
PURGE AND TRAP - 5 mL purge				
STL: SW-846 8260A				
(I-15-MZ-01) DCVJ4-1-01 Protocol: A QC Program: STANDARD TEST SET				
Acrylamide, Acrylonitrile, Acrolein (831	06	5/06/00	0/00/00	5/17/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
STL: Acrylamide by HPLC				
(I-88-A9-01) DCVJ4-1-04 Protocol: A QC Program: STANDARD TEST SET				
Arsenic (7060, Furnace)	06	5/06/00	0/00/00	10/30/00
METALS, TOTAL - Waters				
M7060_L AS				
(I-05-DT-01) DCVJ4 Protocol: A QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B)	06	5/06/00	0/00/00	10/30/00
METALS, TOTAL - Waters				
M6010_L AG,AL,BA,BE,CA,CD,CO,CR,CU,FE,KX,MG,MN,NA,NI,SB,VX,ZN				
(I-05-QO-01) DCVJ4 Protocol: A QC Program: STANDARD TEST SET				
pH - Aqueous (150.1)	06	5/06/00	0/00/00	5/05/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(I-88-AJ-01) DCVJ4-1-24 Protocol: A QC Program: STANDARD TEST SET				
Solids, Filterable "TDS" (160.1)	06	5/06/00	0/00/00	5/10/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(I-88-AK-01) DCVJ4-1-27 Protocol: A QC Program: STANDARD TEST SET				
Chlorine, Residual (330.3)	06	5/06/00	0/00/00	5/04/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(I-88-RD-01) DCVJ4-1-2A Protocol: A QC Program: STANDARD TEST SET				
Sulfate 375.4)	06	5/06/00	0/00/00	5/31/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(I-88-UV-01) DCVJ4-1-2E Protocol: A QC Program: STANDARD TEST SET				

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 5/06/00
Page 2 CLIENT ANALYSIS SUMMARY Time: 10:58:30
STL St. Louis User Id.: PACEM

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 33548
PROJECT MANAGER: MARTI WARD LAB ID: F-0E060133-001
PROJECT #: PERMIT MONITOR WORK ORDER: DCVJ4
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 5/04/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 5/03/00
SITE: B99-018 ANALYTICAL DUE DATE: 6/02/00N
AMOUNT REC"D: 9X40ML,125P,250P,500P,LP REPORT DUE DATE: 6/19/00
STORAGE LOC: T11A,V5A PRIORITY: 29
LOT COMMENTS: Hanford EDD and Package Format required SAMPLING TIME: 9:39
MATRIX: WATER RECEIVING TIME: 13:30
SAMPLE ID: B0Y317
QC PACKAGE: Special Report - see checklist SDG# : W03153
SAMPLE COMMENTS:
PH,TDS,TSS,& RCL REQUIRE DUP FOR QC, SULFATE REQUIRES MS/DUP FOR QC
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Solids, Total Suspended "TSS" (160.2)	06	5/06/00	0/00/00	5/10/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(I-88-AL-01) DCVJ4-1-2H Protocol: A QC Program: STANDARD TEST SET				
Volatile Organics, GC/MS (8240)	06	5/06/00	0/00/00	5/17/00
PURGE AND TRAP - 5 mL purge				
STL: HANFORD 8240APPIX VOA GC/MS LIST				
(I-15-FB-5I) DCVJ4-1-2L Protocol: A QC Program: CLIENT: HANFORD				

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 5/06/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 10:58:30
STL St. Louis User Id.: PACEM

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 33548
PROJECT MANAGER: MARTI WARD LAB ID: F-0E060133-001-D
PROJECT #: PERMIT MONITOR WORK ORDER: DCVJ4 MSD
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 5/04/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 5/03/00
SITE: B99-018 ANALYTICAL DUE DATE: 6/02/00N
AMOUNT REC"D: 9X40ML,125P,250P,500P,LP REPORT DUE DATE: 6/19/00
STORAGE LOC: T11A,V5A PRIORITY: 29
LOT COMMENTS: Hanford EDD and Package Format required SAMPLING TIME: 9:39
MATRIX: WATER RECEIVING TIME: 13:30
SAMPLE ID: B0Y317
QC PACKAGE: Special Report - see checklist SDG# : W03153
SAMPLE COMMENTS:
PH,TDS,TSS,& RCL REQUIRE DUP FOR QC, SULFATE REQUIRES MS/DUP FOR QC
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06	5/06/00	0/00/00	5/17/00
PURGE AND TRAP - 5 mL purge				
STL: SW-846 8260A				
(I-15-MZ-01) DCVJ4-1-03 Protocol: A QC Program: STANDARD TEST SET				
Acrylamide, Acrylonitrile, Acrolein (831	06	5/06/00	0/00/00	5/17/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
STL: Acrylamide by HPLC				
(I-88-A9-01) DCVJ4-1-06 Protocol: A QC Program: STANDARD TEST SET				
Arsenic (7060, Furnace)	06	5/06/00	0/00/00	10/30/00
METALS, TOTAL - Waters				
M7060_L AS				
(I-05-DT-01) DCVJ4 Protocol: A QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B)	06	5/06/00	0/00/00	10/30/00
METALS, TOTAL - Waters				
M6010_L AG,AL,BA,BE,CA,CD,CO,CR,CU,FE,KX,MG,MN,NA,NI,SB,VX,ZN				
(I-05-QO-01) DCVJ4 Protocol: A QC Program: STANDARD TEST SET				
Volatile Organics, GC/MS (8240)	06	5/06/00	0/00/00	5/17/00
PURGE AND TRAP - 5 mL purge				
STL: HANFORD 8240APPIX VOA GC/MS LIST				
(I-15-FB-5I) DCVJ4-1-2N Protocol: A QC Program: CLIENT: HANFORD				

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 5/06/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 10:58:30
STL St. Louis User Id.: PACEM

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 33548
PROJECT MANAGER: MARTI WARD LAB ID: F-0E060133-001-S
PROJECT #: PERMIT MONITOR WORK ORDER: DCVJ4 MS
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 5/04/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 5/03/00
SITE: B99-018 ANALYTICAL DUE DATE: 6/02/00N
AMOUNT REC"D: 9X40ML,125P,250P,500P,LP REPORT DUE DATE: 6/19/00
STORAGE LOC: T11A,V5A PRIORITY: 29
LOT COMMENTS: Hanford EDD and Package Format required SAMPLING TIME: 9:39
MATRIX: WATER RECEIVING TIME: 13:30
SAMPLE ID: B0Y317
QC PACKAGE: Special Report - see checklist SDG# : W03153
SAMPLE COMMENTS:
PH,TDS,TSS,& RCL REQUIRE DUP FOR QC, SULFATE REQUIRES MS/DUP FOR QC
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06	5/06/00	0/00/00	5/17/00
PURGE AND TRAP - 5 mL purge				
STL: SW-846 8260A				
(I-15-MZ-01) DCVJ4-1-02 Protocol: A QC Program: STANDARD TEST SET				
Acrylamide, Acrylonitrile, Acrolein (831	06	5/06/00	0/00/00	5/17/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
STL: Acrylamide by HPLC				
(I-88-A9-01) DCVJ4-1-05 Protocol: A QC Program: STANDARD TEST SET				
Arsenic (7060, Furnace)	06	5/06/00	0/00/00	10/30/00
METALS, TOTAL - Waters				
M7060_L AS				
(I-05-DT-01) DCVJ4 Protocol: A QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B)	06	5/06/00	0/00/00	10/30/00
METALS, TOTAL - Waters				
M6010_L AG,AL,BA,BE,CA,CD,CO,CR,CU,FE,KX,MG,MN,NA,NI,SB,VX,ZN				
(I-05-QO-01) DCVJ4 Protocol: A QC Program: STANDARD TEST SET				
Sulfate 375.4)	06	5/06/00	0/00/00	5/31/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(I-88-UV-01) DCVJ4-1-2F Protocol: A QC Program: STANDARD TEST SET				
Volatile Organics, GC/MS (8240)	06	5/06/00	0/00/00	5/17/00
PURGE AND TRAP - 5 mL purge				
STL: HANFORD 8240APPIX VOA GC/MS LIST				
(I-15-FB-5I) DCVJ4-1-2M Protocol: A QC Program: CLIENT: HANFORD				

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Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-018-38	Page 1 of 2

Collector: T Johansen/ M Baechler	Company Contact: D Blankenship	Telephone No.: 373-5456	Project Coordinator: TRENT, SJ
Price Code: 7N	Data Turnaround: 45 Days	Air Quality: ☐	
Project Designation: 183N Backwash Discharge Pond -- Permit Monitoring	Sampling Location: 183N		SAF No.: B99-018
Ice Chest No.: SML 562	Field Logbook No.: EL 1516	COA: 77BK27YA40	Method of Shipment: Fed-EX
Shipped To: Quanterra Incorporated	Offsite Property No.: A000153		Bill of Lading/Air Bill No.: 4235 7953 5534

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

WO3153

SAMPLE ANALYSIS all 100 % full

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	None	Cool 4C	☐ 5/1/00 HCl or H2SO4 to pH <2 Coo
Type of Container	P	P	P	P	P	P	P	P	Gs*	Gs*
No. of Container(s)	1	1	1	1	1	1	1	1	3	3
Volume	20mL	125mL	250mL	500mL	500mL	500mL	500mL	1000mL	40mL	40mL
	Activity Scan	pH - 150.1	Sulfate -- 375.4	TDS - 160.1	TSS - 160.2	Arsenic - 7060 - (GFAA) pH<1	ICP Metals - 6010A (TAL) pH<1	Chlorine (Total residual) - 330.3	Acrylamide - 8316	VOA - 8240A (Append IX)

Sample No.	Matrix *	Sample Date	Sample Time	Activity Scan	pH - 150.1	Sulfate -- 375.4	TDS - 160.1	TSS - 160.2	Arsenic - 7060 - (GFAA)	ICP Metals - 6010A (TAL)	Chlorine (Total residual) - 330.3	Acrylamide - 8316	VOA - 8240A (Append IX)
B0Y317	Water	5/3/00	0930	X	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
[illegible]	5/3/00 1510	Bekring #2	5/3/00 1510
Ref #2	5-4-00 1330	[illegible]	1330 5-4-00
[illegible]	1430 5-4-00	Fed Ex	
FED EX		[illegible] SRL	5-5-00 0855

SPECIAL INSTRUCTIONS

SAMPLES COLLECTED FROM AREA WITH < 2000 pCi/g

collector unavailible to relinquish custody

Matrix *
S-Soil
SD-Sediment
SO-Solid
S-Sludge
W - Water
O-Oil
A-Air
DS-Drum Solids
DL-Drum Liquids
T-Tissue
Wi-Wipe
L-Liquid
Vi-Vegetation
X-Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)

STL St. Louis

LOT #F0E060133

2°

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-018-38	Page 2 of 2
Collector: T Johansen/ M Baechler	Company Contact: D Blankenship; Telephone No.: 373-5456	Project Coordinator: TRENT, SJ	Price Code: 7N; Air Quality ☐; Data Turnaround: 45 Days
Project Designation: 183N Backwash Discharge Pond -- Permit Monitoring	Sampling Location: 183N	SAF No.: B99-018	
Ice Chest No.: SMK 562	Field Logbook No.: EL 1516; COA: 77BK27YA40	Method of Shipment: Fed-EX	
Shipped To: Quanterra Incorporated	Offsite Property No.: ADP0153	Bill of Lading/Air Bill No.: FEDEX 4235 7953 5534	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool to 4C HCl or H2SO4 to pH <2 Cool										
Type of Container	Gs*										
No. of Container(s)	3										
Volume	40mL										
SAMPLE ANALYSIS	VOA - 8260A (TCL)										

Sample No.	Matrix *	Sample Date	Sample Time										
B0Y317	Water	5/3/00	0939	X									

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
[illegible]	5/3/00 1510	Petrg #2	5/3/00 1510
Ref #2 [illegible]	5-4-00 1530	[illegible]	5-4-00 1530
[illegible]	5-4-00 1630	Fed Ex	
FED EX		[illegible]	5-5-00

SPECIAL INSTRUCTIONS

SAMPLE COLLECTED FROM AREA WITH < 2000 pCi/g

collector unavailible to relinquish custody

Matrix *: S=Soil; SE=Sediment; SO=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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method: ~~return to Project Manager~~	Disposed By	Date/Time

TMJ 5/3/00

BHI-EE-011 (10/99)

STL St. Louis

LOT #F0E060133

50

STL St. Louis

ERC Radiological Counting Facility Analysis Report

RCF Number RCF7761

Sample Date & Time 5/1/00 1131

Project ID: 116-H-1 SAF Number: B00-048

Date Analyzed 5/3/00 8:01:49

Sample ID: B0Y271

Gamma Energy Analysis

Nuclide		Activity (pCi/g)		Error (pCi/g)	MDC (pCi/g)
K-40	<	1.7E+02			1.7E+02
Co-60		2.1E+01	+/-	1.1E+01	1.2E+01
Cs-137		4.1E+01	+/-	1.7E+01	2.4E+01
Eu-152		1.1E+02	+/-	5.1E+01	6.2E+01
Eu-154	<	6.3E+01			6.3E+01
Eu-155	<	9.6E+01			9.6E+01
Th-232D	<	4.6E+01			4.6E+01
Th-234	<	3.6E+02			3.6E+02
U-235	<	1.8E+02			1.8E+02
Am-241	<	5.0E+01			5.0E+01

Total GEA (pCi/g) 1.7E+02 +/- 7.1E+01

	Activity (pCi/g)		Error (pCi/g)
Gross Alpha**	6.9E+00	+/-	1.3E+00
Gross Beta	9.9E+01	+/-	4.4E+00

Alpha MDC (pCi/g) 2.6E+00

Beta MDC (pCi/g) 5.1E+01

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDC = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst T. J. Snider 5/3/00

Report To Mike Stankovich

Fax 373-1395 372-9487

Report Printed: Wednesday, May 03, 2000

LOT #F0E060133

St John, David A

From: Nielson, Renee J
Sent: Thursday, May 04, 2000 8:15 AM
To: Gale, Stuart J (Jeff); Thoren, Rikki A
Cc: St John, David A; Stankovich, Michael T; Nielson, Renee J; Ayres, Doris E; Duncan, Jeanette M
Subject: Samples collected from 116-H-1 Drilling

Rikki and Jeff,

I forgot to write the RCF HEIS numbers on the Chains of Custody that go to Quanterra and to TMA/RECRA. We usually do this so the shipper knows what total activity goes with what sample. Here they are...

Samples collected on 5/1/00

B0Y270	(TMA)	B0Y271	(RCF)	500 cpm
B0Y272	(TMA)	B0Y273	(RCF)	Background + ≈ 10-50 cpm
B0Y2B2	(TMA)	B0Y273	(RCF)	Background
B0Y2B3	(QTL)	B0Y273	(RCF)	Background
B0Y2B4	(TMA)	No TA needed		(equipment blank for B0Y270)

Samples collected on 5/2/00

B0Y274	(TMA)	B0Y275	(RCF)	Background
B0Y276	(TMA)	B0Y277	(RCF)	Background
B0Y278	(TMA)	B0Y279	(RCF)	Background
B0Y280	(TMA)	B0Y281	(RCF)	Background

Samples collected on 5/3/00

B0Y282	(TMA)	B0Y283	(RCF)	Background
B0Y284	(TMA)	B0Y285	(RCF)	Background.

Water samples collected on 5/3/00

B0Y3V6	(TMA)	B0Y3V7	(QTL)	B0Y3W0	(RCF)
B0Y3V8	(TMA)	B0Y3V9	(QTL)	B0Y3W0	(RCF)

> down gradient and across gradient < 2,000 pCi/g

If you have any questions, please call me at 521-2090.

Thanks,
Renee

Per Mike Stankovich and Renee Nielson Telecon 5/4/00 @ 08:30
DAS

Figure 1. Sample Check-in List

Date/Time Received: 1315 5/4/00 SDG#: W03169

Work Order Number: JDE040248 SAF#: B00-048

Shipping Container ID: ERC 99-010 Chain of Custody #: B00-048-01

1. Outermost shipping container damaged? Yes [] No [✓]

2. Custody Seals on shipping container intact? Yes [✓] No []

3. Custody Seals dated and signed? Yes [✓] No []

4. Chain-of-Custody record present? Yes [✓] No []

5. Chain-of-Custody includes the following information:
   - Client name Yes [✓] No []
   - Project name or number Yes [✓] No []
   - Sample date/time for each sample Yes [✓] No []
   - Container types, sizes and number of containers Yes [✓] No []
   - Short description of sample, i.e., matrix Yes [✓] No []
   - Analyses requested Yes [✓] No []
   - Preservation used or "none" or N/A if not applicable Yes [✓] No []
   - Date and time of relinquish and receipt Yes [✓] No []
   - Signatures of those persons relinquishing and receiving Yes [✓] No []

6. Sample numbers on chain of custody match those on sample containers? Yes [✓] No []

   8

7. Collection date and date of laboratory receipt are within project specific holding time requirements? Yes [✓] No []

8. Cooler temperature: 4°C

9. Vermiculite/packing materials is: Wet [✓] Dry []

10. Samples have: ✓ tape ____ hazard labels ✓ custody seals ✓ appropriate sample labels

11. Samples are: ✓ in good condition ____ leaking ____ broken ____ have air bubbles

12. Were any anomalies identified in sample receipt? Yes [] No []

13. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: [signature] Date: 1315 5/4/00

Telephone/Fax/E:mailed to: _____ On _____ By _____

STL St. Louis

Committed to *Your* Success

000496

Lot No.: F0E060133
WO 3153

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Bechtel Hanford

Date: 5.5.00 Time: 755

Quote No: 33548

Initiated by: [illegible]

Shipper/No: FedX 4235 795355 34

RFA/COC Numbers: N/A

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4°C ± 2°C
     Record temperature: _____
   - ☐ pH _____
   - ☐ other: _____
3. ☐ Sample received in improper container.
4. ☐ Sample received without proper paperwork. Explain: _____
5. ☐ Paperwork received without sample.
6. ☐ No sample ID on sample container.
7. ☑ Custody tape disturbed/broken/missing/not tamper evident type (circle all that apply).
8. ☐ Sample ID on container does not match sample ID on paperwork. Explain: _____
9. ☐ All coolers on airbill not received with shipment.
10. ☐ Sample volume insufficient for analysis
11. ☐ Other (explain below)

☑ No variances were noted during sample receipt.

☐ Cooler Temperature Upon Receipt in °C: 2°

Temperature Variance Does Not Affect the Following Analyses: _____

Notes:

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____

☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Sample(s) processed "as is". _____

☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: (or designate) [illegible] Date: 5.5.00

Project Management Review: [illegible] Date: 5.8.00

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 03/06/00

LOT #F0E060133