



STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel 314 298 8566
Fax 314 298 8757
www.stl-inc.com

ANALYTICAL REPORT

PROJECT NO. 200UP1 IAM GW

C01-004

Lot #: F0J300130
SDG #: W03341

Joan Kessner

Bechtel Hanford, Inc.
3190 George Washington Way
Richland, WA 99352

SEVERN TRENT LABORATORIES, INC.

MARTI WARD
Project Manager

December 20, 2000

RECEIVED
JAN 22 2001

EDMC



STL St. Louis is a part of Severn Trent Laboratories, Inc.

CASE NARRATIVE

Bechtel Hanford Incorporated
 3190 George Washington Way
 Richland, Washington 99352
 December 20, 2000
 Attention: Joan Kessner

STL St. Louis
 13715 Rider Trail North
 Earth City, MO 63045

Tel 314 298 8566
 Fax 314 298 8757
 www.st-hrc.com

Project Number	:	39168
SDG	:	W03341
Number of Samples	:	one
Sample Matrix	:	water
Data Deliverable	:	Summary
Date SDG Closed	:	November 9, 2000



II. Introduction

On October 28, 2000, one (1) water sample was received by STL-St. Louis for chemical analysis. The sample was 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: 8240 Volatiles

Deviation from Request: There were no deviations.

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.



Bechtel Hanford Incorporated
December 20, 2000
Project Number: 39168
SDG: W03341
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STL St. Louis

Volatiles:

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 MS/MSD %RPD for 1,1-Dichloroethene was outside control limits. The individual compound recoveries in the MS/MSD and LCS were acceptable.

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

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:

A handwritten signature in black ink that reads "Marti Ward".

Marti Ward
St. Louis Project Manager

SAMPLE SUMMARY

F0J300130

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
DN2MH	001	B109L2	10/26/00	09:05

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

F0J300130

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Volatile Organics by GC/MS	SW846 8240A	SW846 8240A

References:

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

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

Run Date: 10/30/00
Time: 10:19:41
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 200UP1 IAM GW
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: C01-004
AMOUNT REC'D: 20ML,3X40
STORAGE LOC: S34,V12C
LOT COMMENTS: VOA: report diluted and undiluted runs
MATRIX: WATER
SAMPLE ID: B109L2
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 39168
LAB ID: F-0J300130-001
WORK ORDER: DN2MH
RECEIVING DATE: 10/28/00
SAMPLING DATE: 10/26/00
ANALYTICAL DUE DATE: 11/28/00N
REPORT DUE DATE: 12/12/00
PRIORITY: 31
SAMPLING TIME: 9:05
RECEIVING TIME: 9:30
SDG# : W03341

Beginning Depth: .00 Ending Depth: .00

***** ANALYSIS *****

WRK	REQUEST	EXTRACTION	ANALYSIS
LOC	DATE	EXP DATE	EXP DATE

06	10/30/00	0/00/00	11/09/00
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Volatile Organics, GC/MS (8240)
 PURGE AND TRAP - 5 mL purge
 STL: HANFORD 8240 GCMS:LIST-1(33)
 (I-15-FB-51) DN2MH-1-AA Protocol: A QC Program: CLIENT: HANFORD

STL St. Louis

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

Run Date: 10/30/00
Time: 10:19:41
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 200UP1 IAM GW
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: C01-004
AMOUNT REC'D: 20ML,3X40
STORAGE LOC: S34,V12C
LOT COMMENTS: VOA: report diluted and undiluted runs
MATRIX: WATER
SAMPLE ID: B109L2
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 39168
LAB ID: F-0J300130-001-D
WORK ORDER: DN2MH MSD
RECEIVING DATE: 10/28/00
SAMPLING DATE: 10/26/00
ANALYTICAL DUE DATE: 11/28/00N
REPORT DUE DATE: 12/12/00
PRIORITY: 31
SAMPLING TIME: 9:05
RECEIVING TIME: 9:30
SDG# : W03341

Beginning Depth: .00 Ending Depth: .00

***** ANALYSIS *****

WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
------------	-----------------	------------------------	----------------------

06	10/30/00	0/00/00	11/09/00
----	----------	---------	----------

Volatile Organics, GC/MS (8240)
PURGE AND TRAP - 5 mL purge
STL: HANFORD 8240 GCMS:LIST-1(33)
(I-15-FB-51) DN2MH-1-AD Protocol: A QC Program: CLIENT: HANFORD

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Page 1

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

Run Date: 10/30/00
Time: 10:19:41
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 200UP1 IAM GW
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: C01-004
AMOUNT REC'D: 20ML, 3X40
STORAGE LOC: S34, V12C
LOT COMMENTS: VOA: report diluted and undiluted runs
MATRIX: WATER
SAMPLE ID: B109L2
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 39168
LAB ID: F-0J300130-001-S
WORK ORDER: DN2MH MS
RECEIVING DATE: 10/28/00
SAMPLING DATE: 10/26/00
ANALYTICAL DUE DATE: 11/28/00N
REPORT DUE DATE: 12/12/00
PRIORITY: 31
SAMPLING TIME: 9:05
RECEIVING TIME: 9:30
SDG# : W03341

Beginning Depth: .00 Ending Depth: .00

***** ANALYSIS *****

WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
------------	-----------------	------------------------	----------------------

06	10/30/00	0/00/00	11/09/00
----	----------	---------	----------

Volatile Organics, GC/MS (8240)
PURGE AND TRAP - 5 mL purge
STL: HANFORD 8240 GCMS:LIST-1(33)
(I-15-FB-5I) DN2MH-1-AC Protocol: A QC Program: CLIENT: HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **C01-004-29** Page 1 of 1

Collector: **D.P. CONNOLLY** MSIN: **FAX**

Container/Requester: **JH KESSNER** Telephone No.: **(502) 376-6588**

Sampling Origin: **HANFORD SITE** Purchase Order/Change Code:

Logbook No.: **6270 - S.A.W.S. - 637** See Client No.: **GWS-106 Temp.**

Method of Shipment: **GOVT. VEHICLE** Bill of Lading/Air Bill No.:

Dem. Turnaround: **48 Days** Certificate Property No.:

SPECIAL INSTRUCTIONS Hold Time: **Total Activity Exemptions: Yes No**
 Submit deliverables & invoices to JH Kessner
 FAX 511 log-in to JH Kessner (372-9487) & DL Stewart (372-1784)

POSSIBLE SAMPLE HAZARDS/REMARKS

SDX
W033A
JOU260303

Sample No.	Lab ID	Date	Time	No/Type Container	Sample Analysis	Preservative
B108L2	W	10/26/00	0905	3840-ml. GPC	8240_VOA_GCMS: LHM-1 (33)	HCl or H2SO4 to pH < 2 Cool AC
B108L2	W			1x20-ml. P	Activity Scan	None
B108L2	W			3x1000-ml. GP	TC99_SEP_LSC: 76-99 (1)	HCl to pH < 2
B108L2	W			1x500-ml. GP	UTOT_PPK: Uranium (1)	HROS to pH < 2

Not
10/26/00

DAVID **Did not receive**

Received By	Date/Time	Print	Signature	Date/Time	Print	Signature
Received By	10/26/00	D.P. Connolly	[Signature]	10/26/00		
Received By	10/26/00	D.E. Preecher	[Signature]	10/26/00		
Received By	10/26/00	Josh Hughes	[Signature]	10/26/00 14:42		
Received By	10/26/00	Josh Hughes	[Signature]	10/26/00 14:42		
Received By	10/26/00	Jim Clarke	[Signature]	10/26/00 08:00		

Matrix

Soil: Sediment: DS: Dredge: DL: Dredge Light: T: Tissue: WT: Waste: L: Liquid: V: Vegetation: O: Other: X

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By: _____ Date/Time: _____

Figure 1. Sample Check-in List

Date/Time Received: 10/26/05 1442 SDG#: W03341
 Work Order Number: JA260303 SAF#: 001-004
 Shipping Container ID: CUS106 Chain of Custody #: 001-004-29

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
7. Collection date and date of laboratory receipt are within project specific holding time requirements? Yes No
8. Cooler temperature: N/A
9. Vermiculite/packing materials is: Wet Dry

10.	Samples have: <input checked="" type="checkbox"/> tape	_____ hazard labels
	<input checked="" type="checkbox"/> custody seals	_____ appropriate sample labels
11.	Samples are: <input checked="" type="checkbox"/> 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: R. De Date: _____
 Telephone/Fax/E-mailed to: _____ On _____ By _____



Lot No.: F0J300130
W03341

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: STL Richland
Quote No: 391288
Shipper/No: 3663534 344 Auborne

Date: 102800 Time: 0930
Initiated by: Jill Clarke
RFA/COC Numbers: C01-004-29

Condition/Variance (Check all that apply):

1. <input type="checkbox"/> Sample received broken/leaking.	8. <input type="checkbox"/> Sample ID on container does not match sample ID on paperwork. Explain: _____
2. <input type="checkbox"/> Sample received without proper preservative. <input type="checkbox"/> Cooler temperature not within 4°C ± 2°C Record temperature: _____ <input type="checkbox"/> pH _____ <input type="checkbox"/> other: _____	9. <input type="checkbox"/> All coolers on airbill not received with shipment.
3. <input type="checkbox"/> Sample received in improper container.	10. <input type="checkbox"/> Sample volume insufficient for analysis
4. <input type="checkbox"/> Sample received without proper paperwork. Explain: _____	11. <input checked="" type="checkbox"/> Other (explain below) <u>Sample # B10JX3 out of hold time (SOG W03331)</u>
5. <input type="checkbox"/> Paperwork received without sample.	
6. <input type="checkbox"/> No sample ID on sample container.	
7. <input type="checkbox"/> Custody tape disturbed/broken/missing/not tamper evident type (circle all that apply).	

No variances were noted during sample receipt.
 Cooler Temperature Upon Receipt in °C: 2

Temperature Variance Does Not Affect the Following Analyses: _____

Notes: B10JX3 Onions out of hold time, ice packs frozen (SOG W03331)

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) Jill Clarke Date: 102800

Project Management Review: MWard Date: 10-30-00

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE
THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED
IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY HIS/HER INITIALS
AND THE DATE NEXT TO THAT ITEM

VOLATILE ORGANICS

BECOTEL HANFORD, INC.

Client Sample ID: B10912

GC/MS Volatiles

Lot-Sample #...: F0J300130-001 Work Order #...: DN2MH1AA Matrix.....: WATER
 Date Sampled...: 10/26/00 Date Received...: 10/28/00
 Prep Date.....: 11/09/00 Analysis Date...: 11/09/00
 Prep Batch #...: 0318450
 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	2.3 J	5.0	ug/L	1.7
1,1,1-Trichloroethane	ND	5.0	ug/L	5.0
Carbon tetrachloride	43	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

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Bromofluorobenzene	96	(69 - 113)
Toluene-d8	102	(68 - 132)
1,2-Dichloroethane-d4	81	(72 - 147)

NOTE(S):

J Estimated result. Result is less than RL.

BECHTEL HANFORD, INC.

B109L2

GC/MS Volatiles

Lot-Sample #: F0J300130-001

Work Order #: DN2MH1AA

Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F0J300130 Work Order #...: DN2MH1AC-MS Matrix.....: WATER
 MS Lot-Sample #: F0J300130-001 DN2MH1AD-MSD
 Date Sampled...: 10/26/00 Date Received...: 10/28/00
 Prep Date.....: 11/09/00 Analysis Date...: 11/09/00
 Prep Batch #...: 0318450
 Dilution Factor: 1

PARAMETER	PERCENT	RECOVERY	RPD	RPD	METHOD
	RECOVERY	LIMITS		LIMITS	
1,1-Dichloroethane	41	(10 - 234)			SW846 8240A
	93 p	(10 - 234)	78	(0-22)	SW846 8240A
Benzene	94	(37 - 151)			SW846 8240A
	97	(37 - 151)	2.5	(0-21)	SW846 8240A
Trichloroethane	85	(71 - 157)			SW846 8240A
	87	(71 - 157)	2.9	(0-24)	SW846 8240A
Toluene	103	(47 - 150)			SW846 8240A
	103	(47 - 150)	0.42	(0-21)	SW846 8240A
Chlorobenzene	102	(37 - 160)			SW846 8240A
	100	(37 - 160)	2.3	(0-21)	SW846 8240A

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Bromofluorobenzene	102	(69 - 113)
	102	(69 - 113)
	103	(68 - 132)
	105	(68 - 132)
1,2-Dichloroethane-d4	89	(72 - 147)
	87	(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 #...: F0J300130
 MB Lot-Sample #: F0K130000-450

Work Order #...: DPRDW1AA

Matrix.....: WATER

Analysis Date...: 11/09/00
 Dilution Factor: 1

Prep Date.....: 11/09/00

Prep Batch #...: 0318450

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
Chloromethane	ND	10	ug/L	SW846 8240A
Vinyl chloride	ND	10	ug/L	SW846 8240A
Bromomethane	ND	10	ug/L	SW846 8240A
Chloroethane	ND	10	ug/L	SW846 8240A
Acetone	ND	20	ug/L	SW846 8240A
1,1-Dichloroethene	ND	5.0	ug/L	SW846 8240A
Methylene chloride	ND	5.0	ug/L	SW846 8240A
Carbon disulfide	ND	5.0	ug/L	SW846 8240A
1,1-Dichloroethane	ND	5.0	ug/L	SW846 8240A
2-Butanone	ND	20	ug/L	SW846 8240A
1,2-Dichloroethene (total)	ND	5.0	ug/L	SW846 8240A
Chloroform	ND	5.0	ug/L	SW846 8240A
1,1,1-Trichloroethane	ND	5.0	ug/L	SW846 8240A
Carbon tetrachloride	ND	5.0	ug/L	SW846 8240A
1,2-Dichloroethane	ND	5.0	ug/L	SW846 8240A
Benzene	ND	5.0	ug/L	SW846 8240A
Trichloroethene	ND	5.0	ug/L	SW846 8240A
1,2-Dichloropropane	ND	5.0	ug/L	SW846 8240A
Bromodichloromethane	ND	5.0	ug/L	SW846 8240A
4-Methyl-2-pentanone	ND	20	ug/L	SW846 8240A
cis-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8240A
Toluene	ND	5.0	ug/L	SW846 8240A
trans-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8240A
1,1,2-Trichloroethane	ND	5.0	ug/L	SW846 8240A
2-Hexanone	ND	20	ug/L	SW846 8240A
Tetrachloroethene	ND	5.0	ug/L	SW846 8240A
Dibromochloromethane	ND	5.0	ug/L	SW846 8240A
Chlorobenzene	ND	5.0	ug/L	SW846 8240A
Ethylbenzene	ND	5.0	ug/L	SW846 8240A
Xylenes (total)	ND	5.0	ug/L	SW846 8240A
Styrene	ND	5.0	ug/L	SW846 8240A
Bromoform	ND	5.0	ug/L	SW846 8240A
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	SW846 8240A

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Bromofluorobenzene	93	(69 - 113)
Toluene-d8	96	(68 - 132)
1,2-Dichloroethane-d4	86	(72 - 147)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0J300130

Work Order #...: DPRDW1AA

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 #: FOK130000-450 B Work Order #: DPRDW1AA Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: F0J300130 Work Order #...: DPRDWLAC Matrix.....: WATER
 LCS Lot-Sample#: F0K130000-450
 Prep Date.....: 11/09/00 Analysis Date...: 11/09/00
 Prep Batch #...: 0318450
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
1,1-Dichloroethene	50.0	45.2	ug/L	90	SW846 8240A
Benzene	50.0	47.1	ug/L	94	SW846 8240A
Trichloroethene	50.0	41.7	ug/L	83	SW846 8240A
Toluene	50.0	50.1	ug/L	100	SW846 8240A
Chlorobenzene	50.0	48.4	ug/L	97	SW846 8240A

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Bromofluorobenzene	100	(69 - 113)
Toluene-d8	102	(68 - 132)
1,2-Dichloroethane-d4	87	(72 - 147)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

Bechtel Hanford

Analysis By

Severn Trent Laboratories Richland

2800 G.W. Way, Richland, Wa 99352, (509) 375-3131

Data Package Contains 21 Pages

Report Nbr: 12172

SDG No.	SAF No.	CLIENT ID No.	STL ID No.
W03341	C01-004	B109L2	9DNV1L10



Comments:

00001



CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

STL Richland
2800 George Washington Way
Richland, WA 99352-1613

Tel: 509 375 3131
Fax: 509 375 5590
www.stl-inc.com

December 15, 2000

Attention: Joan Kessner

SAF Number : C01-004
Date SDG Closed : November 9, 2000
Number of Samples : One (1)
Sample Type : Water
SDG Number : W03341
Data Deliverable : 45-Day / Summary



I. Introduction

On October 26, 2000, one water sample was received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Bechtel Hanford, Inc. (BHI) specific ID:

<u>STLR ID#</u>	<u>BHI ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
9DNV1L10	B109L2	WATER	10/26/00

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were: **Liquid Scintillation Counting**
Technetium-99 by method RICH-RC-5065
Total Uranium
Total Uranium by method RICH-RC-5058

Pacific Northwest National Laboratories
December 15, 2000
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III. Quality Control

The analytical results for each analyses performed under SDG W03341 includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

IV. Comments

Liquid Scintillation Counting

Technetium-99 by method RICH-RC-5065:

The LCS, batch blank, sample, sample duplicate (B109L2) and sample matrix spike (B109L2) results are within contractual requirements.

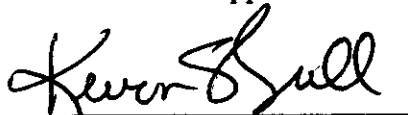
Total Uranium

Total Uranium by method RICH-RC-5058:

The LCS, batch blank, sample, sample duplicate (B109L2) and sample matrix spike (B109L2) results are within contractual requirements.

I certify that this Certificate of Analysis 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:



Jackie Waddell
Project Manager

Drinking Water Method Cross References

DRINKING WATER METHOD CROSS REFERENCES		
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460-70	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D57174-91	Uranium	RICH-RC-5058
Tritium	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, $R = \text{constants} * f(x,y,z,\dots)$. The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/\sqrt{n}), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

SAMPLE RESULTS

LAB NAME: STL Richland **SDG: /RPT GRP:** W03341 / 12172
LOT,RPT DB ID: J0J260303-1 9DNV1L10 **MATRIX:** WATER
CLIENT ID: B109L2 **DATE RECEIVED:** 10/26/00 2:42:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT- CH
TC-99	2.19E+02		6.3E+00	2.9E+01	1.21E+01	pCi/L	100.00%	RICHRC5065	DNV1L	0315345
TOTAL-URANIUM	1.58E+02		0.0E+00	3.8E+01	7.29E-02	ug/L		RICHRC5058	DNV1L	0315343

Number of Results:

DUPLICATE RESULTS

LAB NAME:	STL Richland	SDG: /RPT GRP:	W03341 / 12172
LOT,RPT DB ID:	J0J260303-1 DNV1L1ER	MATRIX:	WATER
CLIENT ID:	B109L2 DUP	DATE RECEIVED:	10/26/00 2:42:00 P
ORIG LAB ID:	9DNV1L10		

ANALYTE	DUP RESULT	COUNTING Q ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
TOTAL-URANIUM	1.59E+02	0.0E+00	3.8E+01	7.29E-02	ug/L		RICHRC5058	1.58E+02	0.69%

Number of Results:

DUPLICATE RESULTS

LAB NAME:	STL Richland	SDG: /RPT GRP:	W03341 / 12172
LOT,RPT DB ID:	J0J260303-1 DNV1L1GR	MATRIX:	WATER
CLIENT ID:	B109L2 DUP	DATE RECEIVED:	10/26/00 2:42:00 P
ORIG LAB ID:	9DNV1L10		

ANALYTE	DUP RESULT	COUNTING Q ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
TC-99	2.27E+02	6.5E+00	3.0E+01	1.21E+01	pCi/L	100.00%	RICHRC5065	2.19E+02	3.53%

Number of Results:

BLANK RESULTS

LAB NAME: STL Richland SDG /RPT GRP: W03341 / 12172
 LOT,RPT DB ID: J0K100000-343 DPNQ31AB MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT- CH
TOTAL-URANIUM	6.59E-03	U	0.0E+00	1.9E-03	7.29E-02	ug/L		RICHRC5058	DPNQ3	0315343

Number of Results:

BLANK RESULTS

LAB NAME: STL Richland **SDG /RPT GRP:** W03341 / 12172
LOT,RPT DB ID: J0K100000-345 DPNQ71AB **MATRIX:** WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT-CH
TC-99	-3.14E+00	U	1.7E-01	1.2E+01	1.21E+01	pCi/L	100.00%	RICHRC5065	DPNQ7	0315345

Number of Results: 1

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

LABORATORY CONTROL SAMPLE

LAB NAME: STL Richland SDG: /RPT GRP: W03341 / 12172
 LAB SAMPLE ID: DPNQ31CS MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
TOTAL-URANIUM	9.05E-01		0.0E+00	1.5E-01	7.29E-02	ug/L		9.04E-01	100.15%

Number of Results:

LABORATORY CONTROL SAMPLE

LAB NAME: STL Richland SDG: /RPT GRP: W03341 / 12172
 LAB SAMPLE ID: DPNQ71CS MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
TC-99	5.07E+02		1.1E+01	5.3E+01	1.21E+01	pCi/L	100.00%	5.43E+02	93.39%

Number of Results:

Result = IDL When Not Detecte
 (Q)ualifiers: U = Analyte result < MDA/IDL,
 J = No U qualifier and result < RDL.

MATRIX SPIKE RESULTS

LAB NAME: STL Richland SDG: /RPT GRP: W03341 / 12172
 LAB SAMPLE ID: DNV1L1DW MATRIX: WATER

ANALYTE	SPIKE RESULT* Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
TOTAL-URANIUM	1.08E+03	0.0E+00	1.7E+02	7.29E-02	ug/L	1.58E+02	9.15E+04	1.18%

Number of Results:

*Spike Result Corrected For Sample Result

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
 J = No U qualifier and result < RDL.

MATRIX SPIKE RESULTS

LAB NAME: STL Richland SDG: /RPT GRP: W03341 / 12172
 LAB SAMPLE ID: DNV1L1FW MATRIX: WATER

ANALYTE	SPIKE RESULT* Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
TC-99	3.52E+03	3.0E+01	3.1E+02	1.21E+01	pCi/L	2.19E+02	3.62E+03	97.38%

Number of Results:

*Spike Result Corrected For Sample Result

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
 J = No U qualifier and result < RDL.

SEVERN**TRENT****SERVICES**Data Review Checklist
RADIOCHEMISTRY

Lot Number: <u>JOS 260303</u>				
Client ID: <u>BNI</u>				
Due Date: <u>12-11-00</u>				
QC Batch Number: <u>0315345</u>			SDG Number: <u>W03341</u>	
Method Test Parameter: <u>TC-99</u>				
Matrix: <u>Water</u>				
Review Item	Yes (✓)	No (v)	N/A (v)	2 nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			X	✓
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?			X	
2. Were all sample holding times met?		X	X	
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	X			
C. QC Samples				
1. Is the blank yield within acceptance criteria?			X	
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	X			
3. Does the blank result meet the Contract criteria?	X			
4. Is the blank result < the Contract Detection Limit?	X			
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			X	
6. Is the LCS result within acceptance criteria?	X			
7. Is the LCS yield within acceptance criteria?	X			
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	X			
9. Do the MS/MSD results and yields meet acceptance criteria?			X	
10. Do the duplicate sample results and yields meet acceptance criteria?			X	
D. Other				
1. Are all Nonconformances included and noted?			X	
2. Are all required forms filled out?	X			
3. Was the correct methodology used?	X			
4. Was transcription checked?	X			
5. Were all calculations checked at a minimum frequency?	X			
6. Were units checked?	X			✓

Comments on any "No" response:

First Level Review:

Stuart E. McLeod

Date:

12/1/00

Second Level Review:

Jacqui Waddell

Date:

12/1/00

SEVERN**TRENT****SERVICES**Data Review Checklist
RADIOCHEMISTRY

Lot Number: <u>JOJ260303</u>				
Client ID: <u>P64 BHI</u>				
Due Date: <u>12-11-00</u>				
QC Batch Number: <u>0315343</u>			SDG Number: <u>W03341</u>	
Method Test Parameter: <u>uranium</u>				
Matrix: <u>water</u>				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?	✓			✓
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?			✓	
2. Were all sample holding times met?	✓			
3. Is the sample Minimum Detectable Activity \leq the Contract Detection Limit?	✓			
C. QC Samples				
1. Is the blank yield within acceptance criteria?			✓	
2. Is the Minimum Detectable Activity for the blank result \leq the Contract Detection Limit?	✓			
3. Does the blank result meet the Contract criteria?	✓			
4. Is the blank result \leq the Contract Detection Limit?	✓			
5. Is the blank result \leq the Contract Detection Limit but the sample result \leq the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			
7. Is the LCS yield within acceptance criteria?			✓	
8. Is the LCS Minimum Detectable Activity \leq the Contract Detection Limit?	✓			
9. Do the MS/MSD results and yields meet acceptance criteria?	✓			
10. Do the duplicate sample results and yields meet acceptance criteria?	✓			
D. Other				
1. Are all Nonconformances included and noted?			✓	
2. Are all required forms filled out?	✓			
3. Was the correct methodology used?	✓			
4. Was transcription checked?	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Were units checked?	✓			

Comments on any "No" response: _____

First Level Review: Pam KunitzDate: 12-13-00Second Level Review: Karen SullDate: 12-15-00

CHAIN OF CUSTODY

00016

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

C01-004-29

Page 1 of 1

Collector D.P. CONNOLLY	Contact/Requester JH KESSNER	Telephone No. (509) 376-4688	MSIN	FAX
SAF No. C01-004	Sampling Origin HANFORD SITE	Purchase Order/Charge Code		
Project Title 200 UPLI AM GW MONITORING, OCTOBER 2000	Logbook No. WM-SAWS-437	Ice Chest No. GWS-106	Temp.	
Shipped To (Lab) Severn Trent Incorporated	Method of Shipment GOVT VEHICLE	Bill of Lading/Air Bill No.		
Protocol CERCLA	Data Turnaround 45 Days	Offsite Property No.		

POSSIBLE SAMPLE HAZARDS/REMARKS

 SDG
 W03341
 J00260303

SPECIAL INSTRUCTIONS Hold Time
 Submit deliverables & invoices to JH Kessner
 FAX STL log-in to JH Kessner (372-9487) & DL Stewart (372-1704)
 Total Activity Exemption: Yes No

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B109L2		W	10/26/00	0905	3x40-mL aGs*	8240_VOA_GCMS: List-1 (33)	HCl or H2SO4 to pH <2 Cool 4C
B109L2		W	I	I	1x20-mL P	Activity Scan	None
B109L2		W	I	I	3x1000-mL G/P	TC99_SEP_LSC: Tc-99 (1)	HCl to pH <2
B109L2		W	I	I	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2
 D.E. 10/26/00 							

Relinquished By D.P. CONNOLLY	Print <i>[Signature]</i>	Sign	Date/Time 1345 OCT 26 2000	Received By D.E. Parchen	Print <i>[Signature]</i>	Sign	Date/Time 1345 10/26/00	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solid DL = Drum Liqui T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By D.E. Parchen	Print <i>[Signature]</i>	Sign	Date/Time 1442 10/26/00	Received By Josh Hughes	Print <i>[Signature]</i>	Sign	Date/Time 10/26/00 14:42	
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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Figure 1. Sample Check-in List

Date/Time Received: 10/26/00 1442 SDG#: W03341
Work Order Number: JA260303 SAF#: COI-004
Shipping Container ID: CWS106 Chain of Custody #: COI-004-29

- 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
- 7. Collection date and date of laboratory receipt are within project specific holding time requirements? Yes No
- 8. Cooler temperature: N/A
- 9. Vermiculite/packing materials is: Wet Dry

10. Samples have: <input checked="" type="checkbox"/> tape <input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals <input type="checkbox"/> appropriate sample labels

11. Samples are: <input checked="" type="checkbox"/> in good condition <input type="checkbox"/> leaking
<input type="checkbox"/> broken <input type="checkbox"/> have air bubbles

- 12. Were any anomalies identified in sample receipt? Yes No
- 13. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: R. De Date: _____
Telephone/Fax/E-mailed to: _____ On _____ By _____

Client Sample Screening Results

30-Oct-00

R 10/30/00

CLIENT CODE	ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B	
PGW	B109L2DNVIL		10/27/00 1:39:00 PM	QUAD21B	10/30/00 10:32:41 AM	B109L2DNVIL	30	37	1.115	126	3.23166667	
	DNVIL	LIQUID		Bkg:	10/28/00 1:34:46 AM		600	71	0.118333333	581	0.96833333	
Anl Date:	10/30/00	Tot Sa, Alq:	3.50E+00	, 1.00E+01	Alp;	(Dpm/ 3.51E+00	(uCi/ 5.54E-04	(pCi/ 1.58E+02	+ 3.3E+01	CAT	1.6E-01	Lab
Ppt mg:	3.1	Units:	L	, ml	Bet;	Alq): 5.62E+00	Sa): 8.86E-04	Ljg): 2.53E+02	+ 3.2E+01	I	2.0E-01	Alq
												Ljg
PGW	B109X61DNVIA		10/27/00 1:39:00 PM	QUAD21C	10/30/00 10:32:41 AM	B109X61DNVIA	30	21	0.635	63	1.18333333	
	DNVIA	LIQUID		Bkg:	10/28/00 1:34:46 AM		600	39	0.065	550	0.91666667	
Anl Date:	10/30/00	Tot Sa, Alq:	1.00E+00	, 1.00E+01	Alp;	(Dpm/ 1.85E+00	(uCi/ 8.35E-05	(pCi/ 8.35E+01	+ 2.6E+01	CAT	3.0E-01	Lab
Ppt mg:	1.7	Units:	L	, ml	Bet;	Alq): 1.96E+00	Sa): 8.85E-05	Ljg): 8.85E+01	+ 2.3E+01	I	5.7E-01	Alq
												Ljg
PGW	B10B37DNQ5P		10/27/00 1:39:00 PM	QUAD21D	10/30/00 10:32:41 AM	B10B37DNQ5P	30	8	0.178333333	69	1.36	
	DNQ5P	LIQUID		Bkg:	10/28/00 1:34:46 AM		600	53	0.088333333	564	0.94	
Anl Date:	10/30/00	Tot Sa, Alq:	2.00E+00	, 1.00E+01	Alp;	(Dpm/ 5.26E-01	(uCi/ 4.74E-05	(pCi/ 2.37E+01	+ 2.3E+01	CAT	1.1E+00	Lab
Ppt mg:	2.8	Units:	L	, ml	Bet;	Alq): 2.58E+00	Sa): 2.33E-04	Ljg): 1.16E+02	+ 2.5E+01	I	4.3E-01	Alq
												Ljg
PGW	B10B65DNQ5V		10/27/00 1:39:00 PM	QUAD22A	10/30/00 10:32:45 AM	B10B65DNQ5V	30	10	0.236666667	33	-0.00666667	
	DNQ5V	LIQUID		Bkg:	10/28/00 1:34:51 AM		600	58	0.096666667	664	1.10666667	
Anl Date:	10/30/00	Tot Sa, Alq:	2.00E+00	, 1.00E+01	Alp;	(Dpm/ 7.08E-01	(uCi/ 6.38E-05	(pCi/ 3.19E+01	+ 2.3E+01	CAT	7.8E-01	Lab
Ppt mg:	3.2	Units:	L	, ml	Bet;	Alq): -1.54E-01	Sa): -1.39E-05	Ljg): -6.93E+00	+ 1.8E+01	I	2.0E+00	Alq
												Ljg
PGW	B10BD4DNV0W		10/27/00 1:39:00 PM	QUAD22B	10/30/00 10:32:45 AM	B10BD4DNV0W	30	11	0.268333333	77	1.40666667	
	DNV0W	LIQUID		Bkg:	10/28/00 1:34:51 AM		600	59	0.098333333	696	1.16	
Anl Date:	10/30/00	Tot Sa, Alq:	9.00E+00	, 1.00E+01	Alp;	(Dpm/ 8.02E-01	(uCi/ 3.25E-04	(pCi/ 3.61E+01	+ 2.5E+01	CAT	6.9E-01	Lab
Ppt mg:	3.1	Units:	L	, ml	Bet;	Alq): 2.53E+00	Sa): 1.02E-03	Ljg): 1.14E+02	+ 2.5E+01	I	4.4E-01	Alq
												Ljg
PGW	B10BK0DNV05		10/27/00 1:39:00 PM	QUAD22C	10/30/00 10:32:45 AM	B10BK0DNV05	30	7	0.135	72	1.48166667	
	DNV05	LIQUID		Bkg:	10/28/00 1:34:51 AM		600	59	0.098333333	551	0.91833333	
Anl Date:	10/30/00	Tot Sa, Alq:	6.50E+00	, 1.00E+01	Alp;	(Dpm/ 3.53E-01	(uCi/ 1.03E-04	(pCi/ 1.59E+01	+ 2.0E+01	CAT	1.6E+00	Lab
Ppt mg:	1.5	Units:	L	, ml	Bet;	Alq): 2.68E+00	Sa): 7.85E-04	Ljg): 1.21E+02	+ 2.4E+01	I	4.1E-01	Alq
												Ljg

00019

30-Oct-00

RQC053

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

Run Date: 11/10/00
Time: 13:14:53

Parent Batch:
Associated Batches:

Page: 1

Umat
TC99

* QC BATCH: 0315345 *

W03341

S5: Technetium-99 by Liquid Scint
FP: Tc-99 Prp/SepRC5065
SI: CLIENT: HANFORD

Analytical Due Date: 12/11/00
Project Manager: JW2

Lot# Work Order	Analyt Due Client Matrix	Client Name Aliquot	Client Name Geometry	Count	Time	Mid/Ave Date/Time	Tracer ID Spike ID	CRDL	Units	Screen Info - (Ci) Alpha Beta	PM Bin
J0J260303-001 DNV1L-1-AC WATER Comments: WATER	12/11/00	Bechtel Hanford, .0000	Hanford,	.000		10/26/00 9:05		15	pCi/L	1.58E-13 2.53E-13 117-10/00	JW2
J0J260303-001 S DNV1L-1-AF WATER Comments: WATER	12/11/00	Bechtel Hanford, .0000	Hanford,	.000		10/26/00 9:05			pCi/L	1.58E-13 2.53E-13 117-10/00	JW2
J0J260303-001 X DNV1L-1-AG WATER Comments: WATER	12/11/00	Bechtel Hanford, .0000	Hanford,	.000		10/26/00 9:05		15	pCi/L	1.58E-13 2.53E-13 117-10/00	JW2
J0K100000-345 B DPN07-1-AA WATER Comments:	12/11/00	Bechtel Hanford,	Hanford,			10/26/00 9:05		15	pCi/L	**NA **NA	JW2
J0K100000-345 C DPN07-1-AC WATER Comments:	12/11/00	Bechtel Hanford,	Hanford,			10/26/00 9:05		15	pCi/L	**NA **NA	JW2
J0K100000-345 B DPN07-1-AD WATER Comments:	12/11/00	Bechtel Hanford,	Hanford,			10/26/00 9:05		15	pCi/L	**NA **NA	JW2

Total Number of Samples In Batch: 00006

Batch Information: Dry Wt: N Decay Correct: Y Blank Sub: None Call In:

 Uncert: Both Sigma: 1.960 ODR: Target List + Other Detected

BLANK CRDL Tracer Yield Type QC Control Limits

 Technetium 99 15 RPD

** NYS = Not Yet Screened
 ** NA = Not Applicable
 ** Other = Other than Gross Alpha or Gross Beta
 ** Indicates that Batch Information has changed for this sample. Print worksheet for details.

00020

RQC053

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

Run Date: 11/10/00
Time: 13:13:29

Parent Batch:
Associated Batches:

Page: 1

Umat
TC-99

* QC BATCH: 0315343 *

W03341

SS: Total Uranium by KPA
DH: Umat Laser PrpRC5015
SI: CLIENT: HANFORD

Analytical Due Date: 12/11/00

Project Manager: JW2

Lot# Work Order	Analyt Due Client Matrix	Client Name Aliquot	Geometry	Count	Time	Mid/Ave Date/Time	Tracer ID Spike ID	CRDL	Units	Screen Info - (Ci) Alpha Beta	PM Bin
J0J260303-001 DNV1L-1-AA WATER Comments: WATER	12/11/00 1.0mL	Bechtel Hanford, .0000		.000	10/26/00	9:05		0.1	pCi/L	1.58E-13 2.53E-13 117-10/00	JW2
J0J260303-001 S DNV1L-1-AD WATER Comments: WATER	12/11/00 1.0mL	Bechtel Hanford, .0000		.000	10/26/00	9:05			pCi/L	1.58E-13 2.53E-13 117-10/00	JW2
J0J260303-001 X DNV1L-1-AE WATER Comments: WATER	12/11/00 1.0mL	Bechtel Hanford, .0000		.000	10/26/00	9:05		0.1	pCi/L	1.58E-13 2.53E-13 117-10/00	JW2
J0K100000-343 B DPNQ3-1-AA WATER Comments:	12/11/00	Bechtel Hanford,			10/26/00	9:05		0.1	pCi/L	**NA **NA	JW2
J0K100000-343 C DPNQ3-1-AC WATER Comments:	12/11/00	Bechtel Hanford,			10/26/00	9:05		0.1	pCi/L	**NA **NA	JW2

Total Number of Samples In Batch: 00005

Batch Information:

Dry Wt: N

Decay Correct: Y

Blank Sub: None

Call In:

Uncert: Both

Sigma: 1.960

ODR: Target List + Other Detected

BLANK CRDL
Uranium

0.1

Tracer Yield

Type
RPD

QC Control Limits

** NYS = Not Yet Screened

** NA = Not Applicable

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00021