



Analytical Data Package Prepared For
Washington Closure Hanford

Radiochemical Analysis By

STL Richland

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code: STLRL

Data Package Contains 260 Pages

Report No.: 31184

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
J00046	RC-048	J11122	J6A160225-2	HVP8J1AA	9HVP8J10	6017100
		J11123	J6A160225-4	HVP8M1AA	9HVP8M10	6017100
		J11135	J6A160225-1	HVP8H1AA	9HVP8410	6017100
		J11136	J6A160225-3	HVP8L1AA	9HVP8L10	6017100

Certificate of Analysis

Washington Closure Hanford
3190 George Washington Way
Richland, WA 99354

January 31, 2005

Attention: Joan Kessner

SAF Number	:	RC-048
Date SDG Closed	:	January 16, 2006
Number of Samples	:	Four (4)
Sample Type	:	Water
SDG Number	:	J00046
Data Deliverable	:	45-Day / Summary

CASE NARRATIVE

I. Introduction

On January 16, 2006, four water samples were received at STL Richland (STLR) for chemistry analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

<u>WCH ID#</u>	<u>STLR ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
J11135	HVP84	WATER	01/16/06
J11122	HVP8J	WATER	01/16/06
J11136	HVP8L	WATER	01/16/06
J11123	HVP8M	WATER	01/16/06

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. 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:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed 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.

V. Comments

Chemical Analysis

Hexavalent Chromium by EPA method 7196A:

The LCS, batch blank, sample, sample matrix spike (J11135), matrix spike duplicate (J11135) and sample duplicate (J11135) 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:



Hans Carman
Project Manager

Drinking Water Method Cross References

DRINKING WATER ASTM 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	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	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.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation $(\text{Result}/\text{Expected})-1$ as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) u_c - Combined Uncertainty.	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, u_c the combined uncertainty. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgndCnt}/\text{BkgndCntMin})/\text{SCntMin})) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. $MDC = (4.65 * \text{Sqrt}((\text{BkgndCnt}/\text{BkgndCntMin})/\text{SCntMin}) + 2.71/\text{SCntMin}) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
RER	The equation Replicate Error Ratio = $(S-D)/[\text{sqrt}(\text{TPUs}^2 + \text{TPUd}^2)]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 24-Jan-06

STL Richland STLRL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 31184

SDG No: J00046

Client Id	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC or MDA	CRDL	RPD
6017100 7196_CR6								
J11122								
HVP8J1AA	HEXCHROME	2.00E-03 +- 4.0E-03	U	mg/L	N/A	2.00E-03	2.00E-03	
J11123								
HVP8M1AA	HEXCHROME	2.00E-03 +- 4.0E-03	U	mg/L	N/A	2.00E-03	2.00E-03	
J11135								
HVP8H1AA	HEXCHROME	2.00E-03 +- 4.0E-03	U	mg/L	N/A	2.00E-03	2.00E-03	
HVP8H1AE	HEXCHROME	2.00E-03 +- 4.0E-03	U	mg/L	N/A	2.00E-03	2.00E-03	0.0
J11136								
HVP8L1AA	HEXCHROME	2.00E-03 +- 4.0E-03	U	mg/L	N/A	2.00E-03	2.00E-03	
No. of Results: 5								

STL Richland

RPD - Relative Percent Difference.

rptSTLrchSaSummary2 V4.14.4 A97

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not Identified by gamma scan software.

QC Results Summary
STL Richland STLRL
 Ordered by Method, Batch No, QC Type,.

Date: 24-Jan-06

Report No. : 31184

SDG No.: J00046

Batch	Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC MDA
7196_CR6									
	6017100	MATRIX SPIKE							
	HVP8H1AC	HEXCHROME	5.79E-01 +- 4.0E-03		mg/L	N/A	105%	0.0	2.00E-03
	HVP8H1AD	HEXCHROME	5.78E-01 +- 4.0E-03		mg/L	N/A	104%	0.0	2.00E-03
	6017100	LCS							
	HVQF91AC	HEXCHROME	5.50E-01 +- 4.0E-03		mg/L	N/A	105%	0.0	2.00E-03
	6017100	BLANK QC							
	HVQF91AA	HEXCHROME	2.00E-03 +- 4.0E-03	U	mg/L	N/A			2.00E-03
	No. of Results: 4								

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.
 rptSTLrchQcSummary V4.14.4 A97 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I
SAMPLE RESULTS

Date: 24-Jan-06

Lab Name: STL Richland

SDG: J00046

Collection Date: 1/16/2006 10:30:00 AM

Lot-Sample No.: J6A160225-2

Report No.: 31184

Received Date: 1/16/2006 4:00:00 PM

Client Sample ID: J11122

COC No.: RC-048-101

Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6017100	7196_CR6				Work Order: HVP8J1AA		Report DB ID: 9HVP8J10					
HEXCHROME	2.00E-03	U		4.0E-03	2.00E-03	mg/L	N/A	1.	1/17/06		95.0	
							2.00E-03	1.			ML	

No. of Results: 1

Comments:

STL Richland MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 rptSTLRchSample U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.
 V4.14.4 A97

FORM I
SAMPLE RESULTS

Date: 24-Jan-06

Lab Name: STL Richland

SDG: J00046

Collection Date: 1/16/2006 1:30:00 PM

Lot-Sample No.: J6A160225-4

Report No.: 31184

Received Date: 1/16/2006 4:00:00 PM

Client Sample ID: J11123

COC No.: RC-048-102

Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6017100	7196_CR6				Work Order: HVP8M1AA		Report DB ID: 9HVP8M10					
HEXCHROME	2.00E-03	U		4.0E-03	2.00E-03	mg/L	N/A	1.	1/17/06		95.0	
							2.00E-03	1.			ML	

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 24-Jan-06

Lab Name: STL Richland

SDG: J00046

Collection Date: 1/16/2006 9:30:00 AM

Lot-Sample No.: J6A160225-1

Report No.: 31184

Received Date: 1/16/2006 4:00:00 PM

Client Sample ID: J11135

COC No.: RC-048-113

Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Count Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6017100	7196_CR6				Work Order: HVP8H1AA		Report DB ID: 9HVP8410					
HEXCHROME	2.00E-03	U		4.0E-03	2.00E-03	mg/L	N/A	1.	1/17/06		95.0	
							2.00E-03	1.			ML	

No. of Results: 1

Comments:

FORM I
SAMPLE RESULTS

Date: 24-Jan-06

Lab Name: STL Richland
Lot-Sample No.: J6A160225-3
Client Sample ID: J11136

SDG: J00046
Report No.: 31184
COC No.: RC-048-114

Collection Date: 1/16/2006 1:00:00 PM
Received Date: 1/16/2006 4:00:00 PM
Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6017100	7196_CR6				Work Order: HVP8L1AA		Report DB ID: 9HVP8L10					
HEXCHROME	2.00E-03	U		4.0E-03	2.00E-03	mg/L	N/A	1.	1/17/06		95.0	
							2.00E-03	1.			ML	

No. of Results: 1 Comments:

STL Richland MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
rptSTLRchSample U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.
V4.14.4 A97

FORM II

Date: 24-Jan-06

DUPLICATE RESULTS

Lab Name: STL Richland
 Lot-Sample No.: J6A160225-1
 Client Sample ID: J11135

SDG: J00046
 Report No.: 31184
 COC No.: RC-048-113

Collection Date: 1/16/2006 9:30:00 AM
 Received Date: 1/16/2006 4:00:00 PM
 Matrix: WATER

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6017100	7196_CR6				Work Order: HVP8H1AE				Report DB ID: HVP841ER			
HEXCHROME	2.00E-03	U		4.0E-03	2.00E-03	mg/L	N/A	1.	1/17/06		95.0	
	2.00E-03	U	RPD 0.0			2.00E-03		1.			ML	

No. of Results: 1 Comments:

STL Richland RPD - Relative Percent Difference.
 rptSTLRchDupV4.1 MDC|MDA,Le - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 4.4 A97 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II
BLANK RESULTS

Date: 24-Jan-06

Lab Name: STL Richland
Matrix: WATER

SDG: J00046
Report No.: 31184

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Alliquot Size	Primary Detector
Batch: 6017100	7196_CR6				Work Order: HVQF91AA		Report DB ID: HVQF91AB					
HEXCHROME	2.00E-03	U		4.0E-03	2.00E-03	mg/L	N/A	1.	1/17/06		95.0	
						2.00E-03		1.			ML	

No. of Results: 1 Comments:

FORM II
LCS RESULTS

Date: 24-Jan-06

Lab Name: STL Richland

SDG: J00046

Matrix: WATER

Report No. : 31184

Parameter	Result	Count Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 6017100	7196_CR6			Work Order: HVQF91AC				Report DB ID: HVQF91AS					
HEXCHROME	5.50E-01			4.0E-03	2.00E-03	mg/L		N/A	5.26E-01	105%	1/17/06	95.0	
							Rec Limits:	85	115	0.0		ML	

No. of Results: 1

Comments:

FORM II
MATRIX SPIKE RESULTS

Date: 24-Jan-06

Lab Name: STL Richland

SDG: J00046

Lot-Sample No.: J6A160225-1

Report No. : 31184

Matrix: WATER

Parameter	SpikeResult, Orig Rst	Count Qual Error (2 s)	Total Uncert(2 s)	MDC MDA	Rpt Unit, CRDL	Yield	Rec- overy	Exp- ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6017100	Work Order: HVP8H1AC		Report DB ID: HVP841CW		Orig Sa DB ID: 9HVP8410							
HEXCHROME	5.79E-01 2.00E-03		4.0E-03	2.00E-03	mg/L	N/A	104.51%	5.54E-01		1/17/06	95.0 ML	7196_CR6
Batch: 6017100	Work Order: HVP8H1AD		Report DB ID: HVP841DW		Orig Sa DB ID: HVP841CW							
HEXCHROME	5.78E-01 5.79E-01		4.0E-03	2.00E-03	mg/L	N/A	104.33%	5.54E-01		1/17/06	95.0 ML	7196_CR6

Number of Results: 2

Comments:

STL Richland RER - Replicate Error Ratio = $(S-D)/[\text{sqrt}(\text{sq}(\text{TPUs})+\text{sq}(\text{TPUd}))]$ as defined by ICPT BOA.
 rptSTLRchMs Bias - (Result/Expected)-1 as defined by ANSI N13.30.
 V4.14.4 A97

FORM II

Date: 24-Jan-06

MATRIX SPIKE DUPLICATE RESULTS

Lab Name: STL Richland

SDG: J00046

Lot-Sample No.: J6A160225-1

Report No.: 31184

Matrix: WATER

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA	Rpt Unit, CRDL	Yield	Rec- overy	Exp- ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 6017100	7196_CR6			Work Order: HVP8H1AC		Report DB ID: HVP841CW		Orig Sa DB ID: HVP841DW					
HEXCHROME	5.79E-01			4.0E-03	2.00E-03	mg/L	N/A	104.51%	5.54E-01		1/17/06	95.0	
	5.78E-01	RPD	0.2									ML	
Batch: 6017100	7196_CR6			Work Order: HVP8H1AD		Report DB ID: HVP841DW		Orig Sa DB ID: HVP841CW					
HEXCHROME	5.78E-01			4.0E-03	2.00E-03	mg/L	N/A	104.33%	5.54E-01		1/17/06	95.0	
	5.79E-01	RPD	0.2									ML	
No. of Results: 2	Comments:												

STL Richland RER - Replicate Error Ratio = $(S-D)/[\sqrt{(sq(TPUs)+sq(TPUd))}]$ as defined by ICPT BOA.
 rptSTLRchMsDup2 Bias - (Result/Expected)-1 as defined by ANSI N13.30.
 V4.14.4 A97



STL

**Richland Laboratory
Data Review Check List
Hexavalent Chromium**

Work Order Number(s): HVP8H, HVP8J, HVP8L, HVP8M				
Lab Sample Numbers or SDG: J00046				
Method/Test/Parameter: Cr+6 in Water / RICH-WC-5003, Rev 7				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Initial Calibration	✓			✓
1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient within QC limits?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits?	✓			✓
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓
B. Continuing Calibration	✓			✓
1. CCV analyzed at required frequency and all parameters within QC limits?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
C. Sample Analysis	✓			✓
1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?	✓			✓
2. Were all sample holding times met?	✓			✓
D. QC Samples	✓			✓
1. All results for the preparation blank below limits?	✓			✓
2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable?	✓			✓
3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable?	✓			✓
4. Analytical spikes within QC limits where applicable?	✓			✓
5. ICP only: One serial dilution performed per SDG?			✓	✓
6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency?			✓	✓
7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits?			✓	✓

Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
E. Other			✓	
1. Are all nonconformances included and noted?				/
2. Is the correct date and time of analysis shown?	✓			✓
3. Did the analyst sign and date the front page of the analytical run?	✓			/
4. Correct methodology used?	✓			/
5. Transcriptions checked?	✓			/
6. Calculations checked at minimum frequency?	✓			/
7. Units checked?	✓			/

Comments on any "No" response:

Analyst: DMorris

Date: 1-31-06

Second-Level Review: MM-LLZ

Date: 1-31-06

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-048-113		Page 1 of 1			
Collector			Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days		
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa			Sampling Location 300-1		SAF No. RC-048		Air Quality						
Ice Chest No.			Field Logbook No. EL-1592		COA BESRAS6520		Method of Shipment GOV. VEHICLE						
Shipped To Severn Trent Incorporated, Richland			Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A								
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE Special Handling and/or Storage COOL 4C			Preservation Cool 4C										
J00046 J6A160225 Due 03 02 06			Type of Container G/P										
			No. of Container(s) 1										
			Volume 500mL										
SAMPLE ANALYSIS			Chromium Hex - 7196										
Sample No.	Matrix *	Sample Date	Sample Time										
J11135	HVPH	1-16-06	0930	X									
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		S.O.				S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
B.T. Ken / [Signature]		01-16-06/1600		Jeff Jensen		[Signature] 01/16/06 1600							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-101		Page 1 of 1	
Collector <i>Tiller</i>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location 300-1		SAF No. RC-048		Air Quality <input type="checkbox"/>		Data Turnaround 45 Days	
Ice Chest No.		Field Logbook No. EL-1592		COA BESRAS6520		Method of Shipment GOV. VEHICLE			
Shipped To Severn Trent Incorporated, Richland		Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE</i> Special Handling and/or Storage <i>COOL 4C</i>		Preservation Cool 4C		Type of Container G/P		No. of Container(s) 1		Volume 500mL	
SAMPLE ANALYSIS Chromium Hex - 7196									
Sample No.	Matrix *	Sample Date	Sample Time						
J11122	<i>HVPBJ</i>	<i>01-16-00</i>	<i>1030</i>	<i>X</i>					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Dross Solids DL=Drum Liquids T=Tissue W1=Wipe L=Liquid V=Vegetation X=Other	
<i>B. Tiller</i>		<i>1-16-00</i>		<i>Jeff Jensen</i>		<i>01/16/00 1600</i>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-114		Page 1 of 1	
Collector <i>Tiller</i>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location 300-2		SAF No. RC-048		Air Quality <input type="checkbox"/>			
Ice Chest No.		Field Logbook No. EL-1592		COA BESRAS6520		Method of Shipment GOV. VEHICLE			
Shipped To Severn Trent Incorporated, Richland		Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE</i> <i>J00046</i>		Preservation Cool 4C							
Special Handling and/or Storage <i>COOL 4C</i>		Type of Container G/P							
		No. of Container(s) 1							
		Volume 500mL							
SAMPLE ANALYSIS		Chromium Hex - 7196							
Sample No.	Matrix *	Sample Date	Sample Time						
J11136 <i>HVPBL</i>	WATER	<i>01-16-06</i>	<i>1300</i>	<i>X</i>					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <i>B.T. Hansen</i>		Date/Time <i>1-16-06/1400</i>		Received By/Stored In <i>Jeff Jensen</i>		Date/Time <i>01/16/06 1400</i>		5.0 °C S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Tissue WJ=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-102	Page 1 of 1	
Collector <i>Tiller</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days		
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location <i>300-2</i>	SAF No. RC-048	Air Quality				
Ice Chest No.	Field Logbook No. EL-1592	COA BESRAS6520	Method of Shipment GOV. VEHICLE					
Shipped To Severn Trent Incorporated, Richland		Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE</i>			Preservation	Cool 4C				
<i>J00046</i>			Type of Container	G/P				
			No. of Container(s)	1				
			Volume	500mL				
			Special Handling and/or Storage <i>COOL 4C</i>			Chromium Hex - 7196		
SAMPLE ANALYSIS								
Sample No.	Matrix *	Sample Date	Sample Time					
J11123	<i>HVPBM</i>	<i>01-14-06</i>	<i>1330</i>	<i>X</i>				
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			Matrix *	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	<i>5.0 °C</i>			S=Soil SE=Sediment SO=Soil SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
<i>B. Tiller</i>	<i>1-14-06-1600</i>	<i>Jeff Jensen</i>	<i>01/14/06 1600</i>					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
LABORATORY SECTION	Received By	Title		Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By		Date/Time				

Sample Check-in List

Date/Time Received: 01/16/06 1600

Client: BHI SDG #: J00096 NA SAF #: RC-098 NA

Work Order Number: J6A160225 Chain of Custody # RC-098-103, 101, 119, 102

Shipping Container ID: NA Air Bill # _____

1. Custody Seals on shipping container intact? NA Yes No
2. Custody Seals dated and signed? NA Yes No
3. Chain of Custody record present? Yes No
4. Cooler temperature: 5.0 ^{-5.5} NA 5. Vermiculite/packing materials is NA Wet Dry
6. Number of samples in shipping container: 4
7. Sample holding times exceeded? NA Yes No
8. Samples have:
 - tape hazard labels
 - custody seals appropriate samples labels
9. Samples are:
 - in good condition leaking
 - broken have air bubbles
 (Only for samples requiring head space)
10. Sample pH taken? NA pH<2 pH>2 adjusted pH
11. Sample Location, Sample Collector Listed? * Yes No
*For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes No
13. Description of anomalies (include sample numbers): _____

Sample Custodian: [Signature] Date: 01/16/06

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

No action necessary; process as is.

Project Manager _____ Date _____

STL RICHLAND

1/17/2006 7:13:56 AM

Sample Preparation/Analysis

Balance Id: _____

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
 EA Chromium, Hexavalent (7196A)
 5I CLIENT: HANFORD

Pipet #: _____

Report Due: 03/02/2006

Sep1 DT/Tm Tech: _____

Batch: 6017100 mg/L
 SEQ Batch, Test: None

Sep2 DT/Tm Tech: _____

Prep Tech: _____

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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8 HVQF9-1-AA-B

J6A170000-100-BLK

01/16/2006 09:30

AmtRec:

#Containers: 1

Scr:

Alpha:

Beta:

9 HVQF9-1-AC-C

J6A170000-100-LCS

01/16/2006 09:30

AmtRec:

#Containers: 1

Scr:

Alpha:

Beta:

Comments:

All Clients for Batch:

127642, Bechtel Hanford, Inc.

Bechtel Hanford, Inc.

, EC, 27023

HVPSH1AA-SAMP Constituent List:

HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20

HVPSH1AC-MS Constituent List:

HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20

HVPSH1AD-MSD:

HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20

HVQF91AA-BLK:

HEXCHROME RDL:0.002 mg/L LCL: UCL: RPD:

HVQF91AC-LCS:

HEXCHROME RDL:0.002 mg/L LCL:85 UCL:115 RPD:20

HVPSH1AA-SAMP Calc Info:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

HVPSH1AC-MS Calc Info:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

HVPSH1AD-MSD:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

HVQF91AA-BLK:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

HVQF91AC-LCS:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

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