



Department of Energy
 Richland Operations Office
 P.O. Box 550
 Richland, Washington 99352

DEC 18 1995

96-PCA-054

Mr. Moses N. Jaraysi
 200 Area Unit Supervisor
 Nuclear Waste Program
 State of Washington
 Department of Ecology
 1315 West Fourth Avenue
 Kennewick, Washington 99336

Mr. Joseph J. Witczak
 Unit Supervisor
 Regulatory and Technical Support
 State of Washington
 Department of Ecology
 P.O. Box 47600
 Olympia, Washington 98504-7600

Dear Messrs. Jaraysi and Witczak:

SUBMITTAL OF VALIDATED DATA FOR THE 105-DR LARGE SODIUM FIRE FACILITY SAMPLING (T-1-1)

Enclosed are the two validated data packages for the 105-DR Large Sodium Fire Facility, submitted by the U.S. Department of Energy, Richland Operations Office (RL) and the Westinghouse Hanford Company (WHC). The 105-DR Large Sodium Fire Facility is an interim status treatment and storage unit located in the 100-D Area of the Hanford Site. This unit was in operation from 1972 to 1986. The 105-DR Large Sodium Fire Facility is being closed under the Resource Conservation and Recovery Act. The data packages include inorganic analysis of soil and scrubber gravel collected at the 105-DR Large Sodium Fire Facility in July 1995. The analyses were performed by Lockheed Analytical Services.

The data packages included here were validated by Los Alamos Technical Associates, Inc. Data validation activities were performed in accordance with Level D as defined in WHC-SD-EN-SPP-002, Data Validation Procedures for Chemical Analysis and WHC-SD-EN-SPP-001, Data Validation Procedures for Radiochemical Analysis. Level D validation includes evaluation and qualification of results based on analytical holding times, method blank results, matrix spikes and duplicates, surrogate recoveries, and analytical method blanks.



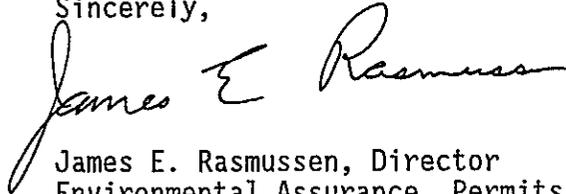
DEC 18 1995

Messrs. Jaraysi and Witczak
96-PCA-054

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Should you have any questions, please contact Ms. E. M. Mattlin, RL, on (509) 376-2385 or Mr. P. C. Miller, WHC, on (509) 376-0441.

Sincerely,



James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division
DOE Richland Operations Office



Edward F. Loika, Director
FFTF Transition Project
Transition Projects
Westinghouse Hanford Company

Enclosures:

1. SDG W0635-QES-392, Data
Validation Report for 105-DR
Large Sodium Fire Facility
2. SDG W0635-QES-393, Data
Validation Report for 105-DR
Large Sodium Fire Facility

cc w/encls:

EDMC, H6-08
R. Jim, YIN
S. McKinney, Ecology
D. Powaukee, NPT
F. Ruck III, WHC
D. Sherwood, EPA
J. Wilkinson, CTUIR

cc w/o encls:

W. Dixon, WHC
S. Price, WHC

8633 Gage Blvd. / Kennewick, WA 99336 / Telephone (509) 783-4369 / FAX (509) 783-9661

October 18, 1995
LATA95-203



Mr. Karl Pool
Westinghouse Hanford Company
P. O. Box 1970
Richland, WA 99352

Subject: VW403.97, SDG W0635-QES-392

Dear Mr. Pool:

Attached is the data validation report for analytical results for 105-DR Large Sodium Fire Facility (SDG W0635-QES-392). The package was received by Los Alamos Technical Associates on September 13, 1995. The data package was initially placed on hold September 19, 1995 and released on October 5, 1995.

If you have any questions, please let me know.

Sincerely,

Brent Morris for

Marsha C. Webb
Deputy Project Manager

Attachment

cc: Jeanette Duncan, CH2M Hill
Don Smith, LATA
VW403.97
MCW/lb



In

DATA VALIDATION REPORT
for
105-DR LARGE SODIUM FIRE FACILITY
SDG W0635-QES-392
LATA VW403.97

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

October 18, 1995

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105-DR LARGE SODIUM FIRE FACILITY
Data Validation Narrative

INTRODUCTION

All samples in Sample Delivery Group (SDG) W0635-QES-392 (VW403.97) were validated at level D as defined in the Data Validation Procedures for Chemical Analysis (WHC-SD-EN-SPP-002, Rev. 2).

The analyses were performed by Quanterra Environmental Services.

ANALYSES REQUESTED

See Table 1

DATA QUALITY OBJECTIVES

- Precision:** Goals for precision were met.
- Accuracy:** Goals for accuracy were met with the exception of those items discussed in the "Qualification Summary Table".
- Sample Result Verification:** All sample results were supported in the raw data.
- Detection Limits:** Detection limit goals were met for all sample results as specified in the *105-DR Large Sodium Fire Facility Decontamination, Sampling, and Analysis Plan*, WHC-SD-EN-AP-186, Rev. 0.
- Completeness:** The data package was 100% complete for all requested analyses.

Data qualifiers are assigned to any results that have been determined to be deficient. These are discussed in the Qualification Summary Table.

Table 1
Chain-of-Custody
Analysis Request

LATA ID #: VW403.97

SDG: W0635-QES-392

Sample Information					Analyses Requested		
SAMPLE NO.	DATE COLLECTED	MATRIX	SAF	FIELD QC INFO	1	2	3
B0G979	18-Jul-95	SOIL	95-080		X	X	X
B0G980	18-Jul-95	SOIL	95-080		X	X	X
B0G981	18-Jul-95	SOIL	95-080	Dupe of B0G980	X	X	X
B0G982	18-Jul-95	SOIL	95-080		X	X	X
B0G983	18-Jul-95	SOIL	95-080		X	X	X
B0G984	18-Jul-95	SOIL	95-080		X	X	X

Method References:

<u>Analysis</u>	<u>Method</u>
1. ICP Metals (Na & Li)	6010
2. Activity Scan	Lab Specific
3. Rad Screen	Lab Specific

REFERENCES

WHC 1993, *Data Validation Procedures for Chemical Analyses*, WHC-SD-EN-SPP-002, Rev. 2, Westinghouse Hanford Company, Richland, Washington.

WHC 1995, *105-DR Large Sodium Fire Facility Decontamination, Sampling, and Analysis Plan*, WHC-SD-EN-AP-186, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

GLOSSARY OF VALIDATION APPLIED QUALIFIERS (CHEMISTRY)

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows.

- U- Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.
- UJ- Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a QC deficiency identified during data validation, the associated quantitation limit is an estimate.
- J- Indicates the compound or analyte was analyzed for and detected. The associated concentration is an estimate, but the data are usable for decision making purposes.
- BJ- Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.
- R- Indicates the compound or analyte was analyzed for, detected, and due to an identified QC deficiency the data are unusable.
- UR- Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data are unusable due to an identified QC deficiency.

GLOSSARY OF LABORATORY APPLIED QUALIFIERS

Inorganic Qualifiers

- U- Indicates the analyte was analyzed for but not detected in the sample.
- B- Indicates the analyte concentration is less than the CRDL but greater than the IDL.
- E- Indicates the value reported is estimated due to the presence of interference.
- N- Indicates spiked sample recovery was not within the control limits.
- *- Indicates duplicate analysis was not within control limits.

Qualification Summary Table

Qualification Summary Table

Inorganics (Metals)

ANALYTE	TYPE	QUALIFIER	SAMPLES AFFECTED	DQO	REASON
Sodium	MINOR	J	B0G979 B0G980 B0G981 B0G982 B0G983 B0G984	ACCURACY	No matrix spike performed.

Inorganics (Metals) Field QC

ANALYTE	TYPE	QUALIFIER	FIELD QC SAMPLES	DQO	ASSESSMENT
ALL	Field Duplicate	NONE	B0G980/B0G981	PRECISION	Field duplicate precision is acceptable.

Data Summary Tables

**.METALS
DATA SUMMARY TABLE**

LATA ID#: VW403.97		HEIS #:	B0G979	B0G980	B0G981	B0G982	B0G983	B0G984						
		Date:	18-Jul-95	18-Jul-95	18-Jul-95	18-Jul-95	18-Jul-95	18-Jul-95						
		Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL						
Constituent	CAS #	Units	Results	Q	Results	Q	Results	Q	Results	Q				
Sodium	7440-23-5	mg/Kg	273	J	154	J	175	J	183	J	182	J	227	J
Lithium	7439-93-2	mg/Kg	6.6	B	6.4	B	6.9	B	9.5	B	10.2	B	23.7	

Shaded areas indicate changes by the validator.
40397DST.XLS, METALS

10/24/95, 2:32 PM

000010

Sample Results (Form I's)

Checklists

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
VALIDATION PROCEDURE:	<input type="checkbox"/> WHC-CM-5-3, Rev. 0		<input checked="" type="checkbox"/> WHC-SD-EN-SPP-002, Rev. 2		
PROJECT:	105-DR LARGE SODIUM FIRE FACILITY		SDG:	W0635-QES-392	
VALIDATOR:	BJ MORRIS	LATA NO:	VW403.97	DATE:	7-Oct-95
REVIEWER:	BJ SEYMOUR	LAB:	QES	CASE:	N/A
SAF NO:	95-080	QAPP NO:	N/A	SAP NO:	WHC-SD-EN-AP-186, Rev. 0
ANALYSES REQUESTED					
<input checked="" type="checkbox"/>	ICP Metals (Na & Li) 6010				
SAMPLE NO.	MATRIX	COMMENTS:			
B0G979 B0G980	SOIL				
B0G981 B0G982					
B0G983 B0G984					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

YES NO N/A

Is technical verification documentation present?

Is a case narrative present?

2. HOLDING TIMES

YES NO N/A

Are sample holding times acceptable?

See HOLDING TIME SUMMARY form

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

YES NO N/A

Were initial calibrations performed on all instruments?

Are initial calibrations acceptable?

Are ICP interference checks acceptable?

Were ICV and CCV checks performed on all instruments?

Are ICV and CCV checks acceptable?

Validation calculation checks were performed and are acceptable.

If NO(s) are checked, see CALIBRATION DATA SUMMARY form

**LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST**

4. BLANKS

YES NO N/A

Were ICB and CCB checks performed for all applicable analyses?

Are ICB and CCB results acceptable?

Were preparation blanks analyzed?

Are preparation blank results acceptable?

If NO(s) are checked, see BLANK AND SAMPLE DATA SUMMARY form

5. ACCURACY

YES NO N/A

Were spike samples analyzed at the proper frequency?

Are all spike sample recoveries acceptable?

Are all elements spiked at an appropriate level?

Was a post digestion spike analyzed?

Are all post digestion spike recoveries acceptable?

Were laboratory control samples (LCS) analyzed at the proper frequency?

Are all LCS recoveries acceptable?

Validation calculation checks were performed and are acceptable.

If NO(s) are checked, see ACCURACY DATA SUMMARY form

6. PRECISION

YES NO N/A

Were laboratory duplicates analyzed at the proper frequency?

Are all duplicate RPD values acceptable?

Were MS/MSDs analyzed?

Are all MS/MSD RPD values acceptable?

Were ICP serial dilution samples analyzed at the proper frequency?

Are all ICP serial dilution %D values acceptable?

Validation calculation checks were performed and are acceptable.

If NO(s) are checked, see PRECISION DATA SUMMARY form

**LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST**

7. FIELD QC SAMPLES

YES	NO	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Were field QC samples (field/trip blanks, duplicates, splits, performance audit) identified?

Are field/trip blank results acceptable? (see Blank Data Summary form)

Are field duplicate RPD values acceptable? (see Field QC evaluation)

Are field split RPD values acceptable? (see Field QC evaluation)

Are performance audit sample results acceptable?

Comments: BOG981 is a field duplicate of BOG980.

8. FURNACE AA QUALITY CONTROL

YES	NO	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Were duplicate injections required?

Are all duplicate injection %RSD values acceptable?

Were analytical spikes required?

Are all analytical spike recoveries acceptable?

Was MSA required?

Are all MSA results acceptable?

Validation calculation checks were performed and are acceptable.

Comments:

9. REPORTED RESULTS AND DETECTION LIMITS

YES	NO	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are results reported for all requested analyses?

Are all results supported in the raw data?

Are results calculated properly?

Do results meet the CRDLs?

Validation calculation checks were performed and are acceptable.

Comments:

VALIDATION SUMMARY

For deficiencies (major and minor) and comments, please refer to the Qualification Summary Table.

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

HOLDING TIME SUMMARY

SDG: W0635-QES-392			VALIDATOR: BJ MORRIS					DATE: 07-Oct-95		
PROJECT: 105-DR LARGE SODIUM FIRE FACILITY			REVIEWER: BJ SEYMOUR					LATA NO.: VV403.97		
HEIS-SN	MATRIX CODE	ANALYSIS	DATE COLLECTED	PREP DATE	ANALYSIS DATE	PREP HT (days)	Required HT (days)	ANALYSIS HT (days)	Required HT (days)	VAL Q
BOG979	SOIL	ICP Metals	18-Jul-95	N/A	11-Aug-95	N/A	N/A	24	180	NONE
BOG980	SOIL	ICP Metals	18-Jul-95	N/A	11-Aug-95	N/A	N/A	24	180	NONE
BOG981	SOIL	ICP Metals	18-Jul-95	N/A	11-Aug-95	N/A	N/A	24	180	NONE
BOG982	SOIL	ICP Metals	18-Jul-95	N/A	11-Aug-95	N/A	N/A	24	180	NONE
BOG983	SOIL	ICP Metals	18-Jul-95	N/A	11-Aug-95	N/A	N/A	24	180	NONE
BOG984	SOIL	ICP Metals	18-Jul-95	N/A	11-Aug-95	N/A	N/A	24	180	NONE

DATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

ACCURACY DATA SUMMARY

SDG: W0635-QES-392				VALIDATOR: BJ MORRIS				DATE: 07-Oct-95				
PROJECT: 105-DR LARGE SODIUM FIRE FACILITY				REVIEWER: BJ SEYMOUR				LATA NO.: VV403.97				
HEIS-SN	ANALYTE	RESULTS	Lab Q	Actual Spiking Level	Minimum Required Spiking Level	Difference	PERCENT RECOVERY (%R)				SAMPLES AFFECTED	VAL Q
							Matrix Spike	Matrix Spike Duplicate	Post Digestion Spike	Laboratory Control Standard		
B0G979	Sodium	No matrix spike performed.									B0G979 B0G980 B0G981 B0G982 B0G983 B0G984	J

000023

METALS FIELD DUPLICATE EVALUATION

LATA ID#: VW403.97		HEIS #:	B0G980	B0G981	RPD S >35%	DIF S >2*DL	DL mg/Kg
		Date:	18-Jul-95	18-Jul-95			
		Matrix:	SOIL	SOIL			
			ORIGINAL	DUPLICATE			
Constituent	CAS #	Units	Results	Q	Results	Q	
Sodium	7440-23-5	mg/Kg	154	J	175	J	21 500
Lithium	7439-93-2	mg/Kg	6.4	B	6.9	B	0.5 2

EVALUATION:

1. Field duplicates are not evaluated for precision if both results are non-detect.
2. If both sample results are >5*DL the RPD is used for evaluation.
3. If either sample result is <5*DL the DIF is used for evaluation.
4. All positive results have exhibited acceptable precision.

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

PERCENT RECOVERY (ICV/CCV)

SDG: W0635-QES-392

Date: 7-Oct-95

LATA No.: VW403.97

Validator: BJ MORRIS

Analyte	ICV/CCV ID	Observed Value	True Value	%R
		O	A	
Sodium	ICV	39347	40000	98.4%
Sodium	CCV	39713	40000	99.3%
Lithium	ICV	3861	4000	96.5%
Lithium	CCV	3895	4000	97.4%

000028

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

MATRIX SPIKE RECOVERY (MS)

SDG: W0635-QES-392

Date: 7-Oct-95

LATA No.: VW403.97

Validator: BJ MORRIS

Analyte	Sample ID	Spike Sample Result	Sample Result	Spike Added	%R
		SSR	SR	SA	
<u>Lithium</u>	<u>B0G979</u>	<u>103.38</u>	<u>6.60</u>	<u>101.73</u>	<u>95.1%</u>

000027

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

PERCENT RECOVERY (LCS)

SDG: W0635-QES-392
LATA No.: VW403.97

Date: 7-Oct-95
Validator: BJ MORRIS

Analyte	Observed value	True value
	OLCS	ALCS
Sodium	2065	2146
Lithium	100.4	100

%R
96.2%
100.4%

000028

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

RELATIVE PERCENT DIFFERENCE

SDG: W0635-QES-392

Date: 7-Oct-95

LATA No.: VW403.97

Validator: BJ MORRIS

Analyte	Sample ID	Matrix Spike	Matrix Spike Duplicate	RPD
<u>Lithium</u>	<u>B0G979</u>	<u>OS</u>	<u>D</u>	
		<u>95.1%</u>	<u>95.7%</u>	<u>0.6%</u>

000029

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

PERCENT DIFFERENCE (ICP SERIAL DILUTION)

SDG: W0635-QES-392
LATA No.: VW403.97

Date: 7-Oct-95
Validator: BJ MORRIS

Analyte	Analyte Concentration before Dilution	Analyte Concentration after Serial Dilution	%D
	I	S	
<u>Sodium</u>	<u>2685</u>	<u>2453</u>	8.6%
<u>Lithium</u>	<u>64.9</u>	<u>69.7</u>	7.3%

000030

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

INORGANICS RESULTS CALCULATION, SOIL

SDG: W0635-QES-392

Date: 7-Oct-95

LATA No.: VW403.97

Validator: BJ MORRIS

Analyte	Concentration (Cal Curve)		Run Dilution Factor	Final Volume (mL)	Weight of Sample (g)	Dry Weight Conversion (decimal)	Concentration (mg/Kg)
	CONCS	units	DFS	VOL	WS	SS	
<u>Sodium-BOG980</u>	<u>1.5167</u>	<u>mg/L</u>	<u>1.00</u>	<u>100</u>	<u>1.00</u>	<u>0.987</u>	153.65
<u>Lithium-BOG982</u>	<u>0.0889</u>	<u>mg/L</u>	<u>1.00</u>	<u>100</u>	<u>1.00</u>	<u>0.938</u>	9.48

000031

Laboratory Case Narratives

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

August 22, 1995

Attention: Karl Pool



Project number	:	519.158
Date Received by Lab	:	July 19, 1995
Number of Samples	:	Six (6)
Sample Type	:	Soil
SDG Number	:	W0635
Data Deliverable	:	Standalone

I. Introduction

On July 19, 1995, six (6) soil samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analyses. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID's:

<u>St Louis ID</u>	<u>WHC ID</u>	<u>Richland ID</u>	<u>Matrix</u>	<u>Date of Receipt</u>
8906-001	B0G979	50720901	Soil	07/19/95
8906-002	B0G980	50720902	Soil	07/19/95
8906-003	B0G981	50720903	Soil	07/19/95
8906-004	B0G982	50720904	Soil	07/19/95
8906-005	B0G983	50720905	Soil	07/19/95
8906-006	B0G984	50720906	Soil	07/19/95

II. 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: Lithium and Sodium by EPA method 6010.

008333

10-11-95

Westinghouse Hanford Company
August 22, 1995
Project Number: 519.158
SDG: W0635
Page 2

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. A Matrix Spike and Matrix Spike Duplicate analyses were performed for Lithium; Sodium precision was determined by post digestion spike.

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

V. Comments

Since sodium is not in our normal SW846 spiking list and the samples required only lithium and sodium, the analyst performed a post digestion spike for sodium. These results, along with the matrix spike results for lithium, can be found on the matrix spike forms.

000004

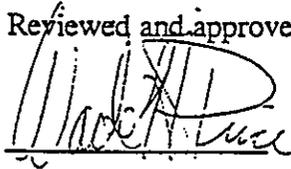
BM
10-11-95

02

Westinghouse Hanford Company
August 22, 1995
Project Number: 519.158
SDG: W0635
Page 3

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:



Wade H. Price
Project Manager
e:\\price\$labbydave\\hanw0649.nar

000035

PM
10-11-95

03

Chain-of-Custody Information

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C# 008327
		Page <u>1</u> of <u>1</u>

Collector HULSE, KARL	Contact/Requestor KNAUS, Z.C.	Tel. No. 372-1597 MISN H6-23 FAX
SAF Number 95-080	Sample Origin 105 DR	Purchase Order/Charge Code N/A
Project Title RCRA Closure Project (105-DR)	Logbook # LWHC - N - 205 - 30	Ice Chest # 55 Temp.
Shipped To (Lab) Quanterra	Method of Shipment Gov. Vehicle	Bill of Lading/Air Bill No. N/A
Protocol RCRA 507209	Data Turnaround NON-TPA	Offsite Property No. N/A

Sample No.	Lab. ID	* S	Date	Time	No/Type Container	Sample Analysis	Preservative
10CG979	01	S	7/18/95	0936	(1) 40 aGis	ACTIVITY SCAN (Lab Specific)	None
10CG979		S	7/18/95	0936	(1) 125 aG	ICP METALS (6010), I, Na	4 deg C
10CG980	2	S	7/18/95	0925	(1) 40 aG	ACTIVITY SCAN (Lab Specific)	None
10CG980		S	7/18/95	0925	(1) 125 aG	ICP METALS (6010), I, Na	4 deg C
10CG981	3	S	7/18/95	0925	(1) 40 aG	ACTIVITY SCAN (Lab Specific)	None
10CG981		S	7/18/95	0925	(1) 125 aG	ICP METALS (6010), I, Na	4 deg C
10CG982	4	S	7/18/95	0953	(1) 40 aG	ACTIVITY SCAN (Lab Specific)	None
10CG982		S	7/18/95	0953	(1) 125 aG	ICP METALS (6010), I, Na	4 deg C
10CG983	5	S	7/18/95	1003	(1) 40 aG	ACTIVITY SCAN (Lab Specific)	None
10CG983		S	7/18/95	1003	(1) 125 aG	ICP METALS (6010), I, Na	4 deg C
10CG984	6	S	7/18/95	1013	(1) 40 aG	ACTIVITY SCAN (Lab Specific)	None
10CG984		S	7/18/95	1013	(1) 125 aG	ICP METALS (6010), I, Na	4 deg C

POSSIBLE SAMPLE HAZARDS/REMARKS List all known wastes.	MISDS Yes () No X	SPECIAL INSTRUCTIONS "standalone Data Deliverable"	Hold Time SDG w0635
---	---------------------------	---	-------------------------------

Relinquished By Print KB Hulse	Sign <i>KB Hulse</i>	Date/Time 7-19-95 0925	Received By Print R.R. Fox	Sign <i>R.R. Fox</i>	Date/Time 7-19-95 09:25	Matrix * S = Soil DS = Drum Solids SE = Sediment DI = Drums Liquids SO = Solid T = Trash SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By R.R. Fox	Sign <i>R.R. Fox</i>	Date/Time 7-19-95 10:10	Received By Quanterra	Sign <i>Quanterra</i>	Date/Time 7/19/95 1010	
Relinquished By	Sign	Date/Time	Received By	Sign	Date/Time	
Relinquished By	Sign	Date/Time	Received By	Sign	Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method e.g. Return to customer, per lab procedure, used in process	Disposed By	Date/Time
--------------------------	---	-------------	-----------

** All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

000007 0012 PM 10/1/95

Received
Items
checked

old tank 100

Client Sample Screening Results

19-Jul-95

(R) 7/19/95

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTSA	NET CPMA	CNTSB	NET CPM B		
WHIC D0G800		7/19/95 12:00:00 PM	QUAD23A	7/19/95 2:43:22 PM	D0G800	30	19	0.37583333	102	2.425		
	LIQUID		Bkg:	7/19/95 5:34:10 AM	BKG	800	46	0.0575	780	0.975		
Anal Date:	7/19/95	Tot Sa, Alq:	1.00E+00 ✓	1.00E+01	Alq:	(Dpm/ 1.65E+00	(uCV 7.42E-05	(pCV 7.42E+01	± 2.5E+01	CAT I ✓	3.4E-01 Lab	
Ppt mg:	2.3 ✓	Units:	L	ml	Det:	Alq:	4.26E+00	Sa:	1.92E-04	I (g):	1.92E+02 ± 2.8E+01	2.6E-01 Lab
WHIC D0G8R4		7/19/95 12:00:00 PM	QUAD23B	7/19/95 2:43:22 PM	D0G8R4	30	24	0.7725	158	4.3679167		
	SOLID		Bkg:	7/19/95 5:34:10 AM	BKG	800	22	0.0275	719	0.89875		
Anal Date:	7/19/95	Tot Sa, Alq:	1.50E+03 ✓	6.94E+01	Alq:	(Dpm/ 4.26E+00	(uCV 4.14E-02	(pCV 2.76E+01	± 7.4E+00	CAT II ✓	1.8E+00 Lab	
Ppt mg:	69.4 ✓	Units:	g	mg	Det:	Alq:	8.93E+00	Sa:	8.70E-02	I (g):	5.80E+01 ± 5.7E+00	1.7E+00 Lab
WHIC D0G8R5		7/19/95 12:00:00 PM	QUAD23C	7/19/95 2:43:22 PM	D0G8R5	30	72	2.34875	519	16.35125		
	SOLID		Bkg:	7/19/95 5:34:10 AM	BKG	800	41	0.05125	759	0.94875		
Anal Date:	7/19/95	Tot Sa, Alq:	1.40E+03 ✓	7.69E+01	Alq:	(Dpm/ 1.34E+01	(uCV 1.10E-01	(pCV 7.83E+01	± 1.0E+01	CAT III ✓	6.4E-01 Lab	
Ppt mg:	76.9 ✓	Units:	g	mg	Det:	Alq:	3.36E+01	Sa:	2.75E-01	I (g):	1.97E+02 ± 9.3E+00	5.1E-01 Lab
WHIC D0G979		7/19/95 10:30:00 AM	QUAD21A	7/19/95 11:44:48 AM	D0G979	30	10	0.28458333	79	1.5183333		
	SOLID		Bkg:	7/19/95 5:33:56 AM	BKG	800	39	0.04875	892	1.115		
Anal Date:	7/19/95	Tot Sa, Alq:	2.17E+02 ✓	7.61E+01	Alq:	(Dpm/ 1.66E+00	(uCV 2.13E-03	(pCV 9.83E+00	± 6.8E+00	CAT I ✓	5.1E+00 Lab	
Ppt mg:	76.1 ✓	Units:	G	mg	Det:	Alq:	3.28E+00	Sa:	4.22E-03	I (g):	1.94E+01 ± 3.9E+00	5.1E+00 Lab
WHIC D0G980		7/19/95 10:30:00 AM	QUAD21B	7/19/95 11:44:48 AM	D0G980	30	14	0.43666667	182	5.1729167		
	SOLID		Bkg:	7/19/95 5:33:56 AM	BKG	800	24	0.03	715	0.89375		
Anal Date:	7/19/95	Tot Sa, Alq:	2.25E+02 ✓	8.17E+01	Alq:	(Dpm/ 2.44E+00	(uCV 3.03E-03	(pCV 1.35E+01	± 6.1E+00	CAT I ✓	3.7E+00 Lab	
Ppt mg:	81.7 ✓	Units:	g	mg	Det:	Alq:	1.11E+01	Sa:	1.38E-02	I (g):	6.14E+01 ± 5.4E+00	1.6E+00 Lab

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 00013
 84 10-11-95

P2-7/19/95

CLIENT CODE	ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
WHIC	B0G981		7/19/95 10:30:00 AM	QUAD21C	7/19/95 11:44:48 AM	B0G981	30	10	0.29958333	116	2.7591667
		SOLID		Bkg:	7/19/95 5:33:56 AM	BKG	800	27	0.03375	886	1.1075
Anal Date:	7/19/95	Tot Sa, Alq:	1.85E+02 ✓	9.45E+01	Alp:	(Dpm/ 1.85E+00	(uCV 1.63E-03	(pCV 8.82E+00	± 3.8E+00	CAT	5.7E+00 Lab
Ppt mg:	94.3 ✓	Units:	g	mg	Det:	Alq): 5.97E+00	Sc): 5.27E-03	L(g): 2.85E+01	± 3.8E+00	I ✓	3.5E+00 ALI LI
WHIC	B0G982		7/19/95 10:30:00 AM	QUAD21D	7/19/95 11:44:48 AM	B0G982	30	7	0.19083333	88	2.0145833
		SOLID		Bkg:	7/19/95 5:33:56 AM	BKG	800	34	0.0425	735	0.91875
Anal Date:	7/19/95	Tot Sa, Alq:	2.01E+02 ✓	9.83E+01	Alp:	(Dpm/ 1.18E+00	(uCV 1.09E-03	(pCV 5.41E+00	± 5.0E+00	CAT	9.2E+00 Lab
Ppt mg:	98.3 ✓	Units:	g	mg	Det:	Alq): 4.43E+00	Sc): 4.08E-03	L(g): 2.03E+01	± 3.2E+00	I ✓	4.9E+00 ALI LI
WHIC	B0G983		7/19/95 10:30:00 AM	QUAD22A	7/19/95 11:44:52 AM	B0G983	30	9	0.25125	86	1.8191667
		SOLID		Bkg:	7/19/95 5:34:01 AM	BKG	800	39	0.04875	838	1.0475
Anal Date:	7/19/95	Tot Sa, Alq:	1.75E+02 ✓	9.83E+01	Alp:	(Dpm/ 1.54E+00	(uCV 1.23E-03	(pCV 7.05E+00	± 5.1E+00	CAT	7.1E+00 Lab
Ppt mg:	95.5 ✓	Units:	g	mg	Det:	Alq): 3.76E+00	Sc): 3.01E-03	L(g): 1.72E+01	± 3.0E+00	I ✓	5.8E+00 ALI LI
WHIC	B0G984		7/19/95 10:30:00 AM	QUAD22D	7/19/95 11:44:52 AM	B0G984	30	8	0.23416667	95	2.1904167
		SOLID		Bkg:	7/19/95 5:34:01 AM	BKG	800	26	0.0325	781	0.97625
Anal Date:	7/19/95	Tot Sa, Alq:	1.85E+02 ✓	8.75E+01	Alp:	(Dpm/ 1.36E+00	(uCV 1.29E-03	(pCV 6.98E+00	± 5.3E+00	CAT	7.2E+00 Lab
Ppt mg:	87.5 ✓	Units:	g	mg	Det:	Alq): 4.58E+00	Sc): 4.37E-03	L(g): 2.36E+01	± 3.6E+00	I ✓	4.2E+00 ALI LI

000023

00014

SM 10-11-95

19-Jul-95

SAMPLE STATUS REPORT FOR N 5712. RAD SCREEN BOG979 TIME: 7/19/95 8: 8
DISPATCHED: 7/17/95 14:44 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/18/95 14:34

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE	RANGE?	ANS?	CODE
4271	TOT ACT	< 5.00000E 01 pCi/G	N	Y		B5023

END OF REPORT
07/19/95 09:11 3373 3176 2225 JB --- F.A.S. 003

SAMPLE STATUS REPORT FOR N 5713. RAD SCREEN BOG980 TIME: 7/19/95 8: 8
DISPATCHED: 7/17/95 14:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/18/95 14:35

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE	RANGE?	ANS?	CODE
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y		B6023

07/19/95 09:12 3373 3176 2225 JB --- F.A.S. 001

SAMPLE STATUS REPORT FOR N 5714. RAD SCREEN BOG981 TIME: 7/19/95 8: 8
DISPATCHED: 7/17/95 14:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/18/95 14:35

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE	RANGE?	ANS?	CODE
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y		B5023

07/19/95 09:12 3373 3176 2225 JB --- F.A.S. 005

SAMPLE STATUS REPORT FOR N 5715. RAD SCREEN BOG982 TIME: 7/19/95 8:44
DISPATCHED: 7/17/95 14:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/18/95 14:35

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE	RANGE?	ANS?	CODE
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y		B6023

07/19/95 09:12 3373 3176 2225 JB --- F.A.S. 006

SAMPLE STATUS REPORT FOR N 5716. RAD SCREEN BOG983 TIME: 7/19/95 8: 8
DISPATCHED: 7/17/95 14:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/19/95 6: 9

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE	RANGE?	ANS?	CODE
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000040

BM 10-16-95

00015

SAMPLE STATUS REPORT FOR N 5713. RAD SCREEN BOG980 TIME: 7/19/95 9: 8
DISPATCHED: 7/17/95 14:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/18/95 14:35

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE
****	*****	*****	RANGE? ANS? CODE
4271	TOT-ACT	< 5.00000E 01 pCi/G	N Y B6023

07/19/95 09:12 3373 3176 2225 JB --- F.A.S. 001

SAMPLE STATUS REPORT FOR N 5714. RAD SCREEN BOG981 TIME: 7/19/95 8: 8
DISPATCHED: 7/17/95 14:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/18/95 14:35

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE
****	*****	*****	RANGE? ANS? CODE
4271	TOT-ACT	< 5.00000E 01 pCi/G	N Y B6023

07/19/95 09:12 3373 3176 2225 JB --- F.A.S. 005

SAMPLE STATUS REPORT FOR N 5715. RAD SCREEN BOG982 TIME: 7/19/95 8:44
DISPATCHED: 7/17/95 14:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/18/95 14:35

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE
****	*****	*****	RANGE? ANS? CODE
4271	TOT-ACT	< 5.00000E 01 pCi/G	N Y B6023

07/19/95 09:12 3373 3176 2225 JB --- F.A.S. 006

SAMPLE STATUS REPORT FOR N 5716. RAD SCREEN BOG983 TIME: 7/19/95 8: 8
DISPATCHED: 7/17/95 14:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/19/95 6: 9

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE
****	*****	*****	RANGE? ANS? CODE
4271	TOT-ACT	< 5.00000E 01 pCi/G	N Y B6023

07/19/95 09:12 3373 3176 2225 JB --- F.A.S. 007

SAMPLE STATUS REPORT FOR N 5717. RAD SCREEN BOG984 TIME: 7/19/95 8: 8
DISPATCHED: 7/17/95 14:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/18/95 14:35

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE
****	*****	*****	RANGE? ANS? CODE
4271	TOT ACT	< 5.00000E 01 pCi/G	N Y B6023

END OF REPORT

000041

B/M
10-11-75
00016

Supplemental Information

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

INFORMATION REQUEST FORM (IRF)

To: Jim McCabe

Date: 19-Sep

Primary FAX: 372-2106

Secondary FAX: 372-1616

PROJECT NAME:	105-DR Large Sodium Fire Facility
SDG NUMBER:	W0635-QES-392
LATA NO.:	VW403.97
LABORATORY:	QES
CASE NUMBER:	N/A
ANALYSIS METHOD:	
ANALYSIS DATE:	
ITEM(S) MISSING:	

Comments: Can you provide the Field QC information for this project?

RETURN TO LATA

Attention: B MORRIS

INFORMATION RECEIVED FROM WHC (INITIALS/DATE): BM 10-5-96

INFORMATION ACCEPTABLE?: YES NO 068343

If NO is checked, send a new LIRF to request additional information.

Post-it* Fax Note	7671	Date	9/19	# of pages	1
To	JIM McCabe	From	Brent Mark		
Co./Dept.		Co.			
Phone #		Phone #	946-2907		
Fax #		Fax #			

END OF PACKAGE

8633 Gage Blvd. / Kennewick, WA 99336 / Telephone (509) 783-4369 / FAX (509) 783-9661

October 18, 1995
LATA95-202



Mr. Karl Pool
Westinghouse Hanford Company
P. O. Box 1970
Richland, WA 99352

Subject: VW403.98, SDG W0638-QES-393

Dear Mr. Pool:

Attached is the data validation report for analytical results for 105-DR Large Sodium Fire Facility (SDG W0638-QES-393). The package was received by Los Alamos Technical Associates on September 13, 1995. The data package was initially placed on hold September 19, 1995 and released on October 6, 1995.

If you have any questions, please let me know.

Sincerely,

Brent Morris for

Marsha C. Webb
Deputy Project Manager

Attachment

cc: Jeanette Duncan, CH2M Hill
Don Smith, LATA
VW403.98
MCW/lb

In

DATA VALIDATION REPORT
for
105-DR LARGE SODIUM FIRE FACILITY
SDG W0638-QES-393
LATA VW403.98

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

October 18, 1995

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105-DR LARGE SODIUM FIRE FACILITY
Data Validation Narrative

INTRODUCTION

All samples in Sample Delivery Group (SDG) W0638-QES-393 (VW403.98) were validated at level D as defined in the Data Validation Procedures for Chemical Analysis (WHC-SD-EN-SPP-002, Rev. 2).

The analyses were performed by Quanterra Environmental Services.

ANALYSES REQUESTED

See Table 1

DATA QUALITY OBJECTIVES

- Precision:** Goals for precision were met.
- Accuracy:** Goals for accuracy were met.
- Sample Result Verification:** All sample results were supported in the raw data.
- Detection Limits:** Detection limit goals were met for all sample results as specified in the *105-DR Large Sodium Fire Facility Decontamination, Sampling, and Analysis Plan*, WHC-SD-EN-AP-186, Rev. 0.
- Completeness:** The data package was 100% complete for all requested analyses.

Data qualifiers are assigned to any results that have been determined to be deficient. These are discussed in the Qualification Summary Table.

Table 1
Chain-of-Custody
Analysis Request

LATA ID #: VV403.98

SDG: W0638-QES-393

Sample Information					Analyses Requested			
SAMPLE NO.	DATE COLLECTED	MATRIX	SAF	FIELD QC INFO	1	2	3	4
B0G9F6	20-Jul-95	GRAVEL	95-080		X	X	X	X
B0G9F7	20-Jul-95	GRAVEL	95-080		X	X	X	X

Method References:

	<u>Analysis</u>	<u>Method</u>
1.	TCLP Metals	
	-As, Ba, Cd, Cr, Pb, Ag, Se	1311/6010
	-Hg	1311/7470
2.	pH	9045
3.	Activity Scan	Lab Specific
4.	Rad Screen	Lab Specific

REFERENCES

WHC 1993, *Data Validation Procedures for Chemical Analyses*, WHC-SD-EN-SPP-002, Rev. 2, Westinghouse Hanford Company, Richland, Washington.

WHC 1995, *105-DR Large Sodium Fire Facility Decontamination, Sampling, and Analysis Plan*, WHC-SD-EN-AP-186, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

GLOSSARY OF VALIDATION APPLIED QUALIFIERS (CHEMISTRY)

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows.

- U- Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.
- UJ- Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a QC deficiency identified during data validation, the associated quantitation limit is an estimate.
- J- Indicates the compound or analyte was analyzed for and detected. The associated concentration is an estimate, but the data are usable for decision making purposes.
- BJ- Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.
- R- Indicates the compound or analyte was analyzed for, detected, and due to an identified QC deficiency the data are unusable.
- UR- Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data are unusable due to an identified QC deficiency.

GLOSSARY OF LABORATORY APPLIED QUALIFIERS

Qualifiers which may be applied by the laboratory in compliance with applicable requirements are as follows.

Inorganic Qualifiers

- U- Indicates the analyte was analyzed for but not detected in the sample.
- B- Indicates the analyte concentration is less than the CRDL but greater than the IDL.
- E- Indicates the value reported is estimated due to the presence of interference.
- N- Indicates spiked sample recovery was not within the control limits.
- *- Indicates duplicate analysis was not within control limits.

Qualification Summary Table

Qualification Summary Table

Inorganics (Metals)

ANALYTE	TYPE	QUALIFIER	SAMPLES AFFECTED	DQO	REASON
No qualifiers were added by the validator.					

General Chemistry

ANALYTE	TYPE	QUALIFIER	SAMPLES AFFECTED	DQO	REASON
No qualifiers were added by the validator.					

000008

Data Summary Tables

**METALS
DATA SUMMARY TABLE**

LATA ID#: VW403.98		HEIS #:	B0G9F6		B0G9F7	
		Date:	20-Jul-95		20-Jul-95	
		Matrix:	GRAVEL		GRAVEL	
Constituent	CAS #	Units	Results	Q	Results	Q
TCLP Arsenic	7440-38-2	µg/L	58.2	U	58.2	U
TCLP Barium	7440-39-3	µg/L	198	B	378	
TCLP Cadmium	7440-43-9	µg/L	3.1	U	3.1	U
TCLP Chromium	7440-47-3	µg/L	2.8	U	2.8	U
TCLP Lead	7439-92-1	µg/L	41.3	U	41.3	U
TCLP Mercury	7439-97-6	µg/L	0.20	U	0.20	U
TCLP Selenium	7782-49-2	µg/L	43.3	U	43.3	U
TCLP Silver	7440-22-4	µg/L	28.4	B	2.2	U

000010

Shaded areas indicate changes by the validator.

**GENERAL CHEMISTRY
DATA SUMMARY TABLE**

LATA ID#: VV403.98		HEIS #:	B0G9F6	B0G9F7
		Date:	20-Jul-95	20-Jul-95
		Matrix:	GRAVEL	GRAVEL
Constituent	CAS #	Units	Results	Q
pH	207	pH units	9.83	9.99

000311

Sample Results (Form I's)

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.158

Category: pH
Method: EPA 9045
Matrix: SOLID

Sample Date : 07/20/95
Receipt Date : 07/21/95
Report Date : 08/21/95

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0G9F6	8920-001	pH	C-006	QCBLK73578-1	07/25/95	07/25/95	9.83	PH			1
B0G9F6	8920-001DUP	pH	C-006	QCBLK73578-1	07/25/95	07/25/95	9.88	PH			1
B0G9F7	8920-002	pH	C-006	QCBLK73578-1	07/25/95	07/25/95	9.99	PH			1
NA	QCBLK73578-1	pH	C-006	QCBLK73578-1	07/25/95	07/25/95	5.91	PH			1

000015

AMS 9/20/95
~~0000164~~
Dec. 10-11-95

Checklists

**LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST**

VALIDATION LEVEL:	A	B	C	D	E
VALIDATION PROCEDURE:	<input type="checkbox"/> WHC-CM-5-3, Rev. 0		<input checked="" type="checkbox"/> WHC-SD-EN-SPP-002, Rev. 2		
PROJECT:	105-DR LARGE SODIUM FIRE FACILITY		SDG:	W0638-QES-393	
VALIDATOR:	DE STROUP <i>10-16-95</i>	LATA NO:	VW403.98	DATE:	11-Oct-95
REVIEWER:	BJ SEYMOUR <i>10-15-95</i>	LAB:	QES	CASE:	NA
SAF NO:	95-080	QAPP NO:	N/A	SAP NO:	WHC-SD-EN-AP-186, Rev. 0
ANALYSES REQUESTED					
<input checked="" type="checkbox"/>	TCLP METALS 1311/6010	<input checked="" type="checkbox"/>	Mercury 7470		
SAMPLE NO.	MATRIX	COMMENTS:			
B0G9F6 B0G9F7	GRAVEL				

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

YES NO N/A

Is technical verification documentation present?

Is a case narrative present?

2. HOLDING TIMES

YES NO N/A

Are sample holding times acceptable?

See HOLDING TIME SUMMARY form

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

YES NO N/A

Were initial calibrations performed on all instruments?

Are initial calibrations acceptable?

Are ICP interference checks acceptable?

Were ICV and CCV checks performed on all instruments?

Are ICV and CCV checks acceptable?

Validation calculation checks were performed and are acceptable.

If NO(s) are checked, see CALIBRATION DATA SUMMARY form

**LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST**

4. BLANKS

YES NO N/A

Were ICB and CCB checks performed for all applicable analyses?

Are ICB and CCB results acceptable?

Were preparation blanks analyzed?

Are preparation blank results acceptable?

If NO(s) are checked, see BLANK AND SAMPLE DATA SUMMARY form

5. ACCURACY

YES NO N/A

Were spike samples analyzed at the proper frequency?

Are all spike sample recoveries acceptable?

Are all elements spiked at an appropriate level?

Was a post digestion spike analyzed?

Are all post digestion spike recoveries acceptable?

Were laboratory control samples (LCS) analyzed at the proper frequency?

Are all LCS recoveries acceptable?

Validation calculation checks were performed and are acceptable.

If NO(s) are checked, see ACCURACY DATA SUMMARY form

6. PRECISION

YES NO N/A

Were laboratory duplicates analyzed at the proper frequency?

Are all duplicate RPD values acceptable?

Were MS/MSDs analyzed?

Are all MS/MSD RPD values acceptable?

Were ICP serial dilution samples analyzed at the proper frequency?

Are all ICP serial dilution %D values acceptable?

Validation calculation checks were performed and are acceptable.

If NO(s) are checked, see PRECISION DATA SUMMARY form

000018

**LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST**

YES NO N/A

7. FIELD QC SAMPLES

- Were field QC samples (field/trip blanks, duplicates, splits, performance audit) identified? YES NO N/A
- Are field/trip blank results acceptable? (see Blank Data Summary form) YES NO N/A
- Are field duplicate RPD values acceptable? (see Field QC evaluation) YES NO N/A
- Are field split RPD values acceptable? (see Field QC evaluation) YES NO N/A
- Are performance audit sample results acceptable? YES NO N/A

Comments:

YES NO N/A

8. FURNACE AA QUALITY CONTROL

- Were duplicate injections required? YES NO N/A
- Are all duplicate injection %RSD values acceptable? YES NO N/A
- Were analytical spikes required? YES NO N/A
- Are all analytical spike recoveries acceptable? YES NO N/A
- Was MSA required? YES NO N/A
- Are all MSA results acceptable? YES NO N/A
- Validation calculation checks were performed and are acceptable. YES NO N/A

Comments:

YES NO N/A

9. REPORTED RESULTS AND DETECTION LIMITS

- Are results reported for all requested analyses? YES NO N/A
- Are all results supported in the raw data? YES NO N/A
- Are results calculated properly? YES NO N/A
- Do results meet the CRDLs? YES NO N/A
- Validation calculation checks were performed and are acceptable. YES NO N/A

Comments:

VALIDATION SUMMARY

For deficiencies (major and minor) and comments, please refer to the Qualification Summary Table.

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

HOLDING TIME SUMMARY

SDG: W0638-QES-393			VALIDATOR: DE STROUP					DATE: 10-Oct-95		
PROJECT: 105-DR LARGE SODIUM FIRE FACILITY			REVIEWER: BJ SEYMOUR					LATA NO.: WW403.98		
HEIS-SN	MATRIX CODE	ANALYSIS	DATE COLLECTED	PREP DATE	ANALYSIS DATE	PREP HT (days)	Required HT (days)	ANALYSIS HT (days)	Required HT (days)	VAL Q
BOG9F6	GRAVEL	TCLP Metals	20-Jul-95	31-Jul-95	31-Jul-95	11	180	0	180	None
BOG9F7	GRAVEL	TCLP Metals	20-Jul-95	31-Jul-95	31-Jul-95	11	180	0	180	None
BOG9F6	GRAVEL	Mercury	20-Jul-95	31-Jul-95	31-Jul-95	11	28	0	28	None
BOG9F7	GRAVEL	Mercury	20-Jul-95	31-Jul-95	31-Jul-95	11	28	0	28	None

000320

**LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST**

LINEAR REGRESSION ANALYSIS

SDG: W0638-QES-393

Date: 11-Oct-95

LATA No.: VW403.98

Validator: DE STROUP

Analyte/Calibration Date: Hg 7/31/95

Concentration	Absorbance
x	y
-0.06	0.000
0.63	0.500
0.90	1.000
2.08	2.000
4.95	5.000
10.00	10.000

r
0.9997

r^2
0.9994

slope
1.0010

x intercept
0.0042

1/slope
0.9990

y intercept
-0.0024

000021

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

PERCENT RECOVERY (ICV/CCV)

SDG: W0638-QES-393
LATA No.: VW403.98

Date: 11-Oct-95
Validator: DES

Analyte	ICV/CCV ID	Observed Value	True Value	%R
		O	A	
Arsenic	ICV	4254.14	4000.00	106.4%
Lead	ICV	4001.36	4000.00	100.0%
Barium	CCV1	3799.22	4000.00	95.0%
Mercury	CCV1	4.27	4.00	106.8%
Arsenic	CCV3	4062.63	4000.00	101.6%
Lead	CCV3	3902.06	4000.00	97.6%

000322

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

MATRIX SPIKE RECOVERY (MS)

SDG: W0638-QES-393

Date: 11-Oct-95

LATA No.: VW403.98

Validator: DES

Analyte	Sample ID	Spike Sample Result	Sample Result	Spike Added	%R
		SSR	SR	SA	
Arsenic	B0G9F6S	5011.37	58.20	5000.00	99.1%
Lead	B0G9F6S	4683.12	41.30	5000.00	92.8%
Arsenic	B0G9F6SD	4905.24	58.20	5000.00	96.9%
Lead	B0G9F6SD	4612.84	41.30	5000.00	91.4%
Mercury	B0G9F6S	0.87	0.00	1.00	87.3%
Mercury	B0G9F6SD	0.80	0.00	1.00	79.8%

000023

**LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST**

PERCENT RECOVERY (LCS)

SDG: W0638-QES-393
LATA No.: VW403.98

Date: 11-Oct-95
Validator: DES

Analyte	Observed value	True value	%R
	OLCS	ALCS	
Arsenic	1047.87	1000.00	104.8%
Selenium	988.58	1000.00	98.9%
Mercury	2.95	3.00	98.3%

000024

**LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST**

RELATIVE PERCENT DIFFERENCE

SDG: W0638-QES-393

Date: 11-Oct-95

LATA No.: VW403.98

Validator: DES

Analyte	Sample ID	Matrix Spike	Matrix Spike Duplicate	RPD
		%R	%R	
<u>Arsenic</u>	<u>B0G9F6SD</u>	<u>100.20</u>	<u>98.10</u>	2.1%
<u>Lead</u>	<u>B0G9F6SD</u>	<u>93.70</u>	<u>92.30</u>	1.5%
<u>Mercury</u>	<u>B0G9F6SD</u>	<u>87.30</u>	<u>79.80</u>	9.0%

000025

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

PERCENT DIFFERENCE (ICP SERIAL DILUTION)

SDG: W0638-QES-393

Date: 11-Oct-95

LATA No.: VW403.98

Validator: DES

Analyte	Analyte Concentration before Dilution	Analyte Concentration after Serial Dilution	%D
	I	S	
<u>Barium</u>	<u>.197.87</u>	<u>204.91</u>	3.6%
<u>Silver</u>	<u>28.4</u>	<u>38.06</u>	34.0%

000026

**LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST**

INORGANICS RESULTS CALCULATION, WATER

SDG: W0638-QES-393

Date: 11-Oct-95

LATA No.: VW403.98

Validator: DE STROUP

Analyte	Concentration from curve		Dilution Factor	Concentration (µg/L)
	CONCW	units	DFW	
<u>Barium</u>	<u>197.97</u>	<u>ug/L</u>	<u>1</u>	198.0
<u>Silver</u>	<u>28.41</u>	<u>ug/L</u>	<u>1</u>	28.4

000027

LATA GENERAL CHEMISTRY
DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
VALIDATION PROCEDURE:	<input type="checkbox"/> WHC-CM-5-3, Rev. 0		<input checked="" type="checkbox"/> WHC-SD-EN-SPP-002, Rev. 2		
PROJECT:	105-DR LARGE SODIUM FIRE FACILITY		SDG:	W0638-QES-393	
VALIDATOR:	DE STROUP <i>del 10-16-95</i>	LATA NO:	VW403.98	DATE:	11-Oct-95
REVIEWER:	BJ SEYMOUR <i>BM 10-15-95</i>	LAB:	QES	CASE:	NA
SAF NO:	95-080	QAPP NO:	N/A	SAP NO:	WHC-SD-EN-AP-186, Rev. 0
ANALYSES REQUESTED					
<input checked="" type="checkbox"/>	pH				
	9045				
SAMPLE NO.	MATRIX	COMMENTS:			
B0G9F6 B0G9F7	GRAVEL				

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE YES NO N/A

Is technical verification documentation present?

Is a case narrative present?

2. HOLDING TIMES YES NO N/A

Are sample holding times acceptable?

See HOLDING TIME SUMMARY form

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS YES NO N/A

Were initial calibrations performed on all instruments?

Are initial calibrations acceptable?

Were calibration checks performed on all instruments?

Are calibration checks acceptable?

Validation calculation checks were performed and are acceptable.

If NO(s) are checked, see CALIBRATION DATA SUMMARY form

000328

LATA GENERAL CHEMISTRY
DATA VALIDATION CHECKLIST

4. BLANKS

YES NO N/A

Were laboratory blanks performed for all applicable analyses?

Are laboratory blank results acceptable?

Were preparation blanks analyzed?

Are preparation blank results acceptable?

If NO(s) are checked, see BLANK AND SAMPLE DATA SUMMARY form

5. ACCURACY

YES NO N/A

Were spike samples analyzed at the proper frequency?

Are all spike sample recoveries acceptable?

Were laboratory control samples (LCS) analyzed at the proper frequency?

Are all LCS recoveries acceptable?

Validation calculation checks were performed and are acceptable.

If NO(s) are checked, see ACCURACY DATA SUMMARY form

6. PRECISION

YES NO N/A

Were laboratory duplicates analyzed at the proper frequency?

Are all duplicate RPD values acceptable?

Were MS/MSDs analyzed?

Are all MS/MSD RPD values acceptable?

Validation calculation checks were performed and are acceptable.

If NO(s) are checked, see PRECISION DATA SUMMARY form

7. FIELD QC SAMPLES

YES NO N/A

Were field QC samples (field/trip blanks, duplicates, splits, performance audit) identified?

Are field/trip blank results acceptable? (see Blank Data Summary form)

Are field duplicate RPD values acceptable? (see Field QC calculations)

Are field split RPD values acceptable? (see Field QC calculations)

Are performance audit sample results acceptable?

Comments:

LATA GENERAL CHEMISTRY
DATA VALIDATION CHECKLIST

8. ANALYTE QUANTITATION

YES NO N/A

Was analyte quantitation performed properly?

Are results calculated properly?

Validation calculation checks were performed and are acceptable.

Comments:

9. REPORTED RESULTS AND DETECTION LIMITS

YES NO N/A

Are results reported for all requested analyses?

Are all results supported in the raw data?

Do results meet the CRDLs?

Validation calculation checks were performed and are acceptable.

Comments:

VALIDATION SUMMARY

For deficiencies (major and minor) and comments, please refer to the Qualification Summary Table.

HOLDING TIME SUMMARY

SDG: W0638-QES-393			VALIDATOR: DE STROUP					DATE: 11-Oct-95		
PROJECT: 105-DR LARGE SODIUM FIRE FACILITY			REVIEWER: BJ SEYMOUR					LATA NO.: VV403.98		
HEIS-SN	MATRIX CODE	ANALYSIS	DATE COLLECTED	PREP DATE	ANALYSIS DATE	PREP HT (days)	Required HT (days)	ANALYSIS HT (days)	Required HT (days)	VAL Q
B0G9F6	GRAVEL	pH	20-Jul-95	25-Jul-95	25-Jul-95	5	NA	0	Immed.	None
B0G9F7	GRAVEL	pH	20-Jul-95	25-Jul-95	25-Jul-95	5	NA	0	Immed.	None

000031

Laboratory Case Narratives

Quanterra Incorporated
 13715 Rider Trail North
 Earth City, Missouri 63045

314 298-8566 Telephone
 314 298-8757 Fax

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
 P.O. Box 1970
 Richland, Washington 99352

August 24, 1995

Attention: Karl Pool

Project number	:	519.158
Date Received by Lab	:	July 21, 1995
Number of Samples	:	Two (2)
Sample Type	:	Soil
SDG Number	:	W0638
Data Deliverable	:	Standalone

I. Introduction

On July 21, 1995, two (2) soil samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analyses. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID's:

<u>St Louis ID</u>	<u>WHC ID</u>	<u>Richland ID</u>	<u>Matrix</u>	<u>Date of Receipt</u>
8920-001	B0G9F6	50726101	Water	07/21/95
8920-002	B0G9F7	50726101	Water	07/21/95

II. 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: ICAP metals by EPA method 6010. Mercury by EPA method 7470. All metals analyzed after TCLP extraction by EPA method 1311. pH by EPA method 9045.

000333

0000159

Westinghouse Hanford Company
August 24, 1995
Project Number: 519.158
SDG: W0638
Page 2

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. A Matrix Spike and Matrix Spike Duplicate analyses were performed per the protocol for the analytes. pH analysis uses only Sample Duplicate for matrix QC.

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

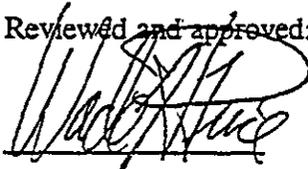
QCLCS- Quality Control Laboratory Control Sample, Blank Spike

V. Comments

There were no comments or nonconformances associated with the analysis of these samples.

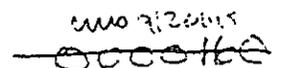
I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:



Wade H. Price
Project Manager
c:\price5tabbydave\hanw0638.nar

000334

000334


Chain-of-Custody Information

Temp 1°c / 2°c Temp Bottle Car # 4767

Westinghouse Hanford Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						C.O.C# 008332	
Collector: HULSE, KARL		Contact/Requestor KNAUS, Z.C.				Tel. No. 372-1597 MISSN H6-23 FAX			
SAF Number 95-080		Sample Origin 105DR				Purchase Order/Charge Code N/A			
Project Title RCRA Closure Project (105-DR)		Logbook # WHC-N-205 U 30				Ice Chest # 55		Temp.	
Shipped To (Lab) Quanterra		Method of Shipment Government Vehicle				Bill of Lading/Air Bill No. N/A			
Protocol RCRA 507261		Data Turnaround NON-TPA				Offsite Property No. W/ct			
Sample No.	Lab. ID	A	Date	Time	No/Type Container	Sample Analysis	Type	Preservative	
H0G9F6	01	X	7/20/95	0845	(1) 40 a(G)	ACTIVITY SCAN (Lab Specific)	Type 20 Fill	None	
H0G9F6	1	X	7/20/95	0845	(1) 125 a(G)	pH(9045)	Soil 100%	4 Deg C	
H0G9F6		X	7/20/95	0845	(1) 500 a(G)	TCLP METALS(1311/6010), As-6010, Ba, Cd, Cr, Pb, Ag, Se, Hg-7470	↓ ↓	4 deg C	
H0G9F7	02	X	7/20/95	0910	(1) 40 a(G)	ACTIVITY SCAN (Lab Specific)		None	
H0G9F7	1	X	7/20/95	0910	(1) 125 a(G)	pH(9045)	Soil 100%	4 Deg C	
H0G9F7	1	X	7/20/95	0910	(1) 500 a(G)	TCLP METALS(1311/6010), As-6010, Ba, Cd, Cr, Pb, Ag, Se, Hg-7470	↓ ↓	4 deg. C	

SDG W0638

POSSIBLE SAMPLE HAZARDS/REMARKS List all known wastes.			MSDS Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		SPECIAL INSTRUCTIONS Sample Matrix is Gravel		Hold Time	
Relinquished By	Print	Sign	Date/Time	Received By	Print	Signature	Date/Time	Matrix *
	KB Hulse	KB Hulse	7-21-95 0953	Kevin Heitberger	Kevin Heitberger		7-21-95 10:40	S = Soil SE = Sediment SL = Sludge W = Water A = Au
	ERF		7-21-95 10:40	Kevin Heitberger			7-21-95 10:40	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
				Kevin Heitberger			7-22-95 10:30	
FINAL SAMPLE DISPOSITION		Disposal Method e.g. Return to customer, per lab procedure, used in process			Disposed By		Date/Time	

** All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

1100000 010000

SAMPLE STATUS REPORT FOR N 5721. RAD SCREEN BOG9F6 TIME: 7/20/95 14:55
DISPATCHED: 7/18/95 14:49 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/20/95 14:18

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE	RANGE?	ANS?	CODE
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y		B6023

END OF REPORT

07/20/95 15:09 3373 3176 2225 JB --- F.A.S. 003

SAMPLE STATUS REPORT FOR N 5722. RAD SCREEN BOG9F7 TIME: 7/20/95 14:55
DISPATCHED: 7/18/95 14:49 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 7/20/95 14:19

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE	RANGE?	ANS?	CODE
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y		B6023

END OF REPORT

BW
10-16-95
000341 ~~0000012~~

Supplemental Information

LATA INORGANIC (METALS)
DATA VALIDATION CHECKLIST

INFORMATION REQUEST FORM (IRF)

To: Jim McCabe

Date: 19-Sep

Primary FAX: 372-2106

Secondary FAX: 372-1616

PROJECT NAME:	105-DR Large Sodium Fire Facility
SDG NUMBER:	W0638-QES-393
LATA NO.:	VW403.98
LABORATORY:	QES
CASE NUMBER:	N/A
ANALYSIS METHOD:	
ANALYSIS DATE:	
ITEM(S) MISSING:	

Comments: Can you provide the Field QC information for this project?

RETURN TO LATA

Attention: B MORRIS

INFORMATION RECEIVED FROM WHC (INITIALS/DATE): 10-6-95

INFORMATION ACCEPTABLE?: YES NO

If NO is checked, send a new LIRF to request additional information.

0000-53

Post-it* Fax Note	7671	Date	9/19	# of pages	1
To	Jim McCabe	From	Brent Morris		
Co./Dept		Co.			
Phone #		Phone #	946-2907		
Fax #					

END OF PACKAGE