

**DON'T SAY IT --- Write It!**

DATE: February 8, 1994

TO: 9304L118-WES-1098

FROM: Pat Reich

H4-19

Telephone: 372-2785

CC:

SUBJECT: DATA VALIDATION REPORT FOR THE 100-IU-4 SODIUM DICHROMATE ERA INV.

THE VALIDATION REPORT FOR THIS DATA PACKAGE IS FILED IN B01971-TMA-454.

PAT REICH  
FILE CLERK





ROY F. WESTON, INC.  
LIONVILLE ANALYTICAL LABORATORY  
ANALYTICAL CASE NARRATIVE



Client : WESTINGHOUSE HANFORD  
RFW# : 9304L118

W.O. #: 06168-002-001-9999-00  
Date Received: 04-06-93

**INORGANIC**

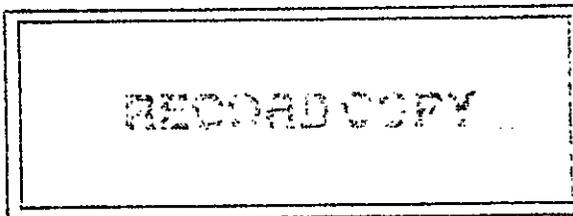
The following is a summary of the quality control results and a description of any problems encountered during the analysis of this batch of samples:

1. All sample holding times as required by 40CFR136 were met.
2. All preparation blank results were below the required detection limits.
3. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.
4. Matrix spike recoveries are summarized on the Inorganic Accuracy Report contained within this document. All recoveries were within the 75-125% guidance limits. All %RPD were within the 20% guidance limit.
5. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.
6. The analytical methods applied by the laboratory, unless otherwise requested, for all inorganic analyses are derived from the USEPA Method for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), Standard Methods for the Examination of Water and Wastewater 16 ed. and Test Methods for Evaluating Solid Waste (USEPA SW846).

J. Peter Hershey, Ph.D.  
Laboratory Manager  
Lionville Analytical Laboratory

4.16.93  
Date

mmz/i04-118



0001

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 04/16/93

CLIENT: WESTINGHOUSE HANFORD  
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9304L118

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	BO1978	% Solids	91.5	%	0.10
		Chromium VI	0.11	u MG/KG	0.11

0004



9304L118

44

Westinghouse  
Hanford Company

CHAIN OF CUSTODY

003655

Custody Form Initiator M.L.MYERS

Company Contact R.C.SMITH/C.E.HEIDEN

Telephone 509-376-2640

Project Designation/Sampling Locations SAF#930045, ERA, SODIUM  
DICHROMATE SITE

Collection Date 4/2/93

Ice Chest No.

Field Logbook No. WHC-N-205-22

Bill of Lading/Airbill No. 970891810

Offsite Property No.

Method of Shipment BURLINGTON AIR EXPRESS OVERNIGHT

Shipped to R.F.WESTON LABS

Possible Sample Hazards/Remarks HAZARDS UNKNOWN, PRIORITY TURNAROUND, RCRA PROTOCOL, SEE SAMPLE  
ANALYSIS REQUEST FOR INDIVIDUAL BOTTLES AND ANALYSIS.

Sample Identification

B01978 (3) BOTTLES

mem 4.5-93

**PRIORITY TURNAROUND**

Field Transfer of Custody			Chain of Possession			(Sign and Print Names)		
Relinquished By	Date	Time	Received By	Date	Time			
M.L. MYERS <i>M.L. MYERS</i>	4/5/93	1200						
Burlington Air Express	4/6/93	300	Sue Perko	4/6/93	300			

Final Sample Disposition		
Disposal Method:	Disposed by:	Date/Time:

Comments:



OVERNIGHT AIR

930411E

Contractor WESTHOUSE MANUFACTURING	<b>OFF-SITE PROPERTY CONTROL</b>	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
---------------------------------------	--------------------------------------	---

PART I - TO BE COMPLETED BY ORIGINATOR

Department ANALYTICAL LABORATORIES	Section ANALYTICAL CHEMISTRY	Unit SAMPLING	MO 10/10/93
The following items are to be shipped from		<input checked="" type="checkbox"/> Contractor	<input type="checkbox"/> Vendor
Routing		<input type="checkbox"/> Contractor	<input type="checkbox"/> Vendor
Shipped to WESTHOUSE MANUFACTURING 200 WEST 200S LOUISVILLE, KY 40203-1010		Off-site Custodian JOSEF KING	
		Full Title [unclear]	

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1	POLYCOOLER, SAMPLES ARE DOUBLE BAGGED AND STORED ON DRY ICE  SAMPLE 001970  COOLER # 00114	
WEIGHT 11 FS		

Classified     Unclassified     Shipped Under DOE Contract     Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

SAMPLES REQUIRE ANALYSIS THAT ARE NOT PRESENTLY AVAILABLE AT THIS SITE.

SAF # 93-045  
COE # 003655

PRIORITY TURNAROUND

BILL OF LADING # 970891810

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release [unclear]	RM Survey No 1250-F9	Date 4-5-93
Location of Property (Area & Bldg) 200 WEST 200S	Contact M.L. MYERS	Phone 373-2640
Date Ready for Shipment 4/7/93	Cost Code to be Charged 0022	Approximate Date This Property will be Returned N/A
Originated By M.L. MYERS	Authorized By J. HYATT	Date 4-5-93
Signature and Name of Property Control	Custodian Date	Property Management Approval Date 4/7/93

PART II - TO BE COMPLETED BY SHIPPING

Signature of Recipient [unclear]	Return Order No.	Date Issued.	Purchase Order No.	Date Issued
Date 4-5-93				

DISTRIBUTION

By Originator White, Green, Yellow, Pink - Property Management Goldenrod - Retain	Shipping Operation - Sign all Copies and Forward to: White - Property Management Green - Property Control Custodian (Issuing Office) Yellow - Retain Pink - Originator
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001 001

**BURLINGTON AIR EXPRESS**

COMMERCIAL SUPPORT GROUP  
18200 VON KARMAN AVE  
IRVINE CA 92715

93041118  
970 891 810

3 C.O.D.

SHIPPER'S REFERENCE NO. SHIPPER'S ACCOUNT NO.

COMPANY DEPT/FLOOR

THRU (YOUR NAME) PHONE NO.

STREET ADDRESS

CITY STATE ZIP (REQUIRED)

CONSIGNEE'S REFERENCE NO. CONSIGNEE'S ACCOUNT NO.

COMPANY DEPT/FLOOR

TO (CONSIGNEE NAME) PHONE NO.

ACCURATE STREET ADDRESS (BURLINGTON CANNOT DELIVER TO A P.O. BOX)

CITY STATE ZIP (REQUIRED)

CONSIGNEE'S CHECK O.K. MARK IF APPLICABLE

DECLARED VALUE \$

LIMIT OF LIABILITY  
LIABILITY IS AGREED AND UNDERSTOOD TO BE \$50 OR \$25 PER POUND (WHICHEVER IS GREATER) UNLESS A PACKER VALUE IS DECLARED AND APPLICABLE CHARGES PAID. SEE REVERSE SIDE OF AIRBILL PARAGRAPH 6 FOR DECLARED VALUE LIMITATIONS.

1-800-CALL-BAX FOR INFORMATION OR THE BAX OFFICE NEAREST YOU

**BILLING INFORMATION**

PREPAID (SHIPPER) \$ LASH RECEIVED IF PAID BY SHIPPER

COLLECT (CONSIGNEE)

3RD PARTY (ACCT NO OR BILLING ADDRESS REQUIRED)

ACCOUNT NO.

COMPANY/NAME

STREET ADDRESS

CITY STATE ZIP

**SERVICE REQUESTED**

OVERNIGHT (NEXT BUSINESS DAY)

SECOND DAY

NEXT FLIGHT OUT

CHECK BELOW IF PACKAGE IS

LETTER

G.O.H. (GARMENT OR HANGER)

SIGNATURE OF SHIPPER

**HANDLING INFORMATION (\* SPECIAL RATE MAY APPLY)**

HOLD AT BAX  \*DANGEROUS GOODS  \*SATURDAY DELIVERY  \*SPECIAL DELIVERY  \*CONVENTION  \*GOVERNMENT SHIPMENT

SPECIAL INSTRUCTIONS / ADDITIONAL REFERENCE INFORMATION:

NO OF PCS	WEIGHT	LENGTH	WIDTH	HEIGHT	DESCRIPTION
1	11				COOLER, SH-4 SAM
TOTAL PCS	TOTAL WT.				
1	11				

RATE QUOTE NUMBER

SKID(S) SAID TO CONTAIN NO OF PIECES

RECEIVED BY BAX AT  SHIPPER'S DOOR  BAX TERMINAL

OUTSIDE CARRIER: CHARGES ADVANCED \$ PRO NUMBER CARRIER NAME

TIME/DATE OF PICK-UP DRIVER NO.

SIGNED FOR BAX X

RELEASE SIGNATURE REMOVER AUTHORIZES BAX TO DELIVER SHIPMENT WITHOUT A DELIVERY SIGNATURE AS PER CONDITIONS ON REVERSE OF THIS PAGE.

970 891 810  
AIRBILL NUMBER

UP 100 (1192)

CONSIGNEE COPY

0017



ROY F. WESTON, INC.  
LIONVILLE ANALYTICAL LABORATORY  
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD  
RFW #: 9304L118

W.O. #: 06168-002-001-9999-00  
Date Received: 04-06-93

**CLP METALS**

1. This narrative covers the analysis of one (1) soil sample.
2. The sample and its associated QC samples were prepared and analyzed in accordance with the following protocols: CLP SOW 3/90.
3. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory.
4. All analyses were performed within the required holding times.
5. All Initial and Continuing Calibration Verifications (ICV/CCV's) were within control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCB's) were within control limits.
7. All Preparation/Method Blanks were below Reporting Limits.
8. All ICP Interference Check Samples (ICSA and ICSAB) were within control limits.
9. All Laboratory Control Samples (LCS) were within the 80-120% control limits.
10. All Serial Dilution percent differences were within SW-846 or USEPA SOW control limits except for:

<u>RFW #</u>	<u>Element</u>	<u>%Difference</u>
001	Barium	10.3

11. All Duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits for samples values greater than 5X Reporting Limit, or +/- the Reporting Limits for sample values less than 5X Reporting Limit except for:

<u>RFW #</u>	<u>Element</u>	<u>%RPD</u>
001	Lead	33.7

0011



12. All Matrix Spike recoveries were within the 75-125% control limits (exception allowed when sample concentration exceeds the spike added concentration by a factor of 4 or more)  
except for:

<u>RFW #</u>	<u>Element</u>	<u>%Recovery</u>
001	Antimony	65.8
	Lead	54.5

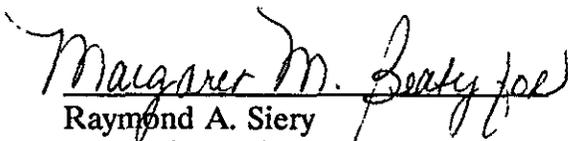
A Post-Matrix Spike analysis was performed for those ICP elements that did not meet the specified control limits (exception allowed for Ag).

Matrix spike analyses are not required for Ca, Mg, Na, and K in waters and soils. Also, not required for Al and Fe in soils.

13. Method of Standard Additions (MSA) analyses were performed on the following samples:

<u>Element</u>	<u>Sample #'s</u>
Lead	001, 001R

14. ICP Interelement Correction Factors for IC1 and IC3 are included in this package, but do not appear on EDD.
15. The graphite furnace time that appears on form XIV is the time of the first injection. The time that appears on the data is the print time.

  
Raymond A. Siery  
Inorganic Section Manager  
Lionville Analytical Laboratory

4/22/03  
Date

ROY F. WESTON, INC.  
LIONVILLE ANALYTICAL LABORATORY  
ANALYTICAL CASE NARRATIVE



Client: WESTINGHOUSE HANFORD  
RFW #: 9304L118

W.O. #: 06168-002-001-9999-00  
Date Received: 04-06-93

CLP METALS ADDENDUM

1. Following Exhibit E, Section V, Item 10, page E-23 of the USEPA Statement of Work for Inorganics Analysis, Document Number ILM02.0 ICP Instrument Detection Limits (IDLs) are reported for two (2) ICP instruments. The instrument identification numbers are "IC1" and "IC3". The highest IDL for the two instruments is used for reporting concentration values in this sample data package.
2. A discrepancy exists between raw data and Form XIVs analytical spikes recovery calculations performed for graphite furnace AA analytes. Instrument software calculates spike recoveries based on absolute values below the IDL for sample results. This is hard-coded by the vendor and is currently not correctable. CLP convention (SOW ILM02.0, Exhibit E, Section V, Item 6, page E-20) requires that when values fall below the IDL, the sample result is equal to zero (0) for the purposes of calculating the percent recovery. The Form XIVs contain the correct calculation.

*Margaret M. Beatty for*  
Raymond A. Siery

Inorganic Section Manager  
Lionville Analytical Laboratory

*4/22/93*  
Date

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 04/20/93

CLIENT: WESTINGHOUSE HANFORD  
 WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9304L118

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	BO1978	Silver, Total	2.2	u MG/KG	2.2
		Aluminum, Total	4680	MG/KG	43.7
		Arsenic, Total	2.2	u MG/KG	2.2
		Barium, Total	62.8	MG/KG	43.7
		Beryllium, Total	1.1	u MG/KG	1.1
		Calcium, Total	3740	MG/KG	1090
		Cadmium, Total	1.1	u MG/KG	1.1
		Cobalt, Total	10.9	u MG/KG	10.9
		Chromium, Total	12.1	MG/KG	2.2
		Copper, Total	10.4	MG/KG	5.5
		Iron, Total	12600	MG/KG	21.9
		Potassium, Total	1090	u MG/KG	1090
		Magnesium, Total	3610	MG/KG	1090
		Manganese, Total	233	MG/KG	3.3
		Sodium, Total	1090	u MG/KG	1090
		Nickel, Total	9.7	MG/KG	8.7
		Lead, Total	5.2	MG/KG	0.65
		Antimony, Total	13.1	u MG/KG	13.1
		Selenium, Total	1.1	u MG/KG	1.1
		Thallium, Total	2.2	u MG/KG	2.2
		Vanadium, Total	18.8	MG/KG	10.9
		Zinc, Total	44.9	MG/KG	4.4

0015

U.S. EPA - CLP

EPA SAMPLE NO.

1  
INORGANIC ANALYSIS DATA SHEET

BO1978

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP118

Matrix (soil/water): SOIL Lab Sample ID: 930411801

Level (low/med): LOW Date Received: 4/06/93

% Solids: 91.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4680.00	-		P
7440-36-0	Antimony	12.50	U	N	P
7440-38-2	Arsenic	1.60	B		F
7440-39-3	Barium	62.80		E	P
7440-41-7	Beryllium	.22	U		P
7440-43-9	Cadmium	.87	U		P
7440-70-2	Calcium	3740.00			P
7440-47-3	Chromium	12.10			P
7440-48-4	Chromium	12.10			P
7440-48-4	Cobalt	6.80	B		P
7440-50-8	Copper	10.40			P
7439-89-6	Iron	12600.00			P
7439-92-1	Lead	5.20		SN*	F
7439-95-4	Magnesium	3610.00			P
7439-96-5	Manganese	233.00			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	9.70			P
7440-09-7	Potassium	1090.00	B		P
7782-49-2	Selenium	.44	U	W	F
7440-22-4	Silver	1.53	U		P
7440-23-5	Sodium	172.00	B		P
7440-28-0	Thallium	.44	U		F
7440-62-2	Vanadium	18.80			P
7440-66-6	Zinc	44.90			P
	Cyanide				NR

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After: BROWN

Clarity After:

Artifacts:

Comments:

1  
INORGANIC ANALYSIS DATA SHEET

BO1978

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP118

Matrix (soil/water): SOIL Lab Sample ID: 930411801

Level (low/med): LOW Date Received: 4/06/93

% Solids: 91.5

*Handwritten:* PWS 11/10/93

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4680.00			P
7440-36-0	Antimony	3.5 <del>12.50</del>	U	N J	P
7440-38-2	Arsenic	1.60	B		F
7440-39-3	Barium	62.80		E J	P
7440-41-7	Beryllium	.22	U		P
7440-43-9	Cadmium	0.44 <del>0.07</del>	U		P
7440-70-2	Calcium	3740.00			P
7440-47-3	Chromium	12.10			P
7440-48-4	Cobalt	6.80	B		P
7440-50-8	Copper	10.40			P
7439-89-6	Iron	12600.00			P
7439-92-1	Lead	5.20		SN* J	F
7439-95-4	Magnesium	3610.00			P
7439-96-5	Manganese	233.00			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	9.70			P
7440-09-7	Potassium	1090.00	B		P
7782-49-2	Selenium	0.22 <del>0.44</del>	U	W	F
7440-22-4	Silver	1.19 <del>1.55</del>	U		F
7440-23-5	Sodium	172.00	B		P
7440-28-0	Thallium	.44	U		F
7440-62-2	Vanadium	18.80			P
7440-66-6	Zinc	44.90		J	P
	Cyanide				NR

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After: BROWN

Clarity After:

Artifacts:

Comments:

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 04/16/93

CLIENT: WESTINGHOUSE HANFORD  
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9304L118

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	BO1978	% Solids Chromium VI	91.5 ✓ 0.11 ✓	% uJ MG/KG	0.10 0.11

Pa-12  
11715.4

0004