

Skinner & Sherman Laboratories Inc.  
300 Second Avenue  
Post Office Box 521  
Waltham, MA 02254-0521  
(617) 890-7200 • FAX (617) 890-3883

Federal Express 3313258443  
September 26, 1991

TMA/ARLI  
160 Taylor Street  
Monrovia, CA 91016

Attention: Dennis Wells

Quality Control Narrative

Scope

Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on August 10, 1991. The samples were analyzed for the USEPA CLP metals and cyanide plus bismuth and silicon. The analysis was performed under Skinner and Sherman work order 9108148.

Methodology

The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work 7/88 (CLP SOW788). Bismuth was analyzed by flame atomic absorption; silicon was analyzed by USEPA Method 370.1 and is reported as SiO<sub>2</sub>.

Discussion

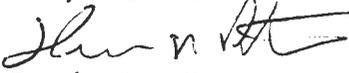
All quality control requirements were met for the samples with the following exceptions:

The lead, selenium, and thallium matrix spike recoveries exceeded the control limits.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

  
David N. Peterson  
Assistant Laboratory Manager



ja

9613404-0905

CHAIN OF CUSTODY

Company Contact	P.H. BUTCHER	Telephone	509-376-5045		
Sample Collected by	K. LEE	Date	8/8/91	Time	1100
Sample Locations	200-BP-1				
Ice Chest No.	BG #1	Field Logbook and Page No.	WHC-N-4461 p 57		
Remarks	N/A				
Bill of Lading No.	2474251307	Offsite Property No.	W91-0481 # 8		
Method of Shipment	EMERY				
Shipped to	TMA/NORCAL				

SAMPLE IDENTIFICATION

B011L9	
1, 1L, P, WATER, CLP-CN, NaOH	
1, 1L, P, WATER, CLP-METAL, Bi/Se/Si, HNO3, UNFILTERED	
12 KOL 500mt, G, WATER, TOC, NO2/NO3, H2SO4	
1, 1L, P, WATER, ANIONS, TDS, ALK, pH	
PMS 8/9/91 5, 6L, P, WATER, ALPHA, BETA, Fe-59, Sr-90, Co-137, Co-60, Pu-238, Pu-239/240, HNO3	
1, 1L, P, WATER, TOTAL URANIUM, HCl	
1, 250ml, G, WATER, TRITIUM	
B011M0	
1, 1L, P, WATER, CLP-METAL, Bi/Se/Si, HNO3, FILTERED	

CHAIN OF POSSESSION

Relinquished by: <i>Kathy D. Lee, K.D.L.</i>	Received by: <i>P.H. Butcher</i>	Date/Time: 8/8/91 1437
Relinquished by: <i>P.H. Butcher</i>	Received by: <i>Kermit Blum</i> *	Date/Time: 8-10-91
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

\* Also received 12 plastic marked "total uranium"

8-28 Edwards Advise analysis not required - return w/other returned Sys

DATE	SAMPLE IDENTIFICATION	SCOPE	TESTS FOR FRACTIONS	WORK IN DEPT: SU
010	BOTTLE	ARLI	ARLI	
010	BOTTLE	ARLI	ARLI	FILE TDS
010	BOTTLE	ARLI	ARLI	NCD_W TDS_L
01E	BOTTLE	ARLI	ARLI	
02A	BOTTLE	ARLI	ARLI	

TRANSFERRED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Kismet Blum	8-12-91	ARLI		S. Valdivia	8/13/91

**CASE SUMMARY****INORGANIC GENERAL CHEMISTRY DATA****CASE NO. 08-103**SCOPE

Two water samples were analyzed for the parameters listed below:

METHODOLOGY

The following EPA methods were used:

Nitrite .....	354.1
Nitrate .....	354.1
Sulfate .....	375.4
pH .....	150.1
Alkalinity .....	310.1
TDS .....	160.1

DISCUSSION

There were no problems with the analysis  
QC results were acceptable

*J. J. Wells*

9613404.0908

WESTINGHOUSE HANFORD CO.

1A

INORGANIC GENERAL CHEMISTRY DATA SHEET

CASE NO.: 08-103

LAB NAME: TMA/ARLI

WHC SAMPLE ID: B011L9

LAB CODE: TMAARL

LAB SAMPLE ID: A1-08-103-01A

MATRIX (soil,water): WATER

ANALYTE	RESULT	UNITS
Nitrite	2.0	mg/L
Nitrate	<0.1	mg/L
Sulfate	3557	mg/L

FORM I

008

## WESTINGHOUSE HANFORD CO.

1A

## INORGANIC GENERAL CHEMISTRY DATA SHEET

CASE NO.: 08-103

LAB NAME: TMA/ARLI

WHC SAMPLE ID: B011L9

LAB CODE: TMAARL

LAB SAMPLE ID: A1-08-103-02A

MATRIX (soil,water): WATER

ANALYTE	RESULT	UNITS
Alkalinity	128	mg/L
pH	8.00	-
TDS	210	mg/L

FORM I

1  
INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B011L9

Lab Name: SKINNER & SHERMAN LABS.

Contract: 68-D9-0088

Lab Code: SKINER

Case No.: N1-08-080SAS No.:

SDG No.: B011L9

Matrix (soil/water): WATER

Lab Sample ID: 08148-01S

Level (low/med): LOW

Date Received: 08/10/91

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	169.00	B		P
7440-36-0	Antimony	11.00	U		P
7440-38-2	Arsenic	4.00	U		F
7440-39-3	Barium	72.50	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.60	B		P
7440-70-2	Calcium	29700.00			P
7440-47-3	Chromium	79.90			P
7440-48-4	Cobalt	2.10	B		P
7440-50-8	Copper	3.00	U		P
7439-89-6	Iron	563.00			P
7439-92-1	Lead	3.50		N	F
7439-95-4	Magnesium	7060.00			P
7439-96-5	Manganese	103.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	44.80			P
7440-09-7	Potassium	4140.00	B		P
7782-49-2	Selenium	4.00	U	NW	F
7440-22-4	Silver	2.00	U		P
7440-23-5	Sodium	21000.00			P
7440-28-0	Thallium	1.00	U	NW	F
7440-62-2	Vanadium	5.40	B		P
7440-66-6	Zinc	91.20			P
	Cyanide	16.70	U		AS
7440-69-9	Bismuth	500.00	U		A

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

SILICON: 31.8 MG/L AS SI02  
 DUPLICATE: 32.0 MG/L 0.6% RPD  
 MATRIX SPIKE: 99.0% RECOVERY

1  
INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B011M0

Lab Name: SKINNER & SHERMAN LABS.

Contract: 68-09-0088

Lab Code: SKINER

Case No.: N1-08-080SAS No.:

SDG No.: B011L9

Matrix (soil/water): WATER

Lab Sample ID: 08148-02S

Level (low/med): LOW

Date Received: 08/10/91

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.20	B		P
7440-36-0	Antimony	13.50	B		P
7440-38-2	Arsenic	4.00	U		F
7440-39-3	Barium	68.50	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	29300.00			P
7440-47-3	Chromium	2.00	U		P
7440-48-4	Cobalt	2.00	U		P
7440-50-8	Copper	3.00	U		P
7439-89-6	Iron	34.50	B		P
7439-92-1	Lead	3.10		N	F
7439-95-4	Magnesium	6930.00			P
7439-96-5	Manganese	87.80			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.20	B		P
7440-09-7	Potassium	4010.00	B		P
7782-49-2	Selenium	4.00	U	NW	F
7440-22-4	Silver	2.00	U		P
7440-23-5	Sodium	20800.00			P
7440-28-0	Thallium	1.00	U	NW	F
7440-62-2	Vanadium	3.20	B		P
7440-66-6	Zinc	70.60			P
	Cyanide	20.00	U		AS
7440-69-9	Bismuth	500.00	U		A

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

SILICON: 31.7 MG/L. AS SI02

FEDERAL EXPRESS

QUESTIONS? CALL 800-236-5355 TOLL FREE.

PACKAGE TRACKING NUMBER

0371685361

104277

0371685361

Date 8-14-91

RECIPIENT'S COPY

From (Your Name) Please Print <b>Georgia Carroll</b>		Your Phone Number (Very Important) <b>(818) 357-3242</b>	To (Recipient's Name) Please Print <b>Mr. Rick Purdy</b>		Recipient's Phone Number (Very Important) <b>( ) ( ) ( )</b>
Company <b>THERM ANALYTICAL LAB</b>		Department/Floor No.	Company <b>TMA/Skinner &amp; Sherman</b>		Department/Floor No.
Street Address <b>160 TAYLOR ST</b>			Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip * Codes.) <b>300 Second Ave.</b>		
City <b>MONROVIA CA</b>		State <b>CA</b>	ZIP Required <b>91016</b>	City <b>Waltham MA</b>	
YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.)			IF HOLD FOR PICK-UP, Print FEDEX Address Here Street Address City State ZIP Required		
PAYMENT 1 <input type="checkbox"/> Bill Sender 2 <input type="checkbox"/> Bill Recipient's FedEx Acct No 3 <input type="checkbox"/> Bill 3rd Party FedEx Acct No 4 <input type="checkbox"/> Bill Credit Card 5 <input type="checkbox"/> Cash/Check			City State ZIP Required		

SERVICES (Check only one box)		DELIVERY AND SPECIAL HANDLING (Check services required)		PACKAGES	WEIGHT in Pounds	YOUR DECLARED VALUE	Emp. No.	Date	Federal Express Use
11 <input checked="" type="checkbox"/> YOUR PACKAGING	51 <input type="checkbox"/> Standard Overnight Service (Delivery by next business afternoon)	1 <input type="checkbox"/> HOLD FOR PICK-UP (if 0 in Box #)	2 <input checked="" type="checkbox"/> DELIVER WEEKDAY	1	9		<input type="checkbox"/> Cash Received		Base Charges
16 <input type="checkbox"/> FEDEX LETTER	56 <input type="checkbox"/> FEDEX LETTER *	3 <input type="checkbox"/> DELIVER SATURDAY (Extra charge) (Not available to all locations)	4 <input type="checkbox"/> DANGEROUS GOODS (Extra charge)				<input type="checkbox"/> Return Shipment		Declared Value Charge
12 <input type="checkbox"/> FEDEX PAK *	52 <input type="checkbox"/> FEDEX PAK *	5 <input type="checkbox"/>	6 <input type="checkbox"/>	Total	Total 9	Total	<input type="checkbox"/> Third Party <input type="checkbox"/> Chg To Del. <input type="checkbox"/> Chg To Hold		Other 1
13 <input type="checkbox"/> FEDEX BOX	53 <input type="checkbox"/> FEDEX BOX	7 <input type="checkbox"/> OTHER SPECIAL SERVICE	8 <input type="checkbox"/>				Street Address		Other 2
14 <input type="checkbox"/> FEDEX TUBE	54 <input type="checkbox"/> FEDEX TUBE	9 <input type="checkbox"/> DRY ICE	10 <input type="checkbox"/>				City State Zip		Total Charges
30 <input type="checkbox"/> ECONOMY TWO-DAY SVC. (Delivery commitment may be long in some areas.)	70 <input type="checkbox"/> HEAVYWEIGHT ** (Declared Value Limit \$100 Call for delivery schedule)	11 <input type="checkbox"/>	12 <input type="checkbox"/> HOLIDAY DELIVERY. (if allowed) (Extra charge)				Received By: <b>R Purdy 8/15</b>		REVISION DATE 8/90 PART #119501 FXEM 1/91 FORMAT #041
		8 <input type="checkbox"/>					Date/Time Received: <b>8/15</b>		<b>041</b>
		9 <input type="checkbox"/> SATURDAY PICK-UP (Extra charge)					FedEx Employee Number		* 1990 F.E.C. PRINTED IN USA
		10 <input type="checkbox"/>					Received At: 1 <input type="checkbox"/> Regular Stop 3 <input type="checkbox"/> Drop Box 2 <input type="checkbox"/> On-Call Stop 4 <input type="checkbox"/> B.S.C. 5 <input type="checkbox"/> Station		
		11 <input type="checkbox"/>					Released Signature: <b>[Signature]</b>		
		12 <input type="checkbox"/>					Date/Time: <b>8/15</b>		

2160 4043196

000161

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE

PACKAGE TRACKING NUMBER

6844394351

53M

6844394351

RECIPIENT'S COPY

Date: 8-12-91

From (Your Name) Please Print <b>Sample Control</b>		Your Phone Number (Very Important)		To (Recipient's Name) Please Print <b>Sample Control</b>		Recipient's Phone Number (Very Important)	
Company <b>T M A / NORCAL</b>		Department/Floor No.		Company <b>TMA/Skinner &amp; Sherman</b>		Department/Floor No.	
Street Address <b>2030 WRIGHT AVE</b>				Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Codes.) <b>300 Second Avenue</b>			
City <b>RICHMOND</b>		State <b>CA</b>		City <b>Waltham,</b>		State <b>MA</b>	
ZIP Required <b>94804</b>				ZIP Required <b>02254</b>			

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.)

IF HOLD FOR PICK-UP, Print FEDEX Address Here

PAYMENT  Bill Sender  Bill Recipient's FedEx Acct No.  Bill 3rd Party FedEx Acct No.  Bill Credit Card

Cash

SERVICES (Check only one box)		DELIVERY AND SPECIAL HANDLING		PACKAGES	WEIGHT in Pounds Only	YOUR DECLARED VALUE	OVER SIZE	Emp. No.	Date	Federal Express Use
Priority Overnight Service (Delivery by next business morning!) Standard Overnight Service (Delivery by next business afternoon!) 11 <input checked="" type="checkbox"/> YOUR PACKAGING 51 <input type="checkbox"/> 16 <input type="checkbox"/> FEDEX LETTER* 56 <input type="checkbox"/> FEDEX LETTER* 12 <input type="checkbox"/> FEDEX PAK 3 52 <input type="checkbox"/> FEDEX PAK* 13 <input type="checkbox"/> FEDEX BOX 53 <input type="checkbox"/> FEDEX BOX 14 <input type="checkbox"/> FEDEX TUBE 54 <input type="checkbox"/> FEDEX TUBE Economy Service (formerly Standard Air) (Delivery by second business day!) Heavyweight Service (for Extra Large or any package over 150 lbs.) 30 <input type="checkbox"/> ECONOMY SERVICE 70 <input type="checkbox"/> HEAVYWEIGHT** 80 <input type="checkbox"/> DEFERRED HEAVYWEIGHT** † Delivery commitment may be later in some areas. **Declared Value Limit \$100. **Call for delivery schedule.	1 <input type="checkbox"/> HOLD FOR PICK-UP (2 in 100 lb) 2 <input checked="" type="checkbox"/> DELIVER WEEKDAY 3 <input type="checkbox"/> DELIVER SATURDAY (Extra charge) (Not available to all locations) 4 <input type="checkbox"/> DANGEROUS GOODS (Extra charge) (CSS not available for Dangerous Goods shipments) 5 <input type="checkbox"/> CONSTANT SURVEILLANCE SVC. (CSS) (Extra charge) (Release Signature Not Applicable) 6 <input type="checkbox"/> DRY ICE _____ lbs. 7 <input type="checkbox"/> OTHER SPECIAL SERVICE _____ 8 <input type="checkbox"/> SATURDAY PICK-UP (Extra charge) 9 <input type="checkbox"/> _____ 10 <input type="checkbox"/> _____ 11 <input type="checkbox"/> DESCRIPTION _____ 12 <input type="checkbox"/> HOLIDAY DELIVERY (if offered) (Extra charge)	1								Base Charges Declared Value Charge Other 1 Other 2 Total Charges
DIM SHIPMENT (Heavyweight Services Only) <input type="checkbox"/> _____ lbs.								Received By: Date/Time Received: <b>28/14/91 9:30</b>		REVISION DATE 11/89 PART #119501 FXEM 2/90 FORMAT R014 <b>014</b> © 1989 F.E.C. PRINTED IN U.S.A.
Received At: <input type="checkbox"/> Regular Stop <input type="checkbox"/> Top Box <input type="checkbox"/> BSC <input type="checkbox"/> On-Call Stop <input type="checkbox"/> Station								Release Signature: _____ Date/Time: _____		
FedEx Emp. No.: _____										

9613404 0913 291000

9613404.0914

B011L9-TMA-034

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

DATE: February 17, 1993

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TO: File: B01R99-TMA-129  
B00XV1-TMA-010  
B011L9-TMA-034  
B019Z1-TMA-080  
B019R9-TMA-055  
B019K3-TMA-107  
B01R97-TMA-136

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FROM: SDLA

Telephone: 2-3206

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CC:

**SUBJECT:**

COMPLETE VALIDATION FOR EIGHT 200-BP-1 PACKAGES

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THE COMPLETE VALIDATION PACKAGE FOR THE ABOVE MENTIONED DATA PACKAGES IS FILED  
IN B00XS7-TMA-008.

9613404.0915

APPENDIX I

DATA VALIDATION SUPPORTING DOCUMENTATION

SDG: B011L9 - TMA-034

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

PROJECT: 200-BP-1	REVIEWER: JS	DATE: 8-31-92
LABORATORY: Thermo Analytical Inc.	CASE:	SDG: B011L9
SAMPLES/MATRIX: B011L9 / WATER		
B011M0 / WATER		

1. COMPLETENESS AND CONTRACT COMPLIANCE

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal of the omitted data.

Data Package Item	Present?:	Yes	No	N/A
Case Narrative		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cover Page		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Traffic Reports		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample Data		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inorganic Analysis Data Sheets		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standards Data		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Initial and Continuing Calibration Verification		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CRDL Standard for AA and ICP		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
QC Summary		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blanks		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICP Interference Check Summary		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spike Sample Recovery		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post-Digestion Spike Sample Recovery		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Duplicate		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laboratory Control Sample		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standard Addition Results		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICP Serial Dilutions		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Instrument Detection Limits		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICP Interelement Correction Factors		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICP Linear Ranges		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preparation Log		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analysis Run Log		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Raw Data		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICP Raw Data		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Furnace AA Raw Data		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mercury Raw Data		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cyanide Raw Data		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional Data		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Internal laboratory chain-of-custody		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Laboratory Sample Preparation Records		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 6. LABORATORY BLANKS

Are target analytes present in the laboratory blanks?

Yes    No    N/A

**ACTION:** Qualify all associated sample results for any analyte <5 times the amount in any laboratory blank as nondetected (U). If analyte concentrations in the blank are > CRDL or below the negative CRDL, verify the laboratory has redigested and reanalyzed associated samples with analyte concentrations < 10 times the blank concentration. If the laboratory has not redigested and reanalyzed the samples, note in the validation narrative.

## 7. FIELD BLANKS

Are target analytes present in the field blanks?

Yes    No     N/A

**ACTION:** Qualify all sample results for any analyte <5 times the amount in any valid field blank as nondetected (U).

## 8. MATRIX SPIKE SAMPLE ANALYSIS

Are spike recoveries within the control limits?

Yes     No    N/A

**ACTION:** Qualify the affected sample data according to the following requirements:

If spike recovery is > 125% and sample results are <IDL no qualification is required. If spike recovery is > 125% or <75% qualify all positive results as estimated (J). If spike recovery is 30% to 74% qualify all nondetects as estimated (UJ). If spike recovery is < 30%, reject all nondetects (R). If the field blank has been used for spike analysis, note in the validation narrative.

## 9. LABORATORY CONTROL SAMPLE

Are percent recoveries within the acceptance limits?

Yes    No    N/A

Are there calculation errors?

Yes     No    N/A

**ACTION:** Qualify the sample data according to the following requirements:

**AQUEOUS LCS** - Qualify as estimated (J), all sample results >IDL, for which the LCS %R falls within the range 50-79% or > 120%. Qualify as estimated (UJ), all sample results <IDL, for which the LCS falls within the range of 50-79%. Qualify as unusable (R) all sample results, for which the LCS %R <50%.

**SOLID LCS** - Qualify as estimated (J), all sample results >IDL for which the LCS result is outside the established control limits. Qualify as estimated (UJ), all sample results <IDL for which the LCS %R are lower than the established control limits.

- If no, were MSA analyses performed when required? Yes No  N/A
- Are MSA correlation coefficients  $\geq 0.995$ ? Yes No  N/A
- If no, was a second MSA analysis performed? Yes No  N/A

**ACTION:** If duplicate injections are outside the acceptance limits and the sample has not been reanalyzed or the reanalysis is outside the acceptance limits, qualify the associated data as estimated (J for detects and UJ for nondetects). If the analytical spike recovery is  $< 40\%$  qualify detects as estimated (J). If the analytical spike recovery is  $\geq 10\%$  but  $< 40\%$ , qualify all nondetects as estimated (UJ) and if the analytical spike recovery is  $< 10\%$ , reject all nondetects (R). If the sample absorbance is  $< 50\%$  of the analytical spike absorbance and the analytical spike recovery is  $< 85\%$  or  $> 115\%$ , qualify all results as estimated (J for detects and UJ for nondetects). If method of standard additions (MSA) was required but was not performed, the MSA samples were spiked incorrectly, or the MSA correlation coefficient was  $< 0.995$ , qualify the associated detected results as estimated (J).

**17. ANALYTE QUANTITATION AND DETECTION LIMITS**

- Have results been reported and calculated correctly?  Yes No N/A
- Are results within the calibrated range of the instruments and within the linear range of the ICP?  Yes No N/A
- Are all detection limits below the CRQL?  Yes No N/A

**Action:** If analyte quantitation is in error, contact the laboratory for explanation. If errors or deficiencies can not be resolved with the laboratory, qualify associated data as unusable (R).

**18. OVERALL ASSESSMENT AND SUMMARY**

- Has the laboratory conducted the analysis in accordance with the analytical SOW?  Yes No N/A
- Were project specific data quality objectives met for this analysis?  Yes No N/A

**ACTION:** Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

HOLDING TIME SUMMARY - FORM B-1

B011L9

SDG: ↓	REVIEWER: T. Stapp	DATE: Aug. 31, 1992	PAGE ___ OF ___				
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B011L9 B011M0	ICP	8-8-91		9-12-91		35	—
↓	As	↓		9-22-91		45	—
↓	Se	↓		9-22-91		45	—
↓	Pb	↓		9-23-91		46	—
↓	Tl	↓		9-23-91		46	—
↓	Bi	↓		9-25-91		48	—
↓	Hg	↓		9-04-91		27	—
↓	Si	↓		8-23-91		15	—
B011L9	CN	↓		8-21-91		13	—
↓	Se	8-8-91		9-23-91		46	—

B-1

9613404.DWH/C-SD-EN-SPP-002, Rev. 1

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

B011L9

SDG: ↓		REVIEWER: T. Staff			DATE: 8-31-92			PAGE ___ OF ___	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS ug/L	SX RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
CCB1	Al	52.1				260.5		B011L9 B011M0	U
	Na	95.1				475.5		—	—
	Zn	6.8						—	—
CCB2	Cd	2.1						B011L9	U
	Ca	53.8				269		—	—
	Co	2.2				14		B011L9	U #
	Mg	41.5						—	—
	Mn	1.3						—	—
PB	Fe	28.5				142.5		B011M0	U
	K	59.0						—	—
FURNACE	Pb	2.1						—	—

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9613404-0920  
 WHC-SD-EN-SPP-002, Rev. 1  
 PB 9/10/92



9613404.0922

WESTINGHOUSE/HANFORD

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B011M0

Lab Name: SKINNER & SHERMAN LABS.

Contract: 68-D9-0088

Lab Code: SKINER

Case No.: N1-08-080SAS No.:

SDG No.: B011L9

Matrix (soil/water): WATER

Lab Sample ID: 08148-02S

Level (low/med): LOW

Date Received: 08/10/91

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.20	B		P U
7440-36-0	Antimony	13.50	B		P
7440-38-2	Arsenic	4.00	U		F
7440-39-3	Barium	68.50	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	29300.00			P
7440-47-3	Chromium	2.00	U		P UJ
7440-48-4	Cobalt	2.00	U		P
7440-50-8	Copper	3.00	U		P
7439-89-6	Iron	34.50	B		P U
7439-92-1	Lead	3.10	N		F J
7439-95-4	Magnesium	6930.00			P
7439-96-5	Manganese	87.80			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.20	B		P
7440-09-7	Potassium	4010.00	B		P
7782-49-2	Selenium	4.00	U	NW	F UJ
7440-22-4	Silver	2.00	U		P
7440-23-5	Sodium	20800.00			P
7440-28-0	Thallium	1.00	U	NW	F UJ
7440-62-2	Vanadium	3.20	B		P
7440-66-6	Zinc	70.60			P
	Cyanide	20.00	U		AS
7440-69-9	Bismuth	500.00	U		A

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

SILICON: 31.7 MG/L AS SiO2

→ [14,800 ug/L Silicon]

FS 8-31-92

**3. INITIAL CALIBRATIONS**

Were all instruments calibrated daily, each set-up time and were the proper number of standards used?

Yes  No  N/A

Are the correlation coefficients  $\geq 0.995$ ?

Yes  No  N/A

Was a balance check conducted prior to the TDS analysis?

Yes  No  N/A

Was the titrant normality checked?

Yes  No  N/A

**ACTION:** Qualify all data as unusable (R) if reported from an analysis in which the above criteria were not met.

**4. INITIAL AND CONTINUING CALIBRATION VERIFICATION**

Have ICV and CCV been analyzed at the proper frequency?

Yes  No  N/A

Are ICV and CCV percent recoveries within control?

Yes  No  N/A

Are there calculation errors?

Yes  No  N/A

**ACTION:** Qualify all affected data in accordance with the validation requirements.

**5. LABORATORY BLANKS**

Are target analytes present in the laboratory blanks?

Yes  No  N/A

**ACTION:** Qualify all associated sample results for any analyte  $< 5$  times the amount in any laboratory blank as nondetected (U) and list the affected samples and analytes below.

**6. FIELD BLANKS**

Are target analytes present in the field blanks?

Yes  No  N/A

**ACTION:** Qualify all sample results for any analyte  $< 5$  times the amount in any valid field blank as nondetected (U).

**7. MATRIX SPIKE SAMPLE ANALYSIS**

Are spike recoveries within the acceptance limits?

Yes  No  N/A

**ACTION:** If the sample concentration exceeds the spike concentration by a factor of 4 or more, and spike recoveries are outside the acceptance limits, no qualification is necessary. If spike recovery is outside the control limits and the sample results are  $> CRQL$ , qualify the data as estimated (J). If the spike recovery is  $< 30\%$  and the sample results are less than the IDL qualify the data as unusable (R).

13. ANALYTE QUANTITATION AND DETECTION LIMITS

TS 9-11-92

Have results been reported and calculated correctly?

~~Yes~~ No N/A

Are instrument detection limits below the CRDL?

Yes No N/A

Action: If analyte quantitation is in error, contact the laboratory for explanation. If errors or deficiencies can not be resolved with the laboratory, qualify associated data as unusable (R).

14. OVERALL ASSESSMENT AND SUMMARY

TS 8-31-92

Has the laboratory conducted the analysis in accordance with the analytical SOW?

~~Yes~~ No N/A

Were project specific data quality objectives met for this analysis?

Yes No N/A

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

HOLDING TIME SUMMARY - FORM B-1

SDG: B011L9		REVIEWER: T. Stapp		DATE: Aug. 31, 1992		PAGE ___ OF ___	
COMMENTS: No holding time summary sheet available. Dates taken from raw data.							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B011L9	Alkalinity	8-8-91		9-17-91		40	J
	TDS			9-9-91		32	J
	TOC			—		—	
	NO <sub>2</sub> /NO <sub>3</sub>			9-11-91		34	J
	pH			9-17-91		40	J
	FL			9-11-91		34	UJ
	CL					34	UJ
	NO <sub>2</sub>					34	J
	NO <sub>3</sub>					34	UJ
	SO <sub>4</sub>					34	J
	PO <sub>4</sub>					34	UJ

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9613404-0925  
MHC-SD-EN-SPP-002, Rev. 1

WESTINGHOUSE HANFORD CO.

1A

INORGANIC GENERAL CHEMISTRY DATA SHEET

CASE NO.: 08-103

LAB NAME: TMA/ARLI

WHC SAMPLE ID: B011L9

LAB CODE: TMAARL

LAB SAMPLE ID: A1-08-103-01A

MATRIX (soil,water): WATER

ANALYTE	RESULT	UNITS
Nitrite	2.0	mg/L
Nitrate	<0.1	mg/L
Sulfate	3557	mg/L

J  
UJ  
XR

Fluoride R  
Chloride R  
Phosphate R

FORM I

FS 8-31-92  
Sulfate rejected  
presumed to be due  
to H<sub>2</sub>SO<sub>4</sub> pres.  
9/11/92