

**START**

9613502.2544

Lockheed Environmental Systems & Technologies Co.  
Lockheed Analytical Services  
975 Kelly Johnson Drive Las Vegas, Nevada 89119-3705  
Telephone 702-361-0220 800-582-7605 Facsimile 702-361-8146

LK6967-LAS 134

**0045553**



June 12, 1996

Ms. Joan Kessner  
Bechtel Hanford, Inc.  
3350 George Washington Way  
MISN B1-35  
Richland, WA 99352

RE: Log-in No.:	L6967
Quotation No.:	Q400000-B
SAF:	B96-092
Document File No.:	0506596
BHI Document File No.:	362
SDG No.:	LK6967



The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on 6 May 1996.

The temperature of the cooler upon receipt was 3°C. Sample containers received agree with the chain-of-custody documentation. Sample containers were received intact. Samples designated for hexachrome analysis were not received in time to meet the analytical holding time requirements.

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Kathleen Hall at (509) 375-4741.



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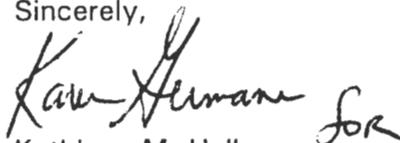
**Lockheed Analytical Services**

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Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

" 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 Manger or a designee, as verified by the following signature."

Sincerely,



Kathleen M. Hall  
Client Services Representative

cc: Client Services  
Document Control

Lockheed Analytical Services

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**CASE NARRATIVE  
 INORGANIC NON METALS ANALYSES**

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike (predigestion) sample(s), duplicate sample(s).

**Preparation and Analysis Requirements**

- One water sample was received for LK6967 and analyzed in batch 509 bh for selected analytes as requested on the chain of custody. Quality control analysis was performed on the following samples:

Client ID	LAL #		Method
BOHD16	L6967-2	MS, DUP	7196 Hexavalent Chromium

**Holding Time Requirements**

- All samples were received and analyzed outside of the method-specific holding times. The associated samples are flagged with an "H".

**Method Blanks**

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

**Internal Quality Control**

- All Internal Quality Control were within acceptance limits.

Kay McCann  
 Prepared By

May 9, 1996  
 Date

**Lockheed Analytical Services**

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## **CASE NARRATIVE INORGANIC METALS ANALYSES**

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), duplicate sample(s).

### **Preparation and Analysis Requirements**

All samples were received on May 6, 1996. The samples were logged in as L6967 and were prepared and analyzed in batch 506 bh. The samples were analyzed by Method 200.7 ICP Metals.

### **Holding Time Requirements**

- All samples were analyzed within the method-specific holding times.

### **Method Blanks**

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

### **Internal Quality Control**

- All Internal Quality Control were within acceptance limits.

Shellee McGrath  
**Prepared By**

June 12, 1996  
**Date**

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LOCKHEED ANALYTICAL SERVICES  
LOGIN CHAIN OF CUSTODY REPORT (ln01)  
May 06 1996, 10:12 am

Login Number: L6967  
Account: 596 Bechtel Hanford, Inc. \* Richland, WA  
Project: BECHTEL-HANFORD Bechtel Hanford Project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due FR Date
L6967-1 temp 3 Location: 157 Water 1 S SCREENING	BOHD16	02-MAY-96	06-MAY-96	10-JUN-96
L6967-2 temp 3 Location: 157 Water 1 S 7196 CHROMIUM (VI)	BOHD16	02-MAY-96	06-MAY-96	10-JUN-96
L6967-3 temp 3; Cr ONLY Location: 157 Water 1 S 200.7 METALS	BOHD16	02-MAY-96	06-MAY-96	10-JUN-96
L6967-4 Location: Water 1 S EDD - DISK DEL. Water 1 S INORG TYPE 2 RPT	REPORT TYPE	06-MAY-96	06-MAY-96	10-JUN-96

Signature: *A. M. [unclear]*  
Date: 5-6-96 0009

0506596

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

L6967

Data Turnaround

- Priority
- Normal

Collector <i>mm 5/2/96</i> R. Fahlberg, <del>D. Bowers</del> <i>M. Mehlhach</i>	Company Contact M.T. Stankovich	Telephone 372-9626
Project Designation 100-HR-3 Routine Process Samples	Sampling Location 100 Area	SAF No. B96-092
Ice Chest No. <b>IT-21</b>	Field Logbook No.	Method of Shipment Hagnd Delivered
Shipped To Lockheed	Offsite Property No. <i>NA B-316</i> <b>W96-0-0690-43</b>	Bill of Lading/Air Bill No. <i>NA C-316</i> <b>2904656002</b>

Possible Sample Hazards/Remarks	Preservation	HNO3	cool to 4c	None
		Type of Container	G/P	G/P
	No. of Containers	1	1	1
Special Handling and/or Storage	Volume	500mL	500mL	20mL

SAMPLE ANALYSIS

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP Metals, 2 Cr	Cr Hex	Activity Scan
BOHD16	W	5-2-96	1318	X	X	X

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By <i>R. Fahlberg</i>	Date/Time <i>1410</i>	Sample analysis for Chromium VI is requested for information only. The ERC contractor acknowledges the 24-hour holding time will not be met.
Received By <i>ER</i>	Date/Time <i>1410</i>	
Relinquished By <i>R. Fahlberg</i>	Date/Time <i>5-2-96</i>	
Received By <i>Michael B. Whittier</i>	Date/Time <i>5-2-96</i>	
Relinquished By <i>ER</i>	Date/Time <i>0900</i>	
Received By <i>Michael B. Whittier</i>	Date/Time <i>5-3-96</i>	
Relinquished By	Date/Time	
Received By	Date/Time	
Relinquished By	Date/Time	
Received By	Date/Time	
LABORATORY SECTION	Received By <i>And Miller</i>	Title <i>Sample Custodian</i>
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By
		Date/Time <i>5-6-96/0930</i>

- Matrix\*
- S - Soil
  - SE - Sediment
  - SO - Solid
  - SL - Sludge
  - W - Water
  - O - Oil
  - A - Air
  - DS - Drum Solids
  - DL - Drum Liquids
  - T - Tissue
  - WI - Wipe
  - L - Liquid
  - V - Vegetation
  - X - Other

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Environmental  
Restoration  
Contractor

**ERC Team**

**Interoffice Memorandum**

Job No. 22192  
Written Response Request: NO  
CCN: N/A  
OU: N/A  
TSD: N/A  
ERA: N/A  
Subject Code: 5K30

TO: W. S. Thompson N1-28 DATE: February 29, 1996  
G. C. Henckel H4-80

COPIES: K. A. Smith X0-23 FROM: S. K. De Mers  
T. L. Lafreniere X0-23 Radiological Controls  
D. E. Gergely X0-23 T7-05/373-1913

SUBJECT: **Total Activities for Off-Site Shipments of Groundwater Samples to NRC Licensed Laboratories**

There is no need to perform total activities prior to offsite shipment to NRC licensed labs of samples taken from ground water wells located on the Hanford Site.

All wells reviewed to date for radiological content have shown no well with a total activity in excess of 2,000,000 pCi/l (2,000 pCi/gm), the Department Of Transportation limit for radioactive material. The highest activity in any known well is  $1.56 \times 10^6$  pCi/l H<sup>3</sup>.

While this does not constitute any release from radiological controls for worker protection, it does allow samples to be shipped based on historical laboratory data and save the expense of doing radiochemical analysis.

A copy of the most recent analytical data should be provided to the NRC licensed laboratory with the samples being shipped or if no data is available for new wells, the most recent data from adjacent wells.

# LOCKHEED MARTIN



## Sample Login Login Review Checklist

Lot Number 46967

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Please sign and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For effective login review, at a minimum, five reports from the login process are required. These are the COC (or equivalent), the login COC report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning review, ensure that these five components are available. Jobs with single component samples, the sample summary report may be omitted.

### SAMPLE SUMMARY REPORT

	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all sample ID's correct?	X	—	—	_____
2. Are all samples present?	X	—	—	_____
3. Are all matrices indicated correctly?	X	—	—	_____
4. Are all analyses on the COC logged in for the appropriate samples?	X	—	—	_____
5. Are all analyses logged in for the correct container?	X	—	—	_____
6. Are samples logged in according to LAS batching procedures?	X	—	—	_____

### LOGIN CHAIN OF CUSTODY

	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are the collect, receive, and due dates correct for every sample?	X	—	—	_____
2. Have all appropriate comments been indicated in the comment section?	—	—	X	_____

### SAMPLE RECEIVING CHECKLIST

	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all discrepancies between the COC and the login noted (if applicable)?	—	—	X	_____

[Signature]  
primary review signature

5-6-96  
date

[Signature]  
secondary review signature

5-6-96  
date

0012

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### SAMPLE CHECK-IN LIST

Date/Time Received: 5-6-96/0930

SDG#: N/A

Work Order Number: N/A

SAF #: 896-092

Shipping Container ID: IT-21

Chain of Custody # N/A

- 1. Custody Seals on shipping container intact? Yes  No
- 2. Custody Seals dated and signed? Yes  No
- 3. Sample temperature 3°C
- 4. Vermiculite/packing materials is Wet  Dry
- 5. Each sample is in a plastic bag? Yes  No
- 6. Sample holding times exceeded? Yes  No

7. Samples have:  
 tape  hazard labels  
 custody seals  appropriate sample labels

8. Samples are:  
 in good condition  leaking  
 broken  have air bubbles

9. Is the information on the COC and Sample bottles in agreement?  
 Yes  No

Notes: Hex Chrom. received out of holding time

Sample Custodian/Laboratory: Anthony Miller Date: 5-6-96

Telephoned To: Kathleen Hall On 5-6-96 By Anthony Miller

**Lockheed Analytical Services  
Sample Receiving Checklist**

Client Name: Bedford-Hanford

Job No. LC967

Cooler ID:

**COOLER CONDITION UPON RECEIPT**

Temperature of cooler upon receipt: 3°C

temperature of temp. blank upon receipt:

	Yes	No	* Comments/Discrepancies
custody seals intact	X		
chain of custody present	X		
blue ice (or equiv.) present/frozen	X		
rad survey completed	X		

**SAMPLE CONDITION UPON RECEIPT**

	Yes	No	* Comments/Discrepancies
all bottles labeled	X		
samples intact	X		
proper container used for sample type	X		
sample volume sufficient for analysis	X		
proper pres. indicated on the COC	X		
VOA's contain headspace			N/A
are samples bi-phasic (if so, indicate sample ID'S):			N/A

**MISCELLANEOUS ITEMS**

	Yes	No	* Comments/Discrepancies
samples with short holding times	X		Hex Chron. holding time exceeded
samples to subcontract		X	

**ADDITIONAL COMMENTS/DISCREPANCIES**

Completed by / date: [Signature] 5-6-96

Sent to the client (date/initials):

\*\* Client's signature upon receipt:

Notes: \* = contact the appropriate CSR of any discrepancies immediately upon receipt

\*\* Please review this information and return via facsimile to the appropriate CSR (702) 361-8146

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17-01-2554

Lockheed Analytical Laboratory  
SAMPLE SUMMARY REPORT (su02)  
Bechtel Hanford, Inc. \* Richland, WA

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
BOHD16 -	L6967-1 L6967-2 L6967-3		Water Water Water	SCREENING - 7196 CHROMIUM ( - 200.7 METALS -
REPORT TYPE -	L6967-4 L6967-4		Water Water	EDD - DISK DEL - INORG TYPE 2 RP

0015

050659

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## LOCKHEED ANALYTICAL SERVICES

## Sample Results

Client Sample ID: B0HD16	Date Collected: 02-MAY-96
Matrix: Water	Date Received: 06-MAY-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, hexavalent	mg/L	7196	< 0.003	0.020	HU	08-MAY-96	36763	L6967-2

0017

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## LOCKHEED ANALYTICAL SERVICES

## Sample Results

Client Sample ID: B0HD16	Date Collected: 02-MAY-96
Matrix: Water	Date Received: 06-MAY-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
CHROMIUM, TOTAL	mg/L	6010	0.0065	0.0030	0.010	B	1	10-JUN-96	36764	L6967-3

0022