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LK6124

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



January 22, 1996

Ms. Joan Kessner
Bechtel Hanford, Inc.
P.O. Box 969
1022 Lee Boulevard
Richland, WA 99352



RE:	Log-in No.:	L6124
	Quotation No.:	Q400000-B
	SAF:	B96-035
	Document File No.:	1228596
	BHI Document File No.:	311
	SDG No.:	LK6124

The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on 28 December 1995.

The temperature of the cooler upon receipt was 2°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.

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,

A handwritten signature in black ink that reads "Kathleen M. Hall for". The signature is written in a cursive style.

Kathleen M. Hall
Client Services Representative

cc: Client Services
Document Control

**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

- Two water samples were received for LK6124 and analyzed in batch 1228 bh for selected analytes as requested on the chain of custody. Quality control analysis was performed on the following samples:

Client ID	LAL #		Method
BOGZ58	L6124-3	MS, DUP	7196 Chromium (VI)

Holding Time Requirements

- All samples were received outside of the method-specific holding time and 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

January 3, 1996
Date

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 December 28, 1995. The samples were logged in as L6124 and were prepared and analyzed in batch 1228 bh.

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

January 22, 1996
Date

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Jan 03 1996, 08:09 am

Login Number: L6124
 Account: 596 Bechtel Hanford, Inc. * Richland, WA
 Project: BECHTEL-HANFORD Bechtel Hanford Project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L6124-1 TEMP 2 Location: 156TMP-1 Water 1 S SCREENING	BOGZ58	22-DEC-95	28-DEC-95	01-FEB-96
		Hold:19-JUN-96		
L6124-2 TEMP 2 Location: 156TMP-1 Water 1 S SCREENING	BOGZ59	22-DEC-95	28-DEC-95	01-FEB-96
		Hold:19-JUN-96		
L6124-3 TEMP 2 Location: 133 Water 1 S 7196 CHROMIUM (VI)	BOGZ58	22-DEC-95	28-DEC-95	01-FEB-96
		Hold:23-DEC-95		
L6124-4 TEMP 2 Location: 133 Water 1 S 7196 CHROMIUM (VI)	BOGZ59	22-DEC-95	28-DEC-95	01-FEB-96
		Hold:23-DEC-95		
* L6124-5 TEMP 2 Location: 156TMP-1 Water 1 S 200.7 CHROMIUM TOTAL	BOGZ58	22-DEC-95	28-DEC-95	01-FEB-96
		Hold:19-JUN-96		
* L6124-6 TEMP 2 Location: 156TMP-1 Water 1 S 200.7 CHROMIUM TOTAL	BOGZ59	22-DEC-95	28-DEC-95	01-FEB-96
		Hold:19-JUN-96		
* * L6124-7 Location: Water 1 S EDD - DISK DEL. Water 1 S INORG TYPE 2 RPT	REPORT TYPE	28-DEC-95	28-DEC-95	01-FEB-96

* product changed

Page 1

* * report type changed

Revised

Signature: L. Miller

Date: 1-3-96

0009

1228596

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Dec 28 1995, 01:26 pm

Login Number: L6124
 Account: 596 Bechtel Hanford, Inc. * Richland, WA
 Project: BECHTEL-HANFORD Bechtel Hanford Project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L6124-1 TEMP 2 Location: 157 Water 1 S SCREENING	BOGZ58	22-DEC-95	28-DEC-95	01-FEB-96
L6124-2 TEMP 2 Location: 157 Water 1 S SCREENING	BOGZ59	22-DEC-95	28-DEC-95	01-FEB-96
L6124-3 TEMP 2 Location: 157 Water 1 S 7196 CHROMIUM (VI)	BOGZ58	22-DEC-95	28-DEC-95	01-FEB-96
L6124-4 TEMP 2 Location: 157 Water 1 S 7196 CHROMIUM (VI)	BOGZ59	22-DEC-95	28-DEC-95	01-FEB-96
L6124-5 TEMP 2 Location: 157 Water 1 S 218.2 CHROMIUM	BOGZ58	22-DEC-95	28-DEC-95	01-FEB-96
L6124-6 TEMP 2 Location: 157 Water 1 S 218.2 CHROMIUM	BOGZ59	22-DEC-95	28-DEC-95	01-FEB-96
L6124-7 Location: Water 1 S EDD - DISK DEL. Water 1 S INORG TYPE 4A RPT	REPORT TYPE	28-DEC-95	28-DEC-95	01-FEB-96

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Signature: Paula Davis

Date: 12-28-95

0010

1208546

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

L6124

Data Turnaround
 Priority
 Normal

Collector K. Trapp	Company Contact B. D. Blumenkranz	Telephone (509) 372-9658
Project Designation 100-HR-3 Pump and Treatment	Sampling Location 100-HR-3 Pump and Treat	SAF No. B96-035
Ice Chest No. <i>SML-225</i>	Field Logbook No. <i>EF-1144-2</i>	Method of Shipment Federal Express
Shipped To Lockheed	Offsite Property No. <i>W96-D-06910-141</i>	Bill of Lading/Air Bill No. <i>2904646503</i>

Possible Sample Hazards/Remarks	Preservation	HNO ₃	Cool 4°C	None									
	Type of Container	P/G	P/G	P									
	No. of Container(s)	1	1	1									
Special Handling and/or Storage Maintain samples between 2°C and 6°C	Volume	500mL	500mL	20mL									

SAMPLE ANALYSIS				Chrom-ium - Total	Chrom-ium VI	Activity Scan							
Sample No.	Matrix*	Date Sampled	Time Sampled										
BOGZ58	W	12/22/95	<i>1023</i>	X	X	X							
BOGZ59	W	12/22/95	<i>1030</i>	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix*
Relinquished By <i>K. Trapp</i>	Date/Time <i>12/22/95</i>	Analysis for Chromium (VI) by SW-846 7196 is being requested for information only. The ERC Contractor acknowledges that the 24-hour holding time will not be met.	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
Received By <i>B. D. Blumenkranz</i>	Date/Time <i>12-23-95</i>		
Relinquished By <i>B. D. Blumenkranz</i>	Date/Time <i>12-27-95</i>		
Received By	Date/Time		
Relinquished By	Date/Time		
Received By	Date/Time		

LABORATORY SECTION	Received By <i>Paul J. Davis</i>	Title <i>Sample Custodian</i>	Date/Time <i>12-28-95/9:00 AM</i>
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

12-28-95

Environmental Restoration Contractor **ERC Team**
Interoffice Memorandum

Job No. 22192
Written Response Required: NO
CMT: N/A
CUT: R00000
TID: N/A
ERAI: N/A
Subject Code: 500

TO: Dave Blumenkranz H4-90

DATE: April 26, 1995

COPIES: Doug Bowers N3-05

FROM: Mike Wesselman
Radiological Controls
N3-06/376-2084

Post-it* Fax Note	7671	Date	5/1	# of pages	1
To	D. Bowers	From	D. Blumenkranz		
Co./Dept.	ITH/Samp.	Co.	CHI/ERS		
Phone #	376-1007	Phone #	372-9658		
Fax #	376-5991	Fax #			

SUBJECT: EXEMPTION OF SAMPLES FROM 100-HR-3 PUMP AND TREAT FROM TOTAL ACTIVITY ANALYSIS.

After reviewing sampling data recorded on GeoDat as well as data from the latest resin change at the unit, it has been concluded that there is no need to perform total activity analysis of water sample from 100-HR-3 prior to offsite shipment. Water from all wells in the area is well below levels which would deliver 100 millirem per year CEDE to any one drinking two liters a day, no water exceeds the 2000 picocurie per gram limit for shipment as non radioactive by Department of Transportation. Activity trends in all wells have been downward for the last twenty years. Sample from the pump and treat system itself indicate less than six picocuries per gram of tritium and less than ten picocuries per liter of both alpha and beta contamination. All discharges of radioactive material to the ground in the 100-D Area have ceased, the actions of the pump and treat system do not appear to be mobilizing previously deposited materials. Based on the above information and the results of total activities performed to date, there is sufficient process knowledge to conclude that preshipment screening of water samples is no longer required.

Michael Wesselman
Mike Wesselman

maw

Distribution

0012

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SAMPLE CHECK-IN LIST

Date/Time Received: 12-28-95/9:00 AM SDG#: 11.2

Work Order Number: _____ SAF #: R96-035

Shipping Container ID: SML-225 Chain of Custody #: 1117

- 1. Custody Seals on shipping container intact? Yes No
- 2. Custody Seals dated and signed? Yes No
- 3. Sample temperature 20 _____
- 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: Chromium IR was passed Holding Time

Sample Custodian/Laboratory: Paul Davis / LNS Date: 12-28-95
Faxed 12-28-95
Telephoned To: Kathleen Hall On 12-28-95 By Paul Davis
PO 12-28-95

LOCKHEED MARTIN



Sample Login Login Review Checklist

Lot Number L6124

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?	<u>X</u>	—	—	_____
2. Are all samples present?	<u>X</u>	—	—	_____
3. Are all matrices indicated correctly?	<u>X</u>	—	—	_____
4. Are all analyses on the COC logged in for the appropriate samples?	<u>X</u>	—	—	_____
5. Are all analyses logged in for the correct container?	<u>X</u>	—	—	_____
6. Are samples logged in according to LAS batching procedures?	<u>X</u>	—	—	_____

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?	<u>X</u>	—	—	_____
2. Have all appropriate comments been indicated in the comment section?	<u>X</u>	—	—	_____

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)?	—	—	<u>X</u>	_____

Paul Davis 12-28-95
primary review signature date

Paul Davis
secondary review signature

12-28-95 0014
date

1728596

**Lockheed Analytical Services
Sample Receiving Checklist**

Client Name: B. P. H. P. L. - Hartford

Job No. L 6124

Cooler ID: 11.02

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: 30

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			
are samples bi-phasic (if so, indicate sample ID'S):			<u>11.02</u>

MISCELLANEOUS ITEMS

	Yes	No	* Comments/Discrepancies
samples with short holding times		X	
samples to subcontract			<u>11.02</u>

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: Paulo Davis 12-28-95

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

1288546

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

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
B0GZ58	L6124-1 L6124-3 L6124-5		Water Water Water	SCREENING 7196 CHROMIUM (VI) 218.2 CHROMIUM
B0GZ59	L6124-2 L6124-4 L6124-6		Water Water Water	SCREENING 7196 CHROMIUM (VI) 218.2 CHROMIUM
REPORT TYPE	L6124-7 L6124-7		Water Water	EDD - DISK DEL. INORG TYPE 4A RP

0016

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LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0GZ58	Date Collected: 22-DEC-95
Matrix: Water	Date Received: 28-DEC-95
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	0.89	0.10	HD(1:5)	02-JAN-96	32086	L6124-3

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0GZ59	Date Collected: 22-DEC-95
Matrix: Water	Date Received: 28-DEC-95
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	0.65	0.10	HD(1:5)	02-JAN-96	32086	L6124-4

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOGZ58	Date Collected: 22-DEC-95
Matrix: Water	Date Received: 28-DEC-95
Percent Solids: N/A	

Constituent	Units	Method	Result	IDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
CHROMIUM, TOTAL	mg/L	6010	0.78	0.0010	0.010		1	11-JAN-96	32227	L6124-5

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0GZ59	Date Collected: 22-DEC-95
Matrix: Water	Date Received: 28-DEC-95
Percent Solids: N/A	

Constituent	Units	Method	Result	IDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
CHROMIUM, TOTAL	mg/L	6010	0.61	0.0010	0.010		1	11-JAN-96	32227	16124-6