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LK6879-LAS

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

0045079

1/2/96

LOCKHEED MARTIN



May 9, 1996

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



RE: Log-in No.:	L6879
Quotation No.:	Q400000-B
SAF:	B96-102
Document File No.:	0423596
BHI Document File No.:	355
SDG No.:	LK6879

The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on 23 April 1996. 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 were 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.

The EDD is being sent on the Hanford Bulletin Board System.

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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Page1

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

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 oil sample was received for LK6879 and analyzed in batch 423 bh for selected analytes as requested on the chain of custody. Quality control analysis was performed on the following samples:

Client ID	LAL #		Method
BOHD75	L6879-2	MS, DUP	300.0 Sulfate

Holding Time Requirements

- All samples were received within method-specified holding time.

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.

Sample

- For client sample BOHD75 (L6879-2), total sulfur was determined by combusting the oil sample in a calorimeter combustion bomb which converts organic and elemental sulfur to sulfate. The resulting sulfate was determined by ion chromatography. To determine total sulfur, the reported sulfate value must be multiplied by the factor 0.333.

Kay McCann
 Prepared By

May 8, 1996
 Date

Lockheed Analytical Services
DATA QUALIFIERS FOR INORGANIC ANALYSES

[Revised 08/28/92]

For Use on the Analytical Data Reporting Forms	
B	<i>For CLP Analyses Only</i> -- Reported value is less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
C	<i>For Routine, Non-CLP Analyses Only</i> -- Any constituent that was also detected in the associated blank whose concentration was greater than the reporting detection limit (RDL).
D	Presence of high levels of interfering constituents required dilution of sample which increased the RDL by the dilution factor.
E	Estimated value due to presence of interference.
H	Sample analysis performed outside of method-or client-specified maximum holding time requirement.
M	<i>For CLP Analyses Only</i> -- Duplicate injection precision criterion was not met.
N	Matrix spike recovery exceeded acceptance limits.
S	Reported value was determined from the method of standard addition.
U	<i>For CLP Reporting Only</i> -- Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
W	<i>For AAS Only</i> -- Post-digestion spike for Furnace AAS did not meet acceptance criteria and sample absorbance is less than 50% of spike absorbance.
X, Y, or Z	Analyst-defined qualifier.
*	Relative percent difference (RPD) for duplicate analysis exceeded acceptance limits.
+	Correlation coefficient (r) for the MSA is less than 0.995.
For Use on the QC Data Reporting Forms	
a¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC summary form.

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LOCKHEED ANALYTICAL SERVICES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Apr 23 1996, 02:20 pm

Login Number: L6879
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
L6879-1 temp 2 Location: 157 Oil	BOHD75	15-APR-96	23-APR-96	08-MAY-96
6 S SCREENING				
L6879-2 temp 2; SULPHUR ANALYSIS Location: 157 Oil	BOHD75	15-APR-96	23-APR-96	08-MAY-96
6 S 300.0 SULFATE				
L6879-3 Location: Water	REPORT TYPE	23-APR-96	23-APR-96	08-MAY-96
1 S EDD - DISK DEL.				
1 S INORG TYPE 2 RPT				

Page 1

Signature: Admill

Date: 4-23-96

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0423596

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

LL6879

Page 1 of 1

Data Turnaround
 Priority
 Normal

Collector Doug Bowers	Company Contact Ron Pohjola	Telephone 373-6724
Project Designation 100N Bunker Tank Oil (waste designation)	Sampling Location 100N	SAF No. B96-102
Ice Chest No. BROOKS	Field Logbook No. EFL 1133-1	Method of Shipment Air freight (Fed X)
Shipped To Lockheed	Offsite Property No. W96-0-0640-41	Bill of Lading/Air Bill No. 2904655485

Possible Sample Hazards/Remarks None known at this time	Preservation	cool to 4C	none										
	Type of Container	G/P	G/P										
	No. of Container(s)	1	1										
	Special Handling and/or Storage	Volume	250 ml	20 mL									

SAMPLE ANALYSIS

Sample No.	Matrix*	Date Sampled	Time Sampled	See item #1 below	Activity Scan								
BOHD75	O	4-15-96	1233	X	X								EAL Box screen BOHD76 EAL02412

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix*
Relinquished By <i>Doug Bowers</i>	Date/Time 4-15-96/1353	Received By <i>Eric Whitton</i>	Date/Time 4-15-96
Relinquished By <i>Eric Whitton</i>	Date/Time 4-22-96	Received By <i>B. Whitton</i>	Date/Time 4-15-96
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Item #1 IC Anions - 300.0 Sulfate -- 375.4 Sulfur

Sample matrix -- Oil.
 Analyze for Sulfate (EPA 300.0) -- after "Oxidation" preparation.
 Analyze for Sulfate (EPA 375.) -- Report value as sulfur not sulfate

Matrix*
 S = Soil
 Sl = Sediment
 SO = Solid
 SL = Sludge
 W = Water
 O = Oil
 A = Air
 DS = Drum Solids
 DL = Drum Liquids
 T = Tissue
 W1 = Wipe
 L = Liquid
 V = Vegetation
 X = Other

LABORATORY SECTION	Received By <i>Monelle</i>	Title Sample Custodian	Date/Time 4-23-96/095
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

9613471.2508

Post-It® Fax Note 7671		Date <i>4-22-96</i>	# of pages <i>2</i>
To <i>Bill Whitten</i>	From <i>Al Davis</i>		
Co./Dept.	Co.		
Phone #	Phone # <i>373-9731</i>		
Fax # <i>376-8851</i>	Fax #		

GROSS RADIONUCLIDE SCREENING SAMPL
 Radiometric Laboratory
 Environmental Analytical Laboratory
 IT Hanford Co.

Customer ID: BOHD76 Bunker Oil
 EAL ID: EAL02412
split of BOHD75

SOILS
 Pass screen (X)
 Fail screen ()
 Other's at 50 pCi limit
 Pass screen (X)
 Fail screen ()

3.25E+01	Calculated Beta Total Activity (pCi/g)	4.59E-02
1.57E-02	Calculated Alpha Total Activity (pCi/g)	2.99E-01
3.26E+01	Calculated total activity pCi/g	3.45E-01
5.59E+00	Calculated total activity error	6.37E-02
3.29E+00	Calculated total activity MDA	1.91E-01

Screen sample based on (x) 99-Tc or () 90-Sr for beta activity.

The screening for other's is based on 50 pCi/g Beta and Alpha, and 2 pCi/g Alpha including the 2 sigma error.

A passed screen for Soils indicates that the soil sample contained less than 200 pCi/g total radioactivity of which less than 20 pCi/g is from alpha emitting radionuclides. For conservatism, a failed screen may also have one or more of the following characteristics: The sum of the total gamma activity detected in the soil is above 5 pCi/g; Beta emission from the bulk sample is found above the natural Hanford soil background (corresponding to approximately 5 pCi/g Sr-90 or 100 pCi/g Tc-99); or Alpha emission from the bulk soil is found above the natural Hanford soil background (corresponding to approximately 10 pCi/g Am-241). Naturally occurring radionuclides common to Hanford soil, tritium, and Carbon-14 are not included in the screening measurement.

L E Matthews by *ALD* 4-16-96
 Rad Ctg Technician Date

Albert I. Davis
 Albert I. Davis 22-Apr-96
 Rad Ctg Mgr

*10ml Oct shaken with 10ml H₂O.
 H₂O dried on planket. ALD.*

0009

C4) 3596

LOCKHEED MARTIN



Sample Login Login Review Checklist

Lot Number LL879

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>Y</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>Y</u>	_____

[Signature]
primary review signature

4-23-96
date

[Signature]
secondary review signature

4-23-96 10
date
C 423546

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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
BOHD75	L6879-1 L6879-2		Oil Oil	SCREENING - 300.0 SULFATE -
REPORT TYPE -	L6879-3 L6879-3		Water Water	EDD - DISK DEL. INORG TYPE 2 RP

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LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0HD75	Date Collected: 15-APR-96
Matrix: Oil	Date Received: 23-APR-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Sulfate	mg/kg	300.0	31000	10.	D(1:10)	01-MAY-96	36335	L6879-2