

START 9613500.0360

LK6763-LAS 33



0045574

Lockheed Analytical Services

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



**ANALYTICAL DATA REPORT
FOR
STRONTIUM-90**

LOG-IN NUMBER:	<u>L6763</u>
QUOTATION NUMBER:	<u>Q400000-B</u>
SAF:	<u>B96-036</u>
DOCUMENT FILE NUMBER:	<u>0409596</u>
BHI DOCUMENT FILE NO.:	<u>350</u>
SDG NUMBER:	<u>LK6763</u>



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9613500.0361

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

LOCKHEED MARTIN



April 22, 1996

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

RE: Log-in No.: L6763
Quotation No.: Q400000-B
SAF: B96-036
Document File No.: 0409596
WHC Document Control No.: 350
SDG No.: LK6763



The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on April 9, 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 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.

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

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

Sincerely,

Karen Aleman for

Kathleen M. Hall

Client Services Representative

cc: Client Services
Document Control

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Lockheed Analytical Services

Log-in No.: L6763
Quotation No.: Q400000-B
SAF: B96-036
Document File No.: 0409596
WHC Document File No.: 350
SDG No.: LK6763
Page No.: 1

CASE NARRATIVE RADIOCHEMICAL ANALYSES

The routine calibration and quality control (QC) analyses performed for this batch include as applicable: instrument calibration, initial and continuing calibration verification, quench monitoring standards, instrument background analysis, method blanks, yield tracer, laboratory control samples, matrix spike samples, and duplicate samples.

NOTE: Chemical recoveries and minimum detectable activities can be found on the preparation sheets and calculation sheets of the attached raw data.

Holding Time Requirements

All holding time requirements were met.

Analytical Method Total Strontium

The total strontium analysis was performed using standard operating procedure, LAL-92-SOP-0196. The samples were analyzed in workgroup 35907. The instrument calibration verification met criteria. The method blank was within QC criteria. The laboratory control sample recovery was within QC criteria. The duplicate recoveries were within QC criteria. No re-analyses were performed.

Andrea Tippett
Prepared By

April 22, 1996
Date

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

Login Number: L6763
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
L6763-1 TEMP 3 Location: 157 Water 1 S SCREENING	BOHCH2	05-APR-96	09-APR-96	24-APR-96
		Hold:02-OCT-96		
L6763-2 TEMP 3 Location: 157 Water 1 S SR-90 LAL-0196	BOHCH2	05-APR-96	09-APR-96	24-APR-96
		Hold:02-OCT-96		
L6763-3 TEMP 3 Location: 157	BOHCH2	05-APR-96	09-APR-96	24-APR-96
L6763-4 TEMP 3 Location: 157	BOHCH2	05-APR-96	09-APR-96	24-APR-96
L6763-5 TEMP 3 Location: 157	BOHCH2	05-APR-96	09-APR-96	24-APR-96
L6763-6 TEMP 3 Location: Water 1 S EDD - DISK DEL. Water 1 S RAD RPT TYPE 2	REPORT TYPE	09-APR-96	09-APR-96	24-APR-96

Page 1

Signature: Paul Davis

Date: 4-09-96

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0409596

Environmental
Restoration
Contractor

ERC Team

Interoffice Memorandum

Job No. 22192

Written Response Required: NO

CCN: N/A

OU: N/A

TSD: N/A

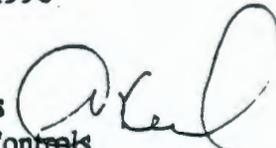
ERA: N/A

Subject Code: 5830

TO: W. S. Thompson N1-28
G. C. Henckel H4-80

DATE: February 29, 1996

COPIES: K. A. Smith X0-23
T. L. Lafreniere X0-23
D. E. Gergely X0-23

FROM: S. K. De Mers 
Radiological Controls
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 1.56×10^6 pCi/l H³.

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.

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SAMPLE CHECK-IN LIST

Date/Time Received: 4-8-96

SDG#: N/A

Work Order Number: N/A

SAF #: B96-036

Shipping Container ID: EFS-11

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 32
- 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:

<input type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels

8. Samples are:

<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

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

Notes: _____

Sample Custodian/Laboratory: Paul Davis / LAS Date: 4-09-96
 Faxed
 Telephoned To: Kathleen Hal On 4-09-96 By Paul Davis
 ACB 4-09-96

LOCKHEED MARTIN



Sample Login Login Review Checklist

Lot Number 66763

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>	_____

[Signature]
primary review signature

4-09-96
date

[Signature]
secondary review signature

000010
date

0409596

Lockheed Analytical Services
Sample Receiving Checklist

Client Name: *Becthel - Hartford*

Job No. *46763*

Cooler ID: *402*

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

MISCELLANEOUS ITEMS

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

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: *Paul D. [Signature]* *4-09-96*

Sent to the client (date/initials): *Paul D. [Signature]* ** Client's signature upon receipt:

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

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
BOHCH2	L6763-1 L6763-2		Water Water	SCREENING SR-90 LAL-0196
REPORT TYPE	L6763-6 L6763-6		Water Water	EDD - DISK DEL. RAD RPT TYPE 2

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LOCKHEED ANALYTICAL SERVICES

RAD DATA REPORT (ra01)

Bechtel Hanford, Inc. * Richland, WA

Bechtel Hanford Project (Project BECTEL-HANFORD)

Client Sample ID: B0HCH2

LAL Sample ID: L6763-2

Date Collected: 05-APR-96

Date Received: 09-APR-96

Matrix: Water

Login Number: L6763

Constituent	Analyzed	Batch	Activity	Error	MDA	DataQual	Units
Sr-89,90	18-APR-96	SR-90 LAL-0196_35907	0.05	0.49	0.85		pCi/L

9613500.0371

VALIDATION SUMMARY

Kearney/Centaur Division
A.T. Kearney, Inc.
2952 George Washington Way
Richland, Washington 99352
509 375 5667
Facsimile 509 375 5151

9613500 0372
Longshore
Consultants



ATKEARNEY

31 May 1996

Ms. Joan Kessner
Bechtel Hanford Incorporated
3350 George Washington Way MSIN BI-35
Richland, Washington 99352

Dear Ms. Kessner:

Enclosed are the radiochemistry data validation reports
for sample data groups W0973-QES and LK6763-LAS.

Sincerely,

R. Bruce Christian
Consultant

cc: J. Duncan - CH2
J. Goode - ATK

Date: 31 May 1996
 To: Bechtel Hanford, Inc. (technical representative)
 From: A.T. Kearney, Inc.
 Project: 100-NR-2 Performance Monitoring Round 0 - April Samples
 Subject: Radiochemistry - Data Package No. LK6763-LAS (SDG No. LK6763)

INTRODUCTION

This memo presents the results of data validation on Summary Data Package No. LK6763-LAS prepared by Lockheed Analytical Services (LAS). A list of samples validated along with the analyses reported and the requested analyte is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analysis
BOHCH2	04/05/96	Water	C	Strontium-90

Data validation was conducted in accordance with the WHC statement of work (WHC 1994) and validation procedures (WHC 1992b). Appendices 1 through 5 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analyses is six months.

All holding times were acceptable.

- **Instrument Calibration and Performance**

Instrument calibration is performed to establish that the counters used to determine radionuclide activities are capable of producing acceptable and reliable analytical data. Each counting system must be factory calibrated at installation and after any maintenance or repair. Calibration consists of an instrument

efficiency determination for each applicable radionuclide. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible.

Initial and continuing calibrations are not reviewed under Level C validation.

- **Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the MDA, the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are elevated to the MDA and qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

- **Accuracy**

Accuracy is evaluated by analyzing distilled water or field samples spiked with known amounts of radionuclides. The sample activity as determined by analysis is compared to the known activity to assess accuracy. The acceptable laboratory control sample recovery range is 70% to 130%, while that for a matrix spike is 60% to 140%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, rejected, or not qualified, depending on the activity of the individual sample.

All accuracy results were acceptable.

- **Precision**

Analytical precision is expressed by the RPD between the recoveries of duplicate matrix spike analyses performed on a sample. Precision may also be assessed using unspiked duplicate sample analyses. If both sample and replicate activities are greater than five times the CRDL and the RPD is less than 35 percent for soil samples and 20 percent for water samples, the results are acceptable. If either activities are less than five times the CRDL, a control limit of less than or equal

to two times the CRDL is used for soil samples and less than or equal to the CRDL for water samples. If either the original or replicate value is below the CRDL, the applicable control limits are less than or equal to the CRDL for water samples and less than or equal to two times the CRDL for soil samples. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All precision results were acceptable.

Field Split Samples

One set of field split samples were submitted to QES/LAS as shown below:

<u>Sample Number</u>	<u>Duplicate Sample No.</u>	<u>Well Location</u>
BOH8N5(QES)	BOHCH2(LAS)	199-N-92A

The split sample results were compared using the validation guidelines for determining the RPD between a sample and its duplicate. All results fell within the required control limits.

- **Detection Levels**

Reported laboratory detection levels are reviewed to ensure that they are at or below the CRDL. All reported MDAs were at or below the analyte specific CRDL.

- **Completeness**

Data Package No. LK6763-LAS (SDG No. LK6763) was submitted for validation and verified for completeness. The completion rate was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

- EPA, 1987, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, Environmental Protection Agency, Washington, D.C.
- EPA, 1988a, *EPA Contract Laboratory Program Statement of Work for Organics Analyses, Multi-Media, Multi-Concentration*, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1988b, *Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1988c, *EPA Contract Laboratory Program Statement of Work for Inorganics Analyses, Multi-Media, Multi-Concentration*, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1988d, *Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses*, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1990, *EPA Contract Laboratory Program Statement of Work for Inorganic Analyses, Multi-media, Multi-Concentration*, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1991, *EPA Contract Laboratory Program Statement of Work for Organics Analyses, Multi-Media, Multi-Concentration*, Environmental Protection Agency, Washington, D.C.
- WHC, 1992a, *Data Validation Procedures for Chemical Analyses*, WHC-SD-EN-SPP-002, Rev. 2, Westinghouse Hanford Company, October 1993.
- WHC, 1992b, *Data Validation Procedure for Radiological Analyses*, WHC-SD-EN-SPP-001, Rev. 2, Westinghouse Hanford Company, 1993.
- EPA, 1994, *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, U.S. Environmental Protection Agency, Washington, D.C.
- WHC, 1994, *Validation Statement of Work*, Rev.1, Westinghouse Hanford Company, 1994.

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Appendix 1

Glossary of Data Reporting Qualifiers

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Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

- U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.
- UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.
- J - Indicates the compound or analyte was analyzed for and detected. Due to a QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.
- R - Indicates the compound or analyte was analyzed for, detected, and due to an identified QC deficiency, the data are unusable.
- UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified QC deficiency.

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Appendix 2
Summary of Data Qualification

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DATA QUALIFICATION SUMMARY

SDG: LK6763	REVIEWER: RBC	DATE: -05/31/96	PAGE <u>1</u> OF <u>1</u>
COMMENTS: No qualifiers assigned.			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON

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Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

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LOCKHEED ANALYTICAL SERVICES

RAD DATA REPORT (ra01)

Bechtel Hanford, Inc. * Richland, WA

Bechtel Hanford Project (Project BECHTEL-HANFORD)

Client Sample ID: BOHCH2

LAL Sample ID: L6763-2

Date Collected: 05-APR-96

Date Received: 09-APR-96

Matrix: Water

Login Number: L6763

Constituent	Analyzed	Batch	Activity	Error	MDA	DataQual	Units
Sr-89,90	18-APR-96	SR-90 LAL-0196_35907	0.05	0.49	0.85		pCi/L U

Page *1/2*

~~00001~~ *g/e*

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

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LOCKHEED MARTIN

April 22, 1996

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

RE: Log-in No.: L6763
Quotation No.: Q400000-B
SAF: B96-036
Document File No.: 0409596
WHC Document Control No.: 350
SDG No.: LK6763



The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on April 9, 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 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.

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

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

Sincerely,

Karen Helman for

Kathleen M. Hall
Client Services Representative

cc: Client Services
Document Control

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Lockheed Analytical Services

Log-in No.: L6763
Quotation No.: Q400000-B
SAF: B96-036
Document File No.: 0409596
WHC Document File No.: 350
SDG No.: LK6763
Page No.: 1

CASE NARRATIVE RADIOCHEMICAL ANALYSES

The routine calibration and quality control (QC) analyses performed for this batch include as applicable: instrument calibration, initial and continuing calibration verification, quench monitoring standards, instrument background analysis, method blanks, yield tracer, laboratory control samples, matrix spike samples, and duplicate samples.

NOTE: Chemical recoveries and minimum detectable activities can be found on the preparation sheets and calculation sheets of the attached raw data.

Holding Time Requirements

All holding time requirements were met.

Analytical Method Total Strontium

The total strontium analysis was performed using standard operating procedure, LAL-92-SOP-0196. The samples were analyzed in workgroup 35907. The instrument calibration verification met criteria. The method blank was within QC criteria. The laboratory control sample recovery was within QC criteria. The duplicate recoveries were within QC criteria. No re-analyses were performed.

Andrea Tippett
Prepared By

April 22, 1996
Date

~~00000~~

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Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

L6763

Data Turnaround
 Priority
 Normal

Collector <i>A. Rizzo, M. Mehlhorn</i>	Company Contact J.V. Borghese	Telephone (509) 373-4790
Project Designation 100-NR-2 Monthly Performance Monitoring - April	Sampling Location 100 N	SAF No. B96-036
Ice Chest No. <i>EFS-11</i>	Field Logbook No. <i>FL-1288</i>	Method of Shipment Hand Delivered
Shipped To Lockheed	Offsite Property No. <i>W96-0-0640-40</i>	Bill of Lading/Air Bill No. <i>2904654894</i>

Possible Sample Hazards/Remarks	Preservation	HNO ₃	Cool 4°C
	Type of Container	P/G	P/G
	No. of Container(s)	4	1
Special Handling and/or Storage Maintain samples between 2°C and 6°C.	Volume	1L	20mL
SAMPLE ANALYSIS		Sr-90	Activity Scan

961500.0387

Sample No.	Matrix*	Date Sampled	Time Sampled				
BOHCH2	W	4-5-96	1242			X	X

CHAIN OF POSSESSION	Sign/Print Names		SPECIAL INSTRUCTIONS	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!		
	Relinquished By <i>M. Mehlhorn</i>	Date/Time <i>4-5-96 1410</i>			Received By <i>SA</i>	Date/Time <i>1410</i>
	Relinquished By <i>Eric</i>	Date/Time <i>0930</i>			Received By <i>Borghese</i>	Date/Time <i>4-5-96</i>
	Relinquished By <i>B. W. Hen</i>	Date/Time <i>4-8-96</i>			Received By	Date/Time
LABORATORY SECTION	Received By <i>M. Mehlhorn</i>	Title <i>Sample Custodian</i>	Date/Time <i>4-9-96/0900</i>			
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time			

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Appendix 5
Data Validation Supporting Documentation

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RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	<u>C</u>	D	E
PROJECT: <u>RBC</u>			DATA PACKAGE: <u>Lk 6763</u>		
VALIDATOR:		LAB: <u>LAS</u>		DATE:	
CASE:			SDG: <u>Lk 6763 - LAS</u>		
ANALYSES PERFORMED					
<input type="checkbox"/> Gross Alpha/Beta	<input checked="" type="checkbox"/> Strontium-90	<input type="checkbox"/> Technetium-99	<input type="checkbox"/> Alpha Spectroscopy	<input type="checkbox"/> Gamma Spectroscopy	
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Radium-22	<input type="checkbox"/> Tritium	<input type="checkbox"/>		
SAMPLES/MATRIX <u>BOHCH2</u> <u>water</u>					

1. Completeness N/A
 Technical verification forms present? Yes No N/A

Comments: _____

2. Initial Calibration N/A
 Instruments/detectors calibrated within one year of sample analysis? Yes No N/A
 Initial calibration acceptable? Yes No N/A
 Standards NIST traceable? Yes No N/A
 Standards Expired? Yes No N/A

Comments: _____

A-1/ke

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- 3. Continuing Calibration N/A
- Calibration checked within one week of sample analysis? . . . Yes No N/A
- Calibration check acceptable? Yes No N/A
- Calibration check standards NIST traceable? Yes No N/A
- Calibration check standards expired? Yes No N/A

Comments: _____

- 4. Blanks N/A
- Method blank analyzed? Yes No N/A
- Method blank results acceptable? Yes No N/A
- Analytes detected in method blank? Yes No N/A
- Field blank(s) analyzed? Yes No N/A
- Field blank results acceptable? Yes No N/A
- Analytes detected in field blank(s)? Yes No N/A
- Transcription/Calculation Errors? Yes No N/A

Comments: _____

- 5. Matrix Spikes N/A
- Matrix spike analyzed? Yes No N/A
- Spike recoveries acceptable? Yes No N/A
- Spike source traceable? Yes No N/A
- Spike source expired? Yes No N/A
- Transcription/Calculation Errors? Yes No N/A

Comments: _____

A-2

6. Laboratory Control Samples N/A
LCS analyzed? Yes No N/A
LCS recoveries acceptable? Yes No N/A
LCS traceable? Yes No N/A
Transcription/Calculation Errors? Yes No N/A

Comments: _____

7. Chemical Recovery N/A
Chemical carrier added? Yes No N/A
Chemical recovery acceptable? Yes No N/A
Chemical carrier traceable? Yes No N/A
Chemical carrier expired? Yes No N/A
Transcription/Calculation errors? Yes No N/A

Comments: _____

8. Duplicates N/A
Duplicates Analyzed? Yes No N/A
RPD Values Acceptable? Yes No N/A
Transcription/Calculation Errors? Yes No N/A

Comments: _____

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9. Field QC Samples N/A

Field duplicate sample(s) analyzed? Yes No N/A

Field duplicate RPD values acceptable? Yes No N/A

Field split sample(s) analyzed? Yes No N/A

Field split RPD values acceptable? Yes No N/A

Performance audit sample(s) analyzed? Yes No N/A

Performance audit sample results acceptable? Yes No N/A

Comments: BOTH 25 (QES)

10. Holding Times

Are sample holding times acceptable? Yes No N/A

Comments: _____

11. Results and Detection Limits (Levels D & E) N/A

Results reported for all required sample analyses? Yes No N/A

Results supported in raw data? Yes No N/A

Results Acceptable? Yes No N/A

Transcription/Calculation errors? Yes No N/A

MDA's meet required detection limits? Yes No N/A

Transcription/calculation errors? Yes No N/A

Comments: _____

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