

LK 8049

0048038



Lockheed Analytical Services

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



ANALYTICAL DATA REPORT

FOR

CHLORIDE, NITRATE, NITRITE, SULFATE,
PHOSPHATE, FLUORIDE, METALS, MERCURY,
TOTAL RECOVERABLE PETROLEUM
HYDROCARBONS AND
OIL AND GREASE ORGANICS,
GAMMA SPECTROMETRY, GROSS BETA,
STRONTIUM-90 AND TRITIUM



LOG-IN NUMBER: L8049
QUOTATION NUMBER: Q400000-B
SAF: B96-181
DOCUMENT FILE NUMBER: 0928596
BHI DOCUMENT FILE NO.: 402
SDG NUMBER: LK8049





November 12, 1996

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



RE: Log-in No.: L8049
Quotation No.: Q400000-B
SAF: 896-181
Document File No.: 0928596
BHI Document File No.: 402
SDG No.: LK8049

The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on September 28, 1996. The temperatures of the two coolers upon receipt were 2 and 3°C. Sample containers received agree with the chain-of-custody documentation. All 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 Mary Wolf at (702) 361-3955 ext. 311. If you are unable to contact the client services representative, please call Mary B. Ford, client services manager, at extension 326.

"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,

Mary K. Wolf
Client Services Representative

cc: Client Services
Document Control

003

**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 sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

- Tow water samples were for LK8049 and analyzed in batch 928 bh for selected analytes to be analyzed in client-specified order as requested on the chain of custody. Quality control analysis was performed on the following samples:

Client ID	LAL #		Method
BOJ1P1	L8049-15	DUP. MS	300.0 Chloride, Nitrate-Nitrogen, Nitrite-Nitrogen, Sulfate, Orthophosphate 340.2 Fluoride

Method Blanks

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

Holding Time Requirements

- All samples were analyzed within the method-specific holding times with the following exceptions:

For Method 300.0 Nitrate-Nitrogen, Nitrite-Nitrogen and Orthophosphate, the samples were received and analyzed outside of method-specific holding time. The associated samples are flagged with an "H".

Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Kay McCann
 Prepared By

October 24, 1996
 Date

**CASE NARRATIVE
INORGANIC METALS ANALYSES
FILTERED WATER**

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), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on September 28, 1996. The samples were logged in as L8049 and were prepared and analyzed in batch 928 bh D for dissolved metals. The samples were analyzed by Method 7000 Furnace Metals for arsenic, selenium, thallium, lead, and antimony, Method 7470 Mercury and Method 6010 ICP Metals for all other analytes.

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 with the following exception: The matrix spike recovery for selenium was outside of acceptance limits (62%). The recovery based on the LCS (98%) supports that the analytical system was operating within control limits.

Shellee McGrath
Prepared By

November 6, 1996
Date

**CASE NARRATIVE
ORGANIC ANALYSES**

Analytical Method 418.1

Analytical Batch 101596PM-418.1

NOTE: Client sample B0J1P0 (L8049-39) was the native sample used for the Matrix Spike (42573MS) and Matrix Spike Duplicate (42573MSD).

The samples were extracted and analyzed within the required holding time on October 15, 1996. All initial and continuing calibrations met criteria. Total Recoverable Petroleum Hydrocarbon (TRPH) was not detected in the Method Blank (42573MB). The recovery of TRPH was within QC limits in the 42573MS, 42573MSD and Laboratory Control Sample (42573LCS). The Relative Percent Difference (RPD) between the 42573MS and 42573MSD recoveries was within QC limits.

Analytical Method 413.1

Analytical Batch 100896-413.1

NOTE: Client sample B0J1P0 (L8049-35) was the native sample used for the 42319MS and 42319MSD.

The samples were extracted and analyzed within the required holding time on October 8, 1996. Oil and Grease was not detected in the 42319MB. The recovery of Oil and Grease was within QC limits in the 42319MS, 42319MSD and 42319LCS. The RPD between the 42319MS and 42319MSD recoveries was within QC limits.

Prepared By
Patricia Lonergan

November 12, 1996

CASE NARRATIVE RADIOCHEMISTRY 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.

Holding Time Requirements

All holding time requirements were met.

Chemical recoveries and minimum detectable activities (MDAs) can be found on the calculation and preparation sheets of the attached analytical raw data.

Gamma Spectrometry

Analytical Method Gamma Spectrometry

The gamma spectrometry analysis was performed using standard operating procedure (SOP), LAL-91-SOP-0063. The samples were analyzed in workgroup 42723. The instrument calibration verification met criteria. The method blank was within QC criteria. The laboratory control sample (LCS) recoveries were within QC criteria. The duplicate (DUP) recoveries were within QC criteria. No re-analyses were performed.

Gas Proportional Counter

Analytical Method Gross Beta

The gross beta analysis was performed using SOP, LAL-91-SOP-0060. The samples were analyzed in workgroup 42721. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS and matrix spike (MS) recoveries were within QC criteria. The DUP recoveries were within QC criteria. The MDA exceeded the reporting detection limit due to the residue weight limitations forcing a volume reduction. The associated samples were flagged with a "C" qualifier. No re-analyses were performed.

Analytical Method Strontium-90

The strontium-90 analysis was performed using SOP, LAL-91-SOP-0196. The samples were analyzed in workgroup 42720. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS recovery was within QC criteria. The DUP recoveries were within QC criteria. No re-analyses were performed.

Lockheed Analytical Services

Log-in No.: L8049
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Liquid Scintillation Counter

Analytical Method Tritium

The tritium analysis was performed using SOP, LAL-91-SOP-0066. The samples were analyzed in workgroup 42432. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS recovery was within QC criteria. The MS activity was 9.99% of the MS sample activity, therefore the MS recovery is not applicable. Since all other QC criteria were met, data quality is not believed to be adversely affected. The DUP recoveries were within QC criteria. The quench value was within curve limitations. No re-analyses were performed.

Yvonne M. Jacoby
Prepared By

November 12, 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.

Lockheed Analytical Services
DATA QUALIFIERS FOR ORGANIC ANALYSES

[Revised 02/09/1996]

For Use On The Analytical Data Reporting Forms	
A	<i>For CLP analyses Only</i> -- The TIC is a suspected aldol-condensation product.
B	Any constituent that was also detected in the associated blank whose concentration was greater than the practical or reporting detection limit (PQL or RDL).
C	Constituent confirmed by GC/MS analysis. <i>[pesticide/PCB analyses only]</i>
D	Constituent detected in the diluted sample. It also indicates that an accurate quantitation is not possible due to <u>surrogates</u> being diluted out of the samples during the course of the analysis.
E	Constituent concentration exceeded the calibration range.
G	The quantitation is not gasoline or diesel but believed to be some other combination of hydrocarbons.
H	Sample analysis performed outside of method- or client-specified maximum holding time requirement.
J	<i>Estimated value</i> -- (1) constituent detected at a level less than the RDL or PQL and greater than or equal to the MDL; (2) estimated concentration for TICs (<i>For CLP Reporting Only</i>).
N	<i>For CLP Reporting Only</i> -- Tentatively identified constituents (TICs) identified based on mass spectral library search.
NQ	Analyte detected, but Not Quantified; see result from subsequent analysis
P	<i>For CLP Reporting Only</i> -- The percent difference between the concentrations detected on both GC columns was greater than 25 percent <i>[pesticide/PCB analyses only]</i> .
U	<i>For CLP Reporting Only</i> -- Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
X, Y, or Z	Analyst-defined qualifier.
N/A (% Moisture)	N/A in the % moisture cell indicates that data are reported on an "as received" basis. A value in the % moisture cell indicates that data are reported based on a "dry weight" basis.
For Use On The QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for matrix spike, matrix spike duplicate, laboratory control standard, or surrogates; and RPD for matrix spike duplicate or unspiked duplicate) exceeded acceptance limits.
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.

Lockheed Analytical Services
DATA QUALIFIERS FOR RADIOCHEMICAL ANALYSES

[Revised 04/05/96]

For Use on the Analytical Data Reporting Forms	
B	Any constituent that was detected in the associated method blank at a concentration was greater than the reporting detection limit (RDL).
C	The minimum detectable activity exceeded the RDL due to the residue weight limitations forcing a volume reduction.
D	Constituent detected in the diluted sample.
E	Constituent concentration exceeded the calibration or attenuation curve range.
F	<i>For Alpha Spectrometry Only</i> -- Full width half max exceeded the acceptance limits.
H	Sample analysis performed outside of method-specified maximum holding time requirement.
Y	Chemical yield exceeded acceptance limits.
For Use on the QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for laboratory control standard and matrix spike; and RPD for replicate analyses) exceeded acceptance limits.
a¹	The spike recovery and/or RPD for matrix spike and 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 MDA.

¹ Used as foot note designations on the QC summary form.



SAMPLE LOGIN AND CHAIN OF CUSTODY

Revised

LOCKHEED ANALYTICAL SERVICES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 04 1996, 07:02 am

Login Number: L8049
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
L8049-1 TEMP 2,3 Location: L8060-1 Water 1 S NONE	BOJDW7	26-SEP-96	28-SEP-96	12-NOV-96
			Hold:06-OCT-96	
L8049-2 TEMP 2,3 Location: 156-018 Water 1 S SCREENING	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
			Hold:25-MAR-97	
L8049-3 TEMP 2,3 Location: 156-018 Water 1 S SCREENING	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
			Hold:25-MAR-97	
L8049-4 TEMP 2,3 Location: L8060-2 Water 1 S NONE	BOJDW7	26-SEP-96	28-SEP-96	12-NOV-96
			Hold:06-OCT-96	
L8049-5 TEMP 2,3 Location: L8060-3	BOJDW7	26-SEP-96	28-SEP-96	12-NOV-96
L8049-6 TEMP 2,3 Location: L8060-4	BOJDW7	26-SEP-96	28-SEP-96	12-NOV-96
L8049-7 TEMP 2,3 Location: L8060-5	BOJDW7	26-SEP-96	28-SEP-96	12-NOV-96
L8049-8 TEMP 2,3 Location: L8060-6	BOJDW7	26-SEP-96	28-SEP-96	12-NOV-96
L8049-9 TEMP 2,3 Location: L8060-7 Water 1 S NONE	BOJDW9	26-SEP-96	28-SEP-96	12-NOV-96
			Hold:06-OCT-96	
L8049-10 TEMP 2,3 Location: L8060-8	BOJDW9	26-SEP-96	28-SEP-96	12-NOV-96

login revised because of 2 SAFs logged together. 10-4-96 Maw

013

0918571

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Oct 04 1996, 07:02 am

Login Number: L8049
 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
L8049-11 TEMP 2,3 Location: L8060-9	BOJDW9	26-SEP-96	28-SEP-96	12-NOV-96
L8049-12 TEMP 2,3 Location: L8060-10	BOJDW9	26-SEP-96	28-SEP-96	12-NOV-96
L8049-13 TEMP 2,3 Location: L8060-11	BOJDW9	26-SEP-96	28-SEP-96	12-NOV-96
L8049-14 TEMP 2,3 Location: 156CART-5 Water 1 S TRITIUM(H3) LAL-0066	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
L8049-15 TEMP 2,3 Location: 121 Water 1 S 300.0 CHLORIDE Water 1 S 300.0 NITRATE Water 1 S 300.0 NITRITE Water 1 S 300.0 PHOSPHATE Water 1 S 300.0 SULFATE Water 1 S 340.2 FLUORIDE	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
L8049-16 TEMP 2,3 Location: 121 Water 1 S 300.0 CHLORIDE Water 1 S 300.0 NITRATE Water 1 S 300.0 NITRITE Water 1 S 300.0 PHOSPHATE Water 1 S 300.0 SULFATE Water 1 S 340.2 FLUORIDE	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
L8049-17 TEMP 2,3 Location: RFG02-28B Filt H2O 15 S 6010 ICP METALS Filt H2O 15 S 7000 FURNACE METALS Filt H2O 15 S 7470 MERCURY	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Oct 04 1996, 07:02 am

Login Number: L8049
 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
L8049-18 TEMP 2,3 Location: RFG02-28B Filt H2O 15 S 6010 ICP METALS Filt H2O 15 S 7000 FURNACE METALS Filt H2O 15 S 7470 MERCURY	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
		Hold:25-MAR-97		
		Hold:25-MAR-97		
		Hold:24-OCT-96		
L8049-19 TEMP 2,3 "ICP+Tn,Pb" Location: L8060-12 Water 1 S NONE	BOJDW7	26-SEP-96	28-SEP-96	12-NOV-96
		Hold:06-OCT-96		
L8049-20 TEMP 2,3 "ICP+Tn,Pb" Location: L8060-13 Water 1 S NONE	BOJDW8	26-SEP-96	28-SEP-96	12-NOV-96
		Hold:06-OCT-96		
L8049-21 TEMP 2,3 Location: 156CART-5 Water 1 S GROSS BETA LAL-0060	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
		Hold:25-MAR-97		
L8049-22 TEMP 2,3 Location: 156CART-5 Water 1 S GROSS BETA LAL-0060	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
		Hold:25-MAR-97		
L8049-23 TEMP 2,3 Location: 156CART-5 Water 1 S GAMMA SPEC LAL-0063	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
		Hold:25-MAR-97		
L8049-24 TEMP 2,3 Location: 156CART-5	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
L8049-25 TEMP 2,3 Location: 156CART-5	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
L8049-26 TEMP 2,3 Location: 156CART-5	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Oct 04 1996, 07:02 am

Login Number: L8049
 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
L8049-27 TEMP 2,3 Location: 156CART-5 Water 1 S SR-90 LAL-0196	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
		Hold:25-MAR-97		
L8049-28 TEMP 2,3 Location: 156CART-5	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
L8049-29 TEMP 2,3 Location: 156CART-5	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
L8049-30 TEMP 2,3 Location: 156CART-5	BOJ1P1	26-SEP-96	28-SEP-96	12-NOV-96
L8049-31 TEMP 2,3 Location: 156CART-5 Water 1 S SR-90 LAL-0196	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
		Hold:25-MAR-97		
L8049-32 TEMP 2,3 Location: 156CART-5	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
L8049-33 TEMP 2,3 Location: 156CART-5	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
L8049-34 TEMP 2,3 Location: 156CART-5	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
L8049-35 TEMP 2,3 Location: 157 Water 1 S 413.1 OIL AND GREASE	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
		Hold:24-OCT-96		
L8049-36 TEMP 2,3 Location: 157	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Oct 04 1996, 07:02 am

Login Number: L8049
 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
L8049-37 TEMP 2,3 Location: 157	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
L8049-38 TEMP 2,3 Location: 157	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
L8049-39 TEMP 2,3 Location: 157 Water 1 S 418.1 TPH	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
		Hold: 24-OCT-96		
L8049-40 TEMP 2,3 Location: 157	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
L8049-41 TEMP 2,3 Location: 157	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
L8049-42 TEMP 2,3 Location: 157	BOJ1P0	26-SEP-96	28-SEP-96	12-NOV-96
L8049-43 Location:	REPORT TYPE	28-SEP-96	28-SEP-96	12-NOV-96
Water 1 S EDD - DISK DEL.				
Water 1 S GC2				
Water 1 S GCMS2				
Water 1 S INORG TYPE 4A RPT				
Water 1 S RAD RPT TYPE 2				
Water 1 S WOLF				

Signature: Mary Kasey 017
 Date: 10-4-96

CALREC

L8049

Bechtel Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B96-181-39	Page 1 of 1
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Collector <i>A. Rizzo</i>	Company Contact J. V. Borghese	Telephone No. (509) 373-4790	Project Coordinator Koerner, CC	Data Turnaround 45 Days
Project Designation 100-NR-2 Groundwater Sampling - Round 10	Sampling Location 100 N	SAF No. B96-181		
Ice Chest No. <i>EA-210</i>	Field Logbook No. <i>EFL-1288</i>	Method of Shipment Federal Express		
Shipped To Lockheed	Offsite Property No. <i>W96-0-0314-10</i>	Bill of Lading/Air Bill No. <i>277 1632 866</i>		

POSSIBLE SAMPLE HAZARDS/REMARKS NA	Preservation	None	None	Cool &C	HNO3 to pH <2							
	Type of Container	P	G	P	P	P	P	P				
	No. of Container(s)	1	1	1	1	1	4	4				1
Special Handling and/or Storage Maintain samples between 2 degrees C and 6 degrees C	Volume	20ml	500ml	500ml	500ml	1000ml	1000ml	1000ml				

SAMPLE ANALYSIS												
	Activity Scan	Tribrom - H3	See Item (1) in Special Instructions	ICP Metals - 6010A (TAL)	Gross Beta	Gamma Spectroscopy (Water)	Strontium-89,90					
Sample No.	Matrix *	Sample Date	Sample Time									
B0J1P1	Water	9-26-96	1330	X	X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	
Relinquished By <i>A.G. Rizzo</i>	Date/Time 9/26/96	Received By <i>K. Topp</i>	Date/Time 9/27/96
Relinquished By <i>K. Topp</i>	Date/Time 9/27/96	Received By	Date/Time
Relinquished By 0	Date/Time	Received By	Date/Time
Relinquished By 00	Date/Time	Received By	Date/Time

** Sample analysis for nitrate, nitrite, and phosphate by EPA 300.0 is being requested for information only. The ERC Contractor acknowledges the 48-hour holding time will not be met. The sample for ICP Metals is filtered.

(1) ICP Metals - 300.0 (Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate)

- Matrix ***
- S - Soil
 - SE - 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>[Signature]</i>	Title <i>Sample Custodian</i>	Date/Time 9-28-96 19:30
FINAL SAMPLE	Disposal Method	Disposed By	Date/Time

Collector <i>A. Rizza</i>	Company Contact J. V. Borghese	Telephone No. (509) 373-4790	Project Coordinator Koerner, CC	Data Turnaround 45 Days
Project Designation 100-NR-2 Groundwater Sampling - Round 10	Sampling Location 100 N	SAF No. B96-181		
Ice Chest No. <i>ER-26</i>	Field Logbook No. <i>ERL-1244</i>	Method of Shipment Federal Express		
Shipped To Lockheed	Offsite Property No. <i>W96-U-0314-10</i>	Bill of Lading/Air Bill No. <i>277 1632 957</i>		

POSSIBLE SAMPLE HAZARDS/REMARKS NA	Preservation	None	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	H2SO4 to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2		
	Type of Container	P	P	P	P	G	G	P		
	No. of Container(s)	1	1	1	1	4	4	4		1
Special Handling and/or Storage Maintain samples between 2 degrees C and 6 degrees C	Volume	20ml	500ml	500ml	1000ml	1000ml	1000ml	1000ml		

SAMPLE ANALYSIS				Activity Scab	See also (1) in Special Instructions	ICP Metals - 6010A (TAL)	Gross Beta	Oil & Grease - 4131	TPH (Total) - 4181	Selenium - 89.90		
Sample No.	Matrix *	Sample Date	Sample Time									
BOJ1P0	Water	9/26/96	1002	X	X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix *
Relinquished By <i>A. Rizza (ER)</i>	Date/Time 9/26/96 1630	Received By <i>K. Tapp / K. Tapp</i>	Date/Time 9/26/96 1630
Relinquished By <i>K. Tapp / K. Tapp</i>	Date/Time 9/27/96 1050	Received By	Date/Time
Relinquished By <i>0</i>	Date/Time	Received By	Date/Time
Relinquished By <i>0</i>	Date/Time	Received By	Date/Time

** Sample analysis for nitrate, nitrite, and phosphate by EPA 300.0 is being requested for information only. The ERC Contractor acknowledges the 48-hour holding time will not be met. The sample for ICP Metals is filtered.
(1) IC Anions - 300.0 (Chloride, Fluoride, Nitrogen as Nitrate, Nitrogen as Nitrate, Phosphate, Sulfate)

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

LABORATORY SECTION	Received By <i>[Signature]</i>	Title Sample Custodian	Date/Time 9-28-96 19:40
FINAL SAMPLE	Disposal Method	Disposed By	Date/Time

Environmental
Restoration
Contractor

ERC Team
Interoffice Memorandum

Job No. 22192
Written Agreement Required: NO
CON: N/A
O&H: N/A
TRD: N/A
ERAI: N/A
Subject Codes: 300

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 1.56×10^6 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.

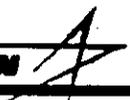
A copy of the most recent analytical data should be provided to the NRC licensed laboratory with the samples being shipped or if no data is available for new wells, the most recent data from adjacent wells.

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

Client	LAL	SDG		
Sample Number	Sample Number	Number	Matrix	Method
BOJ1P0	L8049-2		Water	SCREENING
	L8049-16		Water	300.0 CHLORIDE
	L8049-16		Water	300.0 NITRATE
	L8049-16		Water	300.0 NITRITE
	L8049-16		Water	300.0 PHOSPHATE
	L8049-16		Water	300.0 SULFATE
	L8049-16		Water	340.2 FLUORIDE
	L8049-17		Filt H2O	6010 ICP METALS
	L8049-17		Filt H2O	7000 FURNACE ME
	L8049-17		Filt H2O	7470 MERCURY
	L8049-21		Water	GROSS BETA LAL-
	L8049-31		Water	SR-90 LAL-0196
	L8049-35		Water	413.1 OIL AND C
L8049-39		Water	418.1 TPH	
BOJ1P1	L8049-3		Water	SCREENING
	L8049-14		Water	TRITIUM(H3) LAL
	L8049-15		Water	300.0 CHLORIDE
	L8049-15		Water	300.0 NITRATE
	L8049-15		Water	300.0 NITRITE
	L8049-15		Water	300.0 PHOSPHATE
	L8049-15		Water	300.0 SULFATE
	L8049-15		Water	340.2 FLUORIDE
	L8049-18		Filt H2O	6010 ICP METALS
	L8049-18		Filt H2O	7000 FURNACE ME
	L8049-18		Filt H2O	7470 MERCURY
	L8049-22		Water	GROSS BETA LAL-
	L8049-23		Water	GAMMA SPEC LAL-
L8049-27		Water	SR-90 LAL-0196	
BOJDW7	L8049-1		Water	NONE
	L8049-4		Water	NONE
	L8049-19		Water	NONE
BOJDW8	L8049-20		Water	NONE
BOJDW9	L8049-9		Water	NONE
REPORT TYPE	L8049-43		Water	EDD - DISK DEL.
	L8049-43		Water	GC2
	L8049-43		Water	GCMS2
	L8049-43		Water	INORG TYPE 4A F
	L8049-43		Water	RAD RPT TYPE 2
	L8049-43		Water	WOLF

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

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
80J1P0 -	L8049-2		Water	SCREENING -
	L8049-16		Water	300.0 CHLORIDE -
	L8049-16		Water	300.0 NITRATE -
	L8049-16		Water	300.0 NITRITE -
	L8049-16		Water	300.0 PHOSPHATE -
	L8049-16		Water	300.0 SULFATE -
	L8049-16		Water	340.2 FLUORIDE -
	L8049-17		Filt H2O	6010 ICP METALS -
	L8049-17		Filt H2O	7000 FURNACE ME -
	L8049-17		Filt H2O	7470 MERCURY -
	L8049-21		Water	GROSS BETA LAL-1
	L8049-31		Water	SR-90 LAL-0196
	L8049-35		Water	413.2 OIL AND G
L8049-39		Water	418.1 TPH -	
80J1P1 -	L8049-3		Water	SCREENING -
	L8049-14		Water	TRITIUM(H3) LAL
	L8049-15		Water	300.0 CHLORIDE -
	L8049-15		Water	300.0 NITRATE -
	L8049-15		Water	300.0 NITRITE -
	L8049-15		Water	300.0 PHOSPHATE -
	L8049-15		Water	300.0 SULFATE -
	L8049-15		Water	340.2 FLUORIDE -
	L8049-18		Filt H2O	6010 ICP METALS -
	L8049-18		Filt H2O	7000 FURNACE ME -
	L8049-18		Filt H2O	7470 MERCURY -
	L8049-22		Water	GROSS BETA LAL-1
	L8049-23		Water	GAMMA SPEC LAL-1
L8049-27		Water	SR-90 LAL-0196	
80JDW7 -	L8049-1		Water	SCREENING -
	L8049-4		Water	8240 VOLATILES -
	L8049-19		Water	6010 ICP METALS -
	L8049-19		Water	7000 FURNACE ME -
	L8049-19		Water	7470 MERCURY -
80JDW8	L8049-20		Water	6010 ICP METALS -
	L8049-20		Water	7000 FURNACE ME -
	L8049-20		Water	7470 MERCURY -
80JDW9	L8049-9		Water	8240 VOLATILES -
REPORT TYPE -	L8049-43		Water	EDD - DISK DEL.
	L8049-43		Water	GC2 -
	L8049-43		Water	GCMS2 -
	L8049-43		Water	INORG TYPE 4A R
	L8049-43		Water	RAD RPT TYPE 2
	L8049-43		Water	WOLF



NON-METALS

WATER

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0J1P1	Date Collected: 26-SEP-96
Matrix: Water	Date Received: 28-SEP-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Chloride	mg/L	300.0	2.3	0.020		03-OCT-96	42004	L8049-15
Nitrate-N	mg/L	300.0	2.2	0.020	H	03-OCT-96	41995	L8049-15
Nitrite-N	mg/L	300.0	< 0.002	0.010	HU	03-OCT-96	42005	L8049-15
Ortho Phosphate	mg/L	300.0	0.023	0.10	HB	10-OCT-96	42006	L8049-15
Sulfate	mg/L	300.0	45.	0.10		03-OCT-96	42007	L8049-15
Fluoride	mg/L	340.2	0.38	0.050		21-OCT-96	42008	L8049-15

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOJ1P0	Date Collected: 26-SEP-96
Matrix: Water	Date Received: 28-SEP-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Chloride	mg/L	300.0	22.	0.020		03-OCT-96	42004	L8049-16
Nitrate-N	mg/L	300.0	5.6	0.020	H	03-OCT-96	41995	L8049-16
Nitrite-N	mg/L	300.0	< 0.002	0.010	HU	03-OCT-96	42005	L8049-16
Ortho Phosphate	mg/L	300.0	0.070	0.10	HB	10-OCT-96	42006	L8049-16
Sulfate	mg/L	300.0	240	0.10		03-OCT-96	42007	L8049-16
Fluoride	mg/L	340.2	0.091	0.050		21-OCT-96	42008	L8049-16

**METALS
FILTERED WATER**

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOJ1P0	Date Collected: 26-SEP-96
Matrix: Filt H2O	Date Received: 28-SEP-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MOL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
ALUMINUM, DISSOLVED	mg/l	6010	< 0.048	0.048	0.20	U	1	23-OCT-96	42437	L8049-17
BARIUM, DISSOLVED	mg/l	6010	0.070	0.0080	0.20	B	1	23-OCT-96	42437	L8049-17
BERYLLIUM, DISSOLVED	mg/l	6010	< 0.0010	0.0010	0.0050	U	1	23-OCT-96	42437	L8049-17
CADMIUM, DISSOLVED	mg/l	6010	< 0.0030	0.0030	0.0050	U	1	23-OCT-96	42437	L8049-17
CALCIUM, DISSOLVED	mg/l	6010	140	0.010	5.0		1	23-OCT-96	42437	L8049-17
CHROMIUM, DISSOLVED	mg/l	6010	< 0.0060	0.0060	0.010	U	1	23-OCT-96	42437	L8049-17
COBALT, DISSOLVED	mg/l	6010	0.0097	0.0040	0.050	B	1	23-OCT-96	42437	L8049-17
COPPER, DISSOLVED	mg/l	6010	< 0.0060	0.0060	0.025	U	1	23-OCT-96	42437	L8049-17
IRON, DISSOLVED	mg/l	6010	0.0070	0.0060	0.10	B	1	23-OCT-96	42437	L8049-17
MAGNESIUM, DISSOLVED	mg/l	6010	23.	0.062	5.0		1	23-OCT-96	42437	L8049-17
MANGANESE, DISSOLVED	mg/l	6010	0.0020	0.0010	0.015	B	1	23-OCT-96	42437	L8049-17
NICKEL, DISSOLVED	mg/l	6010	< 0.012	0.012	0.040	U	1	23-OCT-96	42437	L8049-17
POTASSIUM, DISSOLVED	mg/l	6010	5.9	1.4	5.0		1	23-OCT-96	42437	L8049-17
SILVER, DISSOLVED	mg/l	6010	< 0.0060	0.0060	0.010	U	1	23-OCT-96	42437	L8049-17
SODIUM, DISSOLVED	mg/l	6010	50.	0.32	5.0		1	23-OCT-96	42437	L8049-17
VANADIUM, DISSOLVED	mg/l	6010	< 0.0060	0.0060	0.050	U	1	23-OCT-96	42437	L8049-17
ZINC, DISSOLVED	mg/l	6010	< 0.0030	0.0030	0.020	U	1	23-OCT-96	42437	L8049-17
ANTIMONY, DISSOLVED	mg/l	7041	< 0.0090	0.0090	0.060	U	1	05-NOV-96	42438	L8049-17
ARSENIC, DISSOLVED	mg/l	7060	< 0.0030	0.0030	0.010	U	1	28-OCT-96	42438	L8049-17
LEAD, DISSOLVED	mg/l	7421	< 0.0020	0.0020	0.0030	U	1	28-OCT-96	42438	L8049-17
SELENIUM, DISSOLVED	mg/l	7740	< 0.0030	0.0030	0.0050	NUW	1	28-OCT-96	42438	L8049-17
THALLIUM, DISSOLVED	mg/l	7840	< 0.0030	0.0030	0.010	UW	1	28-OCT-96	42438	L8049-17
MERCURY, DISSOLVED	mg/l	7470	< 0.00020	0.00020	0.00020	U	1	22-OCT-96	42439	L8049-17

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOJ1P1	Date Collected: 26-SEP-96
Matrix: Filt H2O	Date Received: 28-SEP-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
ALUMINUM, DISSOLVED	mg/l	6010	< 0.048	0.048	0.20	U	1	23-OCT-96	42437	L8049-18
BARIUM, DISSOLVED	mg/l	6010	0.023	0.0080	0.20	B	1	23-OCT-96	42437	L8049-18
BERYLLIUM, DISSOLVED	mg/l	6010	< 0.0010	0.0010	0.0050	U	1	23-OCT-96	42437	L8049-18
CADMIUM, DISSOLVED	mg/l	6010	< 0.0030	0.0030	0.0050	U	1	23-OCT-96	42437	L8049-18
CALCIUM, DISSOLVED	mg/l	6010	30.	0.010	5.0		1	23-OCT-96	42437	L8049-18
CHROMIUM, DISSOLVED	mg/l	6010	0.19	0.0060	0.010		1	23-OCT-96	42437	L8049-18
COBALT, DISSOLVED	mg/l	6010	0.0041	0.0040	0.050	B	1	23-OCT-96	42437	L8049-18
COPPER, DISSOLVED	mg/l	6010	< 0.0060	0.0060	0.025	U	1	23-OCT-96	42437	L8049-18
IRON, DISSOLVED	mg/l	6010	< 0.0060	0.0060	0.10	U	1	23-OCT-96	42437	L8049-18
MAGNESIUM, DISSOLVED	mg/l	6010	15.	0.062	5.0		1	23-OCT-96	42437	L8049-18
MANGANESE, DISSOLVED	mg/l	6010	0.0032	0.0010	0.015	B	1	23-OCT-96	42437	L8049-18
NICKEL, DISSOLVED	mg/l	6010	< 0.012	0.012	0.040	U	1	23-OCT-96	42437	L8049-18
POTASSIUM, DISSOLVED	mg/l	6010	4.6	1.4	5.0	B	1	23-OCT-96	42437	L8049-18
SILVER, DISSOLVED	mg/l	6010	< 0.0060	0.0060	0.010	U	1	23-OCT-96	42437	L8049-18
SODIUM, DISSOLVED	mg/l	6010	23.	0.32	5.0		1	23-OCT-96	42437	L8049-18
VANADIUM, DISSOLVED	mg/l	6010	0.017	0.0060	0.050	B	1	23-OCT-96	42437	L8049-18
ZINC, DISSOLVED	mg/l	6010	< 0.0030	0.0030	0.020	U	1	23-OCT-96	42437	L8049-18
ANTIMONY, DISSOLVED	mg/l	7041	< 0.0090	0.0090	0.060	UW	1	05-NOV-96	42438	L8049-18
ARSENIC, DISSOLVED	mg/l	7060	0.0064	0.0030	0.010	B	1	28-OCT-96	42438	L8049-18
LEAD, DISSOLVED	mg/l	7421	< 0.0020	0.0020	0.0030	U	1	28-OCT-96	42438	L8049-18
SELENIUM, DISSOLVED	mg/l	7740	< 0.0030	0.0030	0.0050	NUW	1	28-OCT-96	42438	L8049-18
THALLIUM, DISSOLVED	mg/l	7840	< 0.0030	0.0030	0.010	U	1	28-OCT-96	42438	L8049-18
MERCURY, DISSOLVED	mg/l	7470	< 0.00020	0.00020	0.00020	U	1	22-OCT-96	42439	L8049-18

LOCKHEED ANALYTICAL SERVICES

TOTAL PETROLEUM HYDROCARBONS BY FTIR
418.1 TPH

Client Sample ID:	B0J1P0	LAL Sample ID:	L8049-39
Date Collected:	26-SEP-96	Date Received:	28-SEP-96
Date Analyzed:	15-OCT-96	Analytical Batch ID:	101596PM-418.1
Date Extracted:	15-OCT-96	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	1.0
		QC Group:	418.1 TPH_42573

CONSTITUENT	CAS NO.	RESULT mg/L	MDL mg/L	PQL/RDL mg/L	DATA QUALIFIER
TRPH		<1.0	0.20	1.0	

LOCKHEED ANALYTICAL SERVICES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS BY FTIR

Client Sample ID:	BOJ1P0	LAL Sample ID:	42573MS
Date Collected:	26-SEP-96	Date Received:	28-SEP-96
Date Analyzed:	15-OCT-96	Analytical Batch ID:	101596PM-418.1
Date Extracted:	15-OCT-96	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	418.1 TPH_42573

CONSTITUENT	CAS NO.	RESULT mg/L	MDL mg/L	PQL/RDL mg/L	DATA QUALIFIER(S)
TRPH		2.3	0.20	1.0	

LOCKHEED ANALYTICAL SERVICES

SPIKED SAMPLE RESULT TOTAL PETROLEUM HYDROCARBONS BY FTIR

Client Sample ID:	BOJ1P0	LAL Sample ID:	42573MSD
Date Collected:	26-SEP-96	Date Received:	28-SEP-96
Date Analyzed:	15-OCT-96	Analytical Batch ID:	101596PM-418.1
Date Extracted:	15-OCT-96	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	418.1 TPH_42573

CONSTITUENT	CAS NO.	RESULT mg/L	MDL mg/L	PQL/RDL mg/L	DATA QUALIFIER (:
TRPH		2.3	0.20	1.0	

LOCKHEED ANALYTICAL SERVICES

OIL AND GREASE - GRAVIMETRIC METHOD 413.1 OIL AND GREASE

Client Sample ID:	BOJ1P0	LAL Sample ID:	L8049-35
Date Collected:	26-SEP-96	Date Received:	28-SEP-96
Date Analyzed:	08-OCT-96	Analytical Batch ID:	100896AM-413.1
Date Extracted:	08-OCT-96	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	1.0
		QC Group:	413.1 OIL AND GREASE_42319

CONSTITUENT	CAS NO.	RESULT	MDL	PQL/RDL	DATA QUALIFIER(S)
Oil and Grease	10-30-0	<5.0	2.0	5.0	

RADIOCHEMISTRY

085

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. * Richland, WA

Project Name: BECHTEL-HANFORD

Project Desc: Bechtel Hanford Project

Client Sample ID: BOJ1P1

Date Collected: 26-SEP-96

Matrix: Water

Login Number: L8049

Date Received: 28-SEP-96

Constituent	Method	Batch	Activity	Error	NDA	Qualifier	Units	Analyzed	Lab ID
H-3	LAL-0066	42432	42600	2500	230		pCi/L	08-NOV-96	L8049-14

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. * Richland, WA

Project Name: BECHTEL-HANFORD

Project Desc: Bechtel Hanford Project

Client Sample ID: BOJ1PO

Date Collected: 26-SEP-96

Matrix: Water

Login Number: L8049

Date Received: 28-SEP-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	LAB ID
Gross Beta	LAL-0060	42721	834.	45.	4.9	C	pCi/L	22-OCT-96	L8049-21

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. * Richland, WA
Project Name: BECTEL-HANFORD
Project Desc: Bechtel Hanford Project

Client Sample ID: BOJ1P1
Date Collected: 26-SEP-96
Matrix: Water

Login Number: L8049
Date Received: 28-SEP-96

CONSTITUENT	METHOD	BATCH	ACTIVITY	ERR%	MDA	QUALIFIER	UNITS	ANALYZED	LAB
Gross Beta	LAL-0060	42721	6.0	1.7	2.3		pCi/L	22-OCT-96	L8049-22

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. * Richland, WA

Project Name: BECHTEL-HANFORD

Project Desc: Bechtel Hanford Project

Client Sample ID: B0J1P1
Date Collected: 26-SEP-96
Matrix: Water

Login Number: L8049
Date Received: 28-SEP-96

Constituent	Method	Batch	Activity	Effec	MDA	Qualifier	Units	Analyzed	Lab ID
Ac-228(Ra-228)	LAL-0063	42723	-16.	17.	44.		pCi/L	24-OCT-96	L8049-23
Co-58	LAL-0063	42723	-3.5	6.1	11.		pCi/L	24-OCT-96	L8049-23
Co-60	LAL-0063	42723	-1.6	1.5	7.4		pCi/L	24-OCT-96	L8049-23
Ca-137	LAL-0063	42723	0.3	7.3	9.3		pCi/L	24-OCT-96	L8049-23
Eu-152	LAL-0063	42723	-10.1	7.9	45.		pCi/L	24-OCT-96	L8049-23
Eu-154	LAL-0063	42723	-23.	10.	50.		pCi/L	24-OCT-96	L8049-23
Eu-155	LAL-0063	42723	-3.9	5.8	18.		pCi/L	24-OCT-96	L8049-23
Fe-59	LAL-0063	42723	-5.6	6.1	26.		pCi/L	24-OCT-96	L8049-23
Pb-212	LAL-0063	42723	-8.	11.	16.		pCi/L	24-OCT-96	L8049-23
Pb-214(Ra-226)	LAL-0063	42723	-6.	13.	21.		pCi/L	24-OCT-96	L8049-23
Ra-226(GAMMA)	LAL-0063	42723	0.00	130	170		pCi/L	24-OCT-96	L8049-23
Ru-106	LAL-0063	42723	7.	62.	81.		pCi/L	24-OCT-96	L8049-23
U-235(GAMMA)	LAL-0063	42723	2.	31.	45.		pCi/L	24-OCT-96	L8049-23

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. * Richland, WA

Project Name: BECHTEL-HANFORD

Project Desc: Bechtel Hanford Project

Client Sample ID: BOJ1P1

Date Collected: 26-SEP-96

Matrix: Water

Login Number: L8049

Date Received: 28-SEP-96

Constituent	Method	Batch	Activity	Error	MBA	Qualifier	Units	Analyzed	Lab ID
Sr-89,90	LAL-0196	42720	0.49	0.44	0.73		pCi/L	25-OCT-96	L8049-27

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. * Richland, WA
Project Name: BECTEL-HANFORD
Project Desc: Bechtel Hanford Project

Client Sample ID: BOJ1PO
Date Collected: 26-SEP-96
Matrix: Water

Login Number: L8049
Date Received: 28-SEP-96

Constituent	Method	Batch	Activity	Elem	MVA	Qualifier	Units	Analyzdate	LAB ID
Sr-89,90	LAL-0196	42720	420.	21.	0.77		pCi/L	25-OCT-96	L8049-31