

LK 7550

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

0048950



September 27, 1996



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

RE:	Log-in No.:	L7550/L7561
	Quotation No.:	Q400000-B
	SAF:	B96-142
	Document File No.:	0730596D/0801596
	BHI Document File No.:	392
	SDG No.:	LK7550

L7550 The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on July 30, 1996. The temperature of the cooler upon receipt was 15°C. Sample containers received coincided with the chain-of-custody documentation. All sample containers were received intact. Samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

L7561 The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on August 1, 1996. The temperatures of the four coolers upon receipt were 2, 3, 4, and 4°C. Sample containers received did not all coincide with the chain-of-custody documentation. All sample containers were received intact. Samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

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.

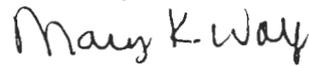
Lockheed Analytical Services

Log-in No.: L7550/L7561
Quotation No.: Q400000-B
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If you have any questions concerning the analysis or the data please call Mary Wolf at (702) 361-3955, extension 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

Sample Disposition Record

Control #: B96-0128
Revision #: 0
Date Initiated: 09/10/96

Section 1 - BACKGROUND

SAF #: B96-142
OU: N/A
Project ID: 100N 90-Day Pad
Task ID: 1
Sampling Event: 109N Unknown Wastes -- Oil
Laboratory: Lockheed
Project Coordinator: C. C. Koerner
Task Manager: D. W. Eckert

Section 2 - SAMPLE INFORMATION

Number of Samples: 1
ID Numbers: B0HXX1
Matrix: Other Solid
Collection Date: 07/29/96

Section 3 - ISSUE

Class: Lab Direction
NCR Number: N/A
Type: Revision of Direction
Description: Chain of Custody associated with sample number B0HXX1 indicated containers and requested analyses for gamma spec, gross alpha/gross beta. Lockheed received sample number B0HXX1 but did not received a container for gamma spec, gross alpha/gross beta analyses.

N/A

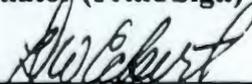
NCR Validation (Print/Sign)	Date
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Section 4 - DISPOSITION

Type: Reject
Description: Lockheed is directed to cancel the gamma spec, gross alpha/gross beta analyses for sample number B0HXX1.

C. C. Koerner/ 	9-10-96
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Project Coordinator (Print/Sign)	Date
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D. W. Eckert/ 	9/10/96
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Task Manager (Print/Sign)	Date
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N/A

QA (Print/Sign)	Date
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Section 5 - INSPECTION (Issue Class: Nonconformance Only)

Inspection Number: N/A
Inspection Results: N/A

N/A

Inspector (Print/Sign)	Date
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**CASE NARRATIVE
 INORGANIC NON METALS ANALYSES**

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

Preparation and Analysis Requirements

- Six liquid waste and two solid waste samples were received for LK7550 and analyzed in batches 730 bh4 and 730 bh5 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
Liquid Waste			
BOHXW6	L7550-28	DUP, MS	335.2 Total Cyanide
BOHXW5	L7550-33	DUP, MS	9030 Sulfide
BOHYM8	L7550-28	DUP	9041 pH
Solid Waste			
BOHXX3	L7550-2	DUP, MS	335.2 Total Cyanide
	L7550-2	DUP	9041 pH
N/A	N/A	N/A	1010 Ignitability

Holding Time Requirements

- The samples were received and analyzed within method-specific holding time except for the following:

For Method 9041 pH the samples were received and analyzed outside of the method-specific holding time and the associated samples are flagged with an "H".

For Method 335.2 Total Cyanide and Method 9030 Sulfide, due to the client-specified sequence of analyses, these samples were analyzed outside of the method-specific holding time and the associated samples are flagged with an "H".

Method Blanks

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

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Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Samples

- For Method 335.2 Total Cyanide and 9030 Sulfide the samples were logged in with a matrix of liquid waste. However, as the samples were oil and grease, the matrix spike, sample duplicate and samples are reported in mg/kg.
- The solid waste samples are reported on an as received basis.

Kay McCann
Prepared By

September 4, 1996
Date

**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

- Six liquid waste and one solid waste samples were received for LK7561 and analyzed in batches 730 bh4 and 730 bh5 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
Liquid Waste			
BOHXX4	L7561-29	DUP, MS	335.2 Total Cyanide
	L7561-36	DUP, MS	9030 Sulfide
BOHYM8	L7561-28	DUP	9041 pH
Solid Waste			
BOHXX1	L7561-31	DUP, MS	335.2 Total Cyanide
	L7561-38	DUP, MS	9030 Sulfide
	L7561-31	DUP	9041 pH
N/A	N/A	N/A	1010 Ignitability

Holding Time Requirements

- The samples were received and analyzed within method-specific holding time except for the following:

For Method 9041 pH the samples were received and analyzed outside of the method-specific holding time and the associated samples are flagged with an "H".

For Method 9030 Sulfide, due to the client-specified sequence of analyses, these samples were analyzed outside of the method-specific holding time and the associated samples are flagged with an "H".

Method Blanks

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

Internal Quality Control

- All Internal Quality Control were within acceptance limits with the following exception:

For Method 9030 Sulfide for solid waste, the matrix spike recovery exceeded the 75-125% acceptance limit. However, the LCS recovery was within criteria (92.5%) indicating the system was under control. The associated sample is flagged with an "N".

Samples

- For Method 335.2 Total Cyanide and 9030 Sulfide the samples were logged in with a matrix of liquid waste. However, as the samples were oil and grease, the matrix spike, sample duplicate and samples are reported in mg/kg.
- The solid waste samples are reported on an as received basis.

Kay McCann
Prepared By

September 4, 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), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on July 30, and August 1, 1996. The samples were logged in as L7550 and L7761 and were prepared and analyzed in batch 730 bh4 for TCLP metals. The samples were analyzed by Method 6010A ICP Trace and Method 7470 Mercury.

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.
- The LCS for silver recovered 79% of its true value. All silver results were below the Reporting Detection Limit and the matrix spike recovery of 91.4% indicates the slightly low bias of the LCS does not affect the results, therefore, redigestion was not performed.

Sample Results

- The liquid waste samples were prepared as a solid and the density was determined in order to report the results in mg/L.

Shellee McGrath
Prepared By

September 25, 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), and duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on August 1, 1996. The samples were logged in as L7661 and were prepared and analyzed in batch 730 bh2 for TCLP metals. The samples were analyzed by Method 6010A ICP Trace and Method 7470 Mercury.

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

September 27, 1996
Date

**CASE NARRATIVE
ORGANIC ANALYSES**

Analytical Method 8080 Pesticides/PCBs

The associated samples were analyzed in three analytical batches.

Analytical Batch 080596-8080-E-4 (Liquid Waste)

NOTE: Client sample BOHXW5 (L7550-15) was very acidic and required a proportionally large volume of sodium hydroxide to bring the pH to 6.0. When the sample was extracted the sample was biphasic. Equal amounts of both phases were taken for analysis. Even then the native sample reacted differently than the Matrix Spike (39818MS) and Matrix Spike Duplicate (39818MSD).

Client sample BOHXW5 (L7550-15) was the native sample used for the 39818MS and 39818MSD.

The Laboratory Control Sample (39818LCS) contained several compounds in addition to the six (6) required spike compounds.

The samples were extracted within the required holding time on August 5, 1996 and analyzed within the required holding time on August 8, 1996. All initial and continuing calibrations met criteria except for 4,4'-DDD, Methoxychlor, and D-BHC in the beginning continuing and Dieldrin and Endrin Aldehyde in the ending continuing calibrations. There were no compounds detected in client sample BOHXW5 (L7550-15) and we believe that data quality was unaffected. There were no target compounds detected in the Method Blank (39818). Surrogate recoveries were within QC limits except for DCB in samples BOHXW5 (L7550-15) and 39818MSD due to matrix interference. Compound recoveries were within QC limits in the 39818MS and 39818MSD except for 4,4'-DDT, Dieldrin, and Endrin due to matrix interference. Compound recoveries were within QC limits in the 39818LCS. The Relative Percent Differences (RPDs) between the 39818MS and 39818MSD recoveries were within QC limits except for Endrin.

Analytical Batch 081196-8080-E-5 (Solid Waste)

NOTE: Client sample BOHXX3 (L7550-2) was the native sample used for the 39838MS and 39838MSD.

The 39838MS, 39838MSD, and 39838LCS contained several compounds in addition to the six (6) required spike compounds.

Due to the nature of the samples, a reduced sample size of 0.2 grams was

extracted.

The samples were extracted within the required holding time on August 6, 1996 and analyzed within the required holding time on August 15 and 16, 1996. All initial and continuing calibrations met criteria except for most of the compounds in the ending continuing calibration. There were no compounds detected in the associated client samples and we believe that data quality was unaffected. There were no target compounds detected in the 39838MB. Surrogate recoveries were within QC limits except for DCB in client sample BOHXX1 (L7561-17). Compound recoveries were within QC limits in the 39838MS, 39838MSD, and 39838LCS except for Dieldrin in the 39838MSD. The RPDs between the 39838MS and 39838MSD recoveries were within QC limits.

Analytical Batch 081696-8080-C-1 (Liquid Waste)

NOTE: The 39875LCS contained several compounds in addition to the six (6) required spike compounds.

The continuing calibrations which follow the samples have responses which are below criteria. The samples analyzed in this analytical batch were analyzed in a prior analytical batch with similar ending continuing calibration results. The low continuing calibration responses are attributed to the sample matrix influence on the chromatographic system.

The samples were extracted within the required holding time on August 6, 1996 and analyzed within the required holding time on August 17 and 18, 1996. All initial and continuing calibrations met criteria except for all of the compounds in the ending continuing calibration. There were no compounds detected in the associated client samples and we believe that data quality was unaffected. There were no target compounds detected in the 39875MB. Surrogate recoveries were within QC limits. Compound recoveries were within QC limits in the 39875LCS. Refer to analytical batch 082096-8080-C-1 for the associated 39875MS and 39875MSD results.

Analytical Batch 082096-8080-C-1 (Liquid Waste)

NOTE: Client sample BOHYM7 (L7561-20) was the native sample used for the 39875MS and 39875MSD.

The 39875MS and 39875MSD contained several compounds in addition to the six (6) required spike compounds.

The continuing calibrations which follow the samples have responses which are below criteria. The samples analyzed in this analytical batch were analyzed in

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a prior analytical batch with similar ending continuing calibration results. The low continuing calibration responses are attributed to the sample matrix influence on the chromatographic system.

The samples were extracted within the required holding time on August 6, 1996 and analyzed within the required holding time on August 21, 1996. All initial and continuing calibrations met criteria except for 4,4'-DDD, 4,4'-DDT, and Endrin Aldehyde in the ending continuing calibration. There were no compounds detected in the associated client samples and we believe that data quality was unaffected. Refer to analytical batch 081696-8080-C-1 for the associated 39875MB and 39875LCS results. Surrogate recoveries were within QC limits except for TCMX in client sample BOHXX4 (L7561-15). Compound recoveries were within QC limits in the 39875MS and 39875MSD. The RPDs between the 39875MS and 39875MSD recoveries were within QC limits.

Prepared By
Patricia Lonergan

September 27, 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.

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 39711. The instrument calibration verification met criteria. The method blank was within QC criteria with the exception of uranium-235(GAMMA). Since all other QC criteria were met, data quality is not believed to be adversely affected. The samples associated with this method blank were flagged with a "B" qualifier. The laboratory control sample (LCS) recoveries were within QC criteria. The duplicate (DUP) recoveries were within QC criteria. The sample minimum detectable activities were greater than the reporting detection limit due to a limited aliquot volume available for analysis. No re-analyses were performed.

Analytical Method Gross Alpha/Beta

The gross alpha/beta analysis was performed using SOP, LAL-91-SOP-0060. The samples were analyzed in workgroups 39816 and 40473. The samples analyzed in workgroup 39816 were re-analyzed in workgroup 40473 due to the beta DUP and matrix spike (MS) results being out of QC criteria. No analyses from workgroup 39816 were reported. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS recoveries were within QC criteria. The alpha MS recovery was out of QC criteria; since the beta MS recovery and all other QC criteria were met, data quality is not believed to be adversely affected. The DUP recoveries were within QC criteria. No other re-analyses were performed.

Andrea Tippett
Prepared By

September 16, 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.

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 29 1996, 08:03 am

Login Number: L7550
 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
L7550-1 TEMP 15 Location: EXPENDED SolidWaste 8 S 1010 IGNITABILITY SolidWaste 8 S SCREENING	BOHXX2	23-JUL-96	30-JUL-96	14-AUG-96
L7550-2 TEMP 15 Location: EXPENDED SolidWaste 8 S 1010 IGNITABILITY SolidWaste 8 S 335.2 CYANIDE TOTAL SolidWaste 8 S 8080 PEST/PCBS SolidWaste 8 S 9045 PH SolidWaste 8 S SCREENING	BOHXX3	23-JUL-96	30-JUL-96	14-AUG-96
L7550-3 TEMP 15 Location: RFG01-43C Liq. Waste 7 S SCREENING	BOHXX5	22-JUL-96	30-JUL-96	14-AUG-96
L7550-4 TEMP 15 Location: RFG01-43C Liq. Waste 7 S SCREENING	BOHXX6	23-JUL-96	30-JUL-96	14-AUG-96
L7550-5 TEMP 15 Location: RFG01-43C Liq. Waste 7 S SCREENING	BOHXX7	23-JUL-96	30-JUL-96	14-AUG-96
L7550-6 TEMP 15 Location: RFG01-43C Liq. Waste 7 S SCREENING	BOHXX8	23-JUL-96	30-JUL-96	14-AUG-96
L7550-7 TEMP 15 Location: RFG01-43C Liq. Waste 7 S SCREENING	BOHXX9	23-JUL-96	30-JUL-96	14-AUG-96
L7550-8 TEMP 15 Location: RFG01-43C Liq. Waste 7 S SCREENING	BOHXX0	23-JUL-96	30-JUL-96	14-AUG-96

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 29 1996, 08:03 am

Login Number: L7550
 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
L7550-9 TEMP 15 60mls Location: RFG19-135A Liq. Waste 7 S 1010	BOHXW5 IGNITABILITY	22-JUL-96	30-JUL-96	14-AUG-96
	Hold:29-JUL-96			
L7550-10 TEMP 15 60mls Location: RFG19-135A Liq. Waste 7 S 1010	BOHXW6 IGNITABILITY	23-JUL-96	30-JUL-96	14-AUG-96
	Hold:30-JUL-96			
L7550-11 TEMP 15 60mls Location: RFG19-135A Liq. Waste 7 S 1010	BOHXW7 IGNITABILITY	23-JUL-96	30-JUL-96	14-AUG-96
	Hold:30-JUL-96			
L7550-12 TEMP 15 60mls Location: RFG19-135A Liq. Waste 7 S 1010	BOHXW9 IGNITABILITY	23-JUL-96	30-JUL-96	14-AUG-96
	Hold:30-JUL-96			
L7550-13 TEMP 15 60mls Location: RFG19-135A Liq. Waste 7 S 1010	BOHXW8 IGNITABILITY	23-JUL-96	30-JUL-96	14-AUG-96
	Hold:30-JUL-96			
L7550-14 TEMP 15 60mls Location: RFG19-135A Liq. Waste 7 S 1010	BOHXX0 IGNITABILITY	23-JUL-96	30-JUL-96	14-AUG-96
	Hold:30-JUL-96			
L7550-15 TEMP 15 60mls Location: RFG19-105B Liq. Waste 7 S 8080	BOHXW5 PEST/PCBS	22-JUL-96	30-JUL-96	14-AUG-96
	Hold:05-AUG-96			
L7550-16 TEMP 15 60mls Location: RFG19-105B Liq. Waste 7 S 8080	BOHXW6 PEST/PCBS	23-JUL-96	30-JUL-96	14-AUG-96
	Hold:06-AUG-96			
L7550-17 TEMP 15 60mls Location: RFG19-105B Liq. Waste 7 S 8080	BOHXW7 PEST/PCBS	23-JUL-96	30-JUL-96	14-AUG-96
	Hold:06-AUG-96			

0020
 C7305460

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 29 1996, 08:03 am

Login Number: L7550
 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
L7550-18 TEMP 15 60mls Location: RFG19-105B Liq. Waste 7 S 8080	BOHXW9 PEST/PCBS	23-JUL-96	30-JUL-96	14-AUG-96
			Hold:06-AUG-96	
L7550-19 TEMP 15 60mls Location: RFG19-105B Liq. Waste 7 S 8080	BOHXW8 PEST/PCBS	23-JUL-96	30-JUL-96	14-AUG-96
			Hold:06-AUG-96	
L7550-20 TEMP 15 60mls Location: RFG19-105B Liq. Waste 7 S 8080	BOHXX0 PEST/PCBS	23-JUL-96	30-JUL-96	14-AUG-96
			Hold:06-AUG-96	
L7550-21 TEMP 15 Location: 133 Liq. Waste 7 S 1311 TCLP Extr 13 S 6010A TCLP Extr 13 S 7470 Liq. Waste 7 S 9041	BOHXW5 TCLP REG. EXTR. ICP TRACE MERCURY PH	22-JUL-96	30-JUL-96	14-AUG-96
			Hold:05-AUG-96	
			Hold:18-JAN-97	
			Hold:19-AUG-96	
			Hold:29-JUL-96	
L7550-22 TEMP 15 Location: 133 Liq. Waste 7 S 1311 TCLP Extr 13 S 6010A TCLP Extr 13 S 7470 Liq. Waste 7 S 9041	BOHXW6 TCLP REG. EXTR. ICP TRACE MERCURY PH	23-JUL-96	30-JUL-96	14-AUG-96
			Hold:06-AUG-96	
			Hold:19-JAN-97	
			Hold:20-AUG-96	
			Hold:30-JUL-96	
L7550-23 TEMP 15 Location: 133 Liq. Waste 7 S 1311 TCLP Extr 13 S 6010A TCLP Extr 13 S 7470 Liq. Waste 7 S 9041	BOHXW7 TCLP REG. EXTR. ICP TRACE MERCURY PH	23-JUL-96	30-JUL-96	14-AUG-96
			Hold:06-AUG-96	
			Hold:19-JAN-97	
			Hold:20-AUG-96	
			Hold:30-JUL-96	
L7550-24 TEMP 15 Location: 133 Liq. Waste 7 S 1311 TCLP Extr 13 S 6010A	BOHXW8 TCLP REG. EXTR. ICP TRACE	23-JUL-96	30-JUL-96	14-AUG-96
			Hold:06-AUG-96	
			Hold:19-JAN-97	

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 29 1996, 08:03 am

Login Number: L7550
 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
TCLP Extr 13 S 7470 Liq. Waste 7 S 9041 PH	MERCURY	Hold:20-AUG-96 Hold:30-JUL-96		
L7550-25 TEMP 15 Location: 133	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1311 TCLP Extr 13 S 6010A TCLP Extr 13 S 7470 Liq. Waste 7 S 9041 PH	TCLP REG. EXTR. ICP TRACE MERCURY PH	Hold:06-AUG-96 Hold:19-JAN-97 Hold:20-AUG-96 Hold:30-JUL-96		
L7550-26 TEMP 15 Location: 133	BOHXX0	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1311 TCLP Extr 13 S 6010A TCLP Extr 13 S 7470 Liq. Waste 7 S 9041 PH	TCLP REG. EXTR. ICP TRACE MERCURY PH	Hold:06-AUG-96 Hold:19-JAN-97 Hold:20-AUG-96 Hold:30-JUL-96		
L7550-27 TEMP 15 60mls Location: RFG19-135A	BOHXW5	22-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 335.2	CYANIDE TOTAL	Hold:05-AUG-96		
L7550-28 TEMP 15 60mls Location: RFG19-135A	BOHXW6	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 335.2	CYANIDE TOTAL	Hold:06-AUG-96		
L7550-29 TEMP 15 60mls Location: RFG19-135A	BOHXW7	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 335.2	CYANIDE TOTAL	Hold:06-AUG-96		
L7550-30 TEMP 15 60mls Location: RFG19-135A	BOHXW8	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 335.2	CYANIDE TOTAL	Hold:06-AUG-96		
L7550-31 TEMP 15 60mls Location: RFG19-135A	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 335.2	CYANIDE TOTAL	Hold:06-AUG-96		

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 10:31 am

Login Number: L7550
 Account: 596 Bechtel Hanford, Inc. * Richland, WA
 Project: BECTEL-HANFORD Bechtel Hanford Project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L7550-1 TEMP 15 Location: 156TMP-2	BOHXX2	23-JUL-96	30-JUL-96	14-AUG-96
SolidWaste 8 S 1010 IGNITABILITY		Hold:30-JUL-96		
SolidWaste 8 S 1311 TCLP REG. EXTR.		Hold:06-AUG-96		
SolidWaste 8 S 335.2 CYANIDE TOTAL		Hold:06-AUG-96		
*TCLP Extr 13 S 6010A ICP TRACE		Hold:19-JAN-97		
TCLP Extr 13 S 7470 MERCURY		Hold:20-AUG-96		
SolidWaste 8 S 8080 PEST/PCBS		Hold:06-AUG-96		
SolidWaste 8 S 9030 SULFIDE		Hold:30-JUL-96		
SolidWaste 8 S 9045 PH		Hold:30-JUL-96		
SolidWaste 8 S SCREENING				
L7550-2 TEMP 15 Location: 156TMP-2	BOHXX3	23-JUL-96	30-JUL-96	14-AUG-96
SolidWaste 8 S 1010 IGNITABILITY		Hold:30-JUL-96		
SolidWaste 8 S 1311 TCLP REG. EXTR.		Hold:06-AUG-96		
SolidWaste 8 S 335.2 CYANIDE TOTAL		Hold:06-AUG-96		
*TCLP Extr 13 S 6010A ICP TRACE		Hold:19-JAN-97		
TCLP Extr 13 S 7470 MERCURY		Hold:20-AUG-96		
SolidWaste 8 S 8080 PEST/PCBS		Hold:06-AUG-96		
SolidWaste 8 S 9030 SULFIDE		Hold:30-JUL-96		
SolidWaste 8 S 9045 PH		Hold:30-JUL-96		
SolidWaste 8 S SCREENING				
L7550-3 TEMP 15 Location: 156TMP-2	BOHXX5	22-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S SCREENING		Hold:18-JAN-97		
L7550-4 TEMP 15 Location: 156TMP-2	BOHXX6	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S SCREENING		Hold:19-JAN-97		
L7550-5 TEMP 15 Location: 156TMP-2	BOHXX7	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S SCREENING		Hold:19-JAN-97		
L7550-6 TEMP 15 Location: 156TMP-2	BOHXX8	23-JUL-96	30-JUL-96	14-AUG-96

* Changed to Icp Trace per Kathleen Hall. Page 1

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 10:31 am

Login Number: L7550
 - 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
Liq. Waste 7 S SCREENING		Hold:19-JAN-97		
L7550-7 TEMP 15 Location: 156TMP-2	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S SCREENING		Hold:19-JAN-97		
L7550-8 TEMP 15 Location: 156TMP-2	BOHXX0	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S SCREENING		Hold:19-JAN-97		
L7550-9 TEMP 15 60mls Location: RFG02-25B	BOHXW5	22-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1010 IGNITABILITY		Hold:29-JUL-96		
Liq. Waste 7 S 9040 PH		Hold:29-JUL-96		
L7550-10 TEMP 15 60mls Location: 156CART-8	BOHXW6	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1010 IGNITABILITY		Hold:30-JUL-96		
Liq. Waste 7 S 9040 PH		Hold:30-JUL-96		
L7550-11 TEMP 15 60mls Location: 156CART-8	BOHXW7	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1010 IGNITABILITY		Hold:30-JUL-96		
Liq. Waste 7 S 9040 PH		Hold:30-JUL-96		
L7550-12 TEMP 15 60mls Location: 156CART-8	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1010 IGNITABILITY		Hold:30-JUL-96		
Liq. Waste 7 S 9040 PH		Hold:30-JUL-96		
L7550-13 TEMP 15 60mls Location: 156CART-8	BOHXW8	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1010 IGNITABILITY		Hold:30-JUL-96		
Liq. Waste 7 S 9040 PH		Hold:30-JUL-96		

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (1n01)
 Aug 02 1996, 10:31 am

Login Number: L7550
 - 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
L7550-14 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 1010 Liq. Waste 7 S 9040	BOHXX0 IGNITABILITY PH	23-JUL-96	30-JUL-96	14-AUG-96
		Hold:30-JUL-96		
		Hold:30-JUL-96		
L7550-15 TEMP 15 60mls Location: RFG02-25B Liq. Waste 7 S 8080	BOHXX5 PEST/PCBS	22-JUL-96	30-JUL-96	14-AUG-96
		Hold:05-AUG-96		
L7550-16 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 8080	BOHXX6 PEST/PCBS	23-JUL-96	30-JUL-96	14-AUG-96
		Hold:06-AUG-96		
L7550-17 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 8080	BOHXX7 PEST/PCBS	23-JUL-96	30-JUL-96	14-AUG-96
		Hold:06-AUG-96		
L7550-18 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 8080	BOHXX9 PEST/PCBS	23-JUL-96	30-JUL-96	14-AUG-96
		Hold:06-AUG-96		
L7550-19 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 8080	BOHXX8 PEST/PCBS	23-JUL-96	30-JUL-96	14-AUG-96
		Hold:06-AUG-96		
L7550-20 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 8080	BOHXX0 PEST/PCBS	23-JUL-96	30-JUL-96	14-AUG-96
		Hold:06-AUG-96		
*L7550-21 TEMP 15 Location: RFG02-25B Liq. Waste 7 S 1311 TCLP Extr 13 S 6010A TCLP Extr 13 S 7470	BOHXX5 TCLP REG. EXTR. ICP TRACE MERCURY	22-JUL-96	30-JUL-96	14-AUG-96
		Hold:05-AUG-96		
		Hold:18-JAN-97		
		Hold:19-AUG-96		

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 10:31 am

Login Number: L7550
 - 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
*L7550-22 TEMP 15 Location: 156CART-8 Liq. Waste 7 S 1311 TCLP REG. EXTR. TCLP Extr 13 S 6010A ICP TRACE TCLP Extr 13 S 7470 MERCURY	BOHXW6	23-JUL-96	30-JUL-96	14-AUG-96
*L7550-23 TEMP 15 Location: 156CART-8 Liq. Waste 7 S 1311 TCLP REG. EXTR. TCLP Extr 13 S 6010A ICP TRACE TCLP Extr 13 S 7470 MERCURY	BOHXW7	23-JUL-96	30-JUL-96	14-AUG-96
*L7550-24 TEMP 15 Location: 156CART-8 Liq. Waste 7 S 1311 TCLP REG. EXTR. TCLP Extr 13 S 6010A ICP TRACE TCLP Extr 13 S 7470 MERCURY	BOHXW8	23-JUL-96	30-JUL-96	14-AUG-96
*L7550-25 TEMP 15 Location: 156CART-8 Liq. Waste 7 S 1311 TCLP REG. EXTR. TCLP Extr 13 S 6010A ICP TRACE TCLP Extr 13 S 7470 MERCURY	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
*L7550-26 TEMP 15 Location: 156CART-8 Liq. Waste 7 S 1311 TCLP REG. EXTR. TCLP Extr 13 S 6010A ICP TRACE TCLP Extr 13 S 7470 MERCURY	BOHXX0	23-JUL-96	30-JUL-96	14-AUG-96
L7550-27 TEMP 15 60mls Location: RFG02-25B Liq. Waste 7 S 335.2 CYANIDE TOTAL	BOHXW5	22-JUL-96	30-JUL-96	14-AUG-96
L7550-28 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 335.2 CYANIDE TOTAL	BOHXW6	23-JUL-96	30-JUL-96	14-AUG-96

* Changed matrix To Tcpl + Icp Trace Page 4

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 10:31 am

Login Number: L7550
 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
L7550-29 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 335.2 CYANIDE TOTAL	BOHXW7	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:06-AUG-96
L7550-30 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 335.2 CYANIDE TOTAL	BOHXW8	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:06-AUG-96
L7550-31 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 335.2 CYANIDE TOTAL	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:06-AUG-96
L7550-32 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 335.2 CYANIDE TOTAL	BOHXX0	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:06-AUG-96
L7550-33 TEMP 15 60mls Location: RFG02-25B Liq. Waste 7 S 9030 SULFIDE	BOHXW5	22-JUL-96	30-JUL-96	14-AUG-96
				Hold:29-JUL-96
L7550-34 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 9030 SULFIDE	BOHXW6	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:30-JUL-96
L7550-35 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 9030 SULFIDE	BOHXW7	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:30-JUL-96
L7550-36 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 9030 SULFIDE	BOHXW8	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:30-JUL-96
L7550-37 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 9030 SULFIDE	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:30-JUL-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 10:31 am

Login Number: L7550
 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
L7550-38 TEMP 15 60mls Location: 156CART-8 Liq. Waste 7 S 9030	BOHXX0 SULFIDE	23-JUL-96	30-JUL-96	14-AUG-96
		Hold:30-JUL-96		
L7550-39 TEMP 15 60mls Location: 157	REPORT TYPE	23-JUL-96	30-JUL-96	14-AUG-96
Water 1 S EDD - DISK DEL.				
Water 1 S GC2				
Water 1 S INORG TYPE 2 RPT				

Signature: Paul Vang

Date: 8-02-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Jul 31 1996, 03:38 pm

Login Number: L7550
 - 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
L7550-1 TEMP 15 Location: 157	BOHXX2	23-JUL-96	30-JUL-96	14-AUG-96
SolidWaste 8 S 1010 IGNITABILITY		Hold:30-JUL-96		
SolidWaste 8 S 1311 TCLP REG. EXTR.		Hold:06-AUG-96		
SolidWaste 8 S 335.2 CYANIDE TOTAL		Hold:06-AUG-96		
TCLP Extr 13 S 6010A ICP METALS		Hold:19-JAN-97		
TCLP Extr 13 S 7470 MERCURY		Hold:20-AUG-96		
SolidWaste 8 S 8080 PEST/PCBS		Hold:06-AUG-96		
SolidWaste 8 S 9030 SULFIDE		Hold:30-JUL-96		
SolidWaste 8 S 9045 PH		Hold:30-JUL-96		
SolidWaste 8 S SCREENING				
L7550-2 TEMP 15 Location: 157	BOHXX3	23-JUL-96	30-JUL-96	14-AUG-96
SolidWaste 8 S 1010 IGNITABILITY		Hold:30-JUL-96		
SolidWaste 8 S 1311 TCLP REG. EXTR.		Hold:06-AUG-96		
SolidWaste 8 S 335.2 CYANIDE TOTAL		Hold:06-AUG-96		
TCLP Extr 13 S 6010A ICP METALS		Hold:19-JAN-97		
TCLP Extr 13 S 7470 MERCURY		Hold:20-AUG-96		
SolidWaste 8 S 8080 PEST/PCBS		Hold:06-AUG-96		
SolidWaste 8 S 9030 SULFIDE		Hold:30-JUL-96		
SolidWaste 8 S 9045 PH		Hold:30-JUL-96		
SolidWaste 8 S SCREENING				
L7550-3 TEMP 15 Location: 157	BOHXX5	22-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S SCREENING		Hold:18-JAN-97		
L7550-4 TEMP 15 Location: 157	BOHXX6	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S SCREENING		Hold:19-JAN-97		
L7550-5 TEMP 15 Location: 157	BOHXX7	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S SCREENING		Hold:19-JAN-97		
L7550-6 TEMP 15 Location: 157	BOHXX8	23-JUL-96	30-JUL-96	14-AUG-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Jul 31 1996, 03:38 pm

Login Number: L7550
 - 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
Liq. Waste 7 S SCREENING		Hold:19-JAN-97		
L7550-7 TEMP 15 Location: 157	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S SCREENING		Hold:19-JAN-97		
L7550-8 TEMP 15 Location: 157	BOHXXO	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S SCREENING		Hold:19-JAN-97		
L7550-9 TEMP 15 60mls Location: RFG02-25B	BOHXW5	22-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1010 IGNITABILITY		Hold:29-JUL-96		
Liq. Waste 7 S 9040 PH		Hold:29-JUL-96		
L7550-10 TEMP 15 60mls Location: 157	BOHXW6	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1010 IGNITABILITY		Hold:30-JUL-96		
Liq. Waste 7 S 9040 PH		Hold:30-JUL-96		
L7550-11 TEMP 15 60mls Location: 157	BOHXW7	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1010 IGNITABILITY		Hold:30-JUL-96		
Liq. Waste 7 S 9040 PH		Hold:30-JUL-96		
L7550-12 TEMP 15 60mls Location: 157	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1010 IGNITABILITY		Hold:30-JUL-96		
Liq. Waste 7 S 9040 PH		Hold:30-JUL-96		
L7550-13 TEMP 15 60mls Location: 157	BOHXW8	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1010 IGNITABILITY		Hold:30-JUL-96		
Liq. Waste 7 S 9040 PH		Hold:30-JUL-96		

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Jul 31 1996, 03:38 pm

Login Number: L7550
 -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
L7550-14 TEMP 15 60mls Location: 157 Liq. Waste 7 S 1010 Liq. Waste 7 S 9040	BOHXX0 IGNITABILITY PH	23-JUL-96 Hold:30-JUL-96 Hold:30-JUL-96	30-JUL-96	14-AUG-96
L7550-15 TEMP 15 60mls Location: RFG02-25B Liq. Waste 7 S 8080	BOHXX5 PEST/PCBS	22-JUL-96 Hold:05-AUG-96	30-JUL-96	14-AUG-96
L7550-16 TEMP 15 60mls Location: 157 Liq. Waste 7 S 8080	BOHXX6 PEST/PCBS	23-JUL-96 Hold:06-AUG-96	30-JUL-96	14-AUG-96
L7550-17 TEMP 15 60mls Location: 157 Liq. Waste 7 S 8080	BOHXX7 PEST/PCBS	23-JUL-96 Hold:06-AUG-96	30-JUL-96	14-AUG-96
L7550-18 TEMP 15 60mls Location: 157 Liq. Waste 7 S 8080	BOHXX9 PEST/PCBS	23-JUL-96 Hold:06-AUG-96	30-JUL-96	14-AUG-96
L7550-19 TEMP 15 60mls Location: 157 Liq. Waste 7 S 8080	BOHXX8 PEST/PCBS	23-JUL-96 Hold:06-AUG-96	30-JUL-96	14-AUG-96
L7550-20 TEMP 15 60mls Location: 157 Liq. Waste 7 S 8080	BOHXX0 PEST/PCBS	23-JUL-96 Hold:06-AUG-96	30-JUL-96	14-AUG-96
L7550-21 TEMP 15 Location: RFG02-25B Liq. Waste 7 S 1311 Liq. Waste 7 S 6010A Liq. Waste 7 S 7470	BOHXX5 TCLP REG. EXTR. ICP METALS MERCURY	22-JUL-96 Hold:05-AUG-96 Hold:18-JAN-97 Hold:19-AUG-96	30-JUL-96	14-AUG-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Jul 31 1996, 03:38 pm

Login Number: L7550
 -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
L7550-22 TEMP 15 Location: 157	BOHXW6	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1311 TCLP REG. EXTR.		Hold:06-AUG-96		
Liq. Waste 7 S 6010A ICP METALS		Hold:19-JAN-97		
Liq. Waste 7 S 7470 MERCURY		Hold:20-AUG-96		
L7550-23 TEMP 15 Location: 157	BOHXW7	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1311 TCLP REG. EXTR.		Hold:06-AUG-96		
Liq. Waste 7 S 6010A ICP METALS		Hold:19-JAN-97		
Liq. Waste 7 S 7470 MERCURY		Hold:20-AUG-96		
L7550-24 TEMP 15 Location: 157	BOHXW8	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1311 TCLP REG. EXTR.		Hold:06-AUG-96		
Liq. Waste 7 S 6010A ICP METALS		Hold:19-JAN-97		
Liq. Waste 7 S 7470 MERCURY		Hold:20-AUG-96		
L7550-25 TEMP 15 Location: 157	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1311 TCLP REG. EXTR.		Hold:06-AUG-96		
Liq. Waste 7 S 6010A ICP METALS		Hold:19-JAN-97		
Liq. Waste 7 S 7470 MERCURY		Hold:20-AUG-96		
L7550-26 TEMP 15 Location: 157	BOHXX0	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 1311 TCLP REG. EXTR.		Hold:06-AUG-96		
Liq. Waste 7 S 6010A ICP METALS		Hold:19-JAN-97		
Liq. Waste 7 S 7470 MERCURY		Hold:20-AUG-96		
L7550-27 TEMP 15 60mls Location: RFG02-25B	BOHXW5	22-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 335.2 CYANIDE TOTAL		Hold:05-AUG-96		
L7550-28 TEMP 15 60mls Location: 157	BOHXW6	23-JUL-96	30-JUL-96	14-AUG-96
Liq. Waste 7 S 335.2 CYANIDE TOTAL		Hold:06-AUG-96		

0033

0730596-D

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Jul 31 1996, 03:38 pm

Login Number: L7550
 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
L7550-29 TEMP 15 60mls Location: 157 Liq. Waste 7 S 335.2 CYANIDE TOTAL	BOHXW7	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:06-AUG-96
L7550-30 TEMP 15 60mls Location: 157 Liq. Waste 7 S 335.2 CYANIDE TOTAL	BOHXW8	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:06-AUG-96
L7550-31 TEMP 15 60mls Location: 157 Liq. Waste 7 S 335.2 CYANIDE TOTAL	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:06-AUG-96
L7550-32 TEMP 15 60mls Location: 157 Liq. Waste 7 S 335.2 CYANIDE TOTAL	BOHXX0	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:06-AUG-96
L7550-33 TEMP 15 60mls Location: RFG02-25B Liq. Waste 7 S 9030 SULFIDE	BOHXW5	22-JUL-96	30-JUL-96	14-AUG-96
				Hold:29-JUL-96
L7550-34 TEMP 15 60mls Location: 157 Liq. Waste 7 S 9030 SULFIDE	BOHXW6	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:30-JUL-96
L7550-35 TEMP 15 60mls Location: 157 Liq. Waste 7 S 9030 SULFIDE	BOHXW7	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:30-JUL-96
L7550-36 TEMP 15 60mls Location: 157 Liq. Waste 7 S 9030 SULFIDE	BOHXW8	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:30-JUL-96
L7550-37 TEMP 15 60mls Location: 157 Liq. Waste 7 S 9030 SULFIDE	BOHXW9	23-JUL-96	30-JUL-96	14-AUG-96
				Hold:30-JUL-96

0034
0730596D

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Jul 31 1996, 03:38 pm

Login Number: L7550
 -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
L7550-38 TEMP 15 60mls Location: 157 Liq. Waste 7 S 9030 SULFIDE	BOHXXO	23-JUL-96	30-JUL-96	14-AUG-96
		Hold:30-JUL-96		
L7550-39 TEMP 15 60mls Location: 157	REPORT TYPE	23-JUL-96	30-JUL-96	14-AUG-96
Water 1 S EDD - DISK DEL.				
Water 1 S GC2				
Water 1 S INORG TYPE 2 RPT				

Signature: *Paula Young*

Date: 7-31-96

0730596 D 0025

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

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
BOHXW5 -	L7550-3		Liq. Waste	SCREENING -
	L7550-9		Liq. Waste	1010 IGNITABILI
	L7550-9		Liq. Waste	9040 PH -
	L7550-15		Liq. Waste	8080 PEST/PCBS-
	L7550-21		Liq. Waste	1311 TCLP REG.
	L7550-21		Liq. Waste	6010A ICP METAL
	L7550-21		Liq. Waste	7470 MERCURY -
	L7550-27		Liq. Waste	335.2 CYANIDE T
BOHXW6 -	L7550-33		Liq. Waste	9030 SULFIDE -
	L7550-4		Liq. Waste	SCREENING -
	L7550-10		Liq. Waste	1010 IGNITABILI
	L7550-10		Liq. Waste	9040 PH -
	L7550-16		Liq. Waste	8080 PEST/PCBS
	L7550-22		Liq. Waste	1311 TCLP REG.
	L7550-22		Liq. Waste	6010A ICP METAL
	L7550-22		Liq. Waste	7470 MERCURY -
BOHXW7 -	L7550-28		Liq. Waste	335.2 CYANIDE T
	L7550-34		Liq. Waste	9030 SULFIDE
	L7550-5		Liq. Waste	SCREENING -
	L7550-11		Liq. Waste	1010 IGNITABILI
	L7550-11		Liq. Waste	9040 PH -
	L7550-17		Liq. Waste	8080 PEST/PCBS
	L7550-23		Liq. Waste	1311 TCLP REG.
	L7550-23		Liq. Waste	6010A ICP METAL
BOHXW8 -	L7550-23		Liq. Waste	7470 MERCURY -
	L7550-29		Liq. Waste	335.2 CYANIDE T
	L7550-35		Liq. Waste	9030 SULFIDE -
	L7550-6		Liq. Waste	SCREENING -
	L7550-13		Liq. Waste	1010 IGNITABILI
	L7550-13		Liq. Waste	9040 PH -
	L7550-19		Liq. Waste	8080 PEST/PCBS
	L7550-24		Liq. Waste	1311 TCLP REG.
BOHXW9 -	L7550-24		Liq. Waste	6010A ICP METAL
	L7550-24		Liq. Waste	7470 MERCURY -
	L7550-30		Liq. Waste	335.2 CYANIDE T
	L7550-36		Liq. Waste	9030 SULFIDE
	L7550-7		Liq. Waste	SCREENING -
	L7550-12		Liq. Waste	1010 IGNITABILI
	L7550-12		Liq. Waste	9040 PH -
	L7550-18		Liq. Waste	8080 PEST/PCBS
BOHXX0 -	L7550-25		Liq. Waste	1311 TCLP REG.
	L7550-25		Liq. Waste	6010A ICP METAL
	L7550-25		Liq. Waste	7470 MERCURY -
	L7550-31		Liq. Waste	335.2 CYANIDE -
	L7550-37		Liq. Waste	9030 SULFIDE
	L7550-8		Liq. Waste	SCREENING -
	L7550-14		Liq. Waste	1010 IGNITABILI
	L7550-14		Liq. Waste	9040 PH
L7550-20		Liq. Waste	8080 PEST/PCBS	

0730596 D 0036

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

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
	L7550-26		Liq. Waste	1311 TCLP REG.
	L7550-26		Liq. Waste	6010A ICP METAL
	L7550-26		Liq. Waste	7470 MERCURY -
	L7550-32		Liq. Waste	335.2 CYANIDE T
	L7550-38		Liq. Waste	9030 SULFIDE -
BOHXX2 -	L7550-1		SolidWaste	1010 IGNITABILI
	L7550-1		SolidWaste	1311 TCLP REG.
	L7550-1		SolidWaste	335.2 CYANIDE T
	L7550-1		TCLP Extr	6010A ICP METAL
	L7550-1		TCLP Extr	7470 MERCURY-
	L7550-1		SolidWaste	8080 PEST/PCBS
	L7550-1		SolidWaste	9030 SULFIDE -
	L7550-1		SolidWaste	9045 PH -
	L7550-1		SolidWaste	SCREENING -
BOHXX3 -	L7550-2		SolidWaste	1010 IGNITABILI
	L7550-2		SolidWaste	1311 TCLP REG.
	L7550-2		SolidWaste	335.2 CYANIDE T
	L7550-2		TCLP Extr	6010A ICP METAL
	L7550-2		TCLP Extr	7470 MERCURY -
	L7550-2		SolidWaste	8080 PEST/PCBS
	L7550-2		SolidWaste	9030 SULFIDE -
	L7550-2		SolidWaste	9045 PH -
	L7550-2		SolidWaste	SCREENING -
REPORT TYPE -	L7550-39		Water	EDD - DISK DEL.
	L7550-39		Water	GC2 -
	L7550-39		Water	INORG TYPE 2 RF

0730596 0037

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST **L7550**

B96-142-3 Page 1 of 2

Data Turnaround

Priority
 Normal

Collector Doug Bowers	Company Contact Don Eckert	Telephone No. 373-4955
Project Designation 100-N 90-Day Pad Waste Container Characterization	Sampling Location 109N (100N)	SAF No. B96-142
Ice Chest No. SAL-483	Field Logbook No. EFL-1133-1	Method of Shipment Commercial Freight (truck)
Shipped To Lockheed	Offsite Property No.	Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None									
	Type of Container	P	G	aG	aG	aG	G	aG	G/P	aG	G
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1

Special Handling and/or Storage Cool to 4C	Volume	20ml	20ml 60ml	125ml	60ml	300ml	250ml	125ml	60ml	125ml
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SAMPLE ANALYSIS	Activity Score	Ignitability - 1010, pH (Soil) - 9045	Ignitability - 1010, pH (Soil) - 9045	Pest/PCBs - 8080 (TCL)	Pest/PCBs - 8080 (TCL)	See num (1) in Special Instructions	See num (2) in Special Instructions	Cyanide (Total) - 335.2	Cyanide (Total) - 335.2	Sulfides - 9030
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Sample No.	Matrix *	Sample Date	Sample Time								
BOHXX1	Other Solid										
BOHXX2	Other Solid	7-23-96	0955	X							
BOHXX3	Other Solid	7-23-96	1007	X							

CHAIN OF POSSESSION	Sign/Print Names		SPECIAL INSTRUCTIONS Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR (same order as on chain of custody) Turnaround time - 15 days (1) Metals by ICP (TCLP) - 1311/6010A; Mercury (TCLP) - 1311/7470 (2) Metals by ICP (TCLP) - 1311/6010A; Mercury (TCLP) - 1311/7470	Matrix * S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids T - Tissue WJ - Wipe L - Liquid V - Vegetation X - Other		
	Relinquished By <i>Doug Bowers</i>	Date/Time 7-24-96/0620			Received By <i>David S. [unclear]</i>	Date/Time 7/24/96 0620
	Relinquished By <i>DSH-JM [unclear]</i>	Date/Time [unclear]			Received By <i>[unclear]</i>	Date/Time 0730
	Relinquished By <i>[unclear]</i>	Date/Time 7-24-96 0730			Received By <i>[unclear]</i>	Date/Time 7-24-96
	Relinquished By <i>[unclear]</i>	Date/Time 0900			Received By <i>[unclear]</i>	Date/Time [unclear]

LABORATORY SECTION	Received By <i>Paula [unclear]</i>	Title <i>Sample Custodian</i>	Date/Time 7-30-96/16:00
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

0730596 D

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B96-142-3

Page 2 of 2

Data Turnaround

- Priority
- Normal

Collector Doug Bowers	Company Contact Don Eckert	Telephone No. 373-4955
Project Designation 100-N 90-Day Pad Waste Container Characterization	Sampling Location 109N (100N)	SAF No. B96-142

Ice Chest No. SML-483	Field Logbook No. EFL-1133-1	Method of Shipment Commercial Freight (truck)
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Shipped To Lockheed	Offsite Property No.	Bill of Lading/Air Bill No.
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POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None							
	Type of Container	None	none	none					
	No. of Container(s)	1	1	1					
	Volume	60ml	250ml	1L					

SPECIAL HANDLING AND/OR STORAGE Cool to 4C	Sulfides - 9030								
	SAMPLE ANALYSIS	5 ppb	5 ppb	10.10	10.10				

Sample No.	Matrix *	Sample Date	Sample Time						
BOHXX1	Other Solid								
BOHXX2	Other Solid	7-23-96	0955			X			
BOHXX3	Other Solid	7-23-96	1007			X			

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By <i>Doug Bowers</i>	Received By <i>David St. John</i>
Date/Time 7-24-96 0620	Date/Time 7/24/96 0620
Relinquished By <i>D. St. John</i>	Received By <i>Rick White</i>
Date/Time 7-24-96 0730	Date/Time 7-24-96
Relinquished By <i>Rick White</i>	Received By <i>[Signature]</i>
Date/Time 7-24-96	Date/Time

SPECIAL INSTRUCTIONS
Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR (same order as on chain of custody)
Turnaround time - 15 days

#1 entire sample volume in 1 bottle

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

LABORATORY SECTION	Received By <i>Paula Woods</i>	Title Sample Custodian	Date/Time 7-30-96/16:00
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

0730596 D 39

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B96-142-4 Page 1 of 2

Data Turnaround
 Priority
 Normal

Collector Doug Bowers	Company Contact Don Eckert	Telephone No. 373-4955
Project Designation 100-N 90-Day Pad Waste Container Characterization	Sampling Location 109N (100N)	SAF No. B96-142
Ice Chest No.	Field Logbook No. EFL-1133-1	Method of Shipment Commercial Freight (truck)
Shipped To Lockheed	Offsite Property No.	Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None	None	None	None	None	None	None	None	None	None
	Type of Container	P	G	aG	aG	aG	G	aG	G/P	aG	G
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage Cool to 4C	Volume	20ml	125ml	60ml	125ml	60ml	300ml	250ml	125ml	60ml	125ml

SAMPLE ANALYSIS	Accuracy Score	Igatability - 1010, pH (Soil) - 9045	Igatability - 1010, pH (Soil) - 9045	Pest/PCBs - 8080 (TCL)	Pest/PCBs - 8080 (TCL)	See item (1) in Special Instructions	See item (2) in Special Instructions	Cyanide (Total) - 335.2	Cyanide (Total) - 335.2	Sulfides - 9030
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Sample No.	Matrix *	Sample Date	Sample Time							
BOHXW5	Other Solid	7-22-96	1337	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By Doug Bowers 7-24-96/0620	Received By [Signature] B. Whitten 7-29-96
Relinquished By [Signature] B. Whitten 7-26-96	Received By
Relinquished By	Received By
Relinquished By	Received By

SPECIAL INSTRUCTIONS
 Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR. Turnaround time - 15 days. Due to shipping requirements, the ERC Contractor acknowledges the holding time for Sulfoxides by EPA 9030 may not be met

(1) Metals by ICP (TCLP) - 1311/6010A, Mercury (TCLP) - 1311/7470
 (2) Metals by ICP (TCLP) - 1311/6010A, Mercury (TCLP) - 1311/7470

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

LABORATORY SECTION	Received By Paul W. [Signature]	Title Sample Custodian	Date/Time 7-30-96/16:00
FINAL SAMPLE	Disposal Method	Disposed By	Date/Time

073059620

Collector Doug Bowers	Company Contact Don Eckert	Telephone No. 373-4955
Project Designation 100-N 90-Day Pad Waste Container Characterization	Sampling Location 109N (100N)	SAF No. B96-142
Ice Chest No.	Field Logbook No. EFL-1133-1	Method of Shipment Commercial Freight (truck)
Shipped To Lockheed	Offsite Property No.	Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None	None																	
	Type of Container	2G	G/P																	
	No. of Container(s)	1	1																	
	Special Handling and/or Storage Cool to 4C	Volume	60ml	1210g																

SAMPLE ANALYSIS				Sulfides - 9830, Gross Alpha	Gamma Spectroscopy															
Sample No.	Matrix *	Sample Date	Sample Time																	
B0HXW5	Other Solid	7-22-96	1337	X																

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By Doug Bowers	Date/Time 7-24-96/0620	Received By Paula White Date/Time 7-24-96
Relinquished By Paula White	Date/Time 0900	Received By B. Whitton
Relinquished By 	Date/Time 	Received By
Relinquished By 	Date/Time 	Received By

SPECIAL INSTRUCTIONS
 Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR. Turnaround time - 15 days. Due to shipping requirements, the ERC Contractor acknowledges the holding time for Sulfides by EPA 9030 may not be met.

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

LABORATORY SECTION	Received By Paula White	Title Sample Custodian	Date/Time 7-30-96/16:00
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

07305962

Collector: **Doug Bowers** Company Contact: **Don Eckert** Telephone No.: **373-4955**
 Project Designation: **100-N 90-Day Pad Waste Container Characterization** Sampling Location: **109N (100N)** SAF No.: **B96-142**
 Ice Chest No.: **GWS-108** Field Logbook No.: **EFL-1133-1** Method of Shipment: **Commercial Freight (truck)**
 Shipped To: **Lockheed** Offsite Property No.: Bill of Lading/Air Bill No.:

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None									
	Type of Container	P	G	aG	aG	aG	G	aG	G/P	aG	G
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1

Special Handling and/or Storage: **Cool to 4C**

SAMPLE ANALYSIS	Activity Scan	Ignitability - 1010, pH (Soil) - 9045	Ignitability - 1010, pH (Soil) - 9045	Pest/PCBs - 8080 (TCL)	Pest/PCBs - 8080 (TCL)	See item (1) in Special Instructions	See item (2) in Special Instructions	Cyanide (Total) - 335.2	Cyanide (Total) - 335.2	Buildup - 9030
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Sample No.	Matrix *	Sample Date	Sample Time	Activity Scan	Ignitability - 1010, pH (Soil) - 9045	Ignitability - 1010, pH (Soil) - 9045	Pest/PCBs - 8080 (TCL)	Pest/PCBs - 8080 (TCL)	See item (1) in Special Instructions	See item (2) in Special Instructions	Cyanide (Total) - 335.2	Cyanide (Total) - 335.2	Buildup - 9030
BOH0W5	Other Solid	7-22-96	1337	X	X	X	X	X	X	X	X	X	X
BOH0W6	Other Solid	7-23-96	0842	X	X	X	X	X	X	X	X	X	X
BOH0W7	Other Solid	7-23-96	0855	X	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
Doug Bowers	7-27-96/0620	Don Eckert	7-27-96/0623
D.S. John	7-24-96	Don Eckert	7-24-96
Don Eckert	7-24-96	Don Eckert	7-24-96

SPECIAL INSTRUCTIONS
 Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR (same order as on chain of custody)
 Turnaround time - 15 days
 (1) Metals by ICP (TCLP) - 1311/6010A; Mercury (TCLP) - 1311/7470
 (2) Metals by ICP (TCLP) - 1311/6010A; Mercury (TCLP) - 1311/7470

- 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

LABORATORY SECTION Received By: **Paula Davis** Title: **Sample Custodian** Date/Time: **7-30-96/16:00**
 FINAL SAMPLE DISPOSITION Disposed Method: **Sample Custodian** Disposed By: **Sample Custodian** Date/Time: **7-30-96/16:00**

07305961 42 11/11

Collector: Doug Bowers Company Contact: Don Eckert Telephone No.: 373-4955
 Project Designation: 100-N 90-Day Pad Waste Container Characterization Sampling Location: 109N (100N) SAF No.: B96-142
 Ice Chest No.: GWS-108 Field Logbook No.: EFL-1133-1 Method of Shipment: Commercial Freight (truck)
 Shipped To: Lockheed Offsite Property No.: Bill of Lading/Air Bill No.:

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None																		
	Type of Container	aG																		
	No. of Container(s)	1																		
Special Handling and/or Storage Cool to 4C	Volume	60ml																		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time																	
BOHXW5	Other Solid	7-22-96	1337	X	BU	7-24-96														
BOHXW6	Other Solid	7-23-96	0842	Y																
BOHXW7	Other Solid	7-23-96	0855	Y																

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
Doug Bowers	7-24-96/0620	David S. [Signature]	7/24/96 0620
D. S. [Signature]	7-24-96 0730	[Signature]	7-24-96
[Signature]	7-24-96 0730	[Signature]	7-24-96
[Signature]	7-24-96	[Signature]	

SPECIAL INSTRUCTIONS
 Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR (same order as on chain of custody)
 Turnaround time - 15 days
 DUE TO SHIPPING REQUIREMENTS, THE ERC CONTRACTOR ACKNOWLEDGES THE HOLDING TIME FOR SULFIDES BY EPA9030 MAY NOT BE MET.
 BU 7-25-96

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

LABORATORY SECTION Received By: [Signature] Title: EMPLOYEE Date/Time: 7-30-96/16:00
 FINAL SAMPLE DISPOSITION Disposal Method: [Signature] Disposed By: [Signature] Date/Time: 7-30-96/16:00

0730596 J 43

Collector: Doug Bowers Company Contact: Don Eckert Telephone No.: 373-4955
 Project Designation: 100-N 90-Day Pad Waste Container Characterization Sampling Location: 109N (100N) SAF No.: B96-142
 Ice Chest No.: 3ml-483 Field Logbook No.: EFL-1133-1 Method of Shipment: Commercial Freight (truck)
 Shipped To: Lockheed Offsite Property No.: Bill of Lading/Air Bill No.:

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None									
	Type of Container	P	G	aG	aG	aG	G	aG	G/P	aG	G
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1

Special Handling and/or Storage Cool to 4C	Volume	20ml	125ml	60ml	125ml	60ml	300ml	250ml	125ml	60ml	125ml
---	--------	------	-------	------	-------	------	-------	-------	-------	------	-------

SAMPLE ANALYSIS				Activity Scan	Ignitability - 1010, pH (Soil) - 9045	Ignitability - 1010, pH (Soil) - 9045	Per/PCBs - 8080 (TCL)	Per/PCBs - 8080 (TCL)	See item (1) in Special Instructions	See item (2) in Special Instructions	Cyanide (Total) - 335.2	Cyanide (Total) - 335.2	Sulfides - 9030
Sample No.	Matrix *	Sample Date	Sample Time										
BOHDXW8	Other Solid	7-23-96	0915	X		X		X		X		X	
BOHDXW9	Other Solid	7-23-96	0937	X		X		X		X		X	
BOHDX0	Other Solid	7-23-96	0928	X		X		X		X		X	

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix *
Relinquished By: Doug Bowers 7-24-96/0620	Received By: Don Eckert 7/24/96	Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR (same order as on chain of custody) Turnaround time - 15 days (1) Metals by ICP (TCLP) - 1311/6010A; Mercury (TCLP) - 1311/7470 (2) Metals by ICP (TCLP) - 1311/6010A; Mercury (TCLP) - 1311/7470	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: D. St. John SM 7-24-96 0730	Received By: [Signature] 7/24/96 0620		
Relinquished By: [Signature] 7-24-96 0900	Received By: [Signature] 7-24-96		
Relinquished By: [Signature] 7-24-96	Received By: [Signature]		

LABORATORY SECTION Received By: [Signature] Title: Sample Custodian Date/Time: 7-28-96/16:00
 FINAL SAMPLE DISPOSITION Disposal Method: [Signature] Disposed By: [Signature] Date/Time: [Signature]

0730596 D

Collector: Doug Bowers Company Contact: Don Eckert Telephone No.: 373-4955
 Project Designation: 100-N 90-Day Pad Waste Container Characterization Sampling Location: 109N (100N) SAF No.: B96-142
 Ice Chest No.: SMC-482 Field Logbook No.: EFL-1133-1 Method of Shipment: Commercial Freight (truck)
 Shipped To: Lockheed Offsite Property No.: Bill of Lading/Air Bill No.:

POSSIBLE SAMPLE HAZARDS/REMARKS Unknowns	Preservation	None	None																
	Type of Container	2G	2G																
	No. of Container(s)	1	1																
Special Handling and/or Storage Cool to 4C	Volume	60ml	250ml																

SAMPLE ANALYSIS Sulfides - 9030 Entire sample sent below

Sample No.	Matrix *	Sample Date	Sample Time																
BOHXW8	Other Solid	7-23-96	0915	X															
BOHXW9	Other Solid	7-23-96	0927	X															
BOHXX0	Other Solid	7-23-96	0938	X															

CHAIN OF POSSESSION Sign/Print Names

Relinquished By: Doug Bowers	Date/Time: 7-24-96/0620	Received By: David S. [Signature]	Date/Time: 7/24/96 0620
Relinquished By: JTH	Date/Time: 7-24-96 0730	Received By: [Signature]	Date/Time: 0730
Relinquished By: [Signature]	Date/Time: 7-24-96 0900	Received By: [Signature]	Date/Time: 7-24-96
Relinquished By: [Signature]	Date/Time: 7-24-96	Received By: [Signature]	Date/Time: [Signature]

SPECIAL INSTRUCTIONS
 Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR (same order as on chain of custody)
 Turnaround time - 15 days
 #1 Entire sample in 1 bottle pull samples as needed from it
 DUE TO SHIPPING REQUIREMENTS THE ERG CONTRACTOR ACKNOWLEDGES THE HOLDING TIME FOR SULFIDES BY EPA 9030 MAY NOT BE MET. 8/27-96

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

LABORATORY SECTION Received By: [Signature] Title: Sample Custodian Date/Time: 7-30-96
 FINAL SAMPLE DISPOSITION Disposal Method: [Signature] Disposed By: [Signature] Date/Time: [Signature]

07305962 / 45 9/1

MEMO COPY 96/07/26 7/31

L01602
FREIGHT BILL # 369643455

SHIPPER

US DEPT OF ENERGY
PO BOX 1970 01 14
P. O. BOX 1970
RICHLAND WA 99352



viking
freight
A Viking System Company

P.O. BOX 648871
SAN JOSE, CA 95164
TELEPHONE (408) 932
CAL 184.849

DELV # 369643455
ROUTING WD
PAB/LVS-21A
14528/999999
REF. #

PAGE 2 OF 2
SCAC = VIKN IL

CONSIGNEE CCCA BILL: BCT3500RRC

LOCKHEED LAB
TONY MILLER SH# BHI3669
975 KELLY JOHNSON RD
LAS VEGAS NV 89119

UNITS	P	HM	DESCRIPTION	WEIGHT IN LBS	RATE	CHARGES
5	X		EMERGENCY CONTACT: * *1-509-373-3800 DAY OR NIGHT* FLAMMABLE LIQUID, NOS (SAMPLES FOR ANALYSIS), 3, UN1993, PO I, LIMITED QUANTITY, NO LABELS REQUIRED, ERG# 128 POLY COOLERS	309		
1	X		CORROSIVE LIQUID, ACIDIC, ORGANIC, NOS (SAMPLES FOR ANALYSIS), 8, UN3265, PO I, CORROSIVE LABELS APPLIED, ERG# 153 STEEL DRUM	110		
			RECEIVED IN GOOD ORDER EXCEPT AS NOTED	RECEIVING CO. NAME	SURCHARGE	
MOND			PRINT LAST NAME	SEAL #	INTACT ON RECEIPT	AMT. DUE
						AMT. COL

DRIVER
UNITS
DATE
TIME

SEE BACK OF MEMO COPY DATE 96/07/26 7/31

LAS VEGAS 702/871-5323

96/07/27 02:06:35

L01602
FREIGHT BILL # 369643455

SHIPPER

US DEPT OF ENERGY
PO BOX 1970 01 14
P. O. BOX 1970
RICHLAND WA 99352



viking
freight
A Viking System Company

P.O. BOX 64890
SAN JOSE, CA 95111
TELEPHONE (408) 932
CAL 184.849

DELV # 369643455
ROUTING WD
PAB/LVS-21A
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PAGE 2 OF 2
SCAC = VIKN IL

CONSIGNEE CCCA BILL: BCT3500RRC

LOCKHEED LAB
TONY MILLER SH# BHI3669
975 KELLY JOHNSON RD
LAS VEGAS NV 89119

UNITS	P	HM	DESCRIPTION	WEIGHT IN LBS	RATE	CHARGES
6			COST CODE: X60125 #878 *..RDD..DEL..7-29-96..MONDAY FRIDAY P/U AND MONDAY DELVY DEFICIT WEIGHT FUEL SURCHARGE	81 300		
			RECEIVED IN GOOD ORDER EXCEPT AS NOTED	RECEIVING CO. NAME	SURCHARGE	
MOND			PRINT LAST NAME	SEAL #	INTACT ON RECEIPT	AMT. DUE
						0046 0730596 PREPAID

DRIVE
UNITS
DATE
TIME

WE'RE ONE. WE'RE REGIONAL. WE'RE NATIONAL. WE'RE VIKING.

SHIPPING INST.	SHIP TO: LOCKHEED LAB		HAZARDOUS MATERIAL SHIPMENT RECORD (HMSR)	
	Company 975 KELLY JOHNSON RD		Originating Facility Building 470LC	Originator Signature <i>[Signature]</i>
	Address LAS VEGAS NV 89119		Area 110C	Date 7-26-96
	City, State, Zip TONY MILLER		FROM: <input type="checkbox"/> WHC <input type="checkbox"/> KEH <input type="checkbox"/> PNL <input checked="" type="checkbox"/> OTHER BHE	
Attention:		OFFSITE ONLY		SHIP: <input checked="" type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT
		VIA: <input type="checkbox"/> Parcel Post <input type="checkbox"/> Air Parcel Post <input checked="" type="checkbox"/> Freight (Rtn/Truck)		Cost Code: X60105
		<input type="checkbox"/> Air (Passenger) <input type="checkbox"/> Air (Cargo)		

CONTAINERS/PACKAGING						CONTENT DESCRIPTION
Number of Containers	Type	DOT Spec	Package Dimensions	Quantity Pkg	Gross Wt. Each Pkg	See 49 CFR 172.101(c) Hazardous Material Table
1	STEEL DRUM	1A2	29.5" X 19.5" 30 GAL DRUM	24 BATTERIES 7.130 ML	15 110	Proper Ship Name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N Hazard Class: 8 PG-I (SAMPLES FOR ANALYSIS) UN/NA No.: UN3265 List Secondary Hazards: NONE List Labels Req'd/Applied: CORROSIVE
N/A						Proper Ship Name: Hazard Class: UN/NA No.: List Secondary Hazards: List Labels Req'd/Applied:
N/A						Proper Ship Name: Hazard Class: UN/NA No.: List Secondary Hazards: List Labels Req'd/Applied:

Total No. Containers 1	Gross Wt of Shipment 110 ¹⁵	Identify Placards Required: 1. <u>NONE</u> 3. _____ 2. _____ 4. _____	Identify Property Control or Return Order No. (if applicable) N/A
----------------------------------	--	---	---

Material in manufacturer's original container: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Describe Internal Packaging: SAMPLES ARE DOUBLE WRAPPED WITH BLUE ICE (USHIONED) WITH VERMICULITE AND BUBBLE WRAP
Container free of deterioration or damage: <input checked="" type="checkbox"/> Yes	
Container acceptability documented: <input checked="" type="checkbox"/> Yes	
Material is packaged, sealed, marked and labelled to meet DOT requirements: <input checked="" type="checkbox"/> Yes	

RADIATION RELEASE	Survey No. N/A	Date 7/23	RM Signature: _____	Print Name _____
-------------------	-----------------------	------------------	---------------------	------------------

CERTIFICATION	
CONTRACTORS CERTIFICATION	This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transport according to the applicable regulations of the Department of Transportation:
	This shipment is within the Limitations prescribed for: <input type="checkbox"/> Passenger Aircraft <input type="checkbox"/> Cargo Aircraft <input checked="" type="checkbox"/> NA Aircraft
Authorizing Signature: <i>[Signature]</i>	Print Name: TONY MILLER Date: 7-26-96

FOR OFFSITE SHIPMENTS - ADDITIONAL APPROVAL REQUIRED					
WHC TRAFFIC	B.L. No.	Date Shipped	ETA	Routing	Special Considerations
	BHE-3669	7/26/96	7/29/96	V. King	0047
WHC Traffic: CREA-1				WHC Shipping: _____	

VALIDATED RESULTS SHORT REPORT

24 Jul 199

Customer ID: BOHXX7
 Lab Sample#: S96E000883

Sample Date:
 Recv. Date: 07/23/96 18:45

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Act. by LSC: ‡ Uncert.	4.79	‡Uncertainty
Total Activity by LSC (Solid)	2.24e-4	uCi/g

Customer ID: BOHXX8
 Lab Sample#: S96E000884

Sample Date:
 Recv. Date: 07/23/96 18:51

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Act. by LSC: ‡ Uncert.	21.2	‡Uncertainty
Total Activity by LSC (Solid)	< 9.26e-6	uCi/g

Customer ID: BOHXX2
 Lab Sample#: S96E000885

Sample Date:
 Recv. Date: 07/23/96 18:51

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Act. by LSC: ‡ Uncert.	7.31	‡Uncertainty
Total Activity by LSC (Solid)	4.14e-5	uCi/g

Customer ID: BOHXX3
 Lab Sample#: S96E000886

Sample Date:
 Recv. Date: 07/23/96 18:51

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Act. by LSC: ‡ Uncert.	20.31	‡Uncertainty
Total Activity by LSC (Solid)	< 9.59e-6	uCi/g

Customer ID: BOHXX0
 Lab Sample#: S96E000887

Sample Date:
 Recv. Date: 07/23/96 18:51

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Act. by LSC: ‡ Uncert.	7.62	‡Uncertainty
Total Activity by LSC (Solid)	2.04e-4	uCi/g

0730596 0048

VALIDATED RESULTS SHORT REPORT

24 Jul 199

Customer ID: BOHXS9
 Lab Sample#: S96E000876

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER

RESULTS

UNITS

Customer ID: BOHXS9
 Lab Sample#: S96E000876

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER

RESULTS

UNITS

Total Activity by LSC
 Total Act. by LSC: † Uncert.
 Total Activity by LSC (Liquid)

11.53 †Uncertainty
 < 9.73e-6 uCi/mL

Customer ID: BOHXT0
 Lab Sample#: S96E000877

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER

RESULTS

UNITS

Total Activity by LSC
 Total Act. by LSC: † Uncert.
 Total Activity by LSC (Liquid)

4.87 †Uncertainty
 1.22e-4 uCi/mL

Customer ID: BOHXT1
 Lab Sample#: S96E000878

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER

RESULTS

UNITS

Total Activity by LSC
 Total Act. by LSC: † Uncert.
 Total Activity by LSC (Liquid)

5.39 †Uncertainty
 1.47e-4 uCi/mL

Customer ID: BOHXL6
 Lab Sample#: S96E000879

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER

RESULTS

UNITS

Total Activity by LSC
 Total Act. by LSC: † Uncert.
 Total Activity by LSC (Liquid)

14.64 †Uncertainty
 < 9.23e-6 uCi/mL

Customer ID: BOHXL7
 Lab Sample#: S96E000880

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER

RESULTS

UNITS

Total Activity by LSC
 Total Act. by LSC: † Uncert.
 Total Activity by LSC (Liquid)

n/a †Uncertainty
 qnch 2 hi uCi/mL

UNABLE TO
 ANALYZE

0730 596 D0049

VALIDATED RESULTS SHORT REPORT

24 Jul 1996

Customer ID: BOHXW8
Lab Sample#: S96E000881

Sample Date:
Recv. Date: 07/23/96 18:35

PARAMETER -

RESULTS

UNITS

Customer ID: BOHXW8
Lab Sample#: S96E000881

Sample Date:
Recv. Date: 07/23/96 18:35

PARAMETER

RESULTS

UNITS

Total Activity by LSC
Total Act. by LSC: † Uncert.
Total Activity by LSC (Liquid)

12.99 †Uncertainty
< 8.91e-6 uCi/mL

Customer ID: BOHXW9
Lab Sample#: S96E000882

Sample Date:
Recv. Date: 07/23/96 18:35

PARAMETER

RESULTS

UNITS

Total Activity by LSC
Total Act. by LSC: † Uncert.
Total Activity by LSC (Liquid)

11.9 †Uncertainty
< 9.34e-6 uCi/mL

0730 596 D 0050

INTERIM RESULTS REPORT

23 Jul 199

Customer ID: BOHKV8
Lab Sample#: S96E000856

Sample Date:
Recv. Date: 07/22/96 16:45

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Activity by LSC (Solid)	< 9.89e-6	uCi/g
Total Act. by LSC: % Uncert.	13.07	%Uncertainty

Customer ID: BOHKV9
Lab Sample#: S96E000857

Sample Date:
Recv. Date: 07/22/96 16:45

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Activity by LSC (Solid)	< 1.18e-5	uCi/g
Total Act. by LSC: % Uncert.	14.64	%Uncertainty

~~Customer ID: BOHKV0~~ *Wrong #*
Lab Sample#: S96E000858 *Rev 7-24-96*

Sample Date:
Recv. Date: 07/22/96 16:45

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Activity by LSC (Solid)	1.78e-4	uCi/g
Total Act. by LSC: % Uncert.	4.8	%Uncertainty

Customer ID: BOHKW1
Lab Sample#: S96E000859

Sample Date:
Recv. Date: 07/22/96 16:45

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Activity by LSC (Solid)	< 9.05e-6	uCi/g
Total Act. by LSC: % Uncert.	11.68	%Uncertainty

Customer ID: BOHKW2
Lab Sample#: S96E000860

Sample Date:
Recv. Date: 07/22/96 16:45

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Activity by LSC (Solid)	3.1e-5	uCi/g
Total Act. by LSC: % Uncert.	8.71	%Uncertainty

Customer ID: BOHKW5
Lab Sample#: S96E000861

Sample Date:
Recv. Date: 07/22/96 16:45

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Activity by LSC (Solid)	< 7.96e-6	uCi/g
Total Act. by LSC: % Uncert.	13.6	%Uncertainty

0730596 A051

VALIDATED RESULTS SHORT REPORT

24 Jul 1996

Customer ID: BOHXS3
 Lab Sample#: S96E000870

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC	11.27	†Uncertainty
Total Act. by LSC: † Uncert.	< 8.78e-6	uCi/mL
Total Activity by LSC (Liquid)		

Customer ID: BOHXS4
 Lab Sample#: S96E000871

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC	11.76	†Uncertainty
Total Act. by LSC: † Uncert.	< 8.77e-6	uCi/mL
Total Activity by LSC (Liquid)		

Customer ID: BOHXS5
 Lab Sample#: S96E000872

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC	19.41	†Uncertainty
Total Act. by LSC: † Uncert.	< 9.82e-6	uCi/mL
Total Activity by LSC (Liquid)		

Customer ID: BOHXS6
 Lab Sample#: S96E000873

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC	13.33	†Uncertainty
Total Act. by LSC: † Uncert.	< 9.49e-6	uCi/mL
Total Activity by LSC (Liquid)		

Customer ID: BOHXS7
 Lab Sample#: S96E000874

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC	12.39	†Uncertainty
Total Act. by LSC: † Uncert.	< 9.76e-6	uCi/mL
Total Activity by LSC (Liquid)		

Customer ID: BOHXS8
 Lab Sample#: S96E000875

Sample Date:
 Recv. Date: 07/23/96 18:35

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC	11.49	†Uncertainty
Total Act. by LSC: † Uncert.	< 8.66e-6	uCi/mL
Total Activity by LSC (Liquid)		

07305961932

VALIDATED RESULTS SHORT REPORT

25 Jul 1996

Customer ID: BOHKW0
Lab Sample#: S96E000858

Sample Date:
Recv. Date: 07/22/96 16:45

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Act. by LSC: † Uncert.	4.8	†Uncertainty
Total Activity by LSC (Solid)	1.78e-4	uCi/g

0730596-0053

MESSAGE CONFIRMATION

SESSION NO. = 156

07/31/96 15:54
ID=LOOKHED LAB SAMPLE RECEIVING

DATE	TIME	S.R-TIME	DISTANT STATION ID	MODE	PAGES	RESULT
07/31	15:40	13'55"	5093754238	G3 -S	15	OK 0000

0730596 0054

SAMPLE CHECK-IN LIST

Date/Time Received: 7-30-96/16:00 SDG#: N/A
Work Order Number: N/A SAF #: B96-142
Shipping Container ID: SML-483 Chain of Custody #: B96-142-3

- 1. Custody Seals on shipping container intact? Yes No
- 2. Custody Seals dated and signed? Yes No
- 3. Sample temperature 15^o
- 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: Blue ice not frozen

Sample Custodian/Laboratory: Paula D. [Signature] Date: 7-31-96
Telephoned To: Kathleen Hall On 7-31-96 By Paula D. [Signature]

LOCKHEED MARTIN



Sample Login Login Review Checklist

Lot Number 62550

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

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

LOGIN CHAIN OF CUSTODY

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

SAMPLE RECEIVING CHECKLIST

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

Paul J. Jones 7-31-96
primary review signature date

Adm. J. 7-31-96 0056
secondary review signature date

0730 596-D

Lockheed Analytical Services
Sample Receiving Checklist

Client Name: *BachTEL Hydrocarbons*

Job No. *L7550*

Cooler ID: *DLA*

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: *15°*

temperature of temp. blank upon receipt: *—*

	Yes	No	* Comments/Discrepancies
custody seals intact	<input checked="" type="checkbox"/>		
chain of custody present	<input checked="" type="checkbox"/>		
blue ice (or equiv.) present/frozen		<input checked="" type="checkbox"/>	<i>Blue Ice not frozen</i>
rad survey completed	<input checked="" type="checkbox"/>		

SAMPLE CONDITION UPON RECEIPT

	Yes	No	* Comments/Discrepancies
all bottles labeled	<input checked="" type="checkbox"/>		
samples intact	<input checked="" type="checkbox"/>		
proper container used for sample type	<input checked="" type="checkbox"/>		
sample volume sufficient for analysis	<input checked="" type="checkbox"/>		
proper pres. indicated on the COC	<input checked="" type="checkbox"/>		
VOA's contain headspace		<input checked="" type="checkbox"/>	<i>DLA</i>
are samples bi-phasic (if so, indicate sample ID'S):		<input checked="" type="checkbox"/>	<i>DLA</i>

MISCELLANBOUS ITEMS

	Yes	No	* Comments/Discrepancies
samples with short holding times		<input checked="" type="checkbox"/>	
samples to subcontract		<input checked="" type="checkbox"/>	<i>DLA</i>

ADDITIONAL COMMENTS/DISCREPANCIES

*ALL Sample except for B0HXX 2, B0HXX 3 were
Liquid NACTP: rec'd 7-31-96*

Completed by / date: *Paul D. ... 7-31-96*

Sent to the client (date/initials): *DLA* ** 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

07305961

* Changed collect date month to July. all samples.

Revised

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 07 1996, 08:35 am

Login Number: L7561
 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
L7561-1 TEMP 2,3,4 Location: RFG01-43A SolidWaste 8 S SCREENING	BOHXX4	29-JUL-96	01-AUG-96	16-AUG-96
L7561-2 TEMP 2,3,4 Location: RFG01-43A Liq. Waste 7 S SCREENING	BOHXX5	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:25-JAN-97	
L7561-3 TEMP 2,3,4 Location: 156-018 SolidWaste 8 S SCREENING	BOHXX1	29-JUL-96	01-AUG-96	16-AUG-96
L7561-4 TEMP 2,3,4 Location: RFG01-43A Liq. Waste 7 S SCREENING	BOHXX6	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:25-JAN-97	
L7561-5 TEMP 2,3,4 Location: RFG01-43A Liq. Waste 7 S SCREENING	BOHYM6	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:25-JAN-97	
L7561-6 TEMP 2,3,4 Location: RFG01-43A Liq. Waste 7 S SCREENING	BOHYM7	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:25-JAN-97	
L7561-7 TEMP 2,3,4 Location: RFG01-43A Liq. Waste 7 S SCREENING	BOHYM8	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:25-JAN-97	
L7561-8 TEMP 2,3,4 LIMITED SAMPLE VOLUME ANALYSIS ARE PRIORITIZED Location: EXPENDED Liq. Waste 7 S 1010 IGNITABILITY	BOHXX4	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:05-AUG-96	
L7561-9 TEMP 2,3,4 LIMITED SAMPLE VOLUME ANALYSIS ARE PRIORITIZED Location: EXPENDED Liq. Waste 7 S 1010 IGNITABILITY	BOHXX5	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:05-AUG-96	

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 07 1996, 08:35 am

Login Number: L7561
 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
L7561-10 TEMP 2,3,4 LIMITED Location: EXPENDED SolidWaste 8 S 1010	BOHXX1 SAMPLE VOLUME ANALYSIS ARE PRIORITIZED IGNITABILITY	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:05-AUG-96	
L7561-11 TEMP 2,3,4 LIMITED Location: EXPENDED Liq. Waste 7 S 1010	BOHXX6 SAMPLE VOLUME ANALYSIS ARE PRIORITIZED IGNITABILITY	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:05-AUG-96	
L7561-12 TEMP 2,3,4 LIMITED Location: EXPENDED Liq. Waste 7 S 1010	BOHYM6 SAMPLE VOLUME ANALYSIS ARE PRIORITIZED IGNITABILITY	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:05-AUG-96	
L7561-13 TEMP 2,3,4 LIMITED Location: EXPENDED Liq. Waste 7 S 1010	BOHYM7 SAMPLE VOLUME ANALYSIS ARE PRIORITIZED IGNITABILITY	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:05-AUG-96	
L7561-14 TEMP 2,3,4 LIMITED Location: EXPENDED Liq. Waste 7 S 1010	BOHYM8 SAMPLE VOLUME ANALYSIS ARE PRIORITIZED IGNITABILITY	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:05-AUG-96	
L7561-15 TEMP 2,3,4 LIMITED Location: 170 Liq. Waste 7 S 8080	BOHXX4 SAMPLE VOLUME ANALYSIS ARE PRIORITIZED PEST/PCBS	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:12-AUG-96	
L7561-16 TEMP 2,3,4 LIMITED Location: 170 Liq. Waste 7 S 8080	BOHXX5 SAMPLE VOLUME ANALYSIS ARE PRIORITIZED PEST/PCBS	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:12-AUG-96	
L7561-17 TEMP 2,3,4 LIMITED Location: 156 SolidWaste 8 S 8080	BOHXX1 SAMPLE VOLUME ANALYSIS ARE PRIORITIZED PEST/PCBS	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:12-AUG-96	
L7561-18 TEMP 2,3,4 LIMITED Location: 170 Liq. Waste 7 S 8080	BOHXX6 SAMPLE VOLUME ANALYSIS ARE PRIORITIZED PEST/PCBS	29-JUL-96	01-AUG-96	16-AUG-96
			Hold:12-AUG-96	

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 07 1996, 08:35 am

Login Number: L7561
 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
L7561-19 TEMP 2,3,4 Location: 170 Liq. Waste 7	BOHYM6 LIMITED SAMPLE VOLUME ANALYSIS S 8080 PEST/PCBS	29-JUL-96	01-AUG-96	16-AUG-96
				Hold:12-AUG-96
L7561-20 TEMP 2,3,4 Location: 170 Liq. Waste 7	BOHYM7 LIMITED SAMPLE VOLUME ANALYSIS S 8080 PEST/PCBS	29-JUL-96	01-AUG-96	16-AUG-96
				Hold:12-AUG-96
L7561-21 TEMP 2,3,4 Location: 170 Liq. Waste 7	BOHYM8 LIMITED SAMPLE VOLUME ANALYSIS S 8080 PEST/PCBS	29-JUL-96	01-AUG-96	16-AUG-96
				Hold:12-AUG-96
L7561-22 TEMP 2,3,4 Location: RFG01-07B Liq. Waste 7	BOHXX4 LIMITED SAMPLE VOLUME ANALYSIS S 1311 TCLP REG. EXTR.	29-JUL-96	01-AUG-96	16-AUG-96
				Hold:12-AUG-96
	TCLP Extr 13 S 6010A ICP METALS			Hold:25-JAN-97
	TCLP Extr 13 S 6010A ICP TRACE			Hold:25-JAN-97
	TCLP Extr 13 S 7470 MERCURY			Hold:26-AUG-96
	Liq. Waste 7 S 9040 PH			Hold:05-AUG-96
L7561-23 TEMP 2,3,4 Location: RFG01-07B Liq. Waste 7	BOHXX5 LIMITED SAMPLE VOLUME ANALYSIS S 1311 TCLP REG. EXTR.	29-JUL-96	01-AUG-96	16-AUG-96
				Hold:12-AUG-96
	TCLP Extr 13 S 6010A ICP METALS			Hold:25-JAN-97
	TCLP Extr 13 S 6010A ICP TRACE			Hold:25-JAN-97
	TCLP Extr 13 S 7470 MERCURY			Hold:26-AUG-96
	Liq. Waste 7 S 9040 PH			Hold:05-AUG-96
L7561-24 TEMP 2,3,4 Location: 156RAD1-05 SolidWaste 8	BOHXX1 LIMITED SAMPLE VOLUME ANALYSIS S 1311 TCLP REG. EXTR.	29-JUL-96	01-AUG-96	16-AUG-96
				Hold:12-AUG-96
	TCLP Extr 13 S 6010A ICP METALS			Hold:25-JAN-97
	TCLP Extr 13 S 6010A ICP TRACE			Hold:25-JAN-97
	TCLP Extr 13 S 7470 MERCURY			Hold:26-AUG-96
L7561-25 TEMP 2,3,4 Location: RFG01-07B	BOHXX6 LIMITED SAMPLE VOLUME ANALYSIS S 8080 PEST/PCBS	29-JUL-96	01-AUG-96	16-AUG-96

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 07 1996, 08:35 am

Login Number: L7561
 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
Liq. Waste 7	S 1311 TCLP REG. EXTR.	Hold:12-AUG-96		
TCLP Extr 13	S 6010A ICP METALS	Hold:25-JAN-97		
TCLP Extr 13	S 6010A ICP TRACE	Hold:25-JAN-97		
TCLP Extr 13	S 7470 MERCURY	Hold:26-AUG-96		
Liq. Waste 7	S 9040 PH	Hold:05-AUG-96		
L7561-26	BOHYM6	29-JUL-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: RFG01-07B				
Liq. Waste 7	S 1311 TCLP REG. EXTR.	Hold:12-AUG-96		
TCLP Extr 13	S 6010A ICP METALS	Hold:25-JAN-97		
TCLP Extr 13	S 6010A ICP TRACE	Hold:25-JAN-97		
TCLP Extr 13	S 7470 MERCURY	Hold:26-AUG-96		
Liq. Waste 7	S 9040 PH	Hold:05-AUG-96		
L7561-27	BOHYM7	29-JUL-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: RFG01-07B				
Liq. Waste 7	S 1311 TCLP REG. EXTR.	Hold:12-AUG-96		
TCLP Extr 13	S 6010A ICP METALS	Hold:25-JAN-97		
TCLP Extr 13	S 6010A ICP TRACE	Hold:25-JAN-97		
TCLP Extr 13	S 7470 MERCURY	Hold:26-AUG-96		
Liq. Waste 7	S 9040 PH	Hold:05-AUG-96		
L7561-28	BOHYM8	29-JUL-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: RFG01-07B				
Liq. Waste 7	S 1311 TCLP REG. EXTR.	Hold:12-AUG-96		
TCLP Extr 13	S 6010A ICP METALS	Hold:25-JAN-97		
TCLP Extr 13	S 6010A ICP TRACE	Hold:25-JAN-97		
TCLP Extr 13	S 7470 MERCURY	Hold:26-AUG-96		
Liq. Waste 7	S 9040 PH	Hold:05-AUG-96		
L7561-29	BOHXX4	29-JUL-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: RFG01-07B				
Liq. Waste 7	S 335.2 CYANIDE TOTAL	Hold:12-AUG-96		
L7561-30	BOHXX5	29-JUL-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: RFG01-07B				
Liq. Waste 7	S 335.2 CYANIDE TOTAL	Hold:12-AUG-96		

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
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Login Number: L7561
 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
L7561-31 TEMP 2,3,4 Location: 156RAD1-05 SolidWaste 8 S 335.2 SolidWaste 8 S 9045	BOHXX1 LIMITED SAMPLE VOLUME ANALYSIS CYANIDE TOTAL PH	29-JUL-96	01-AUG-96	16-AUG-96
L7561-32 TEMP 2,3,4 Location: RFG01-07B Liq. Waste 7 S 335.2	BOHXX6 LIMITED SAMPLE VOLUME ANALYSIS CYANIDE TOTAL	29-JUL-96	01-AUG-96	16-AUG-96
L7561-33 TEMP 2,3,4 Location: RFG01-07B Liq. Waste 7 S 335.2	BOHYM6 LIMITED SAMPLE VOLUME ANALYSIS CYANIDE TOTAL	29-JUL-96	01-AUG-96	16-AUG-96
L7561-34 TEMP 2,3,4 Location: RFG01-07B Liq. Waste 7 S 335.2	BOHYM7 LIMITED SAMPLE VOLUME ANALYSIS CYANIDE TOTAL	29-JUL-96	01-AUG-96	16-AUG-96
L7561-35 TEMP 2,3,4 Location: RFG01-07B Liq. Waste 7 S 335.2	BOHYM8 LIMITED SAMPLE VOLUME ANALYSIS CYANIDE TOTAL	29-JUL-96	01-AUG-96	16-AUG-96
L7561-36 TEMP 2,3,4 Location: RFG01-07B Liq. Waste 7 S 9030	BOHXX4 LIMITED SAMPLE VOLUME ANALYSIS SULFIDE	29-JUL-96	01-AUG-96	16-AUG-96
L7561-37 TEMP 2,3,4 Location: RFG01-07B Liq. Waste 7 S 9030	BOHXX5 LIMITED SAMPLE VOLUME ANALYSIS SULFIDE	29-JUL-96	01-AUG-96	16-AUG-96
L7561-38 TEMP 2,3,4 Location: 156RAD1-05 SolidWaste 8 S 9030	BOHXX1 LIMITED SAMPLE VOLUME ANALYSIS SULFIDE	29-JUL-96	01-AUG-96	16-AUG-96
L7561-39 TEMP 2,3,4 Location: RFG01-07B	BOHXX6 LIMITED SAMPLE VOLUME ANALYSIS SULFIDE	29-JUL-96	01-AUG-96	16-AUG-96

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 07 1996, 08:35 am

Login Number: L7561
 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
Liq. Waste 7 S 9030	SULFIDE	Hold:05-AUG-96		
L7561-40 TEMP 2,3,4 Location: RFG01-07B	BOHYM6 LIMITED SAMPLE VOLUME ANALYSIS	29-JUL-96	01-AUG-96	16-AUG-96
Liq. Waste 7 S 9030	SULFIDE	Hold:05-AUG-96		
L7561-41 TEMP 2,3,4 Location: RFG01-07B	BOHYM7 LIMITED SAMPLE VOLUME ANALYSIS	29-JUL-96	01-AUG-96	16-AUG-96
Liq. Waste 7 S 9030	SULFIDE	Hold:05-AUG-96		
L7561-42 TEMP 2,3,4 Location: RFG01-07B	BOHYM8 LIMITED SAMPLE VOLUME ANALYSIS	29-JUL-96	01-AUG-96	16-AUG-96
Liq. Waste 7 S 9030	SULFIDE	Hold:05-AUG-96		
L7561-43 TEMP 2,3,4 Location: 156CART-04	BOHXX4	29-JUL-96	01-AUG-96	16-AUG-96
Liq. Waste 7 S	GAMMA SPEC LAL-0063	Hold:25-JAN-97		
Liq. Waste 7 S	GR ALP/BETA LAL-0060	Hold:25-JAN-97		
L7561-44 TEMP 2,3,4 Location: 156CART-04	BOHXX4	29-JUL-96	01-AUG-96	16-AUG-96
L7561-45 TEMP 2,3,4 Location: 156-23A	BOHXX4	29-JUL-96	01-AUG-96	16-AUG-96
L7561-46 TEMP 2,3,4 Location: 156CART-04	BOHXX5	29-JUL-96	01-AUG-96	16-AUG-96
Liq. Waste 7 S	GAMMA SPEC LAL-0063	Hold:25-JAN-97		
Liq. Waste 7 S	GR ALP/BETA LAL-0060	Hold:25-JAN-97		
L7561-47 TEMP 2,3,4 Location: 156-23A	BOHXX5	29-JUL-96	01-AUG-96	16-AUG-96
L7561-48 TEMP 2,3,4 Location: 156CART-04	BOHXX5	29-JUL-96	01-AUG-96	16-AUG-96

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 07 1996, 08:35 am

Login Number: L7561
 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
L7561-49 TEMP 2,3,4 Location: 156CART-04 Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-JAN-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-JAN-97	BOHXX6	29-JUL-96	01-AUG-96	16-AUG-96
L7561-50 TEMP 2,3,4 Location: 156-23A	BOHXX6	29-JUL-96	01-AUG-96	16-AUG-96
L7561-51 TEMP 2,3,4 Location: 156-23A	BOHXX6	29-JUL-96	01-AUG-96	16-AUG-96
L7561-52 TEMP 2,3,4 Location: 156CART-04 Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-JAN-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-JAN-97	BOHYM6	29-JUL-96	01-AUG-96	16-AUG-96
L7561-53 TEMP 2,3,4 Location: 156CART-04	BOHYM6	29-JUL-96	01-AUG-96	16-AUG-96
L7561-54 TEMP 2,3,4 Location: 156CART-04	BOHYM6	29-JUL-96	01-AUG-96	16-AUG-96
L7561-55 TEMP 2,3,4 Location: 156-23A Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-JAN-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-JAN-97	BOHYM7	29-JUL-96	01-AUG-96	16-AUG-96
L7561-56 TEMP 2,3,4 Location: 156-23A -	BOHYM7	29-JUL-96	01-AUG-96	16-AUG-96
L7561-57 TEMP 2,3,4 Location: 156CART-04	BOHYM7	29-JUL-96	01-AUG-96	16-AUG-96

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 07 1996, 08:35 am

Login Number: L7561
 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
L7561-58 TEMP 2,3,4 Location: 156-23A Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-JAN-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-JAN-97	BOHYM8	29-JUL-96	01-AUG-96	16-AUG-96
L7561-59 TEMP 2,3,4 Location: 156CART-04	BOHYM8	29-JUL-96	01-AUG-96	16-AUG-96
L7561-60 TEMP 2,3,4 Location: 156CART-04	BOHYM8	29-JUL-96	01-AUG-96	16-AUG-96
L7561-61 Location: Water 1 S EDD - DISK DEL. Water 1 S GC2 Water 1 S INORG TYPE 2 RPT Water 1 S RAD RPT TYPE 2	REPORT TYPE	01-AUG-96	01-AUG-96	16-AUG-96

Signature: _____

Maath L B...
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Date: _____

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LOCKHEED ANALYTICAL SERVICES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 09:57 am

Login Number: L7561
 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
L7561-1 TEMP 2,3,4 Location: 156CART-8 SolidWaste 8 S SCREENING	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
L7561-2 TEMP 2,3,4 Location: 156CART-8 Liq. Waste 7 S SCREENING	BOHXX5	29-AUG-96	01-AUG-96	16-AUG-96
			Hold:25-FEB-97	
L7561-3 TEMP 2,3,4 Location: 156CART-8 SolidWaste 8 S SCREENING	BOHXX1	29-AUG-96	01-AUG-96	16-AUG-96
L7561-4 TEMP 2,3,4 Location: 156CART-8 Liq. Waste 7 S SCREENING	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
			Hold:25-FEB-97	
L7561-5 TEMP 2,3,4 Location: 156CART-8 Liq. Waste 7 S SCREENING	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
			Hold:25-FEB-97	
L7561-6 TEMP 2,3,4 Location: 156CART-8 Liq. Waste 7 S SCREENING	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96
			Hold:25-FEB-97	
L7561-7 TEMP 2,3,4 Location: 156CART-8 Liq. Waste 7 S SCREENING	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
			Hold:25-FEB-97	
L7561-8 TEMP 2,3,4 LIMITED SAMPLE VOLUME ANALYSIS ARE PRIORITIZED Location: 156RAD1-05 Liq. Waste 7 S-1010 IGNITABILITY Liq. Waste 7 S 9040 PH	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
			Hold:05-SEP-96	
			Hold:05-SEP-96	
L7561-9 TEMP 2,3,4 LIMITED SAMPLE VOLUME ANALYSIS ARE PRIORITIZED Location: 156RAD1-05	BOHXX5	29-AUG-96	01-AUG-96	16-AUG-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 09:57 am

Login Number: L7561
 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
Liq. Waste 7	S 1010	IGNITABILITY	Hold:05-SEP-96	
Liq. Waste 7	S 9040	PH	Hold:05-SEP-96	
L7561-10	BOHXX1	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 156RAD1-05				
SolidWaste 8	S 1010	IGNITABILITY	Hold:05-SEP-96	
SolidWaste 8	S 9045	PH	Hold:05-SEP-96	
L7561-11	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 156RAD1-05				
Liq. Waste 7	S 1010	IGNITABILITY	Hold:05-SEP-96	
Liq. Waste 7	S 9040	PH	Hold:05-SEP-96	
L7561-12	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 157				
Liq. Waste 7	S 1010	IGNITABILITY	Hold:05-SEP-96	
Liq. Waste 7	S 9040	PH	Hold:05-SEP-96	
L7561-13	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 156RAD1-05				
Liq. Waste 7	S 1010	IGNITABILITY	Hold:05-SEP-96	
Liq. Waste 7	S 9040	PH	Hold:05-SEP-96	
L7561-14	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 156RAD1-05				
Liq. Waste 7	S 1010	IGNITABILITY	Hold:05-SEP-96	
Liq. Waste 7	S 9040	PH	Hold:05-SEP-96	
*L7561-15	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 156RAD1-05				
Liq. Waste 7	S 8080	PEST/PCBS	Hold:12-SEP-96	
*L7561-16	BOHXX5	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 156RAD1-05				
Liq. Waste 7	S 8080	PEST/PCBS	Hold:12-SEP-96	

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 09:57 am

Login Number: L7561
 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
*L7561-17 TEMP 2,3,4 LIMITED Location: 156RAD1-05 SolidWaste 8 S 8080	BOHXX1 SAMPLE VOLUME ANALYSIS ARE PRIORITIZED PEST/PCBS	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:12-SEP-96
*L7561-18 TEMP 2,3,4 LIMITED Location: 156RAD1-05 Liq. Waste 7 S 8080	BOHXX6 SAMPLE VOLUME ANALYSIS PRIORITIZED PEST/PCBS	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:12-SEP-96
*L7561-19 TEMP 2,3,4 LIMITED Location: 156RAD1-05 Liq. Waste 7 S 8080	BOHYM6 SAMPLE VOLUME ANALYSIS PRIORITIZED PEST/PCBS	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:12-SEP-96
*L7561-20 TEMP 2,3,4 LIMITED Location: 156RAD1-05 Liq. Waste 7 S 8080	BOHYM7 SAMPLE VOLUME ANALYSIS PRIORITIZED PEST/PCBS	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:12-SEP-96
*L7561-21 TEMP 2,3,4 LIMITED Location: 156RAD1-05 Liq. Waste 7 S 8080	BOHYM8 SAMPLE VOLUME ANALYSIS PRIORITIZED PEST/PCBS	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:12-SEP-96
L7561-22 TEMP 2,3,4 LIMITED Location: 156RAD1-05 Liq. Waste 7 S 1311 TCLP Extr 13 S 6010A TCLP Extr 13 S 6010A TCLP Extr 13 S 7470	BOHXX4 SAMPLE VOLUME ANALYSIS PRIORITIZED TCLP REG. EXTR. ICP METALS ICP TRACE MERCURY	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:12-SEP-96 Hold:25-FEB-97 Hold:25-FEB-97 Hold:26-SEP-96
L7561-23 TEMP 2,3,4 LIMITED Location: 156RAD1-05 Liq. Waste 7 S 1311 TCLP Extr 13 S 6010A TCLP Extr 13 S 6010A TCLP Extr 13 S 7470	BOHXX5 SAMPLE VOLUME ANALYSIS PRIORITIZED TCLP REG. EXTR. ICP METALS ICP TRACE MERCURY	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:12-SEP-96 Hold:25-FEB-97 Hold:25-FEB-97 Hold:26-SEP-96
L7561-24 TEMP 2,3,4 LIMITED Location: 156RAD1-05	BOHXX1 SAMPLE VOLUME ANALYSIS PRIORITIZED	29-AUG-96	01-AUG-96	16-AUG-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 09:57 am

Login Number: L7561
 Account: 596 Bechtel Hanford, Inc. * Richland, WA
 Project: BECHTEL-HANFORD Bechtel Hanford Project

Laboratory	Client	Collect	Receive	Due
Sample Number	Sample Number	Date	Date	PR Date
SolidWaste 8 S 1311	TCLP REG. EXTR.	Hold:12-SEP-96		
TCLP Extr 13 S 6010A	ICP METALS	Hold:25-FEB-97		
TCLP Extr 13 S 6010A	ICP TRACE	Hold:25-FEB-97		
TCLP Extr 13 S 7470	MERCURY	Hold:26-SEP-96		
L7561-25	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: 156RAD1-05				
Liq. Waste 7 S 1311	TCLP REG. EXTR.	Hold:12-SEP-96		
TCLP Extr 13 S 6010A	ICP METALS	Hold:25-FEB-97		
TCLP Extr 13 S 6010A	ICP TRACE	Hold:25-FEB-97		
TCLP Extr 13 S 7470	MERCURY	Hold:26-SEP-96		
L7561-26	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: 156RAD1-05				
Liq. Waste 7 S 1311	TCLP REG. EXTR.	Hold:12-SEP-96		
TCLP Extr 13 S 6010A	ICP METALS	Hold:25-FEB-97		
TCLP Extr 13 S 6010A	ICP TRACE	Hold:25-FEB-97		
TCLP Extr 13 S 7470	MERCURY	Hold:26-SEP-96		
L7561-27	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: 156RAD1-05				
Liq. Waste 7 S 1311	TCLP REG. EXTR.	Hold:12-SEP-96		
TCLP Extr 13 S 6010A	ICP METALS	Hold:25-FEB-97		
TCLP Extr 13 S 6010A	ICP TRACE	Hold:25-FEB-97		
TCLP Extr 13 S 7470	MERCURY	Hold:26-SEP-96		
L7561-28	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: 156RAD1-05				
Liq. Waste 7 S 1311	TCLP REG. EXTR.	Hold:12-SEP-96		
TCLP Extr 13 S 6010A	ICP METALS	Hold:25-FEB-97		
TCLP Extr 13 S 6010A	ICP TRACE	Hold:25-FEB-97		
TCLP Extr 13 S 7470	MERCURY	Hold:26-SEP-96		
L7561-29	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: 156RAD1-05				
Liq. Waste 7 S 335.2	CYANIDE TOTAL	Hold:12-SEP-96		

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LOCKHEED ANALYTICAL SERVICES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 09:57 am

Login Number: L7561
 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
L7561-30 TEMP 2,3,4 Location: 156RAD1-05 Liq. Waste 7 S 335.2	BOHXX5 LIMITED SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	CYANIDE TOTAL			Hold:12-SEP-96
L7561-31 TEMP 2,3,4 Location: 156RAD1-05 SolidWaste 8 S 335.2	BOHXX1 LIMITED SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	CYANIDE TOTAL			Hold:12-SEP-96
L7561-32 TEMP 2,3,4 Location: 156RAD1-05 Liq. Waste 7 S 335.2	BOHXX6 LIMITED SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	CYANIDE TOTAL			Hold:12-SEP-96
L7561-33 TEMP 2,3,4 Location: 156RAD1-05 Liq. Waste 7 S 335.2	BOHYM6 LIMITED SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	CYANIDE TOTAL			Hold:12-SEP-96
L7561-34 TEMP 2,3,4 Location: 156RAD1-05 Liq. Waste 7 S 335.2	BOHYM7 LIMITED SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	CYANIDE TOTAL			Hold:12-SEP-96
L7561-35 TEMP 2,3,4 Location: 156RAD1-05 Liq. Waste 7 S 335.2	BOHYM8 LIMITED SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	CYANIDE TOTAL			Hold:12-SEP-96
L7561-36 TEMP 2,3,4 Location: 156RAD1-05 Liq. Waste 7 S 9030	BOHXX4 LIMITED SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	SULFIDE			Hold:05-SEP-96
L7561-37 TEMP 2,3,4 Location: 156RAD1-05 Liq. Waste 7 S 9030	BOHXX5 LIMITED SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	SULFIDE			Hold:05-SEP-96
L7561-38 TEMP 2,3,4 Location: 156RAD1-05 SolidWaste 8 S 9030	BOHXX1 LIMITED SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	SULFIDE			Hold:05-SEP-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 09:57 am

Login Number: L7561
 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
L7561-39 TEMP 2,3,4 LIMITED Location: 156RAD1-05 Liq. Waste 7 S 9030	BOHXX6 SAMPLE VOLUME ANALYSIS SULFIDE	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:05-SEP-96
L7561-40 TEMP 2,3,4 LIMITED Location: 156RAD1-05 Liq. Waste 7 S 9030	BOHYM6 SAMPLE VOLUME ANALYSIS SULFIDE	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:05-SEP-96
L7561-41 TEMP 2,3,4 LIMITED Location: 156RAD1-05 Liq. Waste 7 S 9030	BOHYM7 SAMPLE VOLUME ANALYSIS SULFIDE	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:05-SEP-96
L7561-42 TEMP 2,3,4 LIMITED Location: 156RAD1-05 Liq. Waste 7 S 9030	BOHYM8 SAMPLE VOLUME ANALYSIS SULFIDE	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:05-SEP-96
L7561-43 TEMP 2,3,4 Location: 157 Liq. Waste 7 S GAMMA SPEC LAL-0063 Liq. Waste 7 S GR ALP/BETA LAL-0060	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:25-FEB-97 Hold:25-FEB-97
L7561-44 TEMP 2,3,4 Location: 156CART-8	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
L7561-45 TEMP 2,3,4 Location: 156CART-8	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
L7561-46 TEMP 2,3,4 Location: 157 Liq. Waste 7 S GAMMA SPEC LAL-0063 Liq. Waste 7 S GR ALP/BETA LAL-0060	BOHXX5	29-AUG-96	01-AUG-96	16-AUG-96
				Hold:25-FEB-97 Hold:25-FEB-97
L7561-47 TEMP 2,3,4 Location: 156CART-8	BOHXX5	29-AUG-96	01-AUG-96	16-AUG-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 09:57 am

Login Number: L7561
 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
L7561-48 TEMP 2,3,4 Location: 156CART-8	BOHXX5	29-AUG-96	01-AUG-96	16-AUG-96
L7561-49 TEMP 2,3,4 Location: 157 Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-FEB-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-FEB-97	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-50 TEMP 2,3,4 Location: 156CART-8	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-51 TEMP 2,3,4 Location: 156CART-8	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-52 TEMP 2,3,4 Location: 156CART-8 Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-FEB-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-FEB-97	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-53 TEMP 2,3,4 Location: 156CART-8	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-54 TEMP 2,3,4 Location: 156CART-8	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-55 TEMP 2,3,4 Location: 156CART-8 Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-FEB-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-FEB-97	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96
L7561-56 TEMP 2,3,4 Location: 156CART-8	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 02 1996, 09:57 am

Login Number: L7561
 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
L7561-57 TEMP 2,3,4 Location: 157	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96
L7561-58 TEMP 2,3,4 Location: 156CART-8 Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-FEB-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-FEB-97	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
L7561-59 TEMP 2,3,4 Location: 156CART-8	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
L7561-60 TEMP 2,3,4 Location: 156CART-8	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
L7561-61 Location: Water 1 S EDD - DISK DEL. Water 1 S GC2 Water 1 S INORG TYPE 2 RPT Water 1 S RAD RPT TYPE 2	REPORT TYPE	01-AUG-96	01-AUG-96	16-AUG-96

* Change) 8080 PCB's to Pest/PCB's

Signature: Paul Jans
 Date: 8-02-96 0073
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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 01 1996, 05:58 pm

Login Number: L7561
 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
L7561-1 TEMP 2,3,4 Location: 157 SolidWaste 8 S SCREENING	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
L7561-2 TEMP 2,3,4 Location: 157 Liq. Waste 7 S SCREENING	BOHXX5	29-AUG-96	01-AUG-96	16-AUG-96
			Hold:25-FEB-97	
L7561-3 TEMP 2,3,4 Location: 157 SolidWaste 8 S SCREENING	BOHXX1	29-AUG-96	01-AUG-96	16-AUG-96
L7561-4 TEMP 2,3,4 Location: 157 Liq. Waste 7 S SCREENING	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
			Hold:25-FEB-97	
L7561-5 TEMP 2,3,4 Location: 157 Liq. Waste 7 S SCREENING	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
			Hold:25-FEB-97	
L7561-6 TEMP 2,3,4 Location: 157 Liq. Waste 7 S SCREENING	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96
			Hold:25-FEB-97	
L7561-7 TEMP 2,3,4 Location: 157 Liq. Waste 7 S SCREENING	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
			Hold:25-FEB-97	
L7561-8 TEMP 2,3,4 Location: 157 Liq. Waste 7 S 1010 IGNITABILITY Liq. Waste 7 S 9040 PH	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
	LIMITED SAMPLE VOLUME ANALYSIS ARE PRIORITIZED			
			Hold:05-SEP-96	
			Hold:05-SEP-96	
L7561-9 TEMP 2,3,4 Location: 157	BOHXX5	29-AUG-96	01-AUG-96	16-AUG-96
	LIMITED SAMPLE VOLUME ANALYSIS ARE PRIORITIZED			

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 01 1996, 05:58 pm

Login Number: L7561
 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
Liq. Waste 7	S 1010	IGNITABILITY	Hold:05-SEP-96	
Liq. Waste 7	S 9040	PH	Hold:05-SEP-96	
L7561-10	BOHXX1	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 157				
SolidWaste 8	S 1010	IGNITABILITY	Hold:05-SEP-96	
SolidWaste 8	S 9045	PH	Hold:05-SEP-96	
L7561-11	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 157				
Liq. Waste 7	S 1010	IGNITABILITY	Hold:05-SEP-96	
Liq. Waste 7	S 9040	PH	Hold:05-SEP-96	
L7561-12	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 157				
Liq. Waste 7	S 1010	IGNITABILITY	Hold:05-SEP-96	
Liq. Waste 7	S 9040	PH	Hold:05-SEP-96	
L7561-13	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 157				
Liq. Waste 7	S 1010	IGNITABILITY	Hold:05-SEP-96	
Liq. Waste 7	S 9040	PH	Hold:05-SEP-96	
L7561-14	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 157				
Liq. Waste 7	S 1010	IGNITABILITY	Hold:05-SEP-96	
Liq. Waste 7	S 9040	PH	Hold:05-SEP-96	
L7561-15	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 157				
Liq. Waste 7	S 8080	PCBS ONLY	Hold:12-SEP-96	
L7561-16	BOHXX5	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED	SAMPLE VOLUME ANALYSIS ARE PRIORITIZED		
Location: 157				
Liq. Waste 7	S 8080	PCBS ONLY	Hold:12-SEP-96	

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 01 1996, 05:58 pm

Login Number: L7561
 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
L7561-17 TEMP 2,3,4 Location: 157 SolidWaste 8	LIMITED BOHXX1 SAMPLE VOLUME ANALYSIS ARE PRIORITIZED S 8080 PEST ONLY	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
L7561-18 TEMP 2,3,4 Location: 157 Liq. Waste 7	LIMITED BOHXX6 SAMPLE VOLUME ANALYSIS PRIORITIZED S 8080 PCBS ONLY	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
L7561-19 TEMP 2,3,4 Location: 157 Liq. Waste 7	LIMITED BOHYM6 SAMPLE VOLUME ANALYSIS PRIORITIZED S 8080 PCBS ONLY	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
L7561-20 TEMP 2,3,4 Location: 157 Liq. Waste 7	LIMITED BOHYM7 SAMPLE VOLUME ANALYSIS PRIORITIZED S 8080 PCBS ONLY	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
L7561-21 TEMP 2,3,4 Location: 157 Liq. Waste 7	LIMITED BOHYM8 SAMPLE VOLUME ANALYSIS PRIORITIZED S 8080 PCBS ONLY	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
L7561-22 TEMP 2,3,4 Location: 157 Liq. Waste 7	LIMITED BOHXX4 SAMPLE VOLUME ANALYSIS PRIORITIZED S 1311 TCLP REG. EXTR.	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
	TCLP Extr 13 S 6010A ICP METALS	Hold:25-FEB-97		
	TCLP Extr 13 S 6010A ICP TRACE	Hold:25-FEB-97		
	TCLP Extr 13 S 7470 MERCURY	Hold:26-SEP-96		
L7561-23 TEMP 2,3,4 Location: 157 Liq. Waste 7	LIMITED BOHXX5 SAMPLE VOLUME ANALYSIS PRIORITIZED S 1311 TCLP REG. EXTR.	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
	TCLP Extr 13 S 6010A ICP METALS	Hold:25-FEB-97		
	TCLP Extr 13 S 6010A ICP TRACE	Hold:25-FEB-97		
	TCLP Extr 13 S 7470 MERCURY	Hold:26-SEP-96		
L7561-24 TEMP 2,3,4 Location: 157	LIMITED BOHXX1 SAMPLE VOLUME ANALYSIS PRIORITIZED	29-AUG-96	01-AUG-96	16-AUG-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 01 1996, 05:58 pm

Login Number: L7561
 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
SolidWaste 8	S 1311 TCLP REG. EXTR.	Hold:12-SEP-96		
TCLP Extr 13	S 6010A ICP METALS	Hold:25-FEB-97		
TCLP Extr 13	S 6010A ICP TRACE	Hold:25-FEB-97		
TCLP Extr 13	S 7470 MERCURY	Hold:26-SEP-96		
L7561-25	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: 157				
Liq. Waste 7	S 1311 TCLP REG. EXTR.	Hold:12-SEP-96		
TCLP Extr 13	S 6010A ICP METALS	Hold:25-FEB-97		
TCLP Extr 13	S 6010A ICP TRACE	Hold:25-FEB-97		
TCLP Extr 13	S 7470 MERCURY	Hold:26-SEP-96		
L7561-26	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: 157				
Liq. Waste 7	S 1311 TCLP REG. EXTR.	Hold:12-SEP-96		
TCLP Extr 13	S 6010A ICP METALS	Hold:25-FEB-97		
TCLP Extr 13	S 6010A ICP TRACE	Hold:25-FEB-97		
TCLP Extr 13	S 7470 MERCURY	Hold:26-SEP-96		
L7561-27	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: 157				
Liq. Waste 7	S 1311 TCLP REG. EXTR.	Hold:12-SEP-96		
TCLP Extr 13	S 6010A ICP METALS	Hold:25-FEB-97		
TCLP Extr 13	S 6010A ICP TRACE	Hold:25-FEB-97		
TCLP Extr 13	S 7470 MERCURY	Hold:26-SEP-96		
L7561-28	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: 157				
Liq. Waste 7	S 1311 TCLP REG. EXTR.	Hold:12-SEP-96		
TCLP Extr 13	S 6010A ICP METALS	Hold:25-FEB-97		
TCLP Fxtr 13	S 6010A ICP TRACE	Hold:25-FEB-97		
TCLP Extr 13	S 7470 MERCURY	Hold:26-SEP-96		
L7561-29	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
TEMP 2,3,4	LIMITED SAMPLE VOLUME ANALYSIS PRIORITIZED			
Location: 157				
Liq. Waste 7	S 335.2 CYANIDE TOTAL	Hold:12-SEP-96		

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 01 1996, 05:58 pm

Login Number: L7561
 - 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
L7561-30 TEMP 2,3,4 Location: 157 Liq. Waste 7	BOHXX5 LIMITED SAMPLE VOLUME ANALYSIS S 335.2 CYANIDE TOTAL	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
L7561-31 TEMP 2,3,4 Location: 157 SolidWaste 8	BOHXX1 LIMITED SAMPLE VOLUME ANALYSIS S 335.2 CYANIDE TOTAL	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
L7561-32 TEMP 2,3,4 Location: 157 Liq. Waste 7	BOHXX6 LIMITED SAMPLE VOLUME ANALYSIS S 335.2 CYANIDE TOTAL	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
L7561-33 TEMP 2,3,4 Location: 157 Liq. Waste 7	BOHYM6 LIMITED SAMPLE VOLUME ANALYSIS S 335.2 CYANIDE TOTAL	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
L7561-34 TEMP 2,3,4 Location: 157 Liq. Waste 7	BOHYM7 LIMITED SAMPLE VOLUME ANALYSIS S 335.2 CYANIDE TOTAL	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
L7561-35 TEMP 2,3,4 Location: 157 Liq. Waste 7	BOHYM8 LIMITED SAMPLE VOLUME ANALYSIS S 335.2 CYANIDE TOTAL	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:12-SEP-96		
L7561-36 TEMP 2,3,4 Location: 157 Liq. Waste 7	BOHXX4 LIMITED SAMPLE VOLUME ANALYSIS S 9030 SULFIDE	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:05-SEP-96		
L7561-37 TEMP 2,3,4 Location: 157 Liq. Waste 7	BOHXX5 LIMITED SAMPLE VOLUME ANALYSIS S 9030 SULFIDE	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:05-SEP-96		
L7561-38 TEMP 2,3,4 Location: 157 SolidWaste 8	BOHXX1 LIMITED SAMPLE VOLUME ANALYSIS S 9030 SULFIDE	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:05-SEP-96		

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (1n01)
 Aug 01 1996, 05:58 pm

Login Number: L7561
 - 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
L7561-39 TEMP 2,3,4 Location: 157 Liq. Waste 7	LIMITED BOHXX6 SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	S 9030 SULFIDE	Hold:05-SEP-96		
L7561-40 TEMP 2,3,4 Location: 157 Liq. Waste 7	LIMITED BOHYM6 SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	S 9030 SULFIDE	Hold:05-SEP-96		
L7561-41 TEMP 2,3,4 Location: 157 Liq. Waste 7	LIMITED BOHYM7 SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	S 9030 SULFIDE	Hold:05-SEP-96		
L7561-42 TEMP 2,3,4 Location: 157 Liq. Waste 7	LIMITED BOHYM8 SAMPLE VOLUME ANALYSIS	29-AUG-96	01-AUG-96	16-AUG-96
	S 9030 SULFIDE	Hold:05-SEP-96		
L7561-43 TEMP 2,3,4 Location: 157 Liq. Waste 7 Liq. Waste 7	BOHXX4 GAMMA SPEC LAL-0063 GR ALP/BETA LAL-0060	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:25-FEB-97		
		Hold:25-FEB-97		
L7561-44 TEMP 2,3,4 Location: 157	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
L7561-45 TEMP 2,3,4 Location: 157	BOHXX4	29-AUG-96	01-AUG-96	16-AUG-96
L7561-46 TEMP 2,3,4 Location: 157 Liq. Waste 7 Liq. Waste 7	BOHXX5 GAMMA SPEC LAL-0063 GR ALP/BETA LAL-0060	29-AUG-96	01-AUG-96	16-AUG-96
		Hold:25-FEB-97		
		Hold:25-FEB-97		
L7561-47 TEMP 2,3,4 Location: 157	BOHXX5	29-AUG-96	01-AUG-96	16-AUG-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Aug 01 1996, 05:58 pm

Login Number: L7561
 - 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
L7561-48 TEMP 2,3,4 Location: 157	BOHXX5	29-AUG-96	01-AUG-96	16-AUG-96
L7561-49 TEMP 2,3,4 Location: 157 Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-FEB-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-FEB-97	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-50 TEMP 2,3,4 Location: 157	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-51 TEMP 2,3,4 Location: 157	BOHXX6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-52 TEMP 2,3,4 Location: 157 Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-FEB-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-FEB-97	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-53 TEMP 2,3,4 Location: 157	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-54 TEMP 2,3,4 Location: 157	BOHYM6	29-AUG-96	01-AUG-96	16-AUG-96
L7561-55 TEMP 2,3,4 Location: 157 Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-FEB-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-FEB-97	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96
L7561-56 TEMP 2,3,4 Location: 157	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96

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LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (1n01)
 Aug 01 1996, 05:58 pm

Login Number: L7561
 - 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
L7561-57 TEMP 2,3,4 Location: 157	BOHYM7	29-AUG-96	01-AUG-96	16-AUG-96
L7561-58 TEMP 2,3,4 Location: 157 Liq. Waste 7 S GAMMA SPEC LAL-0063 Hold:25-FEB-97 Liq. Waste 7 S GR ALP/BETA LAL-0060 Hold:25-FEB-97	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
L7561-59 TEMP 2,3,4 Location: 157	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
L7561-60 TEMP 2,3,4 Location: 157	BOHYM8	29-AUG-96	01-AUG-96	16-AUG-96
L7561-61 Location: Water 1 S EDD - DISK DEL. Water 1 S GC2 Water 1 S INORG TYPE 2 RPT Water 1 S RAD RPT TYPE 2	REPORT TYPE	01-AUG-96	01-AUG-96	16-AUG-96

Signature: *Pauli Voss*
 Date: 8-01-96
 0801596 008;

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

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
BOHXX1	L7561-3		SolidWaste	SCREENING
	L7561-10		SolidWaste	1010 IGNITABILI
	L7561-10		SolidWaste	9045 PH
	L7561-17		SolidWaste	8080 PEST ONLY
	L7561-24		SolidWaste	1311 TCLP REG.
	L7561-24		TCLP Extr	6010A ICP METAL
	L7561-24		TCLP Extr	6010A ICP TRACE
	L7561-24		TCLP Extr	7470 MERCURY
	L7561-31		SolidWaste	335.2 CYANIDE T
BOHXX4	L7561-38		SolidWaste	9030 SULFIDE
	L7561-1		SolidWaste	SCREENING
	L7561-8		Liq. Waste	1010 IGNITABILI
	L7561-8		Liq. Waste	9040 PH
	L7561-15		Liq. Waste	8080 PCBS ONLY
	L7561-22		Liq. Waste	1311 TCLP REG.
	L7561-22		TCLP Extr	6010A ICP METAL
	L7561-22		TCLP Extr	6010A ICP TRACE
	L7561-22		TCLP Extr	7470 MERCURY
	L7561-29		Liq. Waste	335.2 CYANIDE T
	L7561-36		Liq. Waste	9030 SULFIDE
BOHXX5	L7561-43		Liq. Waste	GAMMA SPEC LAL-
	L7561-43		Liq. Waste	GR ALP/BETA LAL
	L7561-2		Liq. Waste	SCREENING
	L7561-9		Liq. Waste	1010 IGNITABILI
	L7561-9		Liq. Waste	9040 PH
	L7561-16		Liq. Waste	8080 PCBS ONLY
	L7561-23		Liq. Waste	1311 TCLP REG.
	L7561-23		TCLP Extr	6010A ICP METAL
	L7561-23		TCLP Extr	6010A ICP TRACE
	L7561-23		TCLP Extr	7470 MERCURY
	L7561-30		Liq. Waste	335.2 CYANIDE T
BOHXX6	L7561-37		Liq. Waste	9030 SULFIDE
	L7561-46		Liq. Waste	GAMMA SPEC LAL-
	L7561-46		Liq. Waste	GR ALP/BETA LAL
	L7561-4		Liq. Waste	SCREENING
	L7561-11		Liq. Waste	1010 IGNITABILI
	L7561-11		Liq. Waste	9040 PH
	L7561-18		Liq. Waste	8080 PCBS ONLY
	L7561-25		Liq. Waste	1311 TCLP REG.
	L7561-25		TCLP Extr	6010A ICP METAL
	L7561-25		TCLP Extr	6010A ICP TRACE
	L7561-25		TCLP Extr	7470 MERCURY
BOHYM6	L7561-32		Liq. Waste	335.2 CYANIDE T
	L7561-39		Liq. Waste	9030 SULFIDE
	L7561-49		Liq. Waste	GAMMA SPEC LAL-
	L7561-49		Liq. Waste	GR ALP/BETA LAL
	L7561-5		Liq. Waste	SCREENING
	L7561-12		Liq. Waste	1010 IGNITABILI
	L7561-19		Liq. Waste	8080 PCBS ONLY

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

Client Sample Number	LAL Sample Number	SDS Number	Matrix	Method
	L7561-26		Liq. Waste	1311 TCLP REG.
	L7561-26		TCLP Extr	6010A ICP METAL
	L7561-26		TCLP Extr	6010A ICP TRACE
	L7561-26		TCLP Extr	7470 MERCURY
	L7561-33		Liq. Waste	335.2 CYANIDE T
	L7561-40		Liq. Waste	9030 SULFIDE
	L7561-52		Liq. Waste	GAMMA SPEC LAL-
	L7561-52		Liq. Waste	GR ALP/BETA LAL
BOHYM7	L7561-6		Liq. Waste	SCREENING
	L7561-13		Liq. Waste	1010 IGNITABILI
	L7561-13		Liq. Waste	9040 PH
	L7561-20		Liq. Waste	8080 PCBS ONLY
	L7561-27		Liq. Waste	1311 TCLP REG.
	L7561-27		TCLP Extr	6010A ICP METAL
	L7561-27		TCLP Extr	6010A ICP TRACE
	L7561-27		TCLP Extr	7470 MERCURY
	L7561-34		Liq. Waste	335.2 CYANIDE T
	L7561-41		Liq. Waste	9030 SULFIDE
	L7561-55		Liq. Waste	GAMMA SPEC LAL-
	L7561-55		Liq. Waste	GR ALP/BETA LAL
BOHYM8	L7561-7		Liq. Waste	SCREENING
	L7561-14		Liq. Waste	1010 IGNITABILI
	L7561-14		Liq. Waste	9040 PH
	L7561-21		Liq. Waste	8080 PCBS ONLY
	L7561-28		Liq. Waste	1311 TCLP REG.
	L7561-28		TCLP Extr	6010A ICP METAL
	L7561-28		TCLP Extr	6010A ICP TRACE
	L7561-28		TCLP Extr	7470 MERCURY
	L7561-35		Liq. Waste	335.2 CYANIDE T
	L7561-42		Liq. Waste	9030 SULFIDE
	L7561-58		Liq. Waste	GAMMA SPEC LAL-
	L7561-58		Liq. Waste	GR ALP/BETA LAL
REPORT TYPE	L7561-61		Water	EDD - DISK DEL.
	L7561-61		Water	GC2
	L7561-61		Water	INORG TYPE 2 RP
	L7561-61		Water	RAD RPT TYPE 2

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Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST [7561

B96-142-5 Page 1 of 2

Data Turnaround

Priority
 Normal

Collector Doug Bowers	Company Contact Don Eckert	Telephone No. 373-4955
Project Designation 100-N 90-Day Pad Waste Container Characterization	Sampling Location 109N (100N)	SAF No. B96-142
Ice Chest No. SML-557	Field Logbook No. EFL-1133-1	Method of Shipment Commercial Freight (truck)
Shipped To Lockheed	Offsite Property No.	Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None	None	None	None	None	None	None	None	None	None
	Type of Container	P	G	aG	aG	aG	G	aG	G/P	aG	G
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage Cool to 4C	Volume	20ml	125ml	60ml	125ml	60ml	300ml	250ml	125ml	60ml	125ml

SAMPLE ANALYSIS	Accuracy Score	Ignatability - 1010, pH (Soil) - 9045	Ignatability - 1010, pH (Soil) - 9045	Pest/PCBs - 8080 (TCL)	Pest/PCBs - 8080 (TCL)	See item (1) in Special Instructions	See item (2) in Special Instructions	Cyanide (Total) - 335 2	Cyanide (Total) - 335 2	Sulfides - 9030
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Sample No.	Matrix *	Sample Date	Sample Time								
BOHXX4	Other Solid	7-29-96	0927	X	X	X	X	X	X	X	X
BOHXX5	Other Solid	7-29-96	0927	X	X	X	X	X	X	X	X
BOHXX1	Other Solid	7-29-96	0857	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By <i>[Signature]</i>	Received By <i>[Signature]</i>
Date/Time 7-30-96/0800	Date/Time 0800
Relinquished By <i>[Signature]</i>	Received By <i>[Signature]</i>
Date/Time 7:30-96	Date/Time 7:30-96
Relinquished By	Received By
Date/Time	Date/Time
Relinquished By	Received By
Date/Time	Date/Time

SPECIAL INSTRUCTIONS
 Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR. Turnaround time - 15 days. Due to shipping requirements, the ERC Contractor acknowledges the holding time for Sulfides by EPA9030 may not be met

(1) Metals by ICP (TCLP) - 1311/6010A, Mercury (TCLP) - 1311/7470
 (2) Metals by ICP (TCLP) - 1311/6010A, Mercury (TCLP) - 1311/7470

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

LABORATORY STATION	Received By <i>[Signature]</i>	Title Sample Custodian	Date/Time 8-01-96/15:30
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

0801596
96-26-96

Collector Doug Bowers	Company Contact Don Eckert	Telephone No. 373-4955
Project Designation 100-N 90-Day Pad Waste Container Characterization	Sampling Location 109N (100N)	SAF No. B96-142
Ice Chest No.	Field Logbook No. EFL-1133-1	Method of Shipment Commercial Freight (truck)
Shipped To Lockheed	Offsite Property No.	Bill of Lading/Air Bill No.

Data Turnaround
 Priority
 Normal

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None	None											
	Type of Container	aG	aG											
	No. of Container(s)	1	3											
Special Handling and/or Storage Cool to 4C	Volume	60ml	500ml											

SAMPLE ANALYSIS

Sulfides - 9030 Gross Alpha, Gamma Spectroscopy (100%) 0.7%

Sample No.	Matrix *	Sample Date	Sample Time											
BOHXX4	Other Solid	7-25-96	0927	X	Y									
BOHXX5	Other Solid	7-29-96	0955	X	Y									
BOHXX1	Other Solid	7-29-96	0857	X	Y									

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By Doug Bowers	Received By Don Eckert
Date/Time 7-30-96/0800	Date/Time 0800
Relinquished By Don Eckert	Received By B. Whitten
Date/Time 1030	Date/Time 73096
Relinquished By	Received By
Date/Time	Date/Time
Relinquished By	Received By
Date/Time	Date/Time

SPECIAL INSTRUCTIONS
 Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR. Turnaround time - 15 days. Due to shipping requirements, the ERC Contractor acknowledges the holding time for Sulfides by EPA9030 may not be met.

- Matrix *
- S - Soil
 - SE - Sediment
 - SO - Solid
 - SL - Sludge
 - W - Water
 - O - Oil
 - A - Air
 - D5 - Drum Solids
 - DL - Drum Liquids
 - T - Tissue
 - W1 - Waste
 - L - Liquid
 - V - Vegetation
 - X - Other

LABORATORY SECTION	Received By Don Eckert	Title Sample Custodian	Date/Time 8-01-96/15:30
FINAL SAMPLE DISPOSITION	Disposed Method	Disposed By	Date/Time

0801596 9651080 SB

Collector Doug Bowers	Company Contact Don Eckert	Telephone No. 373-4955
Project Designation 100-N 90-Day Pad Waste Container Characterization	Sampling Location 109N (100N)	SAF No. B96-142
Ice Chest No. RA136/SAL-135	Field Logbook No. EFL-1133-1	Method of Shipment Commercial Freight (truck)
Shipped To Lockheed	Offsite Property No.	Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None	None	None	None	None	None	None	None	None	None
	Type of Container	P	G	nG	nG	nG	G	nG	GrP	nG	G
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage Cool to 4C	Volume	20ml	125ml	60ml	125ml	60ml	300ml	250ml	125ml	60ml	125ml

SAMPLE ANALYSIS				Activity Scan	Ignitability - 1010, pH (Soil) - 9045	Ignitability - 1010, pH (Soil) - 9045	Pest/PCBs - 8080 (TCL)	Pest/PCBs - 8080 (TCL)	See item (1) in Special Instructions	See item (2) in Special Instructions	Cyanide (Total) - 375.2	Cyanide (Total) - 375.2	Sulfides - 9030
Sample No.	Matrix *	Sample Date	Sample Time										
BOHXX6	Other Solid	7-29-96	1012	X		X		X		X		X	
BOHYM6	Other Solid	7-29-96	1025	X		X		X		X		X	

CHAIN OF POSSESSION	Sign/Print Names				SPECIAL INSTRUCTIONS Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR. Turnaround time - 15 days. Due to shipping requirements, the ERC Contractor acknowledges the holding time for Sulfides by EPA9030 may not be met. (1) Metals by ICP (TCLP) - 1311/6010A, Mercury (TCLP) - 1311/7470 (2) Metals by ICP (TCLP) - 1311/6010A, Mercury (TCLP) - 1311/7470	Matrix * S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids T - Tank WI - Wipe L - Liquid V - Vapors X - Other
	Relinquished By Doug Bowers	Date/Time 7-29-96/0800	Received By [Signature]	Date/Time 0800		
	Relinquished By [Signature]	Date/Time 1030	Received By [Signature]	Date/Time 730-96		
	Relinquished By [Signature]	Date/Time	Received By	Date/Time		
Relinquished By [Signature]	Date/Time	Received By	Date/Time			

LABORATORY SECTION	Received By [Signature]	Title Sample Custodian	Date/Time 8-4-96/15:30
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

0801596
96-142-6

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B96-142-6 Page 2 of 2

Data Turnaround

- Priority
- Normal

Collector Doug Bowers	Company Contact Don Eckert	Telephone No. 373-4955
Project Designation 100-N 90-Day Pad Waste Container Characterization	Sampling Location 109N (100N)	SAF No. B96-142
Ice Chest No.	Field Logbook No. EFL-1133-1	Method of Shipment Commercial Freight (truck)
Shipped To Lockheed	Offsite Property No.	Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None	None											
	Type of Container	nG	nG											
	No. of Container(s)	1	3											
Special Handling and/or Storage Cool to 4C	Volume	60ml	500ml											

SAMPLE ANALYSIS

Sulfides - 9030
Gross Alpha,
Gross Beta
Spectroscopy;

Sample No.	Matrix *	Sample Date	Sample Time											
BOHXX6	Other Solid	7-29-96	1012	X	X									
BOHYM6	Other Solid	7-29-96	1025	X	X									

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By <i>Doug Bowers</i>	Date/Time 7-30-96/0800	Received By <i>Don Eckert</i>	Date/Time 0800
Relinquished By <i>Don Eckert</i>	Date/Time 1030	Received By <i>Don Eckert</i>	Date/Time 7-30-96
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR. Turnaround time - 15 days. Due to shipping requirements, the ERC Contractor acknowledges the holding time for Sulfides by EPA9030 may not be met.

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

LABORATORY SECTION	Received By <i>Paul Davis</i>	Title Sample Custodian	Date/Time 8-01-96/15:30
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

08015080
96S
1080

Collector: Doug Bowers
 Company Contact: Don Eckert
 Telephone No.: 373-4955
 Project Designation: 100-N 90-Day Pad Waste Container Characterization
 Sampling Location: 109N (100N)
 SAF No.: B96-142
 Ice Chest No.: RM⁺ 111
 Field Logbook No.: EFL-1133-1
 Method of Shipment: Commercial Freight (truck)
 Shipped To: Lockheed
 Offsite Property No.:
 Bill of Lading/Air Bill No.:

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None	None	None	None	None	None	None	None	None	None
	Type of Container	P	G	aG	aG	aG	G	aG	G/P	aG	G
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage Cool to 4C	Volume	20ml	125ml	60ml	125ml	60ml	300ml	250ml	125ml	60ml	125ml

SAMPLE ANALYSIS				Activity Scan	Ignitability - 1010, pH (Soil) - 9045	Ignitability - 1010, pH (Soil) - 9045	Pest/PCBs - 8080 (TCL)	Pest/PCBs - 8080 (TCL)	See item (1) in Special Instructions	See item (2) in Special Instructions	Cyanide (Total) - 335 2	Cyanide (Total) - 335 2	Sulfides - 9030
Sample No.	Matrix *	Sample Date	Sample Time										
BOHYM7	Other Solid	7-29-96	1040	X		X	X	X	X	X	X	X	
BOHYM8	Other Solid	7-29-96	1035	X		Y	X	X	Y	Y	X	X	

CHAIN OF POSSESSION	Sign/Print Names		SPECIAL INSTRUCTIONS Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR. Turnaround time - 15 days. Due to shipping requirements, the ERC Contractor acknowledges the holding time for Sulfides by EPA9030 may not be met. (1) Metals by ICP (TCLP) - 1311/6010A; Mercury (TCLP) - 1311/7470 (2) Metals by ICP (TCLP) - 1311/6010A; Mercury (TCLP) - 1311/7470	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
	Relinquished By: Doug Bowers 7-29-96/0800	Received By: [Signature] 0800		
	Relinquished By: [Signature] 1030	Received By: [Signature] 7:30 PM		
	Relinquished By: [Signature]	Received By: [Signature]		

LABORATORY SECTION Received By: [Signature] Title: Sample Custodian Date/Time: 8-01-96/15:20

FINAL SAMPLE DISPOSITION Disposal Method: [Signature] Disposed By: [Signature] Date/Time: [Signature]

08015780
88 7/21/96

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B96-142-7

Page 2 of 2

Data Turnaround

Priority
 Normal

Collector Doug Bowers	Company Contact Don Eckert	Telephone No. 373-4955
Project Designation 100-N 90-Day Pad Waste Container Characterization	Sampling Location 109N (100N)	SAF No. B96-142
Ice Chest No.	Field Logbook No. EFL-1133-1	Method of Shipment Commercial Freight (truck)
Shipped To Lockheed	Offsite Property No.	Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS Unknown	Preservation	None	None																
	Type of Container	aG	aG																
	No. of Container(s)	1	3																
Special Handling and/or Storage Cool to 4C	Volume	60ml	500ml																

SAMPLE ANALYSIS				Sulfides - 9030	Gross Alpha, Gamma Spectroscopy; Gross Beta														
-----------------	--	--	--	-----------------	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Sample No.	Matrix *	Sample Date	Sample Time																
BOHYM7	Other Solid	7-29-96	1040	X	X														
BOHYM8	Other Solid	7-29-96	1235	X	X														

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS Due to limited volumes of some waste containers, perform sampling and analysis in order listed on FSR. Turnaround time - 15 days. Due to shipping requirements, the ERC Contractor acknowledges the holding time for Sulfides by EPA9030 may not be met	Matrix * S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids T - Tank WI - Waste L - Liquid V - Vegetation X - Other
Relinquished By Doug Bowers 7-30-96/0800	Received By Vicki... Bechtel 7-30-96	Date/Time 0800	
Relinquished By Vicki... Bechtel 7-30-96	Received By	Date/Time 1030	
Relinquished By	Received By	Date/Time	
Relinquished By	Received By	Date/Time	

LABORATORY SECTION	Received By Paul... Disposal Method	Title Sample Custodian	Date/Time 8-2-96/15:30
FINAL SAMPLE DISPOSITION	Disposed By		Date/Time

18101
9651080

VALIDATED RESULTS SHORT REPORT

30 Jul 1996

Customer ID: BOHXX1
 Lab Sample#: S96E000923

Sample Date:
 Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Customer ID: BOHXX1
 Lab Sample#: S96E000923

Sample Date:
 Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
 Total Act. by LSC: † Uncert.
 Total Activity by LSC (Solid)

3.29 †Uncertainty
 5.20e-4 uCi/g

Customer ID: BOHXX4
 Lab Sample#: S96E000924

Sample Date:
 Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
 Total Act. by LSC: † Uncert.
 Total Activity by LSC (Solid)

3.35 †Uncertainty
 3.49e-4 uCi/g

Customer ID: BOHXX5
 Lab Sample#: S96E000925

Sample Date:
 Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
 Total Act. by LSC: † Uncert.
 Total Activity by LSC (Solid)

12.6 †Uncertainty
 < 1.14e-5 uCi/g

Customer ID: BOHXX6
 Lab Sample#: S96E000926

Sample Date:
 Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
 Total Act. by LSC: † Uncert.
 Total Activity by LSC (Solid)

6.08 †Uncertainty
 8.81e-5 uCi/g

Customer ID: BOHXM6
 Lab Sample#: S96E000927

Sample Date:
 Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
 Total Act. by LSC: † Uncert.
 Total Activity by LSC (Solid)

13.0 †Uncertainty
 < 1.22e-5 uCi/g

0801596 0090

VALIDATED RESULTS SHORT REPORT

30 Jul 1996

Customer ID: BOHYM7
Lab Sample#: S96E000928

Sample Date:
Recv. Date: 07/29/96 16:53

PARAMETER-

RESULTS

UNITS

Customer ID: BOHYM7
Lab Sample#: S96E000928

Sample Date:
Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
Total Act. by LSC: % Uncert.
Total Activity by LSC (Solid)

14.7 %Uncertainty
< 1.27e-5 uCi/g

Customer ID: BOHYM8
Lab Sample#: S96E000929

Sample Date:
Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
Total Act. by LSC: % Uncert.
Total Activity by LSC (Solid)

13.8 %Uncertainty
< 1.16e-5 uCi/g

0801596 0091

VALIDATED RESULTS SHORT REPORT

30 Jul 1996

Customer ID: BOHKT7
Lab Sample#: S96E000918

Sample Date:
Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Customer ID: BOHKT7
Lab Sample#: S96E000918

Sample Date:
Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
Total Act. by LSC: % Uncert.
Total Activity by LSC (Solid)

10.96 %Uncertainty
< 9.38e-6 uCi/g

Customer ID: BOHKT8
Lab Sample#: S96E000919

Sample Date:
Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
Total Act. by LSC: % Uncert.
Total Activity by LSC (Solid)

19.9 %Uncertainty
< 9.82e-6 uCi/g

Customer ID: BOHXV0
Lab Sample#: S96E000920

Sample Date:
Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
Total Act. by LSC: % Uncert.
Total Activity by LSC (Solid)

11.4 %Uncertainty
< 9.29e-6 uCi/g

Customer ID: BOHKT9
Lab Sample#: S96E000921

Sample Date:
Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
Total Act. by LSC: % Uncert.
Total Activity by LSC (Solid)

10.8 %Uncertainty
< 9.86e-6 uCi/g

Customer ID: BOHXV1
Lab Sample#: S96E000922

Sample Date:
Recv. Date: 07/29/96 16:53

PARAMETER

RESULTS

UNITS

Total Activity by LSC
Total Act. by LSC: % Uncert.
Total Activity by LSC (Solid)

10.9 %Uncertainty
< 1.02e-5 uCi/g

VALIDATED RESULTS SHORT REPORT

30 Jul 19

Customer ID: BOHXT3
 Lab Sample#: S96E000912

Sample Date:
 Recv. Date: 07/29/96 16:47

PARAMETER	RESULTS	UNITS
Total Activity by LSC	11.8	%Uncertainty
Total Act. by LSC: % Uncert.	< 1.05e-5	uCi/g
Total Activity by LSC (Solid)		

Customer ID: BOHXT2
 Lab Sample#: S96E000913

Sample Date:
 Recv. Date: 07/29/96 16:53

PARAMETER	RESULTS	UNITS
Total Activity by LSC	10.7	%Uncertainty
Total Act. by LSC: % Uncert.	< 8.99e-6	uCi/g
Total Activity by LSC (Solid)		

Customer ID: BOHXV3
 Lab Sample#: S96E000914

Sample Date:
 Recv. Date: 07/29/96 16:53

PARAMETER	RESULTS	UNITS
Total Activity by LSC	12.4	%Uncertainty
Total Act. by LSC: % Uncert.	< 7.77e-6	uCi/g
Total Activity by LSC (Solid)		

Customer ID: BOHXT4
 Lab Sample#: S96E000915

Sample Date:
 Recv. Date: 07/29/96 16:53

PARAMETER	RESULTS	UNITS
Total Activity by LSC	12.0	%Uncertainty
Total Act. by LSC: % Uncert.	< 1.31e-5	uCi/g
Total Activity by LSC (Solid)		

Customer ID: BOHXT5
 Lab Sample#: S96E000916

Sample Date:
 Recv. Date: 07/29/96 16:53

PARAMETER	RESULTS	UNITS
Total Activity by LSC	11.3	%Uncertainty
Total Act. by LSC: % Uncert.	< 1.07e-5	uCi/g
Total Activity by LSC (Solid)		

Customer ID: BOHXT6
 Lab Sample#: S96E000917

Sample Date:
 Recv. Date: 07/29/96 16:53

PARAMETER	RESULTS	UNITS
Total Activity by LSC	11.4	%Uncertainty
Total Act. by LSC: % Uncert.	< 1.02e-5	uCi/g
Total Activity by LSC (Solid)		

080159693

MESSAGE CONFIRMATION

SESSION NO. = 160

08/01/96 17:22

ID=LOCKHEED LAB SAMPLE RECEIVING

DATE	TIME	S.R-TIME	DISTANT STATION ID	MODE	PAGES	RESULT	
08/01	17:06	15'23"	5093754238	G3 -S	17	OK	0000

0801590094

SAMPLE CHECK-IN LIST

Date/Time Received: 8-01-96 / 15:30 SDG#: N/A

Work Order Number: N/A SAF #: B96-142

Shipping Container ID: SmL-587 Chain of Custody # B96-142-5

- 1. Custody Seals on shipping container intact? Yes No
- 2. Custody Seals dated and signed? Yes No
- 3. Sample temperature 22
- 4. Vermiculite/packing materials is Wet Dry
- 5. Each sample is in a plastic bag? Yes No
- 6. Sample holding times exceeded? Yes No

<p>7. Samples have:</p> <table style="width: 100%;"> <tr> <td style="text-align: center;"><u> </u> tape</td> <td style="text-align: center;"><u> </u> hazard labels</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/> custody seals</td> <td style="text-align: center;"><u> </u> appropriate sample labels</td> </tr> </table>	<u> </u> tape	<u> </u> hazard labels	<input checked="" type="checkbox"/> custody seals	<u> </u> appropriate sample labels
<u> </u> tape	<u> </u> hazard labels			
<input checked="" type="checkbox"/> custody seals	<u> </u> appropriate sample labels			
<p>8. Samples are:</p> <table style="width: 100%;"> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/> in good condition</td> <td style="text-align: center;"><u> </u> leaking</td> </tr> <tr> <td style="text-align: center;"><u> </u> broken</td> <td style="text-align: center;"><u> </u> have air bubbles</td> </tr> </table>	<input checked="" type="checkbox"/> in good condition	<u> </u> leaking	<u> </u> broken	<u> </u> have air bubbles
<input checked="" type="checkbox"/> in good condition	<u> </u> leaking			
<u> </u> broken	<u> </u> have air bubbles			

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

Notes: _____

Sample Custodian/Laboratory: Paula Jankas Date: 8-01-96
 Faxed
 Telephoned To: Kathleen Hall On 8-01-96 By Paula Jankas
 (w) 8-01-96

SAMPLE CHECK-IN LIST

Date/Time Received: 8-01-96/15:30

SDG#: 1-11A

Work Order Number: n/a

SAF #: B96-142-6 ^{PLD 8-01-96}

Shipping Container ID: Em 136/Smb-13 Chain of Custody # B96-142-6

- 1. Custody Seals on shipping container intact? Yes No
- 2. Custody Seals dated and signed? Yes No
- 3. Sample temperature 30
- 4. Vermiculite/packing materials is Wet Dry
- 5. Each sample is in a plastic bag? Yes No
- 6. Sample holding times exceeded? Yes No

<p>7. Samples have:</p> <table style="width: 100%;"> <tr> <td style="text-align: center;"><u> </u> tape</td> <td style="text-align: center;"><u> </u> hazard labels</td> </tr> <tr> <td style="text-align: center;"><u> x </u> custody seals</td> <td style="text-align: center;"><u> </u> appropriate sample labels</td> </tr> </table>	<u> </u> tape	<u> </u> hazard labels	<u> x </u> custody seals	<u> </u> appropriate sample labels
<u> </u> tape	<u> </u> hazard labels			
<u> x </u> custody seals	<u> </u> appropriate sample labels			
<p>8. Samples are:</p> <table style="width: 100%;"> <tr> <td style="text-align: center;"><u> x </u> in good condition</td> <td style="text-align: center;"><u> </u> leaking</td> </tr> <tr> <td style="text-align: center;"><u> </u> broken</td> <td style="text-align: center;"><u> </u> have air bubbles</td> </tr> </table>	<u> x </u> in good condition	<u> </u> leaking	<u> </u> broken	<u> </u> have air bubbles
<u> x </u> in good condition	<u> </u> leaking			
<u> </u> broken	<u> </u> have air bubbles			

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

Notes: _____

Sample Custodian/Laboratory: Paula Vais/CAS Date: 8-01-96
 Telephoned To: Kent Ken Hall On 8-01-96 By Paula Vais
 8-01-96 PCW

SAMPLE CHECK-IN LIST

Date/Time Received: 8-01-96 / 15:30 SDG#: 11-2

Work Order Number: 17117 SAF #: B96-142

Shipping Container ID: RM # 111 ^{10m #111} Chain of Custody #: B96-142-7
_{PCB-01-96}

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

7. Samples have: <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: Paula [Signature] Date: 8-01-96
^{Ex 28}
Telephoned To: KATHLEEN Hall On 8-01-96 By Paula [Signature]
_{PCB 8-01-96}

0801590697

LOCKHEED MARTIN



Sample Login Login Review Checklist

Lot Number L7561

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

	YES	NO	N/A	Comment
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

	YES	NO	N/A	Comment
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

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

Paul Wain 8-01-96
primary review signature date

Paul Wain 8-01-96 0098
secondary review signature date
0801596

Lockheed Analytical Services
Sample Receiving Checklist

Client Name: Boehle-Hanford

Job No. L7561

Cooler ID: 1211

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt:	<u>20</u>		
temperature of temp. blank upon receipt:			
	Yes	No	* Comments/Discrepancies
custody seals intact	<input checked="" type="checkbox"/>		
chain of custody present	<input checked="" type="checkbox"/>		
blue ice (or equiv.) present/frozen	<input checked="" type="checkbox"/>		
rad survey completed	<input checked="" type="checkbox"/>		

SAMPLE CONDITION UPON RECEIPT

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

MISCELLANEOUS ITEMS

	Yes	No	* Comments/Discrepancies
samples with short holding times		<input checked="" type="checkbox"/>	
samples to subcontract			<u>N/A</u>

ADDITIONAL COMMENTS/DISCREPANCIES

All sample except BOHxx1, we did not receive any sample for GOR-ALPHA/Bets + Gamma spec for BOHxx1. per 8-01-96

Completed by / date: Paul Davis 8-01-96

Sent to the client (date/initials): _____ ** Client's signature upon receipt:

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

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

0801590

Lockheed Analytical Services
Sample Receiving Checklist

Client Name: Rechtel - Hazard

Job No. L7561

Cooler ID: 111A

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>N/A</u> <u>N/A</u>

MISCELLANEOUS ITEMS

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

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: Paula Jane 8-01-96

Sent to the client (date/initials): _____ ** Client's signature upon receipt:

Note: * - contact the appropriate CSR of any discrepancies immediately upon receipt

** - please review this information and return via facsimile to the appropriate CSR (702) 361-8166

0801596

UNION

Lockheed Analytical Services
Sample Receiving Checklist

Client Name: *Bechtel - Hanford*

Job No. *L7561*

Cooler ID: *4119*

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: *4°C*
 temperature of temp. blank upon receipt:

	Yes	No	* Comments/Discrepancies
custody seals intact	<input checked="" type="checkbox"/>		
chain of custody present	<input checked="" type="checkbox"/>		
blue ice (or equiv.) present/frozen	<input checked="" type="checkbox"/>		
red survey completed	<input checked="" type="checkbox"/>		

SAMPLE CONDITION UPON RECEIPT

	Yes	No	* Comments/Discrepancies
all bottles labeled	<input checked="" type="checkbox"/>		
samples intact	<input checked="" type="checkbox"/>		
proper container used for sample type	<input checked="" type="checkbox"/>		
sample volume sufficient for analysis	<input checked="" type="checkbox"/>		
proper pres. indicated on the COC	<input checked="" type="checkbox"/>		
VOA's contain headspace			
are samples bi-phasic (if so, indicate sample ID'S):			<i>11A</i> <i>11A</i>

MISCELLANEOUS ITEMS

	Yes	No	* Comments/Discrepancies
samples with short holding times		<input checked="" type="checkbox"/>	
samples to subcontract			<i>11A</i>

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: *Paula Davis 8-01-96*

Sent to the client (date/initials):
 ** Client's signature upon receipt:

Notes: * = contact the appropriate CSR of any discrepancies immediately upon receipt
 ** = please review this information and return via facsimile to the appropriate CSR (702) 361-8146

0881580

0101

Lockheed Analytical Services
Sample Receiving Checklist

Client Name: Bochtel - Hestrad

Job No.

Cooler ID: 117

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: 4°C

temperature of temp. blank upon receipt: ~

	Yes	No	* Comments/Discrepancies
custody seals intact	<input checked="" type="checkbox"/>		
chain of custody present	<input checked="" type="checkbox"/>		
blue ice (or equiv.) present/frozen	<input checked="" type="checkbox"/>		
rad survey completed	<input checked="" type="checkbox"/>		

SAMPLE CONDITION UPON RECEIPT

	Yes	No	* Comments/Discrepancies
all bottles labeled	<input checked="" type="checkbox"/>		
samples intact	<input checked="" type="checkbox"/>		
proper container used for sample type	<input checked="" type="checkbox"/>		
sample volume sufficient for analysis	<input checked="" type="checkbox"/>		
proper pres. indicated on the COC	<input checked="" type="checkbox"/>		
VOA's contain headspace			<u>NA</u>
are samples bi-phasic (if so, indicate sample ID'S):			<u>NA</u>

MISCELLANEOUS ITEMS

	Yes	No	* Comments/Discrepancies
samples with short holding times		<input checked="" type="checkbox"/>	
samples to subcontract			<u>NA</u>

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: Paula Jean 8-01-98

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

7651080

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXW5	Date Collected: 22-JUL-96
Matrix: Liq. Waste	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39654	L7550-9
Cyanide	mg/kg	335.2	< 0.25	0.50	HU	09-AUG-96	39873	L7550-27
Sulfide	mg/kg	9030	< 12.	60.	HU	21-AUG-96	40375	L7550-33
pH - Test Paper	pH Units	9041	2.0	N/A	H	13-AUG-96	40676	L7550-21

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXW6	Date Collected: 23-JUL-96
Matrix: Liq. Waste	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39654	L7550-10
Cyanide	mg/kg	335.2	< 0.25	0.50	HU	09-AUG-96	39873	L7550-28
sulfide	mg/kg	9030	23.	60.	HB	21-AUG-96	40375	L7550-34
pH - Test Paper	pH Units	9041	6.0	N/A	H	13-AUG-96	40676	L7550-22

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXW7	Date Collected: 23-JUL-96
Matrix: Liq. Waste	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Date Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39654	L7550-11
Cyanide	mg/kg	335.2	< 0.25	0.50	HU	09-AUG-96	39873	L7550-29
Sulfide	mg/kg	9030	< 12.	60.	HU	21-AUG-96	40375	L7550-35
pH - Test Paper	pH Units	9041	6.0	N/A	H	13-AUG-96	40676	L7550-23

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXW8	Date Collected: 23-JUL-96
Matrix: Liq. Waste	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Date Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39654	L7550-13
Cyanide	mg/kg	335.2	< 0.25	0.50	HU	09-AUG-96	39873	L7550-30
Sulfide	mg/kg	9030	< 12.	60.	HU	21-AUG-96	40375	L7550-36
pH - Test Paper	pH Units	9041	5.5	N/A	H	13-AUG-96	40676	L7550-24

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXW9	Date Collected: 23-JUL-96
Matrix: Liq. Waste	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Date Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39654	L7550-12
Cyanide	mg/kg	335.2	< 0.25	0.50	HU	09-AUG-96	39873	L7550-31
Sulfide	mg/kg	9030	< 12.	60.	HU	21-AUG-96	40375	L7550-37
pH - Test Paper	pH Units	9041	9.0	N/A	H	13-AUG-96	40676	L7550-25

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXX0	Date Collected: 23-JUL-96
Matrix: Liq. Waste	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Date Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39654	L7550-14
Cyanide	mg/kg	335.2	< 0.25	0.50	HU	09-AUG-96	39873	L7550-32
Sulfide	mg/kg	9030	< 12.	60.	HU	21-AUG-96	40375	L7550-38
pH - Test Paper	pH Units	9041	5.0	N/A	H	13-AUG-96	40676	L7550-26

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXX2	Date Collected: 23-JUL-96
Matrix: SolidWaste	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39655	L7550-1

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXX3	Date Collected: 23-JUL-96
Matrix: SolidWaste	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Date Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39655	L7550-2
Cyanide	mg/kg	335.2	< 0.25	0.50	HU	08-AUG-96	39874	L7550-2
pH	pH Units	9045	7.1	0.10	H	20-AUG-96	39852	L7550-2

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0HXX4	Date Collected: 29-JUL-96
Matrix: Liq. Waste	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39656	L7561-8
Cyanide	mg/kg	335.2	< 0.25	0.50	U	09-AUG-96	39980	L7561-29
Sulfide	mg/kg	9030	< 12.	60.	HU	23-AUG-96	40514	L7561-36
pH - Test Paper	pH Units	9041	4.5	N/A	H	13-AUG-96	40676	L7561-22

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0HXX5	Date Collected: 29-JUL-96
Matrix: Liq. Waste	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Date Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39656	L7561-9
Cyanide	mg/kg	335.2	< 0.25	0.50	U	09-AUG-96	39980	L7561-30
Sulfide	mg/kg	9030	< 12.	60.	HU	23-AUG-96	40514	L7561-37
pH - Test Paper	pH Units	9041	6.0	N/A	H	13-AUG-96	40676	L7561-23

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXX6	Date Collected: 29-JUL-96
Matrix: Liq. Waste	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39656	L7561-11
Cyanide	mg/kg	335.2	< 0.25	0.50	U	09-AUG-96	39980	L7561-32
Sulfide	mg/kg	9030	< 12.	60.	HU	23-AUG-96	40514	L7561-39
pH - Test Paper	pH Units	9041	5.5	N/A	H	13-AUG-96	40676	L7561-25

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHYM6	Date Collected: 29-JUL-96
Matrix: Liq. Waste	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39656	L7561-12
Cyanide	mg/kg	335.2	< 0.25	0.50	U	09-AUG-96	39980	L7561-33
Sulfide	mg/kg	9030	< 12.	60.	HU	23-AUG-96	40514	L7561-40
pH - Test Paper	pH Units	9041	5.0	N/A	H	13-AUG-96	40676	L7561-26

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHYM7	Date Collected: 29-JUL-96
Matrix: Liq. Waste	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Date Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39656	L7561-13
Cyanide	mg/kg	335.2	< 0.25	0.50	U	09-AUG-96	39980	L7561-34
Sulfide	mg/kg	9030	< 12.	60.	HU	23-AUG-96	40514	L7561-41
pH - Test Paper	pH Units	9041	6.0	N/A	H	13-AUG-96	40676	L7561-27

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHYM8	Date Collected: 29-JUL-96
Matrix: Liq. Waste	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Date Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39656	L7561-14
Cyanide	mg/kg	335.2	< 0.25	0.50	U	09-AUG-96	39980	L7561-35
Sulfide	mg/kg	9030	< 12.	60.	HU	23-AUG-96	40514	L7561-42
pH - Test Paper	pH Units	9041	6.5	N/A	H	13-AUG-96	40676	L7561-28

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXX1	Date Collected: 29-JUL-96
Matrix: SolidWaste	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	0.00	N/A	NO FLASH	02-AUG-96	39657	L7561-10
Cyanide	mg/kg	335.2	2.3	0.50		08-AUG-96	39874	L7561-31
Sulfide	mg/kg	9030	< 12.	60.	NMU	22-AUG-96	40588	L7561-38
pH	pH Units	9045	6.8	0.10	H	20-AUG-96	39852	L7561-31

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXW5	Date Collected: 22-JUL-96
Matrix: TCLP Extr	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	1.7	0.91	3.0	B	1	19-SEP-96	40964	L7550-21
Barium, TCLP	mg/L	6010	< 2.4	2.4	61.	U	1	19-SEP-96	40964	L7550-21
Cadmium, TCLP	mg/L	6010	< 0.91	0.91	1.5	U	1	19-SEP-96	40964	L7550-21
Chromium, TCLP	mg/L	6010	7.2	1.8	3.0		1	19-SEP-96	40964	L7550-21
Lead, TCLP	mg/L	6010	< 0.61	0.61	0.91	U	1	19-SEP-96	40964	L7550-21
Selenium, TCLP	mg/L	6010	2.0	1.2	1.5		1	19-SEP-96	40964	L7550-21
Silver, TCLP	mg/L	6010	< 1.2	1.2	3.0	U	1	19-SEP-96	40964	L7550-21
Mercury, TCLP	mg/l	7470	< 0.12	0.12	0.12	U	1	06-SEP-96	40965	L7550-21

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXW6	Date Collected: 23-JUL-96
Matrix: TCLP Extr	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.59	0.59	2.0	U	1	19-SEP-96	40964	L7550-22
Barium, TCLP	mg/L	6010	< 1.6	1.6	39.	U	1	19-SEP-96	40964	L7550-22
Cadmium, TCLP	mg/L	6010	< 0.59	0.59	0.98	U	1	19-SEP-96	40964	L7550-22
Chromium, TCLP	mg/L	6010	1.2	1.2	2.0	B	1	19-SEP-96	40964	L7550-22
Lead, TCLP	mg/L	6010	12.	0.39	0.59		1	19-SEP-96	40964	L7550-22
Selenium, TCLP	mg/L	6010	< 0.78	0.78	0.98	U	1	19-SEP-96	40964	L7550-22
Silver, TCLP	mg/L	6010	< 0.78	0.78	2.0	U	1	19-SEP-96	40964	L7550-22
Mercury, TCLP	mg/l	7470	< 0.094	0.094	0.094	U	1	06-SEP-96	40965	L7550-22

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXW7	Date Collected: 23-JUL-96
Matrix: TCLP Extr	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.59	0.59	2.0	U	1	19-SEP-96	40964	L7550-23
Barium, TCLP	mg/L	6010	< 1.6	1.6	39.	U	1	19-SEP-96	40964	L7550-23
Cadmium, TCLP	mg/L	6010	< 0.59	0.59	0.98	U	1	19-SEP-96	40964	L7550-23
Chromium, TCLP	mg/L	6010	< 1.2	1.2	2.0	U	1	19-SEP-96	40964	L7550-23
Lead, TCLP	mg/L	6010	4800	2.0	3.0		5	19-SEP-96	40964	L7550-23
Selenium, TCLP	mg/L	6010	< 0.78	0.78	0.98	U	1	19-SEP-96	40964	L7550-23
Silver, TCLP	mg/L	6010	< 0.78	0.78	2.0	U	1	19-SEP-96	40964	L7550-23
Mercury, TCLP	mg/l	7470	< 0.095	0.095	0.095	U	1	06-SEP-96	40965	L7550-23

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXW8	Date Collected: 23-JUL-96
Matrix: TCLP Extr	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.53	0.53	1.8	U	1	19-SEP-96	40964	L7550-24
Barium, TCLP	mg/L	6010	< 1.4	1.4	35.	U	1	19-SEP-96	40964	L7550-24
Cadmium, TCLP	mg/L	6010	< 0.53	0.53	0.88	U	1	19-SEP-96	40964	L7550-24
Chromium, TCLP	mg/L	6010	< 1.1	1.1	1.8	U	1	19-SEP-96	40964	L7550-24
Lead, TCLP	mg/L	6010	0.67	0.35	0.53		1	19-SEP-96	40964	L7550-24
Selenium, TCLP	mg/L	6010	< 0.71	0.71	0.88	U	1	19-SEP-96	40964	L7550-24
Silver, TCLP	mg/L	6010	< 0.71	0.71	1.8	U	1	19-SEP-96	40964	L7550-24
Mercury, TCLP	mg/l	7470	< 0.096	0.096	0.096	U	1	06-SEP-96	40965	L7550-24

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXW9	Date Collected: 23-JUL-96
Matrix: TCLP Extr	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.55	0.55	1.8	U	1	19-SEP-96	40964	L7550-25
Barium, TCLP	mg/L	6010	< 1.5	1.5	37.	U	1	19-SEP-96	40964	L7550-25
Cadmium, TCLP	mg/L	6010	< 0.55	0.55	0.91	U	1	19-SEP-96	40964	L7550-25
Chromium, TCLP	mg/L	6010	< 1.0	1.0	1.8	U	1	19-SEP-96	40964	L7550-25
Lead, TCLP	mg/L	6010	0.69	0.34	0.55		1	19-SEP-96	40964	L7550-25
Selenium, TCLP	mg/L	6010	< 0.73	0.73	0.91	U	1	19-SEP-96	40964	L7550-25
Silver, TCLP	mg/L	6010	< 0.73	0.73	1.8	U	1	19-SEP-96	40964	L7550-25
Mercury, TCLP	mg/l	7470	< 0.094	0.094	0.094	U	1	06-SEP-96	40965	L7550-25

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXX0	Date Collected: 23-JUL-96
Matrix: TCLP Extr	Date Received: 30-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.55	0.55	1.8	U	1	19-SEP-96	40964	L7550-26
Barium, TCLP	mg/L	6010	450	1.5	37.		1	19-SEP-96	40964	L7550-26
Cadmium, TCLP	mg/L	6010	0.76	0.55	0.92	B	1	19-SEP-96	40964	L7550-26
Chromium, TCLP	mg/L	6010	< 1.1	1.1	1.8	U	1	19-SEP-96	40964	L7550-26
Lead, TCLP	mg/L	6010	0.78	0.37	0.55		1	19-SEP-96	40964	L7550-26
Selenium, TCLP	mg/L	6010	< 0.74	0.74	0.92	U	1	19-SEP-96	40964	L7550-26
Silver, TCLP	mg/L	6010	< 0.74	0.74	1.8	U	1	19-SEP-96	40964	L7550-26
Mercury, TCLP	mg/l	7470	< 0.089	0.089	0.089	U	1	06-SEP-96	40965	L7550-26

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXX4	Date Collected: 29-JUL-96
Matrix: TCLP Extr	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.74	0.74	2.5	U	1	19-SEP-96	40964	L7561-22
Barium, TCLP	mg/L	6010	< 2.0	2.0	50.	U	1	19-SEP-96	40964	L7561-22
Cadmium, TCLP	mg/L	6010	2.6	0.74	1.2		1	19-SEP-96	40964	L7561-22
Chromium, TCLP	mg/L	6010	< 1.5	1.5	2.5	U	1	19-SEP-96	40964	L7561-22
Lead, TCLP	mg/L	6010	2.5	0.50	0.74		1	19-SEP-96	40964	L7561-22
Selenium, TCLP	mg/L	6010	< 0.99	0.99	1.2	U	1	19-SEP-96	40964	L7561-22
Silver, TCLP	mg/L	6010	< 0.99	0.99	2.5	U	1	19-SEP-96	40964	L7561-22
Mercury, TCLP	mg/l	7470	< 0.12	0.12	0.12	U	1	06-SEP-96	40965	L7561-22

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXX5	Date Collected: 29-JUL-96
Matrix: TCLP Extr	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.49	0.49	1.6	U	1	19-SEP-96	40964	L7561-23
Barium, TCLP	mg/L	6010	< 1.3	1.3	32.	U	1	19-SEP-96	40964	L7561-23
Cadmium, TCLP	mg/L	6010	2.6	0.49	0.81		1	19-SEP-96	40964	L7561-23
Chromium, TCLP	mg/L	6010	< 0.97	0.97	1.6	U	1	19-SEP-96	40964	L7561-23
Lead, TCLP	mg/L	6010	< 0.32	0.32	0.49	U	1	19-SEP-96	40964	L7561-23
Selenium, TCLP	mg/L	6010	< 0.65	0.65	0.81	U	1	19-SEP-96	40964	L7561-23
Silver, TCLP	mg/L	6010	< 0.65	0.65	1.6	U	1	19-SEP-96	40964	L7561-23
Mercury, TCLP	mg/l	7470	< 0.064	0.064	0.064	U	1	06-SEP-96	40965	L7561-23

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXX6	Date Collected: 29-JUL-96
Matrix: TCLP Extr	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.52	0.52	1.7	U	1	19-SEP-96	40964	L7561-25
Barium, TCLP	mg/L	6010	< 1.4	1.4	35.	U	1	19-SEP-96	40964	L7561-25
Cadmium, TCLP	mg/L	6010	3.9	0.52	0.86		1	19-SEP-96	40964	L7561-25
Chromium, TCLP	mg/L	6010	< 1.0	1.0	1.7	U	1	19-SEP-96	40964	L7561-25
Lead, TCLP	mg/L	6010	1.1	0.35	0.52		1	19-SEP-96	40964	L7561-25
Selenium, TCLP	mg/L	6010	< 0.69	0.69	0.86	U	1	19-SEP-96	40964	L7561-25
Silver, TCLP	mg/L	6010	< 0.69	0.69	1.7	U	1	19-SEP-96	40964	L7561-25
Mercury, TCLP	mg/l	7470	< 0.098	0.098	0.098	U	1	06-SEP-96	40965	L7561-25

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0HYM6	Date Collected: 29-JUL-96
Matrix: TCLP Extr	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.41	0.41	1.4	U	1	19-SEP-96	40964	L7561-26
Barium, TCLP	mg/L	6010	< 1.1	1.1	27.	U	1	19-SEP-96	40964	L7561-26
Cadmium, TCLP	mg/L	6010	8.2	0.41	0.68		1	19-SEP-96	40964	L7561-26
Chromium, TCLP	mg/L	6010	< 0.82	0.82	1.4	U	1	19-SEP-96	40964	L7561-26
Lead, TCLP	mg/L	6010	1.9	0.27	0.41		1	19-SEP-96	40964	L7561-26
Selenium, TCLP	mg/L	6010	< 0.54	0.54	0.68	U	1	19-SEP-96	40964	L7561-26
Silver, TCLP	mg/L	6010	< 0.54	0.54	1.4	U	1	19-SEP-96	40964	L7561-26
Mercury, TCLP	mg/l	7470	< 0.056	0.056	0.056	U	1	06-SEP-96	40965	L7561-26

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHYM7	Date Collected: 29-JUL-96
Matrix: TCLP Extr	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.57	0.57	1.9	U	1	19-SEP-96	40964	L7561-27
Barium, TCLP	mg/L	6010	< 1.5	1.5	38.	U	1	19-SEP-96	40964	L7561-27
Cadmium, TCLP	mg/L	6010	< 0.57	0.57	0.95	U	1	19-SEP-96	40964	L7561-27
Chromium, TCLP	mg/L	6010	< 1.1	1.1	1.9	U	1	19-SEP-96	40964	L7561-27
Lead, TCLP	mg/L	6010	< 0.38	0.38	0.57	U	1	19-SEP-96	40964	L7561-27
Selenium, TCLP	mg/L	6010	< 0.76	0.76	0.95	U	1	19-SEP-96	40964	L7561-27
Silver, TCLP	mg/L	6010	< 0.76	0.76	1.9	U	1	19-SEP-96	40964	L7561-27
Mercury, TCLP	mg/l	7470	< 0.098	0.098	0.098	U	1	06-SEP-96	40965	L7561-27

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHYMS	Date Collected: 29-JUL-96
Matrix: TCLP Extr	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.56	0.56	1.9	U	1	19-SEP-96	40964	L7561-28
Barium, TCLP	mg/L	6010	< 1.5	1.5	37.	U	1	19-SEP-96	40964	L7561-28
Cadmium, TCLP	mg/L	6010	1.1	0.56	0.93		1	19-SEP-96	40964	L7561-28
Chromium, TCLP	mg/L	6010	< 1.1	1.1	1.9	U	1	19-SEP-96	40964	L7561-28
Lead, TCLP	mg/L	6010	0.95	0.37	0.56		1	19-SEP-96	40964	L7561-28
Selenium, TCLP	mg/L	6010	< 0.75	0.75	0.93	U	1	19-SEP-96	40964	L7561-28
Silver, TCLP	mg/L	6010	< 0.75	0.75	1.9	U	1	19-SEP-96	40964	L7561-28
Mercury, TCLP	mg/l	7470	< 0.095	0.095	0.095	U	1	06-SEP-96	40965	L7561-28

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHXX1	Date Collected: 29-JUL-96
Matrix: TCLP Extr	Date Received: 01-AUG-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Arsenic, TCLP	mg/L	6010	< 0.030	0.030	0.10	U	1	05-SEP-96	40948	L7561-24
Barium, TCLP	mg/L	6010	2.0	0.010	2.0		1	04-SEP-96	40948	L7561-24
Cadmium, TCLP	mg/L	6010	0.17	0.030	0.050		1	04-SEP-96	40948	L7561-24
Chromium, TCLP	mg/L	6010	< 0.040	0.040	0.10	U	1	04-SEP-96	40948	L7561-24
Lead, TCLP	mg/L	6010	2.0	0.020	0.030		1	04-SEP-96	40948	L7561-24
Selenium, TCLP	mg/L	6010	< 0.040	0.040	0.10	U	1	04-SEP-96	40948	L7561-24
Silver, TCLP	mg/L	6010	< 0.040	0.040	0.10	U	1	26-SEP-96	40948	L7561-24
Mercury, TCLP	mg/l	7470	< 0.0020	0.0020	0.020	U	1	10-SEP-96	40949	L7561-24

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHXW5	LAL Sample ID:	L7550-15
Date Collected:	22-JUL-96	Date Received:	30-JUL-96
Date Analyzed:	08-AUG-96	Analytical Batch ID:	080596-8080-E-4
Date Extracted:	05-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	100
		QC Group:	8080 PEST/PCBS_39818

SURROGATE	RECOVERY	QC Limits
TCMX	30%	21-110
DCB	26% *	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER(s)
A-BHC	319-84-6	<5.0	5.0	
B-BHC	319-85-7	<5.0	5.0	
G-BHC	58-89-9	<5.0	5.0	
D-BHC	319-86-8	<5.0	5.0	
Heptachlor	76-44-8	<5.0	5.0	
Aldrin	309-00-2	<5.0	5.0	
Heptachlor Epoxide	1024-57-3	<5.0	5.0	
G-Chlordane	5103-74-2	<5.0	5.0	
Endosulfan I	959-98-8	<5.0	5.0	
A-Chlordane	5103-71-9	<5.0	5.0	
4,4'-DDE	72-55-9	<10.	10.	
4,4'-DDT	50-29-3	<10.	10.	
Dieldrin	60-57-1	<10.	10.	
Endrin	72-20-8	<10.	10.	
Endosulfan II	33213-65-9	<10.	10.	
4,4'-DDD	72-54-8	<10.	10.	
Endrin Aldehyde	7421-93-4	<10.	10.	
Endosulfan Sulfate	1031-07-8	<10.	10.	
Methoxychlor	72-43-5	<50.	50.	
Toxaphene	8001-35-2	<500	500	
PCB-1016	12674-11-2	<100	100	
PCB-1221	11104-28-2	<200	200	
PCB-1232	11141-16-5	<100	100	
PCB-1242	53469-21-9	<100	100	
PCB-1248	12672-29-6	<100	100	
PCB-1254	11097-69-1	<100	100	
PCB-1260	11096-82-5	<100	100	
Chlordane (Technical)	57-74-9	<100	100	

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LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHW6	LAL Sample ID:	L7550-16
Date Collected:	23-JUL-96	Date Received:	30-JUL-96
Date Analyzed:	17-AUG-96	Analytical Batch ID:	081696-8080-C-1
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	1000
		QC Group:	8080 PEST/PCBS_39875

SURROGATE	RECOVERY	QC Limits
TCMX	54%	21-110
DCB	66%	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER(S)
A-BHC	319-84-6	<50.	50.	
B-BHC	319-85-7	<50.	50.	
G-BHC	58-89-9	<50.	50.	
D-BHC	319-86-8	<50.	50.	
Heptachlor	76-44-8	<50.	50.	
Aldrin	309-00-2	<50.	50.	
Heptachlor Epoxide	1024-57-3	<50.	50.	
G-Chlordane	5103-74-2	<50.	50.	
Endosulfan I	959-98-8	<50.	50.	
A-Chlordane	5103-71-9	<50.	50.	
4,4'-DDE	72-55-9	<100	100	
4,4'-DDT	50-29-3	<100	100	
Dieldrin	60-57-1	<100	100	
Endrin	72-20-8	<100	100	
Endosulfan II	33213-65-9	<100	100	
4,4'-DDD	72-54-8	<100	100	
Endrin Aldehyde	7421-93-4	<100	100	
Endosulfan Sulfate	1031-07-8	<100	100	
Methoxychlor	72-43-5	<500	500	
Toxaphene	8001-35-2	<5000	5000	
PCB-1016	12674-11-2	<1000	1000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<1000	1000	
PCB-1242	53469-21-9	<1000	1000	
PCB-1248	12672-29-6	<1000	1000	
PCB-1254	11097-69-1	<1000	1000	
PCB-1260	11096-82-5	<1000	1000	
Chlordane (Technical)	57-74-9	<1000	1000	

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHXW7	LAL Sample ID:	L7550-17
Date Collected:	23-JUL-96	Date Received:	30-JUL-96
Date Analyzed:	17-AUG-96	Analytical Batch ID:	081696-8080-C-1
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	1000
		QC Group:	8080 PEST/PCBS_39875

	SURROGATE	RECOVERY	QC Limits
TCMX		66%	21-110
DCB		61%	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER(S)
A-BHC	319-84-6	<50.	50.	
B-BHC	319-85-7	<50.	50.	
G-BHC	58-89-9	<50.	50.	
D-BHC	319-86-8	<50.	50.	
Heptachlor	76-44-8	<50.	50.	
Aldrin	309-00-2	<50.	50.	
Heptachlor Epoxide	1024-57-3	<50.	50.	
G-Chlordane	5103-74-2	<50.	50.	
Endosulfan I	959-98-8	<50.	50.	
A-Chlordane	5103-71-9	<50.	50.	
4,4'-DDE	72-55-9	<100	100	
4,4'-DDT	50-29-3	<100	100	
Dieldrin	60-57-1	<100	100	
Endrin	72-20-8	<100	100	
Endosulfan II	33213-65-9	<100	100	
4,4'-DDD	72-54-8	<100	100	
Endrin Aldehyde	7421-93-4	<100	100	
Endosulfan Sulfate	1031-07-8	<100	100	
Methoxychlor	72-43-5	<500	500	
Toxaphene	8001-35-2	<5000	5000	
PCB-1016	12674-11-2	<1000	1000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<1000	1000	
PCB-1242	53469-21-9	<1000	1000	
PCB-1248	12672-29-6	<1000	1000	
PCB-1254	11097-69-1	<1000	1000	
PCB-1260	11096-82-5	<1000	1000	
Chlordane (Technical)	57-74-9	<1000	1000	

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD 8080 PEST/PCBS

Client Sample ID:	BOHXW9	LAL Sample ID:	L7550-18
Date Collected:	23-JUL-96	Date Received:	30-JUL-96
Date Analyzed:	17-AUG-96	Analytical Batch ID:	081696-8080-C 1
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	1000
		QC Group:	8080 PEST/PCBS_39875

	SURROGATE	RECOVERY	QC Limits
TCMX		65%	21-110
DCB		62%	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER(S)
A-BHC	319-84-6	<50.	50.	
B-BHC	319-85-7	<50.	50.	
G-BHC	58-89-9	<50.	50.	
D-BHC	319-86-8	<50.	50.	
Heptachlor	76-44-8	<50.	50.	
Aldrin	309-00-2	<50.	50.	
Heptachlor Epoxide	1024-57-3	<50.	50.	
G-Chlordane	5103-74-2	<50.	50.	
Endosulfan I	959-98-8	<50.	50.	
A-Chlordane	5103-71-9	<50.	50.	
4,4'-DDE	72-55-9	<100	100	
4,4'-DDT	50-29-3	<100	100	
Dieldrin	60-57-1	<100	100	
Endrin	72-20-8	<100	100	
Endosulfan II	33213-65-9	<100	100	
4,4'-DDD	72-54-8	<100	100	
Endrin Aldehyde	7421-93-4	<100	100	
Endosulfan Sulfate	1031-07-8	<100	100	
Methoxychlor	72-43-5	<500	500	
Toxaphene	8001-35-2	<5000	5000	
PCB-1016	12674-11-2	<1000	1000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<1000	1000	
PCB-1242	53469-21-9	<1000	1000	
PCB-1248	12672-29-6	<1000	1000	
PCB-1254	11097-69-1	<1000	1000	
PCB-1260	11096-82-5	<1000	1000	
Chlordane (Technical)	57-74-9	<1000	1000	

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHW8	LAL Sample ID:	L7550-19
Date Collected:	23-JUL-96	Date Received:	30-JUL-96
Date Analyzed:	17-AUG-96	Analytical Batch ID:	081696-8080-C-1
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	1000
		QC Group:	8080 PEST/PCBS_39875

SURROGATE	RECOVERY	QC Limits
TCMX	58%	21-110
DCB	73%	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER (s)
A-BHC	319-84-6	<50.	50.	
B-BHC	319-85-7	<50.	50.	
G-BHC	58-89-9	<50.	50.	
D-BHC	319-86-8	<50.	50.	
Heptachlor	76-44-8	<50.	50.	
Aldrin	309-00-2	<50.	50.	
Heptachlor Epoxide	1024-57-3	<50.	50.	
G-Chlordane	5103-74-2	<50.	50.	
Endosulfan I	959-98-8	<50.	50.	
A-Chlordane	5103-71-9	<50.	50.	
4,4'-DDE	72-55-9	<100	100	
4,4'-DDT	50-29-3	<100	100	
Dieldrin	60-57-1	<100	100	
Endrin	72-20-8	<100	100	
Endosulfan II	33213-65-9	<100	100	
4,4'-DDD	72-54-8	<100	100	
Endrin Aldehyde	7421-93-4	<100	100	
Endosulfan Sulfate	1031-07-8	<100	100	
Methoxychlor	72-43-5	<500	500	
Toxaphene	8001-35-2	<5000	5000	
PCB-1016	12674-11-2	<1000	1000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<1000	1000	
PCB-1242	53469-21-9	<1000	1000	
PCB-1248	12672-29-6	<1000	1000	
PCB-1254	11097-69-1	<1000	1000	
PCB-1260	11096-82-5	<1000	1000	
Chlordane (Technical)	57-74-9	<1000	1000	

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD 8080 PEST/PCBS

Client Sample ID:	BOHXX0	LAL Sample ID:	L7550-20
Date Collected:	23-JUL-96	Date Received:	30-JUL-96
Date Analyzed:	17-AUG-96	Analytical Batch ID:	081696-8080-C-1
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	1000
		QC Group:	8080 PEST/PCBS_39875

SURROGATE	RECOVERY	QC Limits
TCMX	49%	21-110
DCB	47%	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER(s)
A-BHC	319-84-6	<50.	50.	
B-BHC	319-85-7	<50.	50.	
G-BHC	58-89-9	<50.	50.	
D-BHC	319-86-8	<50.	50.	
Heptachlor	76-44-8	<50.	50.	
Aldrin	309-00-2	<50.	50.	
Heptachlor Epoxide	1024-57-3	<50.	50.	
G-Chlordane	5103-74-2	<50.	50.	
Endosulfan I	959-98-8	<50.	50.	
A-Chlordane	5103-71-9	<50.	50.	
4,4'-DDE	72-55-9	<100	100	
4,4'-DDT	50-29-3	<100	100	
Dieldrin	60-57-1	<100	100	
Endrin	72-20-8	<100	100	
Endosulfan II	33213-65-9	<100	100	
4,4'-DDD	72-54-8	<100	100	
Endrin Aldehyde	7421-93-4	<100	100	
Endosulfan Sulfate	1031-07-8	<100	100	
Methoxychlor	72-43-5	<500	500	
Toxaphene	8001-35-2	<5000	5000	
PCB-1016	12674-11-2	<1000	1000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<1000	1000	
PCB-1242	53469-21-9	<1000	1000	
PCB-1248	12672-29-6	<1000	1000	
PCB-1254	11097-69-1	<1000	1000	
PCB-1260	11096-82-5	<1000	1000	
Chlordane (Technical)	57-74-9	<1000	1000	

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHXX4	LAL Sample ID:	L7561-15
Date Collected:	29-JUL-96	Date Received:	01-AUG-96
Date Analyzed:	21-AUG-96	Analytical Batch ID:	082096-8080-C-1
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	1000
		QC Group:	8080 PEST/PCBS_39875

SURROGATE	RECOVERY	QC Limits
TCMX	119% *	21-110
DCB	104%	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER (s)
A-BHC	319-84-6	<50.	50.	
B-BHC	319-85-7	<50.	50.	
G-BHC	58-89-9	<50.	50.	
D-BHC	319-86-8	<50.	50.	
Heptachlor	76-44-8	<50.	50.	
Aldrin	309-00-2	<50.	50.	
Heptachlor Epoxide	1024-57-3	<50.	50.	
G-Chlordane	5103-74-2	<50.	50.	
Endosulfan I	959-98-8	<50.	50.	
A-Chlordane	5103-71-9	<50.	50.	
4,4'-DDE	72-55-9	<100	100	
4,4'-DDT	50-29-3	<100	100	
Dieldrin	60-57-1	<100	100	
Endrin	72-20-8	<100	100	
Endosulfan II	33213-65-9	<100	100	
4,4'-DDD	72-54-8	<100	100	
Endrin Aldehyde	7421-93-4	<100	100	
Endosulfan Sulfate	1031-07-8	<100	100	
Methoxychlor	72-43-5	<500	500	
Toxaphene	8001-35-2	<5000	5000	
PCB-1016	12674-11-2	<1000	1000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<1000	1000	
PCB-1242	53469-21-9	<1000	1000	
PCB-1248	12672-29-6	<1000	1000	
PCB-1254	11097-69-1	<1000	1000	
PCB-1260	11096-82-5	<1000	1000	
Chlordane (Technical)	57-74-9	<1000	1000	

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHXX5	LAL Sample ID:	L7561-16
Date Collected:	29-JUL-96	Date Received:	01-AUG-96
Date Analyzed:	17-AUG-96	Analytical Batch ID:	081696-8080-C-1
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	1000
		QC Group:	8080 PEST/PCBS_39875

	SURROGATE	RECOVERY	QC Limits
TCMX		61%	21-110
DCB		52%	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER(s)
A-BHC	319-84-6	<50.	50.	
B-BHC	319-85-7	<50.	50.	
G-BHC	58-89-9	<50.	50.	
D-BHC	319-86-8	<50.	50.	
Heptachlor	76-44-8	<50.	50.	
Aldrin	309-00-2	<50.	50.	
Heptachlor Epoxide	1024-57-3	<50.	50.	
G-Chlordane	5103-74-2	<50.	50.	
Endosulfan I	959-98-8	<50.	50.	
A-Chlordane	5103-71-9	<50.	50.	
4,4'-DDE	72-55-9	<100	100	
4,4'-DDT	50-29-3	<100	100	
Dieldrin	60-57-1	<100	100	
Endrin	72-20-8	<100	100	
Endosulfan II	33213-65-9	<100	100	
4,4'-DDD	72-54-8	<100	100	
Endrin Aldehyde	7421-93-4	<100	100	
Endosulfan Sulfate	1031-07-8	<100	100	
Methoxychlor	72-43-5	<500	500	
Toxaphene	8001-35-2	<5000	5000	
PCB-1016	12674-11-2	<1000	1000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<1000	1000	
PCB-1242	53469-21-9	<1000	1000	
PCB-1248	12672-29-6	<1000	1000	
PCB-1254	11097-69-1	<1000	1000	
PCB-1260	11096-82-5	<1000	1000	
Chlordane (Technical)	57-74-9	<1000	1000	

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHXX6	LAL Sample ID:	L7561-18
Date Collected:	29-JUL-96	Date Received:	01-AUG-96
Date Analyzed:	18-AUG-96	Analytical Batch ID:	081696-8080-C-1
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	1000
		QC Group:	8080 PEST/PCBS_39875

SURROGATE	RECOVERY	QC Limits
TCMX	63%	21-110
DCB	43%	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER (s)
A-BHC	319-84-6	<50.	50.	
B-BHC	319-85-7	<50.	50.	
G-BHC	58-89-9	<50.	50.	
D-BHC	319-86-8	<50.	50.	
Heptachlor	76-44-8	<50.	50.	
Aldrin	309-00-2	<50.	50.	
Heptachlor Epoxide	1024-57-3	<50.	50.	
G-Chlordane	5103-74-2	<50.	50.	
Endosulfan I	959-98-8	<50.	50.	
A-Chlordane	5103-71-9	<50.	50.	
4,4'-DDE	72-55-9	<100	100	
4,4'-DDT	50-29-3	<100	100	
Dieldrin	60-57-1	<100	100	
Endrin	72-20-8	<100	100	
Endosulfan II	33213-65-9	<100	100	
4,4'-DDD	72-54-8	<100	100	
Endrin Aldehyde	7421-93-4	<100	100	
Endosulfan Sulfate	1031-07-8	<100	100	
Methoxychlor	72-43-5	<500	500	
Toxaphene	8001-35-2	<5000	5000	
PCB-1016	12674-11-2	<1000	1000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<1000	1000	
PCB-1242	53469-21-9	<1000	1000	
PCB-1248	12672-29-6	<1000	1000	
PCB-1254	11097-69-1	<1000	1000	
PCB-1260	11096-82-5	<1000	1000	
Chlordane (Technical)	57-74-9	<1000	1000	

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHYM6	LAL Sample ID:	L7561-19
Date Collected:	29-JUL-96	Date Received:	01-AUG-96
Date Analyzed:	21-AUG-96	Analytical Batch ID:	082096-8080-C-1
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	1000
		QC Group:	8080 PEST/PCBS_39875

SURROGATE	RECOVERY	QC Limits
TCMX	87%	21-110
DCB	87%	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER(S)
A-BHC	319-84-6	<50.	50.	
B-BHC	319-85-7	<50.	50.	
G-BHC	58-89-9	<50.	50.	
D-BHC	319-86-8	<50.	50.	
Heptachlor	76-44-8	<50.	50.	
Aldrin	309-00-2	<50.	50.	
Heptachlor Epoxide	1024-57-3	<50.	50.	
G-Chlordane	5103-74-2	<50.	50.	
Endosulfan I	959-98-8	<50.	50.	
A-Chlordane	5103-71-9	<50.	50.	
4,4'-DDE	72-55-9	<100	100	
4,4'-DDT	50-29-3	<100	100	
Dieldrin	60-57-1	<100	100	
Endrin	72-20-8	<100	100	
Endosulfan II	33213-65-9	<100	100	
4,4'-DDD	72-54-8	<100	100	
Endrin Aldehyde	7421-93-4	<100	100	
Endosulfan Sulfate	1031-07-8	<100	100	
Methoxychlor	72-43-5	<500	500	
Toxaphene	8001-35-2	<5000	5000	
PCB-1016	12674-11-2	<1000	1000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<1000	1000	
PCB-1242	53469-21-9	<1000	1000	
PCB-1248	12672-29-6	<1000	1000	
PCB-1254	11097-69-1	<1000	1000	
PCB-1260	11096-82-5	<1000	1000	
Chlordane (Technical)	57-74-9	<1000	1000	

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHYM7	LAL Sample ID:	L7561-20
Date Collected:	29-JUL-96	Date Received:	01-AUG-96
Date Analyzed:	21-AUG-96	Analytical Batch ID:	082096-8080-C-1
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	1000
		QC Group:	8080 PEST/PCBS_19875

SURROGATE	RECOVERY	QC Limits
TCMX	105%	21-110
DCB	100%	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER(s)
A-BHC	319-84-6	<50.	50.	
B-BHC	319-85-7	<50.	50.	
G-BHC	58-89-9	<50.	50.	
D-BHC	319-86-8	<50.	50.	
Heptachlor	76-44-8	<50.	50.	
Aldrin	309-00-2	<50.	50.	
Heptachlor Epoxide	1024-57-3	<50.	50.	
G-Chlordane	5103-74-2	<50.	50.	
Endosulfan I	959-98-8	<50.	50.	
A-Chlordane	5103-71-9	<50.	50.	
4,4'-DDE	72-55-9	<100	100	
4,4'-DDT	50-29-3	<100	100	
Dieldrin	60-57-1	<100	100	
Endrin	72-20-8	<100	100	
Endosulfan II	33213-65-9	<100	100	
4,4'-DDD	72-54-8	<100	100	
Endrin Aldehyde	7421-93-4	<100	100	
Endosulfan Sulfate	1031-07-8	<100	100	
Methoxychlor	72-43-5	<500	500	
Toxaphene	8001-35-2	<5000	5000	
PCB-1016	12674-11-2	<1000	1000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<1000	1000	
PCB-1242	53469-21-9	<1000	1000	
PCB-1248	12672-29-6	<1000	1000	
PCB-1254	11097-69-1	<1000	1000	
PCB-1260	11096-82-5	<1000	1000	
Chlordane (Technical)	57-74-9	<1000	1000	

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHYM8	LAL Sample ID:	L7561-21
Date Collected:	29-JUL-96	Date Received:	01-AUG-96
Date Analyzed:	21-AUG-96	Analytical Batch ID:	082096-8080-C-1
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	Liq. Waste	Preparation Dilution:	1000
		QC Group:	8080 PEST/PCBS_39875

SURROGATE	RECOVERY	QC Limits
TCMX	93%	21-110
DCB	93%	36-126

CONSTITUENT	CAS NO.	RESULT ug/L	PRACTICAL QUANTITATION LIMIT ug/L	DATA QUALIFIER (S)
A-BHC	319-84-6	<50.	50.	
B-BHC	319-85-7	<50.	50.	
G-BHC	58-89-9	<50.	50.	
D-BHC	319-86-8	<50.	50.	
Heptachlor	76-44-8	<50.	50.	
Aldrin	309-00-2	<50.	50.	
Heptachlor Epoxide	1024-57-3	<50.	50.	
G-Chlordane	5103-74-2	<50.	50.	
Endosulfan I	959-98-8	<50.	50.	
A-Chlordane	5103-71-9	<50.	50.	
4,4'-DDE	72-55-9	<100	100	
4,4'-DDT	50-29-3	<100	100	
Dieldrin	60-57-1	<100	100	
Endrin	72-20-8	<100	100	
Endosulfan II	33213-65-9	<100	100	
4,4'-DDD	72-54-8	<100	100	
Endrin Aldehyde	7421-93-4	<100	100	
Endosulfan Sulfate	1031-07-8	<100	100	
Methoxychlor	72-43-5	<500	500	
Toxaphene	8001-35-2	<5000	5000	
PCB-1016	12674-11-2	<1000	1000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<1000	1000	
PCB-1242	53469-21-9	<1000	1000	
PCB-1248	12672-29-6	<1000	1000	
PCB-1254	11097-69-1	<1000	1000	
PCB-1260	11096-82-5	<1000	1000	
Chlordane (Technical)	57-74-9	<1000	1000	

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LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHXX3	LAL Sample ID:	L7550-2
Date Collected:	23-JUL-96	Date Received:	30-JUL-96
Date Analyzed:	15-AUG-96	Analytical Batch ID:	081196-8080-E-5
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	SolidWaste	Preparation Dilution:	150
Percent Moisture:	N/A	QC Group:	8080 PEST/PCBS_39838

SURROGATE	RECOVERY	QC Limits
TCMX	73%	39-117
DCB	88%	66-128

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER(s)
A-BHC	319-84-6	<260	260	
B-BHC	319-85-7	<260	260	
G-BHC	58-89-9	<260	260	
D-BHC	319-86-8	<260	260	
Heptachlor	76-44-8	<260	260	
Aldrin	309-00-2	<260	260	
Heptachlor Epoxide	1024-57-3	<260	260	
G-Chlordane	5103-74-2	<260	260	
Endosulfan I	959-98-8	<260	260	
A-Chlordane	5103-71-9	<260	260	
4,4'-DDE	72-55-9	<500	500	
4,4'-DDT	50-29-3	<500	500	
Dieldrin	60-57-1	<500	500	
Endrin	72-20-8	<500	500	
Endosulfan II	33213-65-9	<500	500	
4,4'-DDD	72-54-8	<500	500	
Endrin Aldehyde	7421-93-4	<500	500	
Endosulfan Sulfate	1031-07-8	<500	500	
Methoxychlor	72-43-5	<2600	2600	
Toxaphene	8001-35-2	<26000	26000	
PCB-1016	12674-11-2	<2000	2000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<2000	2000	
PCB-1242	53469-21-9	<2000	2000	
PCB-1248	12672-29-6	<2000	2000	
PCB-1254	11097-69-1	<2000	2000	
PCB-1260	11096-82-5	<2000	2000	
Chlordane (Technical)	57-74-9	<6000	6000	

LOCKHEED ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES/PCBS BY GC/ECD
8080 PEST/PCBS

Client Sample ID:	BOHXX1	LAL Sample ID:	L7561-17
Date Collected:	29-JUL-96	Date Received:	01-AUG-96
Date Analyzed:	15-AUG-96	Analytical Batch ID:	081196-8080-E-5
Date Extracted:	06-AUG-96	Analytical Dilution:	1
Matrix:	SolidWaste	Preparation Dilution:	150
Percent Moisture:	N/A	QC Group:	8080 PEST/PCBS_39838

SURROGATE	RECOVERY	QC Limits
TCMX	89%	39-117
DCB	61% *	66-128

CONSTITUENT	CAS NO.	RESULT ug/Kg	PRACTICAL QUANTITATION LIMIT ug/Kg	DATA QUALIFIER(S)
A-BHC	319-84-6	<260	260	
B-BHC	319-85-7	<260	260	
G-BHC	58-89-9	<260	260	
D-BHC	319-86-8	<260	260	
Heptachlor	76-44-8	<260	260	
Aldrin	309-00-2	<260	260	
Heptachlor Epoxide	1024-57-3	<260	260	
G-Chlordane	5103-74-2	<260	260	
Endosulfan I	959-98-8	<260	260	
A-Chlordane	5103-71-9	<260	260	
4,4'-DDE	72-55-9	<500	500	
4,4'-DDT	50-29-3	<500	500	
Dieldrin	60-57-1	<500	500	
Endrin	72-20-8	<500	500	
Endosulfan II	33213-65-9	<500	500	
4,4'-DDD	72-54-8	<500	500	
Endrin Aldehyde	7421-93-4	<500	500	
Endosulfan Sulfate	1031-07-8	<500	500	
Methoxychlor	72-43-5	<2600	2600	
Toxaphene	8001-35-2	<26000	26000	
PCB-1016	12674-11-2	<2000	2000	
PCB-1221	11104-28-2	<2000	2000	
PCB-1232	11141-16-5	<2000	2000	
PCB-1242	53469-21-9	<2000	2000	
PCB-1248	12672-29-6	<2000	2000	
PCB-1254	11097-69-1	<2000	2000	
PCB-1260	11096-82-5	<2000	2000	
Chlordane (Technical)	57-74-9	<6000	6000	

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: BOHXX4

Date Collected: 29-JUL-96

Matrix: Liq. Waste

Login Number: L7561

Date Received: 01-AUG-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Ac-228	LAL-0063	39711	-40	130	230		pCi/L	12-AUG-96	L7561-43
Co-58	LAL-0063	39711	-3.	28.	48.		pCi/L	12-AUG-96	L7561-43
Co-60	LAL-0063	39711	-9.	14.	29.		pCi/L	12-AUG-96	L7561-43
Cs-137	LAL-0063	39711	-29.	17.	59.		pCi/L	12-AUG-96	L7561-43
Eu-152	LAL-0063	39711	32.	57.	160		pCi/L	12-AUG-96	L7561-43
Eu-154	LAL-0063	39711	-47.	45.	210		pCi/L	12-AUG-96	L7561-43
Eu-155	LAL-0063	39711	20.	48.	77.		pCi/L	12-AUG-96	L7561-43
Fe-59	LAL-0063	39711	-40.	30.	95.		pCi/L	12-AUG-96	L7561-43
Pb-212	LAL-0063	39711	-1	55.	74.		pCi/L	12-AUG-96	L7561-43
Pb-214	LAL-0063	39711	17.	61.	89.		pCi/L	12-AUG-96	L7561-43
Ra-226(GAMMA)	LAL-0063	39711	280	680	970		pCi/L	12-AUG-96	L7561-43
Ru-106	LAL-0063	39711	-60	140	460		pCi/L	12-AUG-96	L7561-43
U-235(GAMMA)	LAL-0063	39711	-10	110	210	B	pCi/L	12-AUG-96	L7561-43
Gross Alpha	LAL-0060	40473	0.1	2.5	5.4		pCi/L	24-AUG-96	L7561-43
Gross Beta	LAL-0060	40473	2.7	6.2	11.		pCi/L	24-AUG-96	L7561-43

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: BOHXX5

Date Collected: 29-JUL-96

Matrix: Liq. Waste

Login Number: L7561

Date Received: 01-AUG-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Ac-228	LAL-0063	39711	-105.	83.	200		pCi/L	12-AUG-96	L7561-46
Co-58	LAL-0063	39711	-3.	27.	50.		pCi/L	12-AUG-96	L7561-46
Co-60	LAL-0063	39711	-15.	15.	44.		pCi/L	12-AUG-96	L7561-46
Cs-137	LAL-0063	39711	-4.	30.	54.		pCi/L	12-AUG-96	L7561-46
Eu-152	LAL-0063	39711	18.	57.	160		pCi/L	12-AUG-96	L7561-46
Eu-154	LAL-0063	39711	-29.	66.	220		pCi/L	12-AUG-96	L7561-46
Eu-155	LAL-0063	39711	12.	67.	82.		pCi/L	12-AUG-96	L7561-46
Fe-59	LAL-0063	39711	-18.	47.	110		pCi/L	12-AUG-96	L7561-46
Pb-212	LAL-0063	39711	24.	53.	72.		pCi/L	12-AUG-96	L7561-46
Pb-214	LAL-0063	39711	1	60.	92.		pCi/L	12-AUG-96	L7561-46
Ra-226(GAMMA)	LAL-0063	39711	-40	650	950		pCi/L	12-AUG-96	L7561-46
Ru-106	LAL-0063	39711	-10	240	430		pCi/L	12-AUG-96	L7561-46
U-235(GAMMA)	LAL-0063	39711	90	150	190	B	pCi/L	12-AUG-96	L7561-46
Gross Alpha	LAL-0060	40473	12.5	5.5	5.8		pCi/L	24-AUG-96	L7561-46
Gross Beta	LAL-0060	40473	10.3	6.8	11.		pCi/L	24-AUG-96	L7561-46

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: BOHXX6
Date Collected: 29-JUL-96
Matrix: Liq. Waste

Login Number: L7561
Date Received: 01-AUG-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Ac-228	LAL-0063	39711	30	140	220		pCi/L	12-AUG-96	L7561-49
Co-58	LAL-0063	39711	-2.	25.	42.		pCi/L	12-AUG-96	L7561-49
Co-60	LAL-0063	39711	5.	24.	47.		pCi/L	12-AUG-96	L7561-49
Cs-137	LAL-0063	39711	-10	12.	48.		pCi/L	12-AUG-96	L7561-49
Eu-152	LAL-0063	39711	-17.	64.	240		pCi/L	12-AUG-96	L7561-49
Eu-154	LAL-0063	39711	-44.	42.	260		pCi/L	12-AUG-96	L7561-49
Eu-155	LAL-0063	39711	14.	50.	82.		pCi/L	12-AUG-96	L7561-49
Fe-59	LAL-0063	39711	-26.	33.	100		pCi/L	12-AUG-96	L7561-49
Pb-212	LAL-0063	39711	15.	56.	74.		pCi/L	12-AUG-96	L7561-49
Pb-214	LAL-0063	39711	8.	63.	95.		pCi/L	12-AUG-96	L7561-49
Ra-226(GAMMA)	LAL-0063	39711	-610	640	940		pCi/L	12-AUG-96	L7561-49
Ru-106	LAL-0063	39711	140	330	410		pCi/L	12-AUG-96	L7561-49
U-235(GAMMA)	LAL-0063	39711	0	140	200	B	pCi/L	12-AUG-96	L7561-49
Gross Alpha	LAL-0060	40473	0.2	2.5	5.4		pCi/L	24-AUG-96	L7561-49
Gross Beta	LAL-0060	40473	2.1	6.0	10.		pCi/L	24-AUG-96	L7561-49

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: BOHYM6
Date Collected: 29-JUL-96
Matrix: Liq. Waste

Login Number: L7561
Date Received: 01-AUG-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Ac-228	LAL-0063	39711	20	140	220		pCi/L	12-AUG-96	L7561-52
Co-58	LAL-0063	39711	2.	30.	53.		pCi/L	12-AUG-96	L7561-52
Co-60	LAL-0063	39711	-9.	21.	54.		pCi/L	12-AUG-96	L7561-52
Cs-137	LAL-0063	39711	44.	31.	45.		pCi/L	12-AUG-96	L7561-52
Eu-152	LAL-0063	39711	26.	62.	220		pCi/L	12-AUG-96	L7561-52
Eu-154	LAL-0063	39711	-43.	62.	230		pCi/L	12-AUG-96	L7561-52
Eu-155	LAL-0063	39711	-12.	28.	86.		pCi/L	12-AUG-96	L7561-52
Fe-59	LAL-0063	39711	-15.	29.	110		pCi/L	12-AUG-96	L7561-52
Pb-212	LAL-0063	39711	14.	54.	75.		pCi/L	12-AUG-96	L7561-52
Pb-214	LAL-0063	39711	23.	60.	92.		pCi/L	12-AUG-96	L7561-52
Ra-226(GAMMA)	LAL-0063	39711	-50	640	940		pCi/L	12-AUG-96	L7561-52
Ru-106	LAL-0063	39711	140	240	410		pCi/L	12-AUG-96	L7561-52
U-235(GAMMA)	LAL-0063	39711	30	140	190	B	pCi/L	12-AUG-96	L7561-52
Gross Alpha	LAL-0060	40473	3.3	3.8	6.1		pCi/L	24-AUG-96	L7561-52
Gross Beta	LAL-0060	40473	7.8	6.5	11.		pCi/L	24-AUG-96	L7561-52

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: BOHYM7
Date Collected: 29-JUL-96
Matrix: Liq. Waste

Login Number: L7561
Date Received: 01-AUG-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Ac-228	LAL-0063	39711	-50	130	220		pCi/L	12-AUG-96	L7561-55
Co-58	LAL-0063	39711	9.	25.	42.		pCi/L	12-AUG-96	L7561-55
Co-60	LAL-0063	39711	10.	21.	41.		pCi/L	12-AUG-96	L7561-55
Cs-137	LAL-0063	39711	29.	28.	42.		pCi/L	12-AUG-96	L7561-55
Eu-152	LAL-0063	39711	12.	59.	180		pCi/L	12-AUG-96	L7561-55
Eu-154	LAL-0063	39711	-1.	71.	210		pCi/L	12-AUG-96	L7561-55
Eu-155	LAL-0063	39711	-38.	27.	86.		pCi/L	12-AUG-96	L7561-55
Fe-59	LAL-0063	39711	4.	47.	96.		pCi/L	12-AUG-96	L7561-55
Pb-212	LAL-0063	39711	-16.	52.	75.		pCi/L	12-AUG-96	L7561-55
Pb-214	LAL-0063	39711	10	61.	90.		pCi/L	12-AUG-96	L7561-55
Ra-226(GAMMA)	LAL-0063	39711	-390	640	940		pCi/L	12-AUG-96	L7561-55
Ru-106	LAL-0063	39711	-160	190	390		pCi/L	12-AUG-96	L7561-55
U-235(GAMMA)	LAL-0063	39711	30	150	200	B	pCi/L	12-AUG-96	L7561-55
Gross Alpha	LAL-0060	40473	2.8	3.6	5.9		pCi/L	24-AUG-96	L7561-55
Gross Beta	LAL-0060	40473	0.8	6.0	11.		pCi/L	24-AUG-96	L7561-55

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: B0HYM8
Date Collected: 29-JUL-96
Matrix: Liq. Waste

Login Number: L7561
Date Received: 01-AUG-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Ac-228	LAL-0063	39711	47.	72.	120		pCi/L	12-AUG-96	L7561-58
Co-58	LAL-0063	39711	0	14.	25.		pCi/L	12-AUG-96	L7561-58
Co-60	LAL-0063	39711	-0.8	8.4	27.		pCi/L	12-AUG-96	L7561-58
Cs-137	LAL-0063	39711	11.	15.	23.		pCi/L	12-AUG-96	L7561-58
Eu-152	LAL-0063	39711	-11.	18.	110		pCi/L	12-AUG-96	L7561-58
Eu-154	LAL-0063	39711	-6.	15.	120		pCi/L	12-AUG-96	L7561-58
Eu-155	LAL-0063	39711	2.	58.	70.		pCi/L	12-AUG-96	L7561-58
Fe-59	LAL-0063	39711	7.	22.	45.		pCi/L	12-AUG-96	L7561-58
Pb-212	LAL-0063	39711	1	38.	53.		pCi/L	12-AUG-96	L7561-58
Pb-214	LAL-0063	39711	-12.	39.	63.		pCi/L	12-AUG-96	L7561-58
Ra-226(GAMMA)	LAL-0063	39711	20	440	620		pCi/L	12-AUG-96	L7561-58
Ru-106	LAL-0063	39711	0	120	200		pCi/L	12-AUG-96	L7561-58
U-235(GAMMA)	LAL-0063	39711	30	110	160	B	pCi/L	12-AUG-96	L7561-58
Gross Alpha	LAL-0060	40473	2.6	4.9	8.6		pCi/L	24-AUG-96	L7561-58
Gross Beta	LAL-0060	40473	98.	12.	11.		pCi/L	24-AUG-96	L7561-58

Client	Bechtel								
Client ID	BOHXX4								
Filename	397111.CHN								
LAL parent ID	39711DUP1								
Batch	6339711								
Live Time	10800								
Detector	2	LAS Detector 2, GMX-30200-P, Ser. No. 30-TN10348							
Geometry	1								
Aliquot (gms/L)	0.1								
Count date	8/12/96 8:58								
Collection Date	8/29/96								
delta T to midpoint of count	-16.6	days							
Efficiency data file	1294								
Background, Library files	WBKG2222	whc							V96119
Nuclide	keV	halflife (days)	chnl	GROSS	BKG	NET	Hand Calc NET	Sample cnts/sec	1 sig % err
Ra-226	186.1	5.84E+05	372	214	70	144		0.0133333	11.7
U-235	185.7	2.57E+11	372	214	70	144		0.0133333	11.7
	143.8	2.57E+11	288	124	94	30		0.0027778	49.2
	163.3	2.57E+11	327	118	91	27		0.0025	53.5
Pb-214(Ra-226)	351.9	5.84E+05	704	81	49	32		0.002963	35.6
	295.1	5.84E+05	591	87	81	7		0.0006019	199.1
Fe-59	1099.2	4.51E+01	2198	22	14	8		0.0007407	75.0
	1291.6	4.51E+01	2583	16	13	3		0.0002932	169.6
Co-58	810.8	7.08E+01	1622	29	15	14		0.0012809	48.0
Ac-228(Ra-228)	911.2	2.10E+03	1822	47	15	32		0.0029977	24.2
	969	2.10E+03	1938	33	24	9		0.0008333	83.9
Pb-212	238.6	5.11E+12	478	153	84	69		0.0063889	22.3
	300.1	5.11E+12	600	58	70	-12		-0.001111	94.3
Co-60	1332.5	1924	2665	9	26	-17		-0.001528	35.6
	1173.3	1924	2347	29	17	13		0.0011574	54.0
Cs-137	661.7	10950	1324	44	36	8		0.0007407	111.8
Eu-155	105.3	1810	211	90	100	-10		-0.000926	137.8
Eu-152	1408.1	4.64E+03	2816	10	5	5		0.0004938	71.8
	344.3	4.64E+03	689	69	70	-1		-9.26E-05	1179.0
Eu-154	723.3	3.11E+03	1447	35	44	-9		-0.000864	95.4
	1004.8	3.11E+03	2009	19	20	-1		-7.72E-05	747.8
	1274.5	3.11E+03	2549	14	11	4		0.0003241	141.4
Ru-106	621.8	368.2	1244	41	36	5		0.0004475	181.7
	1050.1	368.2	2100	20	15	5		0.0004475	122.7

Client	Bechtel							
Client ID	BOHXX4							
Filename	397111.CHN							
LAL parent ID	39711DUP1							
Batch	6339711							
Live Time	10800							
Detector	2							
Geometry	1							
Aliquot (gms/L)	0.1							
Count date	8/12/96 8:58							
Collection Date	8/29/96							
delta T to midpoint of count	-16.6							
Efficiency data file	I294							
Background, Library files	WBKG2222							
Nuclide	keV	WBKG cnts/sec	1 sig % err	NET		Efficiency	1 sigma % Eff err	Branch
				Sample cnts/sec	1 sig % err			
Ra-226	186.1	0.013194	5.1	0.00014	1610.68	0.054078	5	0.035
U-235	185.7	0.013194	5.1	0.00014	1610.68	0.054153	5	0.575
	143.8	0.00155	38.0	0.00123	159.32	0.062013	5	0.109
	163.3	0.000867	65.0	0.00163	116.44	0.058391	5	0.05
Pb-214(Ra-226)	351.9	0.00245	18.0	0.00051	291.95	0.031812	5	0.358
	295.1	0.001219	40.6	-0.00062	274.22	0.037446	5	0.185
Fe-59	1099.2	-4.2E-05	525.4	0.00074	75.00	0.011437	5	0.565
	1291.6	0.000258	82.2	0.00003	2034.75	0.00998	5	0.432
Co-58	810.8	-9.7E-05	282.6	0.00128	48.04	0.014814	5	0.9945
Ac-228(Ra-228)	911.2	0.000952	32.4	0.00205	50.62	0.013404	5	0.266
	969	0.000983	25.3	-0.00015	631.96	0.012722	5	0.1617
Pb-212	238.6	0.006608	8.6	-0.00022	909.08	0.045029	5	0.4365
	300.1	1.67E-05	2662.7	-0.00113	53.54	0.036878	5	0.03344
Co-60	1332.5	-0.0001	191.5	-0.00153	35.60	0.009719	5	0.999
	1173.3	0.0002	115.5	0.00096	89.36	0.010825	5	0.999
Cs-137	661.7	-0.00011	320.6	0.00074	111.80	0.017701	5	0.8521
Eu-155	105.3	0.000558	98.5	-0.00148	48.94	0.068383	5	0.218
Eu-152	1408.1	0.000119	150.8	0.00037	142.84	0.009271	5	0.212
	344.3	-0.00058	76.7	-0.00009	1178.98	0.03247	5	0.27
Eu-154	723.3	-0.00013	234.7	-0.00086	95.43	0.016361	5	0.197
	1004.8	-0.00029	77.8	-0.00008	747.80	0.012337	5	0.176
	1274.5	0.000428	46.5	-0.00010	633.68	0.010094	5	0.355
Ru-106	621.8	-5.8E-05	558.1	0.00045	181.75	0.018715	5	0.0981
	1050.1	0.000175	129.7	0.00027	284.77	0.011886	5	0.0146

Client	Bechtel							
Client ID	BOHXX4							
Filename	397111.CHN							
LAL parent ID	39711DUP1							
Batch	6339711							
Live Time	10800							
Detector	2							
Geometry	1							
Aliquot (gms/L)	0.1							
Count date	8/12/96 8:58							
Collection Date	8/29/96							
delta T to midpoint of count	-16.6							
Efficiency data file	1294							
Background, Library files	WBKG2222							
				MDA	Decay	Corrected	error	Corrected
Nuclide	keV	Bq	pCi/L	pCi/L	factor	pCi/L	1 sigma	MDA
Ra-226	186.1	0.07338	19.81259	931.12	0.99998	19.81	319.11	931.10
U-235	185.7	0.00446	1.204317	56.60	1	1.204	19.40	56.60
	143.8	0.181639	49.04244	191.00	1	49.042	78.17	191.00
	163.3	0.559443	151.0496	422.10	1	151.050	176.04	422.10
Pb-214(Ra-226)	351.9	0.045042	12.16135	94.62	0.99998	12.161	35.51	94.62
	295.1	-0.089151	-24.07064	172.19	0.99998	-24.070	66.02	172.19
Fe-59	1099.2	0.11463	30.95015	76.71	0.775248	23.994	18.04	59.47
	1291.6	0.008089	2.184141	122.29	0.775248	1.693	34.45	94.81
Co-58	810.8	0.086944	23.47475	34.25	0.850263	19.960	9.64	29.12
Ac-228(Ra-228)	911.2	0.57374	154.9099	181.73	0.994548	154.065	78.37	180.74
	969	-0.072918	-19.68777	365.44	0.994548	-19.580	123.74	363.45
Pb-212	238.6	-0.011165	-3.014468	77.17	1	-3.014	27.40	77.17
	300.1	-0.914508	-246.9171	844.64	1	-246.917	132.77	844.64
Co-60	1332.5	-0.157354	-42.48556	66.15	0.99405	-42.2328	15.18	65.75
	1173.3	0.088532	23.90373	52.70	0.99405	23.7615	21.27	52.39
Cs-137	661.7	0.04911	13.25982	50.00	0.998952	13.2459	14.82	49.94
Eu-155	105.3	-0.099564	-26.88227	84.84	0.993677	-26.712	13.142	84.305
Eu-152	1408.1	0.190483	51.43048	178.83	0.997528	51.30	73.32	178.38
	344.3	-0.010561	-2.851595	113.63	0.997528	-2.84	33.54	113.35
Eu-154	723.3	-0.26812	-72.39238	257.40	0.996309	-72.13	68.92	256.45
	1004.8	-0.035535	-9.59458	249.88	0.996309	-9.56	71.48	248.96
	1274.5	-0.028942	-7.814206	145.06	0.996309	-7.79	49.34	144.52
Ru-106	621.8	2.44E-01	6.58E+01	4.14E+02	0.969299	63.7946	115.99	401.64
	1050.1	1.57E+00	4.24E+02	3.16E+03	0.969299	410.9909	1170.56	3060.00

Client	Bechtel				
Client ID	BOHXX4				
Filename	397111.CHN				
LAL parent ID	39711DUP1				
Batch	6339711				
Live Time	10800				
Detector	2				
Geometry	1				
Aliquot (gms/L)	0.1				
Count date	8/12/96 8:58				
Collection Date	8/29/96				
delta T to midpoint of count ,	-16.6				
Efficiency data file	I294				
Background, Library files	WBKG2222				
Nuclide	keV	Counting Error pCi/L	FINAL RESULT pCi/L	Total Error 2 sigma	MDA pCi/L
Ra-226	186.1	638.22	19.81	638.23	931.10
U-235	185.7	38.80	1.20	38.80	56.60
	143.8	123.80	65.84	142.89	191.00
	163.3				422.10
Pb-214(Ra-226)	351.9	16.11	4.03	62.55	94.62
	295.1				172.19
Fe-59	1099.2	28.78	19.20	31.96	59.47
	1291.6				94.81
Co-58	810.8	19.18	19.96	19.28	29.12
Ac-228(Ra-228)	911.2	105.31	104.36	132.41	180.74
	969				363.45
Pb-212	238.6	3.22	-3.01	54.81	77.17
	300.1		-246.92	265.54	844.64
Co-60	1332.5	13.20	-19.95	24.71	65.75
	1173.3				52.39
Cs-137	661.7	29.62	13.25	29.65	49.94
Eu-155	105.3	26.15	-26.71	26.28	84.31
Eu-152	1408.1	18.50	6.52	61.00	178.38
	344.3				113.35
Eu-154	723.3	46.41	-24.79	69.97	256.45
	1004.8				248.96
	1274.5				144.52
Ru-106	621.8	205.82	67.170	230.847	401.64
	1050.1				3060.00

Duplicate Results

Ac-228 RER = 0.55

Cs-137 RER = 0.90

Pb-214 RER = 0.10

CS 8/13/96

Client	Bechtel_Hanford								
Client ID	BOHXX4								
Filename	397114.CHN								
LAL parent ID	L7561-43								
Batch	6339711								
Live Time	10800								
Detector	1	LAS Detector 1, GMX-30200-P, Ser. No. 30-TN10223A							
Geometry	I								
Aliquot (gms/L)	0.1								
Count date	8/12/96 20:59								
Collection Date	7/29/96								
delta T to midpoint of count	14.9	days							
Efficiency data file	I194								
Background, Library files	WBKG1222	whc	V96119						
Nuclide	keV	half-life (days)	chnl	GROSS	BKG	NET	Hand Calc NET	Sample cnts/sec	1 sig % err
Ra-226	186.1	5.84E+05	372	249	88	161		0.0148765	11.4
U-235	185.7	2.57E+11	372	249	88	161		0.0148765	11.4
	143.8	2.57E+11	288	136	114	22		0.002037	71.9
	163.3	2.57E+11	327	102	103	-1		-9.26E-05	1431.8
Pb-214(Ra-226)	351.9	5.84E+05	704	73	42	31		0.0028704	34.6
	295.1	5.84E+05	591	80	74	7		0.0006019	190.6
Fe-59	1099.2	4.51E+01	2198	4	15	-11		-0.001034	39.2
	1291.6	4.51E+01	2583	11	13	-2		-0.00017	266.3
Co-58	810.8	7.08E+01	1622	24	26	-2		-0.000154	422.8
Ac-228(Ra-228)	911.2	2.10E+03	1822	36	27	9		0.0008333	88.2
	969	2.10E+03	1938	23	18	5		0.000463	128.1
Pb-212	238.6	5.11E+12	478	138	89	50		0.0045833	30.4
	300.1	5.11E+12	600	62	72	-10		-0.000926	115.8
Co-60	1332.5	1924	2665	15	8	8		0.0006944	63.2
	1173.3	1924	2347	16	21	-5		-0.000463	121.7
Cs-137	661.7	10950	1324	32	44	-12		-0.001111	72.6
Eu-155	105.3	1810	211	106	94	12		0.0010957	119.6
Eu-152	1408.1	4.64E+03	2816	5	5	0		3.086E-05	932.7
	344.3	4.64E+03	689	66	53	14		0.00125	80.6
Eu-154	723.3	3.11E+03	1447	19	30	-11		-0.001049	62.0
	1004.8	3.11E+03	2009	15	25	-10		-0.00088	66.2
	1274.5	3.11E+03	2549	15	18	-3		-0.000231	228.0
Ru-106	621.8	368.2	1244	36	37	-1		-0.000123	642.3
	1050.1	368.2	2100	20	19	1		0.0001235	466.4

Client	Bechtel Hanford							
Client ID	BOHXX4							
Filename	397114.CHN							
LAL parent ID	L7561-43							
Batch	6339711							
Live Time	10800							
Detector	1							
Geometry	1							
Aliquot (gms/L)	0.1							
Count date	8/12/96 20:59							
Collection Date	7/29/96							
delta T to midpoint of count	14.9							
Efficiency data file	1194							
Background, Library files	WBKG1222							
Nuclide	keV	WBKG cnts/sec	1 sig % err	NET	NET	Efficiency	1 sigma % Eff err	Branch
				Sample cnts/sec	1 sig % err			
Ra-226	186.1	0.012953	5.3	0.00192	123.79	0.05376	5	0.035
U-235	185.7	0.012953	5.3	0.00192	123.79	0.053839	5	0.575
	143.8	0.0019	31.5	0.00014	1505.50	0.062197	5	0.109
	163.3	0.00005	1136.8	-0.00014	531.12	0.058317	5	0.05
Pb-214(Ra-226)	351.9	0.002017	22.3	0.00085	168.88	0.031359	5	0.358
	295.1	0.000522	90.1	0.00008	2031.40	0.036899	5	0.185
Fe-59	1099.2	-0.00021	110.4	-0.00103	39.21	0.011408	5	0.565
	1291.6	0.000158	119.3	-0.00033	80.19	0.009941	5	0.432
Co-58	810.8	-0.00038	68.0	-0.00015	422.85	0.014764	5	0.9945
Ac-228(Ra-228)	911.2	0.00119	26.3	-0.00036	294.15	0.013369	5	0.266
	969	0.000967	28.5	-0.00050	172.48	0.012691	5	0.1617
Pb-212	238.6	0.004633	12.3	-0.00005	3931.09	0.044469	5	0.4365
	300.1	-0.00018	246.8	-0.00093	115.76	0.036338	5	0.03344
Co-60	1332.5	-0.00038	56.5	0.00069	63.25	0.009677	5	0.999
	1173.3	0.000433	51.0	-0.00090	38.17	0.010793	5	0.999
Cs-137	661.7	0.000517	63.8	-0.00163	29.34	0.017602	5	0.8521
Eu-155	105.3	-0.00075	70.8	0.00110	119.56	0.068632	5	0.218
Eu-152	1408.1	2.78E-06	6676.8	0.00003	1685.33	0.009222	5	0.212
	344.3	-0.0003	146.2	0.00125	80.64	0.032004	5	0.27
Eu-154	723.3	-0.00018	156.7	-0.00105	61.97	0.016288	5	0.197
	1004.8	-0.00047	51.7	-0.00088	66.16	0.012308	5	0.176
	1274.5	0.000164	113.3	-0.00040	86.54	0.010056	5	0.355
Ru-106	621.8	0.000294	109.2	-0.00042	112.78	0.018594	5	0.0981
	1050.1	-2.8E-05	826.3	0.00012	466.37	0.011858	5	0.0146

Client	Bechtel_Hanford							
Client ID	BOHXX4							
Filename	397114.CHN							
LAL parent ID	L7561-43							
Batch	6339711							
Live Time	10800							
Detector	1							
Geometry	1							
Aliquot (gms/L)	0.1							
Count date	8/12/96 20:59							
Collection Date	7/29/96							
delta T to midpoint of count	14.9							
Efficiency data file	1194							
Background, Library files	WBKG1222							
Nuclide	keV	Bq	pCi/L	MDA pCi/L	Decay factor	Corrected pCi/L	error 1 sigma	Corrected MDA pCi/L
Ra-226	186.1	1.022402	276.0485	969.35	1.000018	276.05	342.01	969.37
U-235	185.7	0.062143	16.77852	58.92	1	16.779	20.79	58.92
	143.8	0.020214	5.457657	208.87	1	5.458	82.17	208.87
	163.3	-0.048903	-13.20381	428.92	1	-13.204	70.13	428.92
Pb-214(Ra-226)	351.9	0.076043	20.53158	88.73	1.000018	20.532	34.69	88.73
	295.1	0.011665	3.149558	161.42	1.000018	3.150	63.98	161.42
Fe-59	1099.2	-0.160417	-43.31268	75.33	1.258065	-54.490	21.54	94.77
	1291.6	-0.076397	-20.62728	119.01	1.258065	-25.950	20.85	149.72
Co-58	810.8	-0.01051	-2.837715	41.37	1.157522	-3.285	13.89	47.89
Ac-228(Ra-228)	911.2	-0.100179	-27.04825	225.41	1.004943	-27.182	79.97	226.52
	969	-0.245452	-66.272	335.11	1.004943	-66.600	114.92	336.77
Pb-212	238.6	-0.002576	-0.695485	73.98	1	-0.695	27.34	73.98
	300.1	-0.761986	-205.7363	856.28	1	-205.736	238.38	856.28
Co-60	1332.5	0.071837	19.3959	29.05	1.005396	19.5006	12.37	29.21
	1173.3	-0.083127	-22.44426	60.92	1.005396	-22.5654	8.69	61.25
Cs-137	661.7	-0.108529	-29.30275	59.09	1.000946	-29.3305	8.73	59.15
Eu-156	105.3	0.073232	19.77269	76.61	1.005737	19.886	23.797	77.050
Eu-152	1408.1	0.014365	3.878645	163.51	1.002234	3.89	65.51	163.87
	344.3	0.144656	39.05721	102.29	1.002234	39.14	31.62	102.52
Eu-154	723.3	-0.327038	-88.30018	214.03	1.00334	-88.60	55.08	214.74
	1004.8	-0.406073	-109.6398	267.65	1.00334	-110.01	72.98	268.54
	1274.5	-0.110756	-29.90402	161.93	1.00334	-30.00	26.01	162.47
Ru-106	621.8	-2.29E-01	-6.19E+01	4.43E+02	1.028519	-63.6234	71.83	455.43
	1050.1	7.13E-01	1.93E+02	3.27E+03	1.028519	198.0354	923.63	3362.37

Client	Bechtel Hanford				
Client ID	BOHXX4				
Filename	397114.CHN				
LAL parent ID	L7561-43				
Batch	6339711				
Live Time	10800				
Detector	1				
Geometry	1				
Aliquot (gms/L)	0.1				
Count date	8/12/96 20:59				
Collection Date	7/29/96				
delta T to midpoint of count	14.9				
Efficiency data file	1194				
Background, Library files	WBKG1222				
Nuclide	keV	Counting Error pCi/L	FINAL RESULT pCi/L	Total Error 2 sigma	MDA pCi/L
Ra-226	186.1	683.46	276.05	684.02	969.37
U-235	185.7	41.54	16.78	41.57	58.92
	143.8	53.48	-5.34	106.69	208.87
	163.3				428.92
Pb-214(Ra-226)	351.9	55.82	16.58	60.99	88.73
	295.1				161.42
Fe-59	1099.2	28.01	-39.76	29.96	94.77
	1291.6				149.72
Co-58	810.8	27.78	-3.28	27.78	47.89
Ac-228(Ra-228)	911.2	119.15	-40.04	131.28	226.52
	969				336.77
Pb-212	238.6	1.61	-0.70	54.68	73.98
	300.1		-205.74	476.76	856.28
Co-60	1332.5	5.67	-8.67	14.22	29.21
	1173.3				61.25
Cs-137	661.7	17.21	-29.33	17.46	59.15
Eu-155	105.3	47.55	19.89	47.59	77.05
Eu-152	1408.1	52.32	32.48	56.96	163.87
	344.3				102.52
Eu-154	723.3	37.84	-47.21	44.77	214.74
	1004.8				268.54
	1274.5				162.47
Ru-106	621.8	136.04	-62.051	143.220	455.43
	1050.1				3362.37

CS 8/13/96

Client	Bechtel	
Client ID	BOHXX5	
Filename	397115.CHN	
LAL parent ID	L7561-46	
Batch	6339711	
Live Time	10800	
Detector	2	LAS Detector 2, GMX-30200-P, Ser. No. 30-TN10348
Geometry	1	
Aliquot (gms/L)	0.1	
Count date	8/12/96 21:00	
Collection Date	7/29/96	
delta T to midpoint of count	14.9	days
Efficiency data file	I294	
Background, Library files	WBKG2222	whc

V96119

Nuclide	keV	halflife (days)	chnl	GROSS	BKG	NET	Hand	Sample cnts/sec	1 sig % err
							Calc NET		
Ra-226	186.1	5.84E+05	372	219	79	140		0.0129475	12.3
U-235	185.7	2.57E+11	372	219	79	140		0.0129475	12.3
	143.8	2.57E+11	288	139	95	44		0.0040741	34.8
	163.3	2.57E+11	327	109	93	16		0.0014815	88.8
Pb-214(Ra-226)	351.9	5.84E+05	704	67	44	23		0.0021296	45.8
	295.1	5.84E+05	591	91	69	22		0.0020525	57.0
Fe-59	1099.2	4.51E+01	2198	12	18	-6		-0.000509	98.8
	1291.6	4.51E+01	2583	13	8	5		0.0004475	95.2
Co-58	810.8	7.08E+01	1622	23	25	-2		-0.000139	459.5
Ac-228(Ra-228)	911.2	2.10E+03	1822	43	20	23		0.0021065	35.0
	969	2.10E+03	1938	20	24	-4		-0.00037	165.8
Pb-212	238.6	5.11E+12	478	155	65	91		0.0083796	16.4
	300.1	5.11E+12	600	56	56	0		0	0.0
Co-60	1332.5	1924	2665	18	11	8		0.0006944	71.2
	1173.3	1924	2347	14	24	-10		-0.000926	61.6
Cs-137	661.7	10950	1324	40	43	-3		-0.000247	341.0
Eu-155	105.3	1810	211	104	91	13		0.0012191	106.0
Eu-152	1408.1	4.64E+03	2816	7	4	4		0.0003241	92.6
	344.3	4.64E+03	689	64	58	6		0.0005247	195.2
Eu-154	723.3	3.11E+03	1447	30	33	-3		-0.000247	296.9
	1004.8	3.11E+03	2009	14	23	-9		-0.000864	65.5
	1274.5	3.11E+03	2549	13	8	5		0.0004475	95.2
Ru-106	621.8	368.2	1244	36	37	-1		-0.000123	642.3
	1050.1	368.2	2100	20	15	5		0.0004475	122.7

0254

Client	Bechtel								
Client ID	BOHXX5								
Filename	397115.CHN								
LAL parent ID	L7561-46								
Batch	6339711								
Live Time	10800								
Detector	2								
Geometry	1								
Aliquot (gms/L)	0.1								
Count date	8/12/96 21:00								
Collection Date	7/29/96								
delta T to midpoint of count	14.9								
Efficiency data file	I294								
Background, Library files	WBKG2222								
Nuclide	keV	WBKG cnts/sec	1 sig % err	NET	NET	Efficiency	1 sigma % Eff err	Branch	
				Sample cnts/sec	1 sig % err				
Ra-226	186.1	0.013194	5.1	-0.00025	921.58	0.054078	5	0.035	
U-235	185.7	0.013194	5.1	-0.00025	921.58	0.054153	5	0.575	
	143.8	0.00155	38.0	0.00252	79.45	0.062013	5	0.109	
	163.3	0.000867	65.0	0.00061	305.66	0.058391	5	0.05	
Pb-214(Ra-226)	351.9	0.00245	18.0	-0.00032	442.43	0.031812	5	0.358	
	295.1	0.001219	40.6	0.00083	199.97	0.037446	5	0.185	
Fe-59	1099.2	-4.2E-05	525.4	-0.00051	98.75	0.011437	5	0.565	
	1291.6	0.000258	82.2	0.00019	337.45	0.00998	5	0.432	
Co-58	810.8	-9.7E-05	282.6	-0.00014	459.47	0.014814	5	0.9945	
Ac-228(Ra-228)	911.2	0.000952	32.4	0.00115	90.52	0.013404	5	0.266	
	969	0.000983	25.3	-0.00135	26.99	0.012722	5	0.1617	
Pb-212	238.6	0.006608	8.6	0.00177	109.60	0.045029	5	0.4365	
	300.1	1.67E-05	2662.7	-0.00002	2662.71	0.036878	5	0.03344	
Co-60	1332.5	-0.0001	191.5	0.00069	71.18	0.009719	5	0.999	
	1173.3	0.0002	115.5	-0.00113	30.18	0.010825	5	0.999	
Cs-137	661.7	-0.00011	320.6	-0.00025	340.95	0.017701	5	0.8521	
Eu-155	105.3	0.000558	98.5	0.00066	278.80	0.068383	5	0.218	
Eu-152	1408.1	0.000119	150.8	0.00020	234.66	0.009271	5	0.212	
	344.3	-0.00058	76.7	0.00052	195.18	0.03247	5	0.27	
Eu-154	723.3	-0.00013	234.7	-0.00025	296.86	0.016361	5	0.197	
	1004.8	-0.00029	77.8	-0.00086	65.47	0.012337	5	0.176	
	1274.5	0.000428	46.5	0.00002	3163.21	0.010094	5	0.355	
Ru-106	621.8	-5.8E-05	558.1	-0.00012	642.26	0.018715	5	0.0981	
	1050.1	0.000175	129.7	0.00027	284.77	0.011886	5	0.0146	

Client	Bechtel							
Client ID	BOHXX5							
Filename	397115.CHN							
LAL parent ID	L7561-46							
Batch	6339711							
Live Time	10800							
Detector	2							
Geometry	1							
Aliquot (gms/L)	0.1							
Count date	8/12/96 21:00							
Collection Date	7/29/96							
delta T to midpoint of count,	14.9							
Efficiency data file	1294							
Background, Library files	WBKG2222							
Nuclide	keV	Bq	pCi/L	MDA pCi/L	Decay factor	Corrected pCi/L	error 1 sigma	Corrected MDA pCi/L
Ra-226	186.1	-0.130453	-35.22238	950.23	1.000018	-35.22	324.61	950.25
U-235	185.7	-0.00793	-2.141009	57.76	1	-2.141	19.73	57.76
	143.8	0.373414	100.8218	191.82	1	100.822	80.26	191.82
	163.3	0.210584	56.85766	426.05	1	56.858	173.81	426.05
Pb-214(Ra-226)	351.9	-0.028131	-7.595357	91.63	1.000018	-7.595	33.61	91.63
	295.1	0.120249	32.4671	161.74	1.000018	32.468	64.95	161.74
Fe-59	1099.2	-0.078808	-21.27823	84.77	1.258072	-26.770	26.47	106.64
	1291.6	0.043883	11.84848	104.97	1.258072	14.906	50.31	132.05
Co-58	810.8	-0.009428	-2.545454	42.81	1.157527	-2.946	13.54	49.55
Ac-228(Ra-228)	911.2	0.32378	87.42057	199.17	1.004943	87.853	79.65	200.15
	969	-0.658059	-177.676	365.44	1.004943	-178.554	49.00	367.25
Pb-212	238.6	0.090118	24.33197	72.39	1	24.332	26.69	72.39
	300.1	-0.013515	-3.649021	761.50	1	-3.649	97.16	761.50
Co-60	1332.5	0.071525	19.31162	43.73	1.005396	19.4158	13.85	43.96
	1173.3	-0.104115	-28.11116	61.25	1.005396	-28.2628	8.65	61.58
Cs-137	661.7	-0.01637	-4.419939	54.16	1.000946	-4.4241	15.09	54.21
Eu-155	105.3	0.044327	11.96817	81.29	1.005737	12.037	33.564	81.759
Eu-152	1408.1	0.104114	28.11081	163.92	1.002234	28.17	66.13	164.29
	344.3	0.059848	16.15904	103.46	1.002234	16.20	31.62	103.69
Eu-154	723.3	-0.076606	-20.68354	222.76	1.00334	-20.75	61.61	223.50
	1004.8	-0.397997	-107.4593	271.72	1.00334	-107.82	70.79	272.63
	1274.5	0.005513	1.48842	134.92	1.00334	1.49	47.24	135.37
Ru-106	621.8	-6.72E-02	-1.82E+01	4.21E+02	1.02852	-18.6737	119.94	432.50
	1050.1	1.57E+00	4.24E+02	3.16E+03	1.02852	436.1010	1242.07	3246.96

Client	Bechtel				
Client ID	BOHXX5				
Filename	397115.CHN				
LAL parent ID	L7561-46				
Batch	6339711				
Live Time	10800				
Detector	2				
Geometry	1				
Aliquot (gms/L)	0.1				
Count date	8/12/96 21:00				
Collection Date	7/29/96				
delta T to midpoint of count,	14.9				
Efficiency data file	1294				
Background, Library files	WBKG2222				
Nuclide	keV	Counting Error pCi/L	FINAL RESULT pCi/L	Total Error 2 sigma	MDA pCi/L
Ra-226	186.1	649.22	-35.22	649.23	950.25
U-235	185.7	39.46	-2.14	39.46	57.76
	143.8	143.17	93.09	145.74	191.82
	163.3				426.05
Pb-214(Ra-226)	351.9	3.16	0.87	59.70	91.63
	295.1				161.74
Fe-59	1099.2	33.61	-17.73	46.85	106.64
	1291.6				132.05
Co-58	810.8	27.08	-2.95	27.08	49.55
Ac-228(Ra-228)	911.2	54.52	-105.40	83.47	200.15
	969				367.25
Pb-212	238.6	53.29	24.33	53.39	72.39
	300.1		-3.65	194.33	761.50
Co-60	1332.5	8.28	-14.90	14.67	43.96
	1173.3				61.58
Cs-137	661.7	30.17	-4.42	30.17	54.21
Eu-155	105.3	67.12	12.04	67.13	81.76
Eu-152	1408.1	55.30	18.42	57.05	164.29
	344.3				103.69
Eu-154	723.3	36.92	-28.88	66.26	223.50
	1004.8				272.63
	1274.5				135.37
Ru-106	621.8	75.35	-14.472	238.765	432.50
	1050.1				3246.96

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Client	Bechtel_Hanford								
Client ID	BOHXX6								
Filename	397116.CHN								
LAL parent ID	L7561-49								
Batch	6339711								
Live Time	10800								
Detector	1	LAS Detector 1, GMX-30200-P, Ser. No. 30-TN10223A							
Geometry									
Aliquot (gms/L)	0.1								
Count date	8/12/96 16:38								
Collection Date	7/29/96								
delta T to midpoint of count,	14.8	days							
Efficiency data file	1194								
Background, Library files	WBKG1222	whc							V96119
Nuclide	keV	halflife (days)	chnl	GROSS	BKG	NET	Hand Calc NET	Sample cnts/sec	1 sig % err
Ra-226	186.1	5.84E+05	372	204	73	132		0.0121759	12.6
U-235	185.7	2.57E+11	372	204	73	132		0.0121759	12.6
	143.8	2.57E+11	288	120	105	15		0.0013889	100.0
	163.3	2.57E+11	327	109	99	10		0.0009259	144.2
Pb-214(Ra-226)	351.9	5.84E+05	704	72	52	20		0.0018519	55.7
	295.1	5.84E+05	591	91	72	19		0.0017284	68.5
Fe-59	1099.2	4.51E+01	2198	12	18	-6		-0.000509	98.8
	1291.6	4.51E+01	2583	11	13	-2		-0.00017	266.3
Co-58	810.8	7.08E+01	1622	19	20	-1		-7.72E-05	747.8
Ac-228(Ra-228)	911.2	2.10E+03	1822	50	26	24		0.0022338	36.1
	969	2.10E+03	1938	27	22	5		0.000463	140.0
Pb-212	238.6	5.11E+12	478	152	90	62		0.0057407	25.1
	300.1	5.11E+12	600	67	72	-5		-0.000463	235.8
Co-60	1332.5	1924	2665	17	15	2		0.0001852	282.8
	1173.3	1924	2347	28	21	7		0.0006481	100.0
Cs-137	661.7	10950	1324	25	25	0		-3.09E-05	2128.4
Eu-155	105.3	1810	211	116	108	9		0.000787	175.9
Eu-152	1408.1	4.64E+03	2816	13	12	1		0.0001235	372.5
	344.3	4.64E+03	689	66	74	-8		-0.000694	157.5
Eu-154	723.3	3.11E+03	1447	26	44	-18		-0.001698	45.7
	1004.8	3.11E+03	2009	19	27	-8		-0.000725	86.4
	1274.5	3.11E+03	2549	13	15	-2		-0.000201	244.9
Ru-106	621.8	368.2	1244	43	29	14		0.0012809	61.4
	1050.1	368.2	2100	17	19	-2		-0.000154	358.3

Client	Bechtel_Hanford							
Client ID	BOHXX6							
Filename	397116.CHN							
LAL parent ID	L7561-49							
Batch	6339711							
Live Time	10800							
Detector	1							
Geometry	1							
Aliquot (gms/L)	0.1							
Count date	8/12/96 16:38							
Collection Date	7/29/96							
delta T to midpoint of count,	14.8							
Efficiency data file	1194							
Background, Library files	WBKG1222							
Nuclide	keV	WBKG cnts/sec	1 sig % err	NET Sample cnts/sec	NET 1 sig % err	Efficiency	1 sigma % Eff err	Branch
Ra-226	186.1	0.012953	5.3	-0.00426	52.13	0.05376	5	0.035
U-235	185.7	0.012953	5.3	-0.00078	285.83	0.053839	5	0.575
	143.8	0.0019	31.5	-0.00051	388.95	0.062197	5	0.109
	163.3	0.00005	1136.8	0.00088	217.34	0.058317	5	0.05
Pb-214(Ra-226)	351.9	0.002017	22.3	-0.00016	897.88	0.031359	5	0.358
	295.1	0.000522	90.1	0.00121	137.11	0.036899	5	0.185
Fe-59	1099.2	-0.00021	110.4	-0.00051	98.75	0.011408	5	0.565
	1291.6	0.000158	119.3	-0.00033	80.19	0.009941	5	0.432
Co-58	810.8	-0.00038	68.0	-0.00008	747.80	0.014764	5	0.9945
Ac-228(Ra-228)	911.2	0.00119	26.3	0.00104	107.21	0.013369	5	0.266
	969	0.000967	28.5	-0.00050	183.45	0.012691	5	0.1617
Pb-212	238.6	0.004633	12.3	0.00111	181.73	0.044469	5	0.4365
	300.1	-0.00018	246.8	-0.00046	235.80	0.036338	5	0.03344
Co-60	1332.5	-0.00038	56.5	0.00019	282.84	0.009677	5	0.999
	1173.3	0.000433	51.0	0.00021	404.65	0.010793	5	0.999
Cs-137	661.7	0.000517	63.8	-0.00055	59.79	0.017602	5	0.8521
Eu-155	105.3	-0.00075	70.8	0.00079	175.88	0.068632	5	0.218
Eu-152	1408.1	2.78E-06	6676.8	0.00012	534.75	0.009222	5	0.212
	344.3	-0.0003	146.2	-0.00069	157.48	0.032004	5	0.27
Eu-154	723.3	-0.00018	156.7	-0.00170	45.74	0.016288	5	0.197
	1004.8	-0.00047	51.7	-0.00073	86.43	0.012308	5	0.176
	1274.5	0.000164	113.3	-0.00036	83.87	0.010056	5	0.355
Ru-106	621.8	0.000294	109.2	0.00099	112.34	0.018594	5	0.0981
	1050.1	-2.8E-05	826.3	-0.00015	358.33	0.011858	5	0.0146

Client	Bechtel_Hanford							
Client ID	BOHXX6							
Filename	397116.CHN							
LAL parent ID	L7561-49							
Batch	6339711							
Live Time	10800							
Detector	1							
Geometry	I							
Aliquot (gms/L)	0.1							
Count date	8/12/96 16:38							
Collection Date	7/29/96							
delta T to midpoint of count	14.8							
Efficiency data file	I194							
Background, Library files	WBKG1222							
				MDA	Decay	Corrected	error	Corrected
Nuclide	keV	Bq	pCi/L	pCi/L	factor	pCi/L	1 sigma	MDA
Ra-226	186.1	-2.263878	-611.247	936.39	1.000018	-611.26	320.10	936.41
U-235	185.7	-0.025094	-6.775474	56.92	1	-6.775	19.37	56.92
	143.8	-0.075391	-20.35559	202.11	1	-20.356	79.18	202.11
	163.3	0.300404	81.10912	421.00	1	81.109	176.33	421.00
Pb-214(Ra-226)	351.9	-0.014681	-3.963798	94.98	1.000018	-3.964	35.59	94.98
	295.1	0.176694	47.70726	160.30	1.000018	47.708	65.46	160.30
Fe-59	1099.2	-0.079012	-21.33311	80.94	1.254568	-26.764	26.46	101.55
	1291.6	-0.076397	-20.62728	119.01	1.254568	-25.878	20.79	149.30
Co-58	810.8	-0.005255	-1.418858	36.01	1.155471	-1.639	12.26	41.61
Ac-228(Ra-228)	911.2	0.293636	79.28177	222.47	1.004882	79.669	85.51	223.56
	969	-0.245452	-66.272	355.66	1.004882	-66.596	122.21	357.40
Pb-212	238.6	0.057051	15.40371	74.36	1	15.404	28.00	74.36
	300.1	-0.380993	-102.8681	856.28	1	-102.868	242.61	856.28
Co-60	1332.5	0.019156	5.172241	46.64	1.00533	5.1998	14.71	46.89
	1173.3	0.019923	5.379204	60.92	1.00533	5.4079	21.88	61.24
Cs-137	661.7	-0.036505	-9.856481	47.61	1.000935	-9.8657	5.92	47.66
Eu-155	105.3	0.052603	14.20292	81.99	1.005667	14.283	25.132	82.458
Eu-152	1408.1	0.061724	16.66539	238.00	1.002207	16.70	89.32	238.53
	344.3	-0.080365	-21.69845	120.63	1.002207	-21.75	34.26	120.90
Eu-154	723.3	-0.529032	-142.8385	256.89	1.0033	-143.31	65.95	257.74
	1004.8	-0.334832	-90.40473	281.46	1.0033	-90.70	78.52	282.39
	1274.5	-0.10211	-27.5696	153.00	1.0033	-27.66	23.24	153.50
Ru-106	621.8	5.41E-01	1.46E+02	4.00E+02	1.028169	150.1263	168.82	410.87
	1050.1	-8.91E-01	-2.41E+02	3.27E+03	1.028169	-247.4599	886.81	3361.23

Client	Bechtel Hanford				
Client ID	BOHXX6				
Filename	397116.CHN				
LAL parent ID	L7561-49				
Batch	6339711				
Live Time	10800				
Detector	1				
Geometry	1				
Aliquot (gms/L)	0.1				
Count date	8/12/96 16:38				
Collection Date	7/29/96				
delta T to midpoint of count	14.8				
Efficiency data file	1194				
Background, Library files	WBKG1222				
Nuclide	keV	Counting Error pCi/L	FINAL RESULT pCi/L	Total Error 2 sigma	MDA pCi/L
Ra-226	186.1	637.27	-611.26	640.20	936.41
U-235	185.7	38.73	-6.78	38.74	56.92
	143.8	12.64	-3.33	144.46	202.11
	163.3				421.00
Pb-214(Ra-226)	351.9	21.22	7.83	62.54	94.98
	295.1				160.30
Fe-59	1099.2	32.64	-26.22	32.70	101.55
	1291.6				149.30
Co-58	810.8	24.52	-1.64	24.52	41.61
Ac-228(Ra-228)	911.2	58.50	31.60	140.12	223.56
	969				357.40
Pb-212	238.6	44.34	15.40	56.01	74.36
	300.1		-102.87	485.23	856.28
Co-60	1332.5	24.41	5.26	24.42	46.89
	1173.3				61.24
Cs-137	661.7	11.80	-9.87	11.84	47.66
Eu-155	105.3	50.24	14.28	50.26	82.46
Eu-152	1408.1	50.80	-16.81	63.98	238.53
	344.3				120.90
Eu-154	723.3	32.10	-44.07	42.22	257.74
	1004.8				282.39
	1274.5				153.50
Ru-106	621.8	292.05	136.221	331.692	410.87
	1050.1				3361.23

CS 8/13/96

397117.XLS

Client	Bechtel								
Client ID	BOHYM6								
Filename	397117.CHN								
LAL parent ID	L7561-52								
Batch	6339711								
Live Time	10800								
Detector	2	LAS Detector 2, GMX-30200-P, Ser. No. 30-TN10348							
Geometry	1								
Aliquot (gms/L)	0.1								
Count date	8/12/96 16:39								
Collection Date	7/29/96								
delta T to midpoint of count'	14.8	days							
Efficiency data file	1294								
Background, Library files	WBKG2222	whc	V96119						
Nuclide	keV	halflife (days)	chnl	GROSS	BKG	NET	Hand Calc NET	Sample cnts/sec	1 sig % err
Ra-226	186.1	5.84E+05	372	216	73	144		0.013287	11.8
U-235	185.7	2.57E+11	372	216	73	144		0.013287	11.8
	143.8	2.57E+11	288	127	98	29		0.0026852	51.7
	163.3	2.57E+11	327	97	92	5		0.000463	275.0
Pb-214(Ra-226)	351.9	5.84E+05	704	75	45	30		0.0027778	36.5
	295.1	5.84E+05	591	84	51	33		0.0030247	35.6
Fe-59	1099.2	4.51E+01	2198	21	18	4		0.0003241	177.3
	1291.6	4.51E+01	2583	10	11	-1		-4.63E-05	905.5
Co-58	810.8	7.08E+01	1622	29	28	1		9.259E-05	755.0
Ac-228(Ra-228)	911.2	2.10E+03	1822	47	27	20		0.0018519	43.0
	969	2.10E+03	1938	27	22	5		0.000463	140.0
Pb-212	238.6	5.11E+12	478	157	75	82		0.0075926	18.6
	300.1	5.11E+12	600	72	54	18		0.0016667	62.4
Co-60	1332.5	1924	2665	10	17	-7		-0.000602	79.2
	1173.3	1924	2347	13	9	4		0.0003704	117.3
Cs-137	661.7	10950	1324	56	29	27		0.0024691	34.6
Eu-155	105.3	1810	211	100	101	-1		-7.72E-05	1700.6
Eu-152	1408.1	4.64E+03	2816	17	8	9		0.0008179	56.8
	344.3	4.64E+03	689	71	65	6		0.0005247	206.1
Eu-154	723.3	3.11E+03	1447	27	35	-8		-0.000741	98.4
	1004.8	3.11E+03	2009	13	22	-9		-0.000849	64.7
	1274.5	3.11E+03	2549	9	6	3		0.0002932	121.6
Ru-106	621.8	368.2	1244	43	34	9		0.0008488	95.6
	1050.1	368.2	2100	25	16	9		0.0008025	74.2

Client Bechtel
 Client ID BOHYM6
 Filename 397117.CHN
 LAL parent ID L7561-52
 Batch 6339711
 Live Time 10800
 Detector 2
 Geometry 1
 Aliquot (gms/L) 0.1
 Count date 8/12/96 16:39
 Collection Date 7/29/96
 delta T to midpoint of count. 14.8
 Efficiency data file 1294
 Background, Library files WBKG2222

Nuclide	keV	WBKG cnts/sec	1 sig % err	NET	NET	Efficiency	1 sigma % Eff err	Branch
				Sample cnts/sec	1 sig % err			
Ra-226	186.1	0.013194	5.1	-0.00037	609.14	0.054078	5	0.035
U-235	185.7	0.013194	5.1	0.00009	2429.32	0.054153	5	0.575
	143.8	0.00155	38.0	0.00114	174.24	0.062013	5	0.109
	163.3	0.000867	65.0	-0.00040	454.83	0.058391	5	0.05
Pb-214(Ra-226)	351.9	0.00245	18.0	0.00033	444.27	0.031812	5	0.358
	295.1	0.001219	40.6	0.00181	87.10	0.037446	5	0.185
Fe-59	1099.2	-4.2E-05	525.4	0.00032	177.28	0.011437	5	0.565
	1291.6	0.000258	82.2	-0.00030	67.88	0.00998	5	0.432
Co-58	810.8	-9.7E-05	282.6	0.00009	754.98	0.014814	5	0.9945
Ac-228(Ra-228)	911.2	0.000952	32.4	0.00090	122.82	0.013404	5	0.266
	969	0.000983	25.3	-0.00052	172.38	0.012722	5	0.1617
Pb-212	238.6	0.006608	8.6	0.00098	201.15	0.045029	5	0.4365
	300.1	1.67E-05	2662.7	0.00165	89.89	0.036878	5	0.03344
Co-60	1332.5	-0.0001	191.5	-0.00060	79.20	0.009719	5	0.999
	1173.3	0.0002	115.5	0.00017	390.47	0.010825	5	0.999
Cs-137	661.7	-0.00011	320.6	0.00247	34.64	0.017701	5	0.8521
Eu-155	105.3	0.000558	98.5	-0.00064	119.96	0.068383	5	0.218
Eu-152	1408.1	0.000119	150.8	0.00070	92.30	0.009271	5	0.212
	344.3	-0.00058	76.7	0.00052	206.05	0.03247	5	0.27
Eu-154	723.3	-0.00013	234.7	-0.00074	98.43	0.016361	5	0.197
	1004.8	-0.00029	77.8	-0.00085	64.69	0.012337	5	0.176
	1274.5	0.000428	46.5	-0.00013	412.77	0.010094	5	0.355
Ru-106	621.8	-5.8E-05	558.1	0.00085	95.62	0.018715	5	0.0981
	1050.1	0.000175	129.7	0.00063	131.05	0.011886	5	0.0146

0263

Client	Bechtel							
Client ID	BOHYM6							
Filename	397117.CHN							
LAL parent ID	L7561-52							
Batch	6339711							
Live Time	10800							
Detector	2							
Geometry	1							
Aliquot (gms/L)	0.1							
Count date	8/12/96 16:39							
Collection Date	7/29/96							
delta T to midpoint of count	14.8							
Efficiency data file	1294							
Background, Library files	WBKG2222							
				MDA	Decay	Corrected	error	Corrected
Nuclide	keV	Bq	pCi/L	pCi/L	factor	pCi/L	1 sigma	MDA
Ra-226	186.1	-0.195098	-52.67639	936.37	1.000018	-52.68	320.89	936.39
U-235	185.7	0.002974	0.802878	56.92	1	0.803	19.50	56.92
	143.8	0.16794	45.34392	194.24	1	45.344	79.04	194.24
	163.3	-0.138275	-37.33424	424.08	1	-37.334	169.82	424.08
Pb-214(Ra-226)	351.9	0.028781	7.770973	92.24	1.000018	7.771	34.53	92.24
	295.1	0.26059	70.35942	144.55	1.000018	70.361	61.38	144.56
Fe-59	1099.2	0.050151	13.54069	84.77	1.254575	16.988	30.13	106.35
	1291.6	-0.070657	-19.07741	114.01	1.254575	-23.934	16.29	143.04
Co-58	810.8	0.006285	1.69697	45.56	1.155475	1.961	14.80	52.65
Ac-228(Ra-228)	911.2	0.252363	68.13791	218.09	1.004883	68.471	84.17	219.15
	969	-0.252961	-68.29953	355.69	1.004883	-68.633	118.36	357.43
Pb-212	238.6	0.050076	13.52059	75.00	1	13.521	27.20	75.00
	300.1	1.337974	361.2531	748.81	1	361.253	325.22	748.81
Co-60	1332.5	-0.061988	-16.73674	53.99	1.00533	-16.8260	13.35	54.28
	1173.3	0.015754	4.253662	42.18	1.00533	4.2763	16.70	42.40
Cs-137	661.7	0.163701	44.19939	45.42	1.000935	44.2407	15.48	45.46
Eu-155	105.3	-0.042629	-11.50979	85.16	1.005667	-11.575	13.897	85.639
Eu-152	1408.1	0.35537	95.94986	216.36	1.002207	96.16	88.88	216.84
	344.3	0.059848	16.15904	109.69	1.002207	16.19	33.38	109.93
Eu-154	723.3	-0.229817	-62.05061	230.15	1.0033	-62.26	61.35	230.90
	1004.8	-0.39089	-105.5404	264.67	1.0033	-105.89	68.71	265.54
	1274.5	-0.037555	-10.13986	123.80	1.0033	-10.17	42.00	124.21
Ru-106	621.8	4.62E-01	1.25E+02	4.02E+02	1.028169	128.3380	122.89	413.08
	1050.1	3.62E+00	9.76E+02	3.25E+03	1.028169	1003.7273	1316.32	3341.52

Client	Bechtel				
Client ID	BOHYM6				
Filename	397117.CHN				
LAL parent ID	L7561-52				
Batch	6339711				
Live Time	10800				
Detector	2				
Geometry	1				
Aliquot (gms/L)	0.1				
Count date	8/12/96 16:39				
Collection Date	7/29/96				
delta T to midpoint of count	14.8				
Efficiency data file	I294				
Background, Library files	WBKG2222				
Nuclide	keV	Counting Error pCi/L	FINAL RESULT pCi/L	Total Error 2 sigma	MDA pCi/L
Ra-226	186.1	641.76	-52.68	641.78	936.39
U-235	185.7	39.01	0.80	39.01	56.92
	143.8	99.65	30.62	143.31	194.24
	163.3				424.08
Pb-214(Ra-226)	351.9	39.00	22.81	60.19	92.24
	295.1				144.56
Fe-59	1099.2	18.61	-14.68	28.66	106.35
	1291.6				143.04
Co-58	810.8	29.61	1.96	29.61	52.65
Ac-228(Ra-228)	911.2	44.86	22.43	137.19	219.15
	969				357.43
Pb-212	238.6	22.19	13.52	54.41	75.00
	300.1		361.25	650.44	748.81
Co-60	1332.5	13.34	-8.60	20.86	54.28
	1173.3				42.40
Cs-137	661.7	30.65	44.24	30.97	45.46
Eu-155	105.3	27.77	-11.58	27.79	85.64
Eu-152	1408.1	43.93	26.08	62.50	216.84
	344.3				109.93
Eu-154	723.3	45.92	-42.83	61.88	230.90
	1004.8				265.54
	1274.5				124.21
Ru-106	621.8	209.96	135.902	244.713	413.08
	1050.1				3341.52

ES 8/13/96

397118.XLS

Client	Bechtel								
Client ID	BOHYM7								
Filename	397118.CHN								
LAL parent ID	L7561-55								
Batch	6339711								
Live Time	10800								
Detector	2	LAS Detector 2, GMX-30200-P, Ser. No. 30-TN10348							
Geometry	J								
Aliquot (gms/L)	0.1								
Count date	8/12/96 13:19								
Collection Date	7/29/96								
delta T to midpoint of count	14.6	days							
Efficiency data file	I294								
Background, Library files	WBKG2222	whc	V96119						
Nuclide	keV	halflife (days)	chnl	GROSS	BKG	NET	Hand Calc NET	Sample cnts/sec	1 sig % err
Ra-226	186.1	5.84E+05	372	209	73	136		0.0125617	12.4
U-235	185.7	2.57E+11	372	209	73	136		0.0125617	12.4
	143.8	2.57E+11	288	131	106	25		0.0023148	61.6
	163.3	2.57E+11	327	116	106	10		0.0009259	149.0
Pb-214(Ra-226)	351.9	5.84E+05	704	78	41	37		0.0034259	29.5
	295.1	5.84E+05	591	86	84	2		0.0001852	651.9
Fe-59	1099.2	4.51E+01	2198	16	14	2		0.0001852	273.9
	1291.6	4.51E+01	2583	12	12	0		3.086E-05	1459.5
Co-58	810.8	7.08E+01	1622	22	18	5		0.0004167	139.7
Ac-228(Ra-228)	911.2	2.10E+03	1822	31	28	3		0.0002662	267.5
	969	2.10E+03	1938	30	22	8		0.0007407	90.1
Pb-212	238.6	5.11E+12	478	132	74	59		0.0054167	24.5
	300.1	5.11E+12	600	64	78	-14		-0.001296	85.1
Co-60	1332.5	1924	2665	15	9	6		0.0005556	81.6
	1173.3	1924	2347	19	18	1		9.259E-05	608.3
Cs-137	661.7	10950	1324	43	25	18		0.0016358	46.8
Eu-155	105.3	1810	211	86	103	-17		-0.001528	83.2
Eu-152	1408.1	4.64E+03	2816	8	5	3		0.0003086	106.8
	344.3	4.64E+03	689	66	63	3		0.0002778	378.6
Eu-154	723.3	3.11E+03	1447	34	28	6		0.0005556	131.2
	1004.8	3.11E+03	2009	20	22	-2		-0.000201	299.7
	1274.5	3.11E+03	2549	16	15	1		7.716E-05	669.9
Ru-106	621.8	368.2	1244	20	29	-9		-0.000849	76.5
	1050.1	368.2	2100	15	21	-6		-0.000556	100.0

0255

Client	Bechtel							
Client ID	BOHYM7							
Filename	397118.CHN							
LAL parent ID	L7561-55							
Batch	6339711							
Live Time	10800							
Detector	2							
Geometry	1							
Aliquot (gms/L)	0.1							
Count date	8/12/96 13:19							
Collection Date	7/29/96							
delta T to midpoint of count	14.6							
Efficiency data file	I294							
Background, Library files	WBKG2222							
Nuclide	keV	WBKG cnts/sec	1 sig % err	NET Sample cnts/sec	NET 1 sig % err	Efficiency	1 sigma % Eff err	Branch
Ra-226	186.1	0.013194	5.1	-0.00271	82.37	0.054078	5	0.035
U-235	185.7	0.013194	5.1	-0.00063	352.84	0.054153	5	0.575
	143.8	0.00155	38.0	0.00076	263.39	0.062013	5	0.109
	163.3	0.000867	65.0	0.00006	3278.51	0.058391	5	0.05
Pb-214(Ra-226)	351.9	0.00245	18.0	0.00098	148.78	0.031812	5	0.358
	295.1	0.001219	40.6	-0.00103	164.61	0.037446	5	0.185
Fe-59	1099.2	-4.2E-05	525.4	0.00019	273.86	0.011437	5	0.565
	1291.6	0.000258	82.2	-0.00023	291.43	0.00998	5	0.432
Co-58	810.8	-9.7E-05	282.6	0.00042	139.66	0.014814	5	0.9945
Ac-228(Ra-228)	911.2	0.000952	32.4	-0.00069	148.80	0.013404	5	0.266
	969	0.000983	25.3	-0.00024	377.83	0.012722	5	0.1617
Pb-212	238.6	0.006608	8.6	-0.00119	159.17	0.045029	5	0.4365
	300.1	1.67E-05	2662.7	-0.00131	50.24	0.036878	5	0.03344
Co-60	1332.5	-0.0001	191.5	0.00056	81.65	0.009719	5	0.999
	1173.3	0.0002	115.5	-0.00011	739.39	0.010825	5	0.999
Cs-137	661.7	-0.00011	320.6	0.00164	46.79	0.017701	5	0.8521
Eu-155	105.3	0.000558	98.5	-0.00209	34.58	0.068383	5	0.218
Eu-152	1408.1	0.000119	150.8	0.00019	269.39	0.009271	5	0.212
	344.3	-0.00058	76.7	0.00028	378.59	0.03247	5	0.27
Eu-154	723.3	-0.00013	234.7	0.00056	131.23	0.016361	5	0.197
	1004.8	-0.00029	77.8	-0.00020	299.70	0.012337	5	0.176
	1274.5	0.000428	46.5	-0.00035	204.14	0.010094	5	0.355
Ru-106	621.8	-5.8E-05	558.1	-0.00085	76.49	0.018715	5	0.0981
	1050.1	0.000175	129.7	-0.00073	44.97	0.011886	5	0.0146

Client	Bechtel							
Client ID	BOHYM7							
Filename	397118.CHN							
LAL parent ID	L7561-55							
Batch	6339711							
Live Time	10800							
Detector	2							
Geometry	1							
Aliquot (gms/L)	0.1							
Count date	8/12/96 13:19							
Collection Date	7/29/96							
delta T to midpoint of count.	14.6							
Efficiency data file	I294							
Background, Library files	WBKG2222							
				MDA	Decay	Corrected	error	Corrected
Nuclide	keV	Bq	pCi/L	pCi/L	factor	pCi/L	1 sigma	MDA
Ra-226	186.1	-1.431956	-386.6281	938.12	1.000017	-386.63	319.06	938.13
U-235	185.7	-0.02032	-5.486335	57.02	1	-5.486	19.36	57.02
	143.8	0.113147	30.54982	200.56	1	30.550	80.48	200.56
	163.3	0.020297	5.480256	450.87	1	5.480	179.67	450.87
Pb-214(Ra-226)	351.9	0.085694	23.1373	89.79	1.000017	23.138	34.44	89.79
	295.1	-0.149297	-40.31021	175.20	1.000017	-40.311	66.39	175.20
Fe-59	1099.2	0.028658	7.737538	76.71	1.251902	9.687	26.53	96.03
	1291.6	-0.05276	-14.24524	118.23	1.251902	-17.834	51.98	148.02
Co-58	810.8	0.028283	7.636363	36.60	1.153906	8.812	12.31	42.24
Ac-228(Ra-228)	911.2	-0.192372	-51.94047	221.07	1.004837	-52.192	77.70	222.14
	969	-0.117929	-31.84071	355.69	1.004837	-31.995	120.90	357.41
Pb-212	238.6	-0.060629	-16.3697	74.63	1	-16.370	26.07	74.63
	300.1	-1.064673	-287.4618	888.44	1	-287.462	145.12	888.44
Co-60	1332.5	0.05722	15.44929	40.67	1.00528	15.5309	12.70	40.89
	1173.3	-0.009932	-2.681656	54.53	1.00528	-2.6958	19.93	54.82
Cs-137	661.7	0.108452	29.2821	42.40	1.000926	29.3092	13.79	42.44
Eu-155	105.3	-0.139936	-37.78275	85.78	1.005614	-37.995	13.275	86.264
Eu-152	1408.1	0.096262	25.99084	178.83	1.002187	26.05	70.18	179.22
	344.3	0.031684	8.554786	107.65	1.002187	8.57	32.46	107.89
Eu-154	723.3	0.172363	46.53796	207.11	1.003269	46.69	61.32	207.78
	1004.8	-0.092392	-24.94591	264.67	1.003269	-25.03	75.02	265.53
	1274.5	-0.09785	-26.41946	163.22	1.003269	-26.51	54.13	163.75
Ru-106	621.8	-4.62E-01	-1.25E+02	3.75E+02	1.027901	-128.3045	98.35	385.62
	1050.1	-4.21E+00	-1.14E+03	3.60E+03	1.027901	-1168.3236	528.68	3695.58

Client	Bachtel				
Client ID	BOHYM7				
Filename	397118.CHN				
LAL parent ID	L7561-55				
Batch	6339711				
Live Time	10800				
Detector	2				
Geometry	1				
Aliquot (gms/L)	0.1				
Count date	8/12/96 13:19				
Collection Date	7/29/96				
delta T to midpoint of count	14.6				
Efficiency data file	1294				
Background, Library files	WBKG2222				
		Counting	FINAL	Total	MDA
Nuclide	keV	Error	RESULT	Error	pCi/L
		pCi/L	pCi/L	2 sigma	
Ra-226	186.1	636.94	-386.63	638.11	938.13
U-235	185.7	38.72	-5.49	38.72	57.02
	143.8	138.42	26.36	146.90	200.56
	163.3				450.87
Pb-214(Ra-226)	351.9	21.37	9.68	61.15	89.79
	295.1				175.20
Fe-59	1099.2	15.96	4.00	47.26	96.03
	1291.6				148.02
Co-58	810.8	24.61	8.81	24.63	42.24
Ac-228(Ra-228)	911.2	128.17	-46.29	130.73	222.14
	969				357.41
Pb-212	238.6	15.68	-16.37	52.14	74.63
	300.1		-287.46	290.25	888.44
Co-60	1332.5	16.66	10.27	21.43	40.89
	1173.3				54.82
Cs-137	661.7	27.43	29.31	27.58	42.44
Eu-155	105.3	26.28	-37.99	26.55	86.26
Eu-152	1408.1	51.16	11.65	58.93	179.22
	344.3				107.89
Eu-154	723.3	2.84	-1.37	71.38	207.78
	1004.8				265.53
	1274.5				163.75
Ru-106	621.8	126.46	-163.096	193.390	385.62
	1050.1				3695.58

CS 8/12/96

Client	Bechtel								
Client ID	BOHYM8								
Filename	397119.CHN								
LAL parent ID	L7561-58								
Batch	6339711								
Live Time	10800								
Detector	3	LAS Detector 3, GEM-90210-P, Ser. No. 30-TP30546A							
Geometry	1								
Aliquot (gms/L)	0.1								
Count date	8/12/96 13:19								
Collection Date	7/29/96								
delta T to midpoint of count,	14.6	days							
Efficiency data file	I394								
Background, Library files	WBKG3215	whc	V96119						
Nuclide	keV	halflife (days)	chnl	GROSS	BKG	NET	Hand Calc NET	Sample cnts/sec	1 sig % err
Ra-226	186.1	5.84E+05	372	237	105	132		0.0122222	14.0
U-235	185.7	2.57E+11	372	237	105	132		0.0122222	14.0
	143.8	2.57E+11	288	182	136	46		0.0042593	38.8
	163.3	2.57E+11	327	133	124	9		0.0008333	178.1
Pb-214(Ra-226)	351.9	5.84E+05	704	100	69	31		0.0028704	41.9
	295.1	5.84E+05	591	123	102	22		0.0019907	69.7
Fe-59	1099.2	4.51E+01	2198	23	19	4		0.0004012	149.0
	1291.6	4.51E+01	2583	18	18	1		4.63E-05	1191.6
Co-58	810.8	7.08E+01	1622	30	30	0		-3.09E-05	2330.2
Ac-228(Ra-228)	911.2	2.10E+03	1822	65	30	35		0.003206	28.2
	969	2.10E+03	1938	46	14	32		0.002963	24.2
Pb-212	238.6	5.11E+12	478	210	98	113		0.0104167	15.6
	300.1	5.11E+12	600	95	96	-1		-9.26E-05	1382.0
Co-60	1332.5	1924	2665	26	24	2		0.0001852	353.6
	1173.3	1924	2347	31	32	-1		-4.63E-05	1581.1
Cs-137	661.7	10950	1324	51	37	14		0.0012654	68.8
Eu-155	105.3	1810	211	117	113	4		0.0003395	413.9
Eu-152	1408.1	4.64E+03	2816	13	14	-1		-9.26E-05	519.6
	344.3	4.64E+03	689	77	82	-5		-0.000432	269.9
Eu-154	723.3	3.11E+03	1447	48	47	1		0.0001235	729.7
	1004.8	3.11E+03	2009	18	42	-24		-0.002222	32.3
	1274.5	3.11E+03	2549	11	12	-1		-6.17E-05	714.1
Ru-106	621.8	368.2	1244	41	35	6		0.0005556	145.3
	1050.1	368.2	2100	22	37	-15		-0.00142	50.2

Client	Bechtel							
Client ID	BOHYM8							
Filename	397119.CHN							
LAL parent ID	L7561-58							
Batch	6339711							
Live Time	10800							
Detector	3							
Geometry	1							
Aliquot (gms/L)	0.1							
Count date	8/12/96 13:19							
Collection Date	7/29/96							
delta T to midpoint of count'	14.6							
Efficiency data file	I394							
Background, Library files	WBKG3215							
Nuclide	keV	WBKG cnts/sec	1 sig % err	NET Sample cnts/sec	NET 1 sig % err	Efficiency	1 sigma % Eff err	Branch
Ra-226	186.1	0.012033	6.0	0.00019	1289.31	0.085263	5	0.035
U-235	185.7	0.012033	6.0	0.00019	1289.31	0.085325	5	0.575
	143.8	0.00285	23.4	0.00141	164.49	0.089756	5	0.109
	163.3	0.000567	111.8	0.00027	794.30	0.088309	5	0.05
Pb-214(Ra-226)	351.9	0.004633	11.1	-0.00176	97.35	0.059433	5	0.358
	295.1	0.000647	89.8	0.00134	146.54	0.067089	5	0.185
Fe-59	1099.2	-0.00028	85.0	0.00040	148.96	0.025708	5	0.565
	1291.6	-8.1E-05	262.4	0.00005	1191.64	0.022801	5	0.432
Co-58	810.8	-0.00023	134.5	-0.00003	2330.24	0.03211	5	0.9945
Ac-228(Ra-228)	911.2	0.002125	18.1	0.00108	119.23	0.029489	5	0.266
	969	0.001883	17.3	0.00108	96.56	0.028195	5	0.1617
Pb-212	238.6	0.010342	6.9	0.00007	3113.84	0.076311	5	0.4365
	300.1	-0.00015	349.1	-0.00009	1382.03	0.066347	5	0.03344
Co-60	1332.5	-0.00026	93.4	0.00019	353.55	0.02227	5	0.999
	1173.3	0.000133	217.2	-0.00018	246.27	0.024498	5	0.999
Cs-137	661.7	-0.00046	82.1	0.00127	68.77	0.037272	5	0.8521
Eu-155	105.3	0.000175	340.1	0.00016	1216.06	0.086492	5	0.218
Eu-152	1408.1	2.22E-05	920.6	-0.00011	240.86	0.021352	5	0.212
	344.3	0.000356	143.8	-0.00079	83.18	0.060362	5	0.27
Eu-154	723.3	-0.00026	136.4	0.00012	729.73	0.034909	5	0.197
	1004.8	-0.00051	53.9	-0.00222	32.27	0.027458	5	0.176
	1274.5	2.78E-06	7393.2	-0.00006	365.02	0.023031	5	0.355
Ru-106	621.8	-2.8E-05	1464.4	0.00056	145.30	0.039025	5	0.0981
	1050.1	0.000172	155.3	-0.00159	28.00	0.026585	5	0.0146

Client	Bechtel								
Client ID	BOHYM8								
Filename	397119.CHN								
LAL parent ID	L7561-58								
Batch	6339711								
Live Time	10800								
Detector	3								
Geometry	1								
Aliquot (gms/L)	0.1								
Count date	8/12/96 13:19								
Collection Date	7/29/96								
delta T to midpoint of count	14.6								
Efficiency data file	I394								
Background, Library files	WBKG3215								
Nuclide	keV	Bq	pCi/L	MDA pCi/L	Decay factor	Corrected pCi/L	error 1 sigma	Corrected MDA pCi/L	
Ra-226	186.1	0.063296	17.08993	619.82	1.000017	17.09	220.35	619.83	
U-235	185.7	0.00385	1.039508	37.70	1	1.040	13.40	37.70	
	143.8	0.144046	38.89241	160.38	1	38.892	64.00	160.38	
	163.3	0.060394	16.30645	315.67	1	16.306	129.53	315.67	
Pb-214(Ra-226)	351.9	-0.082857	-22.37138	62.80	1.000017	-22.372	21.81	62.80	
	295.1	0.108248	29.227	103.02	1.000017	29.228	42.86	103.02	
Fe-59	1099.2	0.027624	7.458424	36.31	1.251897	9.337	13.92	45.46	
	1291.6	0.0047	1.269011	55.01	1.251897	1.589	18.93	68.86	
Co-58	810.8	-0.000967	-0.260962	21.35	1.153903	-0.301	7.02	24.64	
Ac-228(Ra-228)	911.2	0.137814	37.20975	116.86	1.004837	37.390	44.62	117.42	
	969	0.236804	63.93721	164.28	1.004837	64.246	62.12	165.07	
Pb-212	238.6	0.002252	0.60793	52.51	1	0.608	18.93	52.51	
	300.1	-0.041734	-11.2681	539.57	1	-11.268	155.73	539.57	
Co-60	1332.5	0.008324	2.247395	27.11	1.00528	2.2593	7.99	27.25	
	1173.3	-0.00734	-1.981707	30.03	1.00528	-1.9922	4.91	30.19	
Cs-137	661.7	0.039845	10.75809	22.97	1.000926	10.7680	7.42	22.99	
Eu-155	105.3	0.008725	2.355669	69.77	1.005614	2.369	28.807	70.166	
Eu-152	1408.1	-0.025365	-6.848475	111.88	1.002187	-6.86	16.54	112.12	
	344.3	-0.048329	-13.04876	70.11	1.002187	-13.08	10.90	70.27	
Eu-154	723.3	0.017952	4.847056	121.86	1.003269	4.86	35.49	122.26	
	1004.8	-0.459844	-124.1578	159.37	1.003269	-124.56	40.68	159.89	
	1274.5	-0.00789	-2.130195	56.91	1.003269	-2.14	7.80	57.10	
Ru-106	621.8	1.45E-01	3.92E+01	1.97E+02	1.0279	40.2748	58.55	202.06	
	1050.1	-4.10E+00	-1.11E+03	2.05E+03	1.0279	-1138.2927	323.72	2106.73	

Client	Bechtel				
Client ID	BOHYM8				
Filename	397119.CHN				
LAL parent ID	L7561-58				
Batch	6339711				
Live Time	10800				
Detector	3				
Geometry	1				
Aliquot (gms/L)	0.1				
Count date	8/12/96 13:19				
Collection Date	7/29/96				
delta T to midpoint of count	14.6				
Efficiency data file	1394				
Background, Library files	WBKG3215				
		Counting	FINAL	Total	MDA
Nuclide	keV	Error	RESULT	Error	pCi/L
		pCi/L	pCi/L	2 sigma	
Ra-226	186.1	440.69	17.09	440.70	619.83
U-235	185.7	26.81	1.04	26.81	37.70
	143.8	111.01	34.46	114.76	160.38
	163.3				315.67
Pb-214(Ra-226)	351.9	19.07	-11.76	38.87	62.80
	295.1				103.02
Fe-59	1099.2	19.57	6.62	22.43	45.46
	1291.6				68.86
Co-58	810.8	14.03	-0.30	14.03	24.64
Ac-228(Ra-228)	911.2	69.83	46.53	72.48	117.42
	969				165.07
Pb-212	238.6	15.36	0.61	37.86	52.51
	300.1		-11.27	311.46	539.57
Co-60	1332.5	3.34	-0.83	8.36	27.25
	1173.3				30.19
Cs-137	661.7	14.81	10.77	14.85	22.99
Eu-155	105.3	57.61	2.37	57.61	70.17
Eu-152	1408.1	17.60	-11.20	18.20	112.12
	344.3				70.27
Eu-154	723.3	3.84	-5.97	14.98	122.26
	1004.8				159.89
	1274.5				57.10
Ru-108	621.8	1.62	2.939	115.235	202.06
	1050.1				2106.73

CS 8/13/96

0273

A. Wong
4-9-93

ISOTOPES DILUTION RECORD

16 02 PLASTIC JAR
100 uds AQUEOUS
GAMMA LCS

Secondary/Working Level Dilution

Date: 4/8/93 Preparer's Name: A. Wong

Pipet Check / Balance Wt. Check Done (✓)

Diluent used: 0.1 M HCl

I. Isotope #1: Cs-137 ⇒ 197.0 pCi 4-2-91

Diluted Source ID (log#): 91-225-24-3

A: Source activity: $\frac{940.831 \text{ pCi/ml}}{965.84}$ decay corrected from

B: Amount of source transferred: 0.2 ml

C: Total amount of dilution: 100 ml

D: Isotope activity (A*B/C): 1.8817 pCi/ml * 100 ml

II. Isotope #2: Co-60 ⇒ 259.1 pCi 4-2-91

Diluted Source ID (log#): 91-225-80-1

E: Source activity: $\frac{998.1087 \text{ pCi/ml}}{838.8 \text{ pCi/ml } 4-2-93}$ decay corrected from

F: Amount of source transferred: 0.2 ml

G: Total amount of dilution: 100 ml

H: Isotope activity (E*F/G): 199.62 pCi/ml * 100 ml

Dilution Log Book ID: 92-353-78

Reviewed by: [Signature] Date: 4/9/93

988.5 pCi Cs
4-2-91

9-1-91

975.1346 pCi/ml

197.0 pCi 4-2-91

188.17 pCi total Cs

1091.1 pCi/ml 4-2-91

259.1 pCi 4-2-91

199.62 pCi Co

Geometry I

Read and Understood:

A. Wong
Signed

4-9-93
Date

[Signature]
Signed

0293
4/9/93
Date

CERTIFICATE OF CALIBRATION GAMMA STANDARD SOLUTION

Radionuclide	Cs-137	Customer:	LOCKHEED ENGINEERING & SCIENCES Co.
Half Life:	30.0 ± 0.2 years	P.O.No.:	06LAB1036
Catalog No.:	7137	Reference Date:	September 1 1991 12:00 PST.
Source No.:	389-21-2	Contained Radioactivity:	1.002 μ Cl

Description of Solution

a. Mass of solution:	4.9523	grams
b. Chemical form:	CsCl in 0.1N HCl	
c. Carrier content:	None added	
d. Density:	0.9996	gram/ml @ 20°C.

Radioimpurities None detected

Radioactive Daughters None

Radionuclide Concentration 0.202 μ Cl/gm.

Method of Calibration

Weighted aliquots of the solution were assayed using gamma spectrometry:

Energy peak(s) integrated under:	662	KeV.
Branching ratio(s) used:	0.8521	gamma rays per decay.

Uncertainty of Measurement

- | | |
|--|-------|
| a. Systematic uncertainty in instrument calibration: | ±1.0% |
| b. Random uncertainty in assay: | ±1.1% |
| c. Random uncertainty in weighing(s): | ±0.4% |
| d. Total uncertainty at the 99% confidence level: | ±2.5% |

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Notes

1. Nuclear data were taken from "Table of Isotopes", Seventh Edition, edited by Virginia S. Shirley.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)



ISOTOPE PRODUCTS LABORATORIES
1800 No. Keystone Street,
Burbank, California 91504
(818) 843 - 7000

[Signature]
QUALITY CONTROL

U.S. Environmental Protection Agency
Environmental Monitoring Systems Laboratory-Las Vegas
Nuclear Radiation Assessment Division

Calibration Certificate

Description

Principal radionuclide **Cobalt-60** Half-life **5.271 years**

Nominal activity **110** **nano** curies

Nominal volume **5** ml in ampoule/bottle number **2506-2**

Measurement Activity of principal radionuclide

Activity per gram of this solution

22.2 **nano** curies of **Cobalt-60**

at 0400 hours PST on **April 2, 1991**

Activity of daughter radionuclide

The principal activity was accompanied at the quoted time by

curies Per gram

of the daughter nuclide

Total mass of this solution

APPROX. 5.0 grams

Method of measurement

The activity of the primary solution was measured using an ionization chamber.

The activity of the dilution was measured using gamma spectroscopy.

Useful Life

This radionuclide has decayed through **0.6** half lives since it was obtained by EMSL-LV

We recommend that this solution should not be used after **January 2000**

Purity

The manufacturer states that activities other than that of the principal nuclide and of its daughter nuclides, if any, were estimated/known to be

- (1) none stated less than % of the principal activity
equal to %
- (2) less than % of the principal activity
equal to %
- (3) less than % of the principal activity
equal to %

The activity of impurity (1) is not (2) is not (3) is not included in the quoted figures of the principal activity

Random Errors

The precision of this standard was such that the certified value of the radioactive concentration of the principal activity had a standard error (sm) not greater than : 0.42 %
(The 99.7% confidence limits are given by $t(sm)$ where t is obtained from the student t factor for the degree of freedom $(n-1)$).

The maximum uncertainty due to the assessable systematic errors (dilution, counting, and known uncertainty of the standard) is obtained by the separate arithmetic summation of the positive and negative systematic error $(+\delta - \delta')$. These have been estimated not to exceed

-2.1 % or -2.1 %

the overall uncertainty (often called accuracy) is an estimate of the possible divergence of the quoted result from the true value. It is a combination of random error $[t(sm)]$ at the 99.7% confidence limits and the worst case estimate of the systematic errors $(+\delta, -\delta')$

The overall uncertainty is therefore calculated on the basis of $+ [t(sm) + \delta]$, $- [t(sm) + \delta]$ and is +3.5 %, -3.5 % of the quoted radioactive concentration.

Decay Schemes

This standardization is based on the following assumptions of the principle nuclide, its daughter nuclides and impurities (no allowance for error in these assumptions or the assumption of quoted half-life have been included in the statement of accuracy above)

Cobalt-60 decays 100 percent by beta emission followed by prompt gamma transition.

Chemical Composition of Solution

Carrier content per gram of solution:

Other components:

30 micrograms cobalt

0.1 M HCl

Preservative:

Remarks

Date Certificate Prepared May 31, 1991

Approval Signature

Paul B. Fahn

LOCKHEED ANALYTICAL LABORATORY

SAMPLE PREPARATION LOG FOR GROSS ALPHA/BETA ANALYSIS

LAL-91-SOP-0060

Date Prep Started : 8/20/96
 Workgroup Number : GR ALP/BETA LAL-0060 40473

Report

Matrix : Liq. Waste
 Prep Due Date : 08/16/96

CLIENT SAMPLE ID	LAL ID		QC	CHILD LAL ID	pH <2	ALQT VOL (g/L/smp)	PLANCHET TARE WT (grams)	PLANCHET GROSS WT (grams)		SAMPLE WEIGHT (grams)	COMMENTS
L7561-49	40473DUP1	1	DUP1	40473-01	N	0.050	8.5528	8.5592			
Lab Ctrl Sample	40473LCS1	2	LCS1	40473-02		0.250	8.7315	8.8140			
Method Blank	40473MBB	3	MBB1	40473-03		0.250	8.5761	8.5762			
L7561-52	40473MST	4	MS1	40473-04	N	0.050	8.6361	8.6428			
BOHXX4	L7561-43	5		40473-05	N	0.050	8.4970	8.5036			
BOHXX5	L7561-46	6		40473-06	N	0.050	8.6953	8.7010			
BOHXX6	L7561-49	7	SMP1	40473-07	N	0.050	8.6124	8.6194			
BOHYM6	L7561-52	8	MSS1	40473-08	N	0.050	8.6289	8.6355			
BOHYM7	L7561-55	9		40473-09	N	0.050	8.5600	8.5632			
BOHYM8	L7561-58	10		40473-10	N	0.050	8.6966	8.7076			
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									

LCS Volume & RefDate	<u>1.0ml</u>	<u>8/1/90</u>	MS Volume & RefDate	<u>1.0ml</u>	<u>1/5/96</u>	Prep Anlst	<u>RM</u>
LCS Nuclide	<u>Am-241</u>	<u>ScV-90</u>	MS Nuclide	<u>Am-241</u>	<u>ScV-90</u>	Start Date	<u>8/20/96</u>
LCS Activity	<u>9.81 pCi/ml</u>	<u>12.0 pCi/ml</u>	MS Activity	<u>8.40 pCi/ml</u>	<u>8.37 pCi/ml</u>	Count Anlst	<u>CS</u>
LCS ID #	<u>95-721-13-1</u>		MS ID #	<u>94-677-98-1</u>			

Balance Number : 40020096 () Pipette Number : 71008 (✓)
 Comments : _____ () _____ ()
 LCS added by: RM 8/20/96
 Witnessed by: [Signature]

0302

LOCKHEED ANALYTICAL LABORATORY

SAMPLE PREPARATION LOG FOR GROSS ALPHA/BETA ANALYSIS

LAL-91-SOP-0060

Date Prep Started : 8/20/96
 Workgroup Number : GR ALP/BETA LAL-0060 40473

Matrix : Liq. Waste
 Prep Due Date : 08/16/96

CLIENT SAMPLE ID	LAL ID		QC	CHILD LAL ID	pH <2	ALQT VOL (L)	PLANCHET TARE WT (grams)	PLANCHET GROSS WT (grams)	*	SAMPLE WEIGHT (grams)	COMMENTS
L7561-49	40473DUP1	1	DUP1	40473-01	N	0.050	8.5528	8.5592		0.0064	
Lab Ctrl Sample	40473LCS1	2	LCS1	40473-02		0.250	8.7315	8.8140		0.0825	
Method Blank	40473MBB	3	MBB1	40473-03		0.250	8.5761	8.5762		0.0001	
L7561-52	40473MS1	4	MS1	40473-04	N	0.050	8.6361	8.6428		0.0067	
BOHXX4	L7561-43	5		40473-05	N	0.050	8.4970	8.5036		0.0066	
BOHXX5	L7561-46	6		40473-06	N	0.050	8.6953	8.7010		0.0057	
BOHXX6	L7561-49	7	SMP1	40473-07	N	0.050	8.6134	8.6194		0.0060	
BOHYM6	L7561-52	8	MSS1	40473-08	N	0.050	8.6289	8.6355		0.0066	
BOHYM7	L7561-55	9		40473-09	N	0.050	8.5600	8.5632		0.0032	
BOHYM8	L7561-58	10		40473-10	N	0.050	8.6966	8.7076		0.0110	
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									

LCS Volume & RefDate	1.0 mL; 08/01/90		MS Volume & RefDate	1.0 mL; 01/05/96		Prep Anlst	RM
LCS Nuclide	Am-241	Sr-90	MS Nuclide	Am-241	Sr-90	Start Date	8/20/96
LCS Activity	9.8 pCi/mL	12.0 pCi/mL	MS Activity	8.4 pCi/mL	8.4 pCi/mL	Count Anlst	
LCS ID #	95-721-13-1		MS ID #	94-677-93-1			

Balance Number : 40020046 () Pipette Number : 71008 () LCS added by: RM
 Comments : _____ () _____ () Witnessed by : TR

Analyst : Bryan Martin Checked by: LS

SECONDARY/WORKING LEVEL STANDARD DILUTION RECORD

Dilution Source Information	
Isotope:	<u>Am-241 and Sr-90</u>
Parent Barcode Number	<u>AA0030 AA0046</u> <u>Am-241 IPI 388-100-1</u>
Vendor or Certificate I.D. # of Parent Standard:	<u>Sr-90 NEST SRM 4919C</u> <u>Am-241 91-0225-60-1</u>
Diluted Source Logbook I.D. #:	<u>Sr-90 91-0225-30-2</u>
Balance Verification?:	<u>Yes</u>
Diluent Used:	<u>0.1 N HNO₃</u>

Dilution	
* Diluent:	<u>0.1 N HNO₃ + 42mg Sr-(NO₃)₂/mL</u>
* Density of diluent (g/ml):	<u>NA</u>
a: Parent Specific Activity:	<u>Am-241 981 pCi/mL</u> <u>Sr-90 6000 pCi/mL m 8/1/90</u>
b: Amount of Source Transferred:	<u>Am-241 0.5 mL</u> <u>Sr-90 0.5 mL</u>
c: Total amount of Dilution:	<u>500 mL</u>
d: Total Volume of Dilution:	<u>500 mL</u>
e: Activity of Dilution (a * b / c):	<u>NA</u>
f: Activity of Dilution (a * b / d):	<u>Am-241 9.81 pCi/mL</u> <u>Sr-90 12 pCi/mL m 8/1/90</u>
Dilution Logbook I.D. #:	<u>95-721-13-1</u>
Prepared By: <u>Joe Hutchinson</u>	Preparation Date: <u>8/23/95</u>
Reviewed By: <u>97A.M. [Signature]</u>	Review Date: <u>8/24/95</u>
* If the diluent remains unchanged from the diluent used for the dilution source, then a weight dilution of a volume unit source can be performed without a density conversion. If the diluent changes, a weighted proportion density conversion is necessary.	

Read and Understood By

0307

Signed _____

Date _____

Signed _____

Date _____

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Radionuclide	Am-241	Customer:	LOCKHEED ENGINEERING & SCIENCES Co.
Half Life:	432.7 ± 0.5 years	P.O.No.:	06LAB1245
Catalog No.:	7241	Reference Date:	November 1 1991 12:00 PST.
Source No.:	388-100-1	Contained Radioactivity:	0.997 μ Cl.

Description of Solution

a. Mass of solution:	5.0007	gram.
b. Chemical form:	AmCl ₃ in 0.5N HCl	
c. Carrier content:	None added	
d. Density:	1.0077	gram/ml @ 20°C.

Radioisotopes

None detected

Radioactive Daughters

None detected

Radionuclide Concentration

0.1994 μ Cl/gram.

Method of Calibration

Weighed aliquots of the solution were assayed using a liquid scintillation counter.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±2.0%
b. Random uncertainty in assay:	±0.7%
c. Random uncertainty in weighing(s):	±0.0%
d. Total uncertainty at the 99% confidence level:	±2.7%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Notes

1. Nuclear data were taken from "Table of Isotopes", Seventh Edition, edited by Virginia S. Shirley.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)



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 Burbank, California 91504
 (818) 843 - 7000

Shirley A. Wilson
QUALITY CONTROL

0309

PROJECT Preparation of Am-241 Std.

Continued From Page _____

Cont. #	Coll. Date	Exp. Date	Ref. #	Vendor	Prog. In	Notes
388-100-1	Nov 1, 1991	5/6/92	91-0225-64	IPL	JK	J

Item #	Preparation Date	Final Conc.	Initial Conc.	Bar Code
1	5/6/92	9,800 C/g	0.9974 C/g	AA0030

The entire standard was transferred to a 100-ml volumetric. V.F. and the ²⁴¹Am was diluted to 100ml with 0.5N HCl.

$\begin{array}{r} 68.4902 \\ 43.5665 \text{ g wt. V.F.} \\ \hline 4.9237 \text{ g std} \end{array}$	$\begin{array}{r} 164.01 \text{ g std + dilute} \\ 63.57 \text{ g V.F.} \\ \hline 100.44 \text{ g diluted std} \end{array}$
---	---

$$\text{Activity Std} = \frac{0.1994 \mu\text{Ci/g} \times 4.9237 \text{ g std}}{100.44 \text{ g dilution}}$$

$$\begin{aligned} \text{Density } 0.5\text{N HCl} &= 1.003598 \text{ g/ml} & \Rightarrow & 0.0097748 \mu\text{Ci/g} \times 1.003598 \text{ g/ml} \\ &= 0.0098 \mu\text{Ci/g} & & = 0.009810 \mu\text{Ci/g ml} \\ \text{or} &= 9,800 \text{ pCi/g} & & = 9810 \text{ pCi/ml} \end{aligned}$$

Continued on Page _____

Read and Understood By

0308

Joe Hillman
Signed

5/11/92
Date

J. Hill
Signed

7/13/92
Date



THIS IS A PHOTOCOPY OF THE CERTIFICATE
WHICH IS BEING MAILED TO YOU UNDER
SEPARATE COVER.

AA0046

National Institute of Standards & Technology

Certificate

Standard Reference Material 4919-G Radioactivity Standard

Radionuclide	Strontium-90
Source identification	4919-G
Source description	Solution in NIST borosilicate-glass ampoule ⁽¹⁾
Solution composition	Strontium-90 plus yttrium-90 plus approximately 95 μg each of non-radioactive strontium and yttrium per gram of 1-molar hydrochloric acid ⁽²⁾
Mass	Approximately 5.0 grams
Radioactivity concentration	$4.514 \times 10^3 \text{ Bq g}^{-1}$
Reference time	1200 EST August 1, 1990
Overall uncertainty	1.05 percent ⁽³⁾
Photon-emitting impurities	None observed ⁽⁴⁾
Alpha-particle-emitting impurities	None observed ⁽⁵⁾
Half life	$28.5 \pm 0.2 \text{ years}$ ⁽⁶⁾
Measuring instrument	4 $\pi\beta$ liquid-scintillation counter

This standard reference material was prepared in the Center for Radiation Research, Ionizing Radiation Division, Radioactivity Group, Dale D. Hoppes, Group Leader.

Gaithersburg, MD 20899
January, 1991

William P. Reed, Acting Chief
Office of Standard Reference Materials

*Notes on back

0310

PROJECT

SR-90 Radionuclide Standard Preparation Continued From Page

CERT #	Calibration	Expiration	Reference	VENDOR	PREP	INITIALS
Parent Rept #	CERT DATE	DATE	#			INITIALS
SRM # 4919-G	1000 Aug 1, 1990	10-2-93	SRM #4919-6A 91-0199-63	NIST		
ITEM #	Preparation DATE	Final Concentration	INITIAL Concentration			
✓	10-2-91 10-2-91 11-19-91 Aug 1, 1990	600.6859 600.685 μCi	4.514 $\times 10^3 \text{ Bq}$			

9/10/91

Radionuclide = SR-90
 SOURCE # 4919-G
 SOURCE description Solution in NIST Borosilicate glass ampule
 Composition # SR-90 + Y-90 plus approximately
 95 mg of non radioactive Sr and
 yttrium per gram of 1 molar HCl.
 mass approximately 5.0 grams
 Radioactivity conc. 4.514 $\times 10^3 \text{ Bq}$
 Reference time = 1000 EST Aug. 1, 1990
 T_{1/2} = 28.5 to 2 years

10/2/91

Preparation

W weighing

100.0 ml K.F + standard (SR-90 in ampule) = 65.2000
 100.0 ml K.F (empty) (g) = 60.2814
 Difference of mass (g) = 4.9186

2/ Calculations:

$$4.514 \times 10^3 \text{ Bq/g} \times 4.9186 \text{ g} = 22,202.5604 \text{ Bq}$$

$$22,202.5604 \text{ Bq} \times 0.7027 \text{ Pci/Bq} = 600.6859 \text{ Pci}$$

(STD date Aug 1, 1990) Continued on Page

Transferred 11-19-91 Paul F. ...

(Revised from LAL 10-0199 pg 63) 0311
 Read and Understood By

[Signature]
Signed

11/17/91
Date

[Signature]
Signed

12/4/91
Date

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Radionuclide	Am-241	Customer:	LOCKHEED ENGINEERING & SCIENCES Co.
Half Life:	432.7 ± 0.5 years	P.O.No.:	06LAB1245
Catalog No.:	7241	Reference Date:	November 1 1991 12:00 PST.
Source No.:	388-100-1	Contained Radioactivity:	0.997 μ Ci.

Description of Solution

a. Mass of solution:	5.0007		
b. Chemical form:	AmCl ₃ in 0.5N HCl		grams.
c. Carrier content:	None added		
d. Density:	1.0077		gram/ml @ 20°C.

Radioimpurities

None detected

Radioactive Daughters

None detected

Radionuclide Concentration

0.1994 μ Ci/gram.

Method of Calibration

Weighed aliquots of the solution were assayed using a liquid scintillation counter.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±2.0%
b. Random uncertainty in assay:	±0.7%
c. Random uncertainty in weighing(s):	±0.0%
d. Total uncertainty at the 99% confidence level:	±2.7%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Notes

1. Nuclear data were taken from "Table of Isotopes", Seventh Edition, edited by Virginia S. Shirley.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)



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1800 No. Keystone Street.,
Barbark, California 91504
(818) 843 - 7000

Stan A. Moore
QUALITY CONTROL

0312

CERTIFICATE OF CALIBRATION

BETA STANDARD SOLUTION

Radionuclide	Sr-90	Customer: LOCKHEED ENGINEERING & SCIENCES Co.
Half Life:	28.5 ± 0.2 years	P.O.No.: 06LAB1245
Catalog No.:	7090	Reference Date: November 1 1991 12:00 PST.
Source No.:	388-99-2	Contained Radioactivity: 1.018 μCi.
Description of Solution		
a. Mass of solution:	5.0012	gram.
b. Chemical form:	SrCl ₂ in 0.1N HCl	
c. Carrier content:	None added	
d. Density:	0.9996	gram/ml @ 20°C.
Radioimpurities		
	None (Y-90 daughter in equilibrium)	
Radioactive Daughters		
	Y-90 daughter in equilibrium	
Radionuclide Concentration		
	0.203	μCi/gram.

Method of Calibration

Weighed aliquots of the solution were assayed using a liquid scintillation counter.

Uncertainty of Measurement

- | | |
|--|-------|
| a. Systematic uncertainty in instrument calibration: | ±1.5% |
| b. Random uncertainty in assay: | ±0.5% |
| c. Random uncertainty in weighing(s): | ±0.0% |
| d. Total uncertainty at the 99% confidence level: | ±2.0% |

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Notes

1. Nuclear data were taken from "Table of Isotopes", Seventh Edition, edited by Virginia S. Shirley.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)



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Gary A. Gilmore
 QUALITY CONTROL

0313

SECONDARY/WORKING LEVEL STANDARD DILUTION RECORD

Dilution Source Information	
Isotope:	(452.7 yr) <u>Am-241</u> ; (29.1 yr) <u>Sr/Y 90 MS</u>
Parent ^{Logbook} Reference Number	<u>92-353-81-1</u> ; <u>94-0677-52-1</u>
Vendor or Certificate I.D. # of Parent Standard:	_____
Diluted Source Logbook I.D. #:	<u>SEE ABOVE</u>
Balance Verification?:	<u>Yes</u>
Diluent Used:	<u>1 M HNO3</u>

Dilution	
*Diluent:	<u>1 M HNO3 + 10 ml Sr Carrier (10 mg/ml)</u>
*Density of diluent (g/ml):	<u>1.0290</u> g/ml
a: Parent Specific Activity:	$\frac{\text{Am-241}}{1002.4}$; $\frac{\text{Sr/Y-90}^*}{1000.2}$ pCi/g @ 1/5/96
b: Amount of Source Transferred:	<u>4.070</u> ; <u>4.065</u> g
c: Total amount of Dilution:	<u>500.01</u> g
d: Total Volume of Dilution:	<u>514.5</u> ml
e: Activity of Dilution (a * b / c):	$\frac{\text{Am-241}}{8.16}$; $\frac{\text{Sr/Y-90}}{8.13}$ pCi/g @ 1/5/96
f: Activity of Dilution (a * b / d):	<u>8.40</u> ; <u>8.37</u> pCi/ml
Dilution Logbook I.D. #:	<u>94-0677-93-1</u>
* Sr/Y-90 in equilibrium. Activity reported = known Sr 90 activity * 2.	
Prepared By: <u>G. A. Marshall</u>	Preparation Date: <u>1/5/96</u>
Reviewed By: <u>Joe H. Johnson</u>	Review Date: <u>1/5/96</u>
*If the diluent remains unchanged from the diluent used for the dilution source, then a weight dilution of a volume unit source can be performed without a density conversion. If the diluent changes, a weighted proportion density conversion is necessary.	
read and Understood By	

INITIAL STANDARD DILUTION RECORD

Standard Information:	
Isotope:	<u>Sr-90</u>
Activity of Standard Received:	<u>1.018</u> <u>5.0012</u> uCi
Weight of Standard Received (g):	<u>5.0012</u> g
Standard Activity (pCi/g):	<u>2.036E5</u> pCi/g
Half-life in Years or Days:	<u>29.1</u> yrs
Reference Date:	<u>11/1/91</u>
Vendor:	<u>IPL</u>
Vendor I.D. #	<u>—</u>
LAL I.D. #:	<u>AA0049</u>
NIST Traceable?	<u>Yes</u>
Certificate #:	<u>388-99-2</u>
Receiver's Name:	<u>FREE</u>
Date Received:	<u>12/91</u>

Primary Dilution	
Balance Verification?:	<u>Yes</u>
Diluent Used:	<u>1 M HNO₃ (1.0290 g/mL)</u>
a: Decay Corrected Standard Activity (pCi/g):	<u>1.844 E5</u> pCi/g @ <u>1/5/96</u>
b: Weight of the Source Transferred (g):	<u>4.949</u> g
c: Total diluted weight (g):	<u>100.01</u> g
d: Total Diluted Volume (mL)	<u>97.19</u> mL
e: Activity of Dilution by Weight (pCi/g) (a * b / c):	<u>9125.0</u> pCi/g @ <u>1/5/96</u>
f: Calculated Density of Solution (g/mL) (c / d):	<u>1.0290</u> g/mL
g: Activity of Dilution by Volume (pCi/mL) (e * f):	<u>9389.8</u> pCi/mL
h. Dilution Logbook I.D. #:	<u>94-0677-91-1</u>
Prepared By: <u>Jim Moul</u>	Preparation Date: <u>1/5/96</u>
Reviewed By: <u>Joe Hutchison</u>	Review Date: <u>1/5/96</u>
Purity/Cross Check Performed By: _____	Check Date: _____

Signed

Date

Signed

Date

0315

SECONDARY/WORKING LEVEL STANDARD DILUTION RECORD

Dilution Source Information

Isotope: Sr-90

Parent Barcode Number: AA0049

Vendor or Certificate I.D. # of Parent Standard: ~~01-0677-91-1~~ 388-99-2

Diluted Source Logbook I.D. #: 94-0677-91-1

Balance Verification?: Yes

Diluent Used: 1.0 M HNO₃

Dilution

* Diluent: 1.0 M HNO₃

* Density of diluent (g/ml): 1.0290 g/ml

a: Parent Specific Activity: 9125.0 pCi/g 1/5/96

b: Amount of Source Transferred: 6.012 g

c: Total amount of Dilution: 109.70 g

d: Total Volume of Dilution: 106.61 ml

e: Activity of Dilution (a * b / c): 500.09 pCi/g 1/5/96

f: Activity of Dilution (a * b / d): 514.6 pCi/ml

Dilution Logbook I.D. #: 94-0677-92-1

Prepared By: Aj CarmelPreparation Date: 1/5/96Reviewed By: Joe HutchinsonReview Date: 1/6/96

*If the diluent remains unchanged from the diluent used for the dilution source, then a weight dilution of a volume unit source can be performed without a density conversion. If the diluent changes, a weighted proportion density conversion is necessary.

Read and Understood By

Signed

Date

Signed

Date

0316

Certs #	Calib	Exp.	Ref #	Vendor	Prep	Notes
Print Ref.	Cert. Date	Date			In	In
388-100-1	Nov 1, 1991	5/6/92	91-0225-645	IPL	JK	JK
Item #	Preparation Date	Final Conc	Initial Conc	Bar Code		
1	5/6/92	9,800 c/g	0.997 uCi/g	AA0030		
		8.1997 uCi/g	0.1994 uCi/g			

The entire standard was transferred to a 100-ml volumetric V.F. and the ~~sample~~ ^{Std} was diluted to 100 mL with 0.5N HCl.

68.4902	164.01 g Std + dilute
<u>43.5665</u> g wt V.F.	<u>63.57</u> g V.F.
4.9237 g Std	100.44 g diluted Std

Activity Std = $\frac{0.1994 \mu\text{Ci/g}}{100.44 \text{ g dilution}} \times 4.9237 \text{ g Std}$

Density 0.5N HCl = 1.003598 g/ml $\Rightarrow 0.00977148 \mu\text{Ci/g} \times 1.003598 \text{ g/ml}$
 $= 0.0098 \mu\text{Ci/g}$ $= 0.009810 \mu\text{Ci/g ml}$
 or $= 9,800 \text{ pCi/g}$ $= 9810 \text{ pCi/ml}$

Continued on Page _____

Read and Understood By

0317

Joe Hiltner
Signed

5/11/92
Date

J. Hiltner
Signed

7/13/92
Date

ISOTOPE DILUTION RECORD

Isotope: Am-241

Secondary/Working Level Dilution

Date: 4-9-93 Preparer's Name: A. Wong

Pipet Check / Balance Wt. Check Done (✓)

Diluted Source ID (log#): 91-225-60-1

Diluent used: 0.5N HCl

Agnes Wong
4-9-93

A: Source activity: 21700 dpm/g (9774.8 pCi/g)

B: Amount of source transferred: 10.3235 g

C: Total amount of dilution: 100.1029 g

D: Activity of dilution (A*B/C): 2237.90 dpm/g

E: Density of Diluent: 1.0010 g/ml

* F: Activity by volume (D*E): 2240.14 dpm/ml

Dilution Log Book ID: ~~92-335~~^{RW} 92-353-81-1

Reviewed by: [Signature] Date: 4/9/93

1.6" diameter filter LCS in Gamma Spec (14 petri dish and sealed) 955 5/18/93

Prepared by Nels Van Nuyen 5/10/93 - cut Whatman Glass Micro-fiber filter paper (originally 3" dia) to 1.6" dia - P. patted on filter

¹³⁷Cs AG-0199- 0.200 ml * 975.17 pCi/ml = 195.0 pCi (≅ 197.8 pCi 4-2-91)

⁶⁰Co 91-225-80-1 0.200 ml * 1170.56 pCi/ml = 234.1 pCi (≅ 259.1 pCi 4-2-91)

(same precise amounts as p.80K)

Read and Understood By

Agnes Wong
Signed

4-9-93
Date

[Signature]
Signed

5-18-93
Date