START 9613495.2263

W0040-ITC-046
353

0045456

INTERNATIONAL TECHNOLOGY CORPORATION

JUN 1994 RECEIVED SDLA

OCT 1996 RECEIVED EDMC

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Dear J.A. Lerch

Thank you for purchasing analytical testing services from IT Corporation. It is our intention to supply our clients with data packages which not only meet the industry's highest standards for quality, but are also easy to use. Features which we point out are:

1. A Data Summary Packet which allows you to review your data without searching through the complete data package.

   Your Data Summary Packet contains the following items:

   - Case Narrative: listing of sample identifications, analyses performed, explanation of any problem associated with samples, corrective action taken.
   - Quality control sample identifications and analyses performed.
   - Data summary.

2. A data package which meets the specific requirements you requested and is easy to use as well. The package is organized in accordance with the Table of Contents which you will find at the beginning of each section. Sections are separated by color-coded tabs, making it easy to find individual analytical parameters which may be of particular interest to you. The data package is custody-sealed at the laboratory - your assurance that parts of the package are not missing.

We are constantly searching for ways to improve our service to you. This current product has many of the features which you have told us are important to you. Your suggestions regarding additional improvements will be appreciated.

Please contact me with any questions or suggestions.

Sincerely,

Sheree A. Schneider

Sheree' Schneider
Project Manager

PROPRIETARY COPY

Regional Office
5815 Middlebrook Pike • Knoxville, Tennessee 37921 • 615-588-6401

IT Corporation is a wholly owned subsidiary of International Technology Corporation

9613495.2264

DON'T SAY IT --- *Write It!*

DATE: September 7, 1994

TO: W0040-ITC-046

FROM: Pat Reich H4-19

Telephone: 372-2785

cc:

SUBJECT: VALIDATION REPORT

THE VALIDATION REPORT FOR THIS DATA PACKAGE ID IS FILED IN DATA PACKAGE #:

B0BP28-TMA-752.

PAT REICH

54-3000-101 (12/92) GEF014

9613495.2265

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

JUN 1994 RECEIVED SDLA

CERTIFICATE OF ANALYSIS

RECORD COPY

IT Corporation
2800 George Washington Way
Richland, WA 99352
Attn: Van Pettey

June 9, 1994

Job Number: 427; 437; 453

This is the Certificate of Analysis for the following samples:

SDG:	W0040
Client Project ID:	WHC SAF 94-129 100-BC-5 Groundwater Round 6
Date Received by Lab:	April 25; April 27; April 29, 1994
Number of Samples:	Twenty (20)
Sample Type:	Water

I. Introduction

On April 25, April 27 and April 29, 1994, twenty (20) water samples arrived at ITAS-Richland, Washington and were transferred to ITAS-Knoxville for chemical analysis. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results.

The samples were analyzed for Target Analyte List (TAL) metals by cold vapor atomic absorption spectroscopy (CVAA), graphite furnace atomic absorption spectroscopy (GFAA), and inductively coupled plasma spectroscopy (ICP) in accordance with the EPA CLP ILM03 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

9613495.2266

II. Analytical Results/Methodology (Continued)

The pH of the samples was determined using EPA method 9040.

The specific conductance of the samples was measured using EPA method 120.1.

The samples were analyzed for anions by ion chromatography using EPA method 300.0.

III. Quality Control

The samples for work order #427 were digested on May 5 and June 8, 1994 for ICP and May 5, 1994 for GFAA. The CVAA analysis for mercury was performed on May 16, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from May 5 through May 18, 1994; the remaining metals were analyzed by ICP on May 25, May 31 and June 8, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample numbers BOBP10 and BOBP11. Spike recovery (accuracy) results were within acceptance limits for all parameters . Duplicate RPD (precision) results were within acceptance limits for all parameters. The CRA standard for mercury analysis was double spiked. The serial dilution for BOBP11 was performed at a 1/2 dilution instead of a 1/5 dilution.

The samples for work order #437 were digested on May 11, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on May 16, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from May 12 through May 17, 1994; the remaining metals were analyzed by ICP on May 24, 1994. All run QC was acceptable. The CRA sample for the mercury analysis was double spiked. The samples were batched with QC from work order #427.

The samples for work order #453 were digested on May 12, 1994 for ICP and GFAA. The samples for mercury analysis was performed on May 16, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from May 16 through May 24, 1994; the remaining metals were analyzed by ICP on May 25, 1994. All run QC was acceptable. The CRA standard for mercury analysis was double spiked. The samples were batched with QC from work order #427.

Data were reported with qualifiers as follows:

"C" Qualifiers

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
B - Value greater than instrument detection limit, but less than contract required quantitation limit.

9615495.2267

III. Quality Control (Continued)

"Q" Qualifiers

* - Duplicate analysis outside control limits.
N - Spiked sample recovery outside control limits.
W - Post-digestion spike for GFAA was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.
S - The reported value was determined by method of standard additions.

"M" Qualifiers

P - Analysis performed by ICP.
V - Analysis performed by CVAA.
F - Analysis performed by GFAA.
C - Cyanide analysis by manual distillation/colorimetric determination.

Miscellaneous

D - Duplicate.
S - Spike.
NR - Not required.
G - Native analyte > 4 times spike added, therefore, acceptance criteria do not apply.
X - Detection limits higher than normal due to sample matrix interferences.

The samples were analyzed for pH on April 26 and May 3, 1994. A duplicate was analyzed using sample number BOBP10. All quality control results were acceptable.

The samples were analyzed for specific conductance on April 27 and May 2, 1994. A duplicate was analyzed using sample number BOBP10. All quality control results were acceptable.

The samples were analyzed for fluoride, chloride, nitrite, phosphate and sulfate by EPA method 300.0 on May 19 and May 23, 1994. A matrix spike and matrix spike duplicate were analyzed using sample number BOBP10. All quality control results were acceptable.

9613495.2268

IT Corporation
June 9, 1994
Job Number: 427; 437; 453
Client Project ID: WHC SAF 94-129 100-BC-5 Groundwater Round 6

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

III. Quality Control (Continued)

Table I is a cross reference between client sample IDs and laboratory sample IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Test
AA7374	404431-01A	BOBP10	METALS-T
AA7375	404431-01B	"	ANIONS
AA7375	"	"	pH
AA7375	"	"	CONDUCTIVITY
AA7384	404431-02A	BOBP11	METALS-D
AA7376	404431-03A	BOBP00	METALS-T
AA7377	404431-03B	"	ANIONS
AA7377	"	"	pH
AA7377	"	"	CONDUCTIVITY
AA7385	404431-04A	BOBP01	METALS-D
AA7378	404431-05A	BOBNY4	METALS-T
AA7379	404431-05B	"	ANIONS
AA7379	"	"	pH
AA7379	"	"	CONDUCTIVITY
AA7386	404431-06A	BOBNY5	METALS-D
AA7380	404431-07A	BOBP02	METALS-T
AA7381	404437-07B	"	ANIONS
AA7381	"	"	pH
AA7381	"	"	CONDUCTIVITY

III. Quality Control (Continued)

Table I is a cross reference between client sample IDs and laboratory sample IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Test
AA7387	404431-08A	BOBP03	METALS-D
AA7382	404431-09A	BOBP26	METALS-T
AA7383	404431-09B	"	ANIONS
AA7383	"	"	pH
AA7383	"	"	CONDUCTIVITY
AA7388	404431-10A	BOBP27	METALS-D
AA7551	404456-01A	BOBP04	METALS-T
AA7552	404456-01B	"	ANIONS
AA7552	"	"	pH
AA7552	"	"	CONDUCTIVITY
AA7559	404456-02A	BOBP05	METALS-D
AA7553	404456-03A	BOBNZ6	METALS-T
AA7554	404456-03B	"	ANIONS
AA7554	"	"	pH
AA7554	"	"	CONDUCTIVITY
AA7563	404456-04A	BOBNZ7	METALS-D
AA7555	404456-05A	BOBNZ8	METALS-T
AA7556	404456-05B	"	ANIONS
AA7556	"	"	pH

9613495.2270

IT Corporation
June 9, 1994
Job Number: 427; 437; 453
Client Project ID: WHC SAF 94-129 100-BC-5 Groundwater Round 6

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

III. Quality Control (Continued)

Table I is a cross reference between client sample IDs and laboratory sample IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Test
AA7556	404456-05B	BOBNZ8	CONDUCTIVITY
AA7565	404456-06A	BOBNZ9	METALS-D
AA7557	404457-07A	BOBNZ0	METALS-T
AA7558	404457-07B	"	ANIONS
AA7558	"	"	pH
AA7558	"	"	CONDUCTIVITY
AA7567	404456-08A	BOBNZ1	METALS-D
AA7725	404499-01A	BOBNY8	METALS-T
AA7726	404499-01B	"	ANIONS
AA7726	"	"	pH
AA7726	"	"	CONDUCTIVITY
AA7746	404499-02A	BOBNY9	METALS-D

9613495.2271

IT Corporation
June 9, 1994
Job Number: 427; 437; 453
Client Project ID: WHC SAF 94-129 100-BC-5 Groundwater Round 6

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IV. Certification

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature:

Reviewed and Approved:

Sheree A. Schneider

Sheree' A. Schneider
Project Manager

9613495.2272

WO#427

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1550 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(Per Shipping Container)

Date/Time Received 4-22-94 1400 Client Name WHC

Project/Client # 94-129 Batch or Case #

Cooler ID (if noted on the outside of cooler) ER-7

1. Condition of shipping container? n/c
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 4-22-94 224
8. Samples have: X tape ____ hazard labels
   X custody seals ____ appropriate sample labels
9. Samples are: X in good condition ____ leaking
   X broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☑ No ☐

Sample temperature 2°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) n/a
    Request for analysis #(s) n/a
    Airbill # n/a Carrier n/a
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☒

Printed Name/Signature Karen Schlinley Date/Time 4-22-94 1400

FORM NO. LS-042, Rev.0, 2/94

9613495.2273

0000025

WO #427

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2800 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

1 Per Shipping Container

Date/Time Received 4-22-94 14:00 Client Name WHC

Project/Client # 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-9

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 21
8. Samples have: X tape ____ hazard labels
   X custody seals ____ appropriate sample labels
9. Samples are: X in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 2°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) NA
    Request for analysis #(s) NA
    Airbill # NA Carrier NA
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☒

Printed Name/Signature Karen Fottenberg Date/Time 4-22-94 14:00

FORM NO. LS-042, Rev.0, 2/94

9613495.2274

0000026

WO #437

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
3300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-25-94 1300 Client Name WHC

Project/Client # SAF 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-9

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 304 ok 4-25-94
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ✓ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 5°

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) N/A
    Airbill # N/A Carrier N/A
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature R. Boyd R. Boyd Date/Time 4-25-94 1300

FORM NO. LS-042, Rev.0, 2/94

9613495.2275

WO#437

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-25-94 1300 Client Name WHC

Project/Client # SAF 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-3

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☑ No ☐
3. Custody Seals dated and signed? Yes ☑ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☑ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☑
6. Each sample is in a plastic bag? Yes ☑ No ☐
7. Number of sample containers in cooler: 34
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ✓ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☑ No ☐

Sample temperature 10

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) N/A
    Airbill # N/A Carrier N/A
12. Have any anomalies been identified above? Yes ☐ No ☑
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature R. Boyd R. Boyd Date/Time 4-25-94 1300

FORM NO. LS-042, Rev.0, 2/94

WO#453

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1108 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(Per Shipping Container)

Date/Time Received 4/27 1210 Client Name IHC

Project/Client # 94-129 Batch or Case # na

Cooler ID (if noted on the outside of cooler) SmL 1414

1. Condition of shipping container? AR
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 14
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ____ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 40

11. The following paperwork should be accounted for (N/A if not applicable):

    Chain of Custody #'(s) _____

    Request for analysis #(s) na

    Airbill # _____ Carrier _____

12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature [signature] Date/Time 4/27/94 1210

FORM NO. LS-042, Rev.0, 2 94

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

WO#427

Page 1 of 1

Data Turnaround: ☐ Priorty ☒ Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-10[illegible]	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A 1194-0-0518-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP	ANIONS F,SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14		ICP METALS, AA METALS, Hg CLP FILTERD								
Preservative				HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2								
Type of Container				G/P	P	G/P	G/P	Gs	Gs	G/P								
No. of Container(s)				1	1	5	2	6	1	1								
Volume				1000ml	1000ml	1000ml	1000ml	500mL ~~1000ml~~	40mL	1000ml								
SAMPLE ANALYSIS 404431				CLP A	B	40443264												
01 BOBP02	W	4/21/94	1245	X	X	X	X	X	X									
08 BOBP03	W	↓	↓							XA								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	L Sweeney / L Sweeney	4/22/94 0752
L Sweeney / L Sweeney	4/22/94 1400	R Boyl	4/22/94 1400

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0000029

9413124.2274

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#427

Page 1 of 1

Date Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp / K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-7	Field Logbook No.: EFL-103C	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2									
Type of Container	G/P	P	G/P	G/P	Gs	G	G/P									
No. of Container(s)	1	1	5	2	3	1	1									
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40ml	1000ml									
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP	ANIONS F,SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Acidify Scan	ICP METALS, AA METALS, Hg CLP FILTERD									
484431	A	B	40443201													

	Sample No.	Matrix*	Date Sampled	Time Sampled															
01	BOBP10	W	4/22/94	1510	X	X	X	X	X	X									
02	BOBP11	W	↓	↓							XA								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	L Sweeney / L Sweeney	4/22/94 0752
L Sweeney / L Sweeney	4/22/94 1400	R. Bayl	4/22/94 1400

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0000030

9413405.2278

0000031

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#427

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Tropp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100B	SAF No.: 94-129
Ice Chest No.: EIR-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0578-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40mL	1000ml
SAMPLE ANALYSIS 404431	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14 404432	Aroclor Screen 3	ICP METALS, AA METALS, Hg CLP FILTERD

	Sample No.	Matrix*	Date Sampled	Time Sampled															
05	B0BNY4	W	04/21/94	1100	X	X	X	X	X	X									
06	B0BNY5	W	↓	↓							X A								

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix*
Relinquished By: K. Tropp / K Tropp 4/22/94 Date/Time 0752	Received By: L Sweeney / L Sweeney 4-22-94 Date/Time 0752	DATA DELIVERABLE-STANDALONE	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: L Sweeney / L Sweeney 4/22/94 Date/Time 1480	Received By: R. Boyd 4/22/94 Date/Time 1480		
Relinquished By: Date/Time	Received By: Date/Time		
Relinquished By: Date/Time	Received By: Date/Time		

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

9413095.2279

0000032

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

WO#427

Page 1 of 1

Data Turnaround: ☐ Priorty ☒ Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: FR-9	Field Logbook No.: EFL-1036	Method of Shipment: EMERY
Shipped To: TMA	Offsite Property No.: W94-0-0518-3	Bill of Lading/Air Bill No.: ~~W9~~ LCS 4/22/94 NOAK
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative			HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4		HNO3<2								
Type of Container			G/P	P	G/P	G/P	Gs		G/P								
No. of Container(s)			1	1	~~4~~ 1	1	2		1								
Volume			1000ml	1000ml	~~1000ml~~ 4L	1000ml	1000ml		1000ml								
SAMPLE ANALYSIS 404431			ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14		ICP METALS, AA METALS, Hg FILTERD CLP								
Sample No.	Matrix*	Date Sampled	Time Sampled														
09 BOBP26	W	4/21/94	1100	X	X	X	X	X									
10 BOBP27	W	↓	↓							~~X~~ A							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	L Sweeney / L Sweeney	4/22/94 0752
Relinquished By	Date/Time	Received By	Date/Time
L Sweeney / L Sweeney	4/22/94 1400 DCS	R Bayd	4/22/94 1400
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

9413195.2200

0000033

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

WO#427

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W394-0-0518-4	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP	ANIONS F,SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14		ICP METALS, AA METALS, Hg CLP FILTERD								
Preservative				HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2								
Type of Container				G/P	P	G/P	G/P	Gs	G	G/P								
No. of Container(s)				1	1	5	2	3	1	1								
Volume				1000ml	1000ml	1000ml	1000ml	1000ml	40ml	1000ml								
SAMPLE ANALYSIS 464431				CLP A	B	4044320 2			Dairy Farm									
03 BOBP00	W	4/21/94	1410	X	X	X	X	X	X									
04 BOBP01	W	↓	1410							XA								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: K. Trapp / K. Trapp	Date/Time: 4/22/94 0752	Received By: L Sweeney / L Sweeney	Date/Time: 4/22/94 0752
Relinquished By: L Sweeney / L Sweeney	Date/Time: 4/22/94 1400	Received By: R. Boyd II	Date/Time: 4/22/94 1400
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

9413496.2281

WO# 437

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Tropp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1026	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	G/P	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	500ml 1000ml	40ml	1000ml
SAMPLE ANALYSIS 404456	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Purge Gas	ICP METALS, AA METALS, Hg CLP FILTERD 04A

Sample No.	Matrix*	Date Sampled	Time Sampled														
B0BNZ6 03	W	4/22/94	1640	X	X	X	X	X	X								
B0BNZ7 04	W	↓	↓							X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Tropp / K. Tropp	4/22/94 1500	L Sweeney / L Sweeney	4/22/94 1500
L Sweeney / L Sweeney	4/25/94 1300	R. Bard / RT	4.25.94 / 1300

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0000034

2827 9464 2

IN UH 4DT

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Tiepo	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-5	Field Logbook No.: FFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2								
Type of Container	G/P	P	G/P	G/P	Gs	Gas	G/P								
No. of Container(s)	1	1	5	2	6 ~~3~~	1	1								
Volume	1000ml	1000ml	1000ml	1000ml	500ml ~~1000ml~~	40ml	1000ml								
SAMPLE ANALYSIS 40445601	ICP METALS AA METALS Hg CLP A	ANIONS F, SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 40445701	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD 02A								

Sample No.	Matrix*	Date Sampled	Time Sampled														
B0BP04 01	W	4/22/94	1200	X	X	X	X	X	X								
B0BP05 02	W	↓	↓							X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Tiepo / K. Tiepo	4/22/94 1500	L Sweeney / L Sweeney	4/22/94 1500
L Sweeney / L Sweeney	4/25/94 1300	R. Boyd / R. Boyd	4/25/94 1300

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0000035

9413095.2205

WO# 45+

0000036

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100-B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE

Possible Sample Hazards/Remarks																
	Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2								
	Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P								
	No. of Container(s)	1	1	5	2	~~3~~ 1	1	1								
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE	Volume	1000ml	1000ml	1000ml	1000ml	500mL ~~1000mL~~	40mL	1000ml								
SAMPLE ANALYSIS 404456		ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99 4044	TRITIUM C-14 5703	Radium, Gram	ICP METALS, AA METALS, Hg CLP FILTERD A								

Sample No.	Matrix*	Date Sampled	Time Sampled														
BOBNZ8 05	W	4/22/94	1330	X	X	X	X	X	X								
BOBNZ9 06	W	↓	↓							X							

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix*
Relinquished By: K. Trapp / K. Trapp Date/Time: 4/22/94 1500	Received By: L Sweeney / L Sweeney Date/Time: 4/22/94 1500	DATA DELIVERABLE-STANDALONE	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: L Sweeney / L Sweeney Date/Time: 4/25/94 1300	Received By: R. Bard Date/Time: 4/25/94 1300		
Relinquished By: Date/Time:	Received By: Date/Time:		
Relinquished By: Date/Time:	Received By: Date/Time:		

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

9413095.2284

WO#434

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: [ ] Priority [X] Normal

Collector: K. Tiapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A WW94-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	2 GS	G/P
No. of Container(s)	1	1	5	2	~~3~~ 6	1	1
Volume	1000ml	1000ml	1000ml	1000ml	~~1000ml~~ 500mL	40mL	1000ml
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity from	ICP METALS, AA METALS, Hg CLP FILTERD

404456 404457 08A

Sample No.	Matrix*	Date Sampled	Time Sampled							
BOBNZ0 07	W	4/22/94	0903	X	X	X	X	X	X	
BOBNZ1 08	W	↓	↓							X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: K. Uhrge/K. Tiapp 4/22/94 1700	Received By: T. Sweeney/T. Sweeney 4/22/94 1300		
Relinquished By: T. Sweeney/T. Sweeney 4/25/94 1300	Received By: R. Bagl/ST 4/25/94 1300		
Relinquished By:	Received By:		
Relinquished By:	Received By:		

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0000037

9527 5647 96

WO# 453

0000038

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: SMC-114	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W74-0-0578-11	Bill of Lading/Air Bill No.: N/A NONE

Possible Sample Hazards/Remarks

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE Standard Refrig 3B ASS

SAMPLE ANALYSIS: 404499

Preservative			HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2								
Type of Container			G/P	P	G/P	G/P	Gs	ziG7	G/P								
No. of Container(s)			1	1	5	2	3	1	1								
Volume			1000ml	1000ml	1000ml	1000ml	1000ml	40mL	1000ml								
SAMPLE ANALYSIS			ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 4045000	Tc-99	TRITIUM C-14 1	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD ORA								
Sample No.	Matrix*	Date Sampled	Time Sampled														
BOBNY8 01	W	4/25/94	0930	X	X	X	X	X	X								
BOBNY9 02	W	↓	↓							X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: K. Umapp / K. Trapp	Date/Time: 4/25/94 1359	Received By: AJ Simpson / AJ Simpson	Date/Time: 4/25/94 1400
Relinquished By: AJ Simpson	Date/Time: 4/27/94 0921	Received By: L Sweeney / L Sweeney	Date/Time: 4/27/94 0921
Relinquished By: L Sweeney / L Sweeney	Date/Time: 4/27/94 1210	Received By: F Heidelberg	Date/Time: 4/27 1210
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

9413195.2286

0000039

9613495.2287

WO#427

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-C-0518-3

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: BUFR02, BUBN02, BUFI26, BUBI27 Cooler ID: ER-4 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: BUFN02, BUBN03, BUBP10, BUBP11 Cooler ID: ER-7 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
R Melin	157906	4-22-94

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4-22-94	8B410 PB5AA	NA

Originated By	Date	Authorized By	Date
P H Butcher	4/22/94	P H Butcher	4/22/94
Signature and Name of Property Control	**Custodian Date**	**Property Management Approval**	**Date**
		J P Frankel	4/22/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
R. Boyd Jr				
Date 4-22-94 1400				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

SA 2000-470 (09/90)

9613495.2288

WO#427

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		WHC-C-0518-4

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: POP100, 20BT1, BOBNY4, BOBNY5 Cooler ID: ER-5 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: Cooler ID: Polycooler ~~with groundwater~~ NA samples packed in wet ice and ~~vermiculite~~	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
[illegible]	[illegible]	4-22-94

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
~~PH~~ 4/22/94	8B410 PR5AN	NA

Originated By	Date	Authorized By	Date
P H Butcher	4/22/94	P H Butcher	4/22/94
Signature and Name of Property Control	**Custodian Date**	**Property Management Approval**	**Date**
		[illegible]	4/22/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible] IT				
Date 4-22-94 1400				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

9613495.2289

WO#437

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-6-0518-7

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: BORNE2 BORNE3, BORNE4, BORNE5 Cooler ID: ER-7 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: BORNE6, BORNE7, BORNE8, BORNE9 Cooler ID: ER-6 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
Camila Little	15746	4-25-94

Location of Property (Area & Bldg.)	Contact	Phone
100-FC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4-25-94	8B410	NA

Originated By	Date	Authorized By	Date
PH Butcher	4/25/94	[illegible]	4-25-94

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	4/25/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
R Bauer JT				
Date 4-25-94 300				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

54-3000-479 (09/89)

9613495.2290

WO#453

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-C-0518-11

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: BOFNY3, BOFNY6, BOFNY7 Cooler ID: Eng-9 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: BOFNY8, BOFNY9 Cooler ID: SMC-144 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # None

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
[illegible]	15[illegible]	4/27/94

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4-27-94	8B410 PB5AA	NA

Originated By	Date	Authorized By	Date
DH Butcher	4/27/94	[illegible]	4/27/94

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	4/27

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]				
Date 4/27 1230				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001524*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO# 427
RC# 539

Reference Document No. 340395
Page 1 of 2

0000043

Project Name/No. 1 SAF 94-129
Sample Team Members 2
Profit Center No. 3 4632
Project Manager 4 Van Pettey
Purchase Order No. 6
Required Report Date 11

Samples Shipment Date 7 4-23-94
Lab Destination 8 Middlebrook
Lab Contact 9
Project Contact/Phone 12
Carrier/Waybill No. 13 8875576065

Bill to: 5 IT Richland
Report to: 10 IT Richland

White: to accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
40443101 A	BOBP10 / water	4-21-1510	G/P	1000ml	Cool 4°	ICP Metals AA ↓ Hg	5°C BPB 4/25/94 <2	
↓ B	↓	4-21-94 1510	P			Anions, Cond, pH		
4044 3102 A	BOBP11	↓	G/P			ICP, GFAA, Hg	<2	
4044 3103 A	BOBP00	4-21-94 1410	G/P			↓	<2	
↓ B	~~BOBP01~~ BB 4-22-94	↓	P			Anions, Cond, pH		
4044 3104 A	BOBP01	↓	G/P			ICP, GFAA, Hg	<2	
4044 3105 A	BOBNY4	4-21-94 1100	G/P			↓	<2	
↓ B	↓	↓	P	↓	↓	Anions, Cond, pH		

Special Instructions: 23

Possible Hazard Identification: 24
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: 25
Return to Client ☒ Disposal by Lab ☐ Archive (mos.)

Turnaround Time Required: 26
Normal ☐ Rush ☐ AS Per WHC Contract

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG W0040

1. Relinquished by 28 (Signature/Affiliation) R Boyd IT — Date: 4-23-94 Time: 1200	1. Received by 28 (Signature/Affiliation) Bryan Blomquist ITASKA — Date: 4/25/94 Time: 8:55
2. Relinquished by (Signature/Affiliation) — Date: Time:	2. Received by (Signature/Affiliation) — Date: Time:
3. Relinquished by (Signature/Affiliation) — Date: Time:	3. Received by (Signature/Affiliation) — Date: Time:

Comments: 29

MCA 3/15/91

1627 5047196

WO#427

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.[30] 340395

Project Name SAF 94-129 Project No. Samples Shipment Date

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
40443106A	BOBNY5 / water	4-21-94 1100	G/P	1000ml	cool 4°	ICP, GFAA, Hg	5°C RB 4/25/94 <2	
40443107A	BOBP02	4-21-94 1245	G/P			↓	<2	
↓ B	↓		P			Anions, Cond, pH		
40443108A	BOBP03	↓	G/P			ICP, GFAA, Hg	<2	
40443109A	BOBP26	4-21-94 1100	G/P			↓	<2	
↓ B	↓		P			Anions, Cond, pH		
40443110A	BOBP27	↓	G/P			ICP, GFAA, Hg	<2	

RB 4-22-94

FOR LAB USE ONLY

MCA 3/15/91

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

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9613495-2292

0000045

INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001534*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO #437 RL #546

Reference Document No. 453602
Page 1 of ___

Project Name/No. [1] SAF 94-129
Sample Team Members [2]
Profit Center No. [3] 4632
Project Manager [4] YAN PETTEY
Purchase Order No. [6]
Required Report Date [11]

Samples Shipment Date [7] 4-26-94
Lab Destination [8] Middlebrook
Lab Contact [9]
Project Contact/Phone [12]
Carrier/Waybill No. [13]

Bill to: [5] IT Richland
Report to: [10] IT Richland

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Pre-servative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
404456 01A	BOBP04 /water	4/22 1200	G/P	1000ml	Cool 4°	ICP, GFAA, Hg	6°C BB 4/27/94 <2	
B	↓		P			ANIONS, SO4, Cond, PH	FOR LAB USE ONLY	
02A	BOBP05 /water	↓	G/P			ICP, GFAA, Hg	<2	
03A	BOBNZ6 /water	4/22 1040	G/P			ICP, GFAA, Hg	<2	
B	↓		P			ANIONS, SO4, Cond, PH	FOR LAB USE ONLY	
04A	BOBNZ7 /water	↓	G/P			ICP, GFAA, Hg	<2	
05A	BOBNZ8 /water	4/22 1330	G/P			ICP, GFAA, Hg	<2	
B	↓		P			ANIONS, SO4, Cond, PH		

Special Instructions: [23] As per WHC Contract

Possible Hazard Identification: [24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: [25]
Return to Client ☒ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: [26]
Normal ☒ Rush ☐

QC Level: [27]
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG W0040

1. Relinquished by [28] (Signature/Affiliation) [signature] ITAS Date: 4/26/94 Time: 1600	1. Received by [28] (Signature/Affiliation) Bryan Blomquist ITASKN Date: 4/27/94 Time: 9:20
2. Relinquished by (Signature/Affiliation) Date: Time:	2. Received by (Signature/Affiliation) Date: Time:
3. Relinquished by (Signature/Affiliation) Date: Time:	3. Received by (Signature/Affiliation) Date: Time:

Comments: [29]

MCA 3/15/91

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

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INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

WO# 437

Reference Document No.[30] 453602

Page 2 of 2

Project Name SAF 94-129

Project No. STX-W0040

Samples Shipment Date 4-26-94

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
40445606A	BOBNZ9/water	4/22 1330	G/P	1000ml	Cool 4°	ICP, GFAA, Hg	6° C SOB 4/27/94 <2	
07A	BOBNZ0/water	4/22 0905	G/P			ICP, GFAA, Hg	<2	
B			P			Anions, SO4, Cond, PH.		
08A	BOBNZ1/water		G/P			ICP, GFAA, Hg	<2	
	JH 4/25/94							

White: To accompany samples

Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

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96 3195 2294

0000047

INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001549*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO# 453 R# 564

Reference Document No. 453609
Page 1 of 1

Project Name/No. 1 SAF 94-129
Sample Team Members 2
Profit Center No. 3 4632
Project Manager 4 Van Petteys
Purchase Order No. 6
Required Report Date 11

Samples Shipment Date 7 4-28-94
Lab Destination 8 Middlebrook
Lab Contact 9
Project Contact/Phone 12
Carrier/Waybill No. 13 150 9384 335

Bill to: 5 IT Richland
Report to: 10 IT Richland

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
40449901 A	BOBNY8 /water	4/25 0930	G/P	1000ml	Cool 4°	ICP, GFAA, Hg	5°C BPB 4/29/94 <2	
B	↓	↓	P	↓	↓	ANIONS, SO4, Cond, PH.	BPB 4/29/94	
02A	BOBNY9 /water	↓	G/P	↓	↓	ICP, GFAA, Hg	<2	
	JH 4/28/94							

FOR LAB USE ONLY

FOR LAB USE ONLY

Special Instructions: 23 As per WHC Contract

Possible Hazard Identification: 24
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: 25
Return to Client ☒ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: 26
Normal ☒ Rush ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDW W0040

1. Relinquished by 28 (Signature/Affiliation) L. Boyd IT	Date: 4-28-94 Time: 1600	1. Received by 28 (Signature/Affiliation) Bryan Blomquist ITASK	Date: 4/29/94 Time: 8:45
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: 29

*See back of form for special instructions.

MCA 3/15/91

9413495 2295

WO# 427

all Cat. I
JRn 22 Apr 94

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

Customer Code	Recieved Date	Time	Screening Prep Date	Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	Beta	Mnts
WHC			42294		422	10	13	232	240

Customer ID WHC/WATER	pH <2 Rcvd/Relq	RESIDUE Wght (mGrms)	Vol. Anal. mG	mL	Sample Size Gm	L	SMPLE CNT DATA Hldr Num.	Total Alpha	Counts Beta	Net Sample Counts/Minute Alpha	Beta	DPM / Aliqout Alpha	Beta	uCi per Sample Alpha	Beta	2 Sigma Error uCi per Sample Alpha	Beta	pCi/(Gm or L) Alpha	Beta	Catagory 1 Yes/No	Aliquot to Cat 1 Gm or Ltr Alpha	Beta
B0BP26		0.9	5		4.0		5	6	46	0.55	3.63	2.0E+00	7.4E+00	7.3E-04	2.7E-03	7.3E-07	1.0E-06	1.8E+02	6.7E+02	Yes	5.5E+01	1.5E+02
B0BP10		0.7	5		1.0		6	1	20	0.05	1.03	1.5E-01	2.2E+00	1.3E-05	2.0E-04	4.9E-08	1.3E-07	1.3E+01	2.0E+02	Yes	7.6E+02	5.1E+02
B0BNY2		0.9	5		1.0		7	6	25	0.55	1.53	2.1E+00	2.9E+00	1.9E-04	2.6E-04	1.8E-07	2.2E-07	1.9E+02	2.6E+02	Yes	5.3E+01	3.8E+02
B0BP02		1.3	5		1.0		8	2	11	0.15	0.13	5.7E-01	1.9E-01	5.1E-05	1.7E-05	9.0E-08	1.6E-08	5.1E+01	1.7E+01	Yes	1.9E+02	5.9E+03
B0BP00		1.2	5		1.0		9	1	14	0.05	0.43	1.7E-01	8.9E-01	1.5E-05	8.1E-05	4.9E-08	4.3E-07	1.5E+01	8.1E+01	Yes	6.7E+02	1.2E+03
B0BNY4		0.6	5		1.0		10	3	22	0.25	1.23	9.2E-01	2.5E+00	8.3E-05	2.2E-04	1.2E-07	3.7E-07	8.3E+01	2.2E+02	Yes	1.2E+02	4.5E+02
B0BNP7		0.5	5		4.0		11	1	17	0.05	0.73	1.6E-01	1.5E+00	5.6E-05	5.5E-04	1.9E-07	4.1E-06	1.4E+01	1.4E+02	Yes	7.2E+02	7.2E+02
B0BNM5		2.8	5		4.0		12	5	173	0.45	16.33	1.3E+00	3.5E+01	4.6E-04	1.2E-02	6.6E-07	5.4E-05	1.2E+02	3.1E+03	Yes	8.7E+01	3.2E+01
B0BNP3		0.5	5		4.0		14	1	17	0.05	0.73	1.6E-01	1.5E+00	5.6E-05	5.5E-04	1.9E-07	4.1E-06	1.4E+01	1.4E+02	Yes	7.2E+02	7.2E+02
TOTAL	uCi									-0.05	-0.97	-2E-01	-2E+00	1.7E-03	1.7E-02	ERR	ERR	ERR	ERR	Yes	ERR	ERR

0000048

9413495.2296

WO#437

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

Category I
JRM 25 Apr 94

Customer Code	Recieved Date	Time	Screening Prep Date	Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	Beta	Mnts
WHC			42594		425	10	6	52	60

Customer ID WHC/WATER	pH <2 Rcvd/Req	RESIDUE Wght (mGrms)	Vol. Anal. mG	mL	Sample Size Gm	L	SMPLE CNT DATA Hldr Num.	Total Counts Alpha	Beta	Net Sample Counts/Minute Alpha	Beta	DPM / Aliqout Alpha	Beta	uCi per Sample Alpha	Beta	2 Sigma Error uCi per Sample Alpha	Beta	pCi/(Gm or L) Alpha	Beta	Catagory 1 Yes/No	Aliquot to Cat 1 Gm or Ltr Alpha	Beta
B0BRL3		0.2	5		4.0		1	0	15	-0.10	0.63	-4E-01	1.4E+00	-1E-04	5.1E-04	-3E-07	4.0E-07	-4E+01	1.3E+02	Yes	-3E+02	7.9E+02
B0BNZ6		1.9	5		1.0		2	1	29	0.00	2.03	-6E-02	4.3E+00	-6E-06	3.9E-04	-3E-09	1.8E-07	-6E+00	3.9E+02	Yes	-2E+03	2.6E+02
B0BNZ0		1.6	5		1.0		3	5	25	0.40	1.63	1.5E+00	3.2E+00	1.4E-04	2.9E-04	1.6E-07	3.4E-07	1.4E+02	2.9E+02	Yes	7.2E+01	3.4E+02
B0BP04		1.6	5		1.0		4	1	23	0.00	1.43	-5E-02	3.1E+00	-4E-06	2.8E-04	-3E-09	9.8E-06	-4E+00	2.8E+02	Yes	-2E+03	3.6E+02
B0BNP5		1.2	5		4.0		5	0	9	-0.10	0.03	-4E-01	1.4E-01	-1E-04	4.9E-05	-3E-07	3.6E-08	-4E+01	1.2E+01	Yes	-3E+02	8.1E+03
B0BNZ8		0.7	5		1.0		6	2	8	0.10	-0.07	3.9E-01	-2E-01	3.5E-05	-2E-05	7.3E-08	-2E-08	3.5E+01	-2E+01	Yes	2.8E+02	-5E+03
TOTAL	uCi									-0.10	-0.87	-4E-01	-2E+00	-1E-04	1.5E-03	ERR	ERR	ERR	ERR	Yes	ERR	ERR

0000049

96 4 0 0 4 7 2 2 7

WO#453

all below mm L 4-27-94

all Cat I mm Lordy 4-27-94

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

Customer Code	Recieved Date	Time	Screening Prep Date	Screening Prep Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	BACKGROUND Beta	BACKGROUND Mnts
WHC			42794		427	10	20	228	240

Customer ID WHC/WATER	pH <2 Rcvd/Reiq	RESIDUE Wght (mGrms)	Vol. Anal. mG	Vol. Anal. mL	Sample Size Gm	Sample Size L	SMPLE CNT DATA Hldr Num.	SMPLE CNT DATA Total Alpha	SMPLE CNT DATA Counts Beta	Net Sample Counts/Minute Alpha	Net Sample Counts/Minute Beta	DPM / Aliqout Alpha	DPM / Aliqout Beta	uCi per Sample Alpha	uCi per Sample Beta	2 Sigma Error uCi per Sample Alpha	2 Sigma Error uCi per Sample Beta	pCi/(Gm or L) Alpha	pCi/(Gm or L) Beta	Catagory 1 Yes/No	Aliquot to Cat 1 Gm or Ltr Alpha	Aliquot to Cat 1 Gm or Ltr Beta
B0BNM9		0.9	5		4.0		1	8	42	0.72	3.25	2.7E+00	6.5E+00	9.7E-04	2.3E-03	8.4E-07	9.5E-07	2.4E+02	5.8E+02	Yes	4.1E+01	1.7E+02
B0BNN1		1.8	5		4.0		2	3	49	0.22	3.95	7.4E-01	8.3E+00	2.7E-04	3.0E-03	4.5E-07	1.0E-06	6.6E+01	7.5E+02	Yes	1.5E+02	1.3E+02
B0BNK1		1.5	5		4.0		3	2	48	0.12	3.85	3.4E-01	8.1E+00	1.2E-04	2.9E-03	3.2E-07	2.3E-05	3.1E+01	7.3E+02	Yes	3.3E+02	1.4E+02
B0BRK9		0.1	5		4.0		4	1	9	0.02	-0.05	6.6E-02	-1E-01	2.4E-05	-4E-05	1.2E-07	-2E-07	5.9E+00	-1E+01	Yes	1.7E+03	-9E+03
B0BP06		0.5	5		1.0		5	2	14	0.12	0.45	4.4E-01	6.8E-01	4.0E-05	7.9E-05	7.9E-08	1.7E-07	4.0E+01	7.9E+01	Yes	2.5E+02	1.3E+03
B0BNN5		1.1	5		4.0		6	5	23	0.42	1.35	1.6E+00	2.6E+00	5.7E-04	9.4E-04	6.3E-07	9.6E-07	1.4E+02	2.3E+02	Yes	7.0E+01	4.3E+02
B0BP30		0.2	5		1.0		7	0	11	-0.08	0.15	-3E-01	3.7E-01	-3E-05	3.4E-05	-7E-08	5.6E-08	-3E+01	3.4E+01	Yes	-3E+02	3.0E+03
B0BP20		1.7	5		1.0		8	5	20	0.42	1.05	1.6E+00	2.0E+00	1.5E-04	1.8E-04	1.6E-07	1.6E-07	1.5E+02	1.8E+02	Yes	6.9E+01	5.6E+02
B0BRL7		1.7	5		4.0		9	2	42	0.12	3.25	3.8E-01	6.9E+00	1.3E-04	2.5E-03	3.2E-07	1.7E-05	3.2E+01	6.2E+02	Yes	3.1E+02	1.6E+02
B0BNN3		2.2	5		4.0		10	1	41	0.02	3.15	-3E-02	6.7E+00	-1E-05	2.4E-03	-1E-07	1.7E-04	-3E+00	6.1E+02	Yes	-3E+03	1.7E+02
B0BP12		1.8	5		1.0		11	1	16	0.02	0.65	4.6E-02	1.4E+00	4.1E-06	1.2E-04	3.0E-06	3.0E-06	4.1E+00	1.2E+02	Yes	2.4E+03	8.1E+02
B0BRL5		0.3	5		4.0		12	1	10	0.02	0.05	6.3E-02	9.6E-02	2.3E-05	3.4E-05	1.2E-07	1.7E-07	5.7E+00	8.6E+00	Yes	1.8E+03	1.2E+04
B0BNY8		1.7	5		1.0		13	1	24	0.02	1.45	2.0E-02	3.1E+00	1.8E-06	2.8E-04	2.9E-08	2.2E-05	1.8E+00	2.8E+02	Yes	5.5E+03	3.6E+02
B0BNY6		1.8	5		1.0		14	1	19	0.02	0.95	3.6E-02	2.0E+00	3.3E-06	1.8E-04	3.0E-08	6.6E-06	3.3E+00	1.8E+02	Yes	3.1E+03	5.5E+02
B0BP42		0.1	5		1.0		15	1	11	0.02	0.15	6.0E-02	3.1E-01	5.4E-06	2.8E-05	2.9E-08	2.4E-07	5.4E+00	2.8E+01	Yes	1.9E+03	3.6E+03
TOTAL	uCi									-0.08	-0.95	-3E-01	-2E+00	2.3E-03	1.5E-02	ERR	ERR	ERR	ERR	Yes	ERR	ERR

Rec'd at 3:15 pm

0000050

96124954 2298

9613495.2299

04/22/94 07:44 ☎373 3176 222S 3B 010

WO#427

SAMPLE STATUS REPORT FOR E 6273. E-BLANK 1-B9-2 TIME: 4/22/94 8:19
DISPATCHED: 4/ 1/94 15:17 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/22/94 7:43

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBP02
BOBP03
LCS
4/22/94

WO#427

04/22/94 07:45 ☎373 3176 222S 3B ☑011

SAMPLE STATUS REPORT FOR E 6277. E-BLANK 6-65-83 TIME: 4/22/94 8:19
DISPATCHED: 4/ 1/94 15:20 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/22/94 7:44

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBP10
BOBP11
LCS
4/22/94

9613495.2301

04/22/94 07:43 ☎373 3176 222S 3B 008

WO#427

SAMPLE STATUS REPORT FOR E 6264. E-BLANK 1-B4-4 TIME: 4/22/94 8:19
DISPATCHED: 4/ 1/94 15:12 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/22/94 7:43

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

~~BOBNP4~~

~~BOBNP~~

BOBNY4

BOBNY5

LEJ
4/22/94

9613495.2302

WO#427

04/22/94 07:44 ☎373 3176 222S 3B 009

SAMPLE STATUS REPORT FOR E 6272. E-BLANK 1-B9-1 TIME: 4/22/94 8:19
DISPATCHED: 4/ 1/94 15:17 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/22/94 7:44

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBP00
~~BOBB~~
BOBP01
LCS
4/22/94

9413495.2303

0000055

WO#437

04/25/94 09:45 ☎373 3176 222S 3B 005

SAMPLE STATUS REPORT FOR E 6274. E-BLANK 1-B9-3 TIME: 4/25/94 10:17
DISPATCHED: 4/ 1/94 15:18 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/25/94 8:48

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

B0B9C4
B0B9C5
LCS
4/25/94

9613495.2304

WO #437

04/25/94 09:44 ☎373 3178 222S 3B 003

SAMPLE STATUS REPORT FOR E 6270. E-BLANK 1-B5-2 TIME: 4/25/94 10:17
DISPATCHED: 4/ 1/94 15:16 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/25/94 8:48

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBNZ6
BOBNZ7
LCS
4/25/94

9613495.2305

WO#437

04/25/94 09:44 ☎373 3176 222S 3B 002

SAMPLE STATUS REPORT FOR E 6267. E-BLANK 1-B4-8 TIME: 4/25/94 10:17
DISPATCHED: 4/ 1/94 15:15 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/25/94 8:48

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBNZO
BOBNZI
LCS
4/25/94

9613495.2306

WO#437

04/25/94 09:44 ☎373 3176 222S 3B 004

SAMPLE STATUS REPORT FOR E 6271. E-BLANK 1-B8-6 TIME: 4/25/94 10:17
DISPATCHED: 4/ 1/94 15:17 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/25/94 8:48

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBNZ8
BOBNZ9
KS
4/25/94

9613495.2307

WO#453

04/26/94 09:35 ☎373 3176 222S 3B 009

SAMPLE STATUS REPORT FOR E 6266. E-BLANK 1-B4-7 TIME: 4/26/94 10: 3
DISPATCHED: 4/ 1/94 15:13 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/26/94 8:15

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT ✓

BO BNY8
BO BNY9

AJS
4/26/94

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___

Lab Code: ITSTU_ Case No.: W0427 SAS No.: _____ SDG No.:W0040_

SOW No.: ILM02

EPA Sample No.	Lab Sample ID
BOBNY4	AA7378
BOBNY5	AA7386
BOBP00	AA7376
BOBP01	AA7385
BOBP02	AA7380
BOBP03	AA7387
BOBP10	AA7374
BOBP10	AA7374D
BOBP10	AA7374S
BOBP11	AA7384
BOBP11	AA7384D
BOBP11	AA7384S
BOBP26	AA7382
BOBP27	AA7388

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Christopher Kanker Name: Christopher Kanker

Date: June 9, 1994 Title: Chemist

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNY4

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___
Lab Code: ITSTU_ Case No.: WO427 SAS No.: _____ SDG No.: WOO40_
Matrix (soil/water): WATER Lab Sample ID: AA7378
Level (low/med): LOW__ Date Received: 04/25/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	43.9	B		P
7440-36-0	Antimony_	50.0	U		P
7440-38-2	Arsenic__	2.1	B		F
7440-39-3	Barium___	23.5	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	5.0	U		P
7440-70-2	Calcium__	50600			P
7440-47-3	Chromium_	14.3			P
7440-48-4	Cobalt___	10.0	U		P
7440-50-8	Copper___	10.0	U		P
7439-89-6	Iron_____	11.6	B		P
7439-92-1	Lead_____	2.0	U	W	F
7439-95-4	Magnesium	7710			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P
7440-09-7	Potassium	4130	B		P
7782-49-2	Selenium_	2.1	B		F
7440-22-4	Silver___	5.0	U		P
7440-23-5	Sodium___	10800			P
7440-28-0	Thallium_	2.0	U		F
7440-62-2	Vanadium_	10.0	U		P
7440-66-6	Zinc_____	5.0	U		P
5955-70-0	Cyanide__				NR

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
TOTAL

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNY5

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO427 SAS No.: SDG No.: WO040

Matrix (soil/water): WATER Lab Sample ID: AA7386

Level (low/med): LOW Date Received: 04/25/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.0	U		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	2.0	U		F
7440-39-3	Barium	27.8	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	60500			P
7440-47-3	Chromium	13.2			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	10.0	U		P
7439-92-1	Lead	2.0	U		F
7439-95-4	Magnesium	9250			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	5190			P
7782-49-2	Selenium	2.6	B		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	13200			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	17.0	B		P
5955-70-0	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DISSOLVED

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP00

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: WO427 SAS No.: SDG No.: WOO40
Matrix (soil/water): WATER Lab Sample ID: AA7376
Level (low/med): LOW Date Received: 04/25/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.0	U		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	4.0	B		F
7440-39-3	Barium	10.7	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	41300			P
7440-47-3	Chromium	19.8			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	51.8	B		P
7439-92-1	Lead	2.0	U	W	F
7439-95-4	Magnesium	8940			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	5290			P
7782-49-2	Selenium	2.6	B		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	11300			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	5.0	U		P
5955-70-0	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
TOTAL

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP01

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___
Lab Code: ITSTU_ Case No.: WO427 SAS No.: _____ SDG No.: WOO40_
Matrix (soil/water): WATER Lab Sample ID: AA7385
Level (low/med): LOW__ Date Received: 04/25/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.0	U		P_
7440-36-0	Antimony_	50.0	U		P_
7440-38-2	Arsenic__	2.4	B		F_
7440-39-3	Barium___	11.0	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	5.0	U		P_
7440-70-2	Calcium__	44300			P_
7440-47-3	Chromium_	16.5			P_
7440-48-4	Cobalt___	10.0	U		P_
7440-50-8	Copper___	10.0	U		P_
7439-89-6	Iron____	14.1	B		P_
7439-92-1	Lead____	2.0	U		F_
7439-95-4	Magnesium	9630			P_
7439-96-5	Manganese	2.0	U		P_
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P_
7440-09-7	Potassium	5580			P_
7782-49-2	Selenium_	2.0	U	W	F_
7440-22-4	Silver___	5.0	U		P_
7440-23-5	Sodium___	12400			P_
7440-28-0	Thallium_	2.0	U		F_
7440-62-2	Vanadium_	10.3	B		P_
7440-66-6	Zinc____	5.5	B		P_
5955-70-0	Cyanide__				NR

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
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EPA SAMPLE NO.

BOBP02

Lab Name: ITAS_KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: WO427 SAS No.: SDG No.: WOO40
Matrix (soil/water): WATER Lab Sample ID: AA7380
Level (low/med): LOW Date Received: 04/25/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	48.0	B		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	3.7	B	W	F
7440-39-3	Barium	16.1	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	54000			P
7440-47-3	Chromium	25.0			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	41.2	B		P
7439-92-1	Lead	2.0	U	W	F
7439-95-4	Magnesium	12300			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	5890			P
7782-49-2	Selenium	2.5	B		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	12100			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	5.0	U		P
5955-70-0	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
TOTAL

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EPA SAMPLE NO.

BOBP03

Lab Name: ITAS_KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: WO427 SAS No.: SDG No.: WOO40
Matrix (soil/water): WATER Lab Sample ID: AA7387
Level (low/med): LOW Date Received: 04/25/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.0	U		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	2.7	B	W	F
7440-39-3	Barium	17.9	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	58000			P
7440-47-3	Chromium	19.0			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	12.9	B		P
7439-92-1	Lead	2.0	U		F
7439-95-4	Magnesium	13100			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	6010			P
7782-49-2	Selenium	2.6	B		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	12900			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	5.0	U		P
5955-70-0	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
DISSOLVED

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP10

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___
Lab Code: ITSTU_ Case No.: WO427 SAS No.: _____ SDG No.: WOO40_
Matrix (soil/water): WATER Lab Sample ID: AA7374
Level (low/med): LOW__ Date Received: 04/25/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.0	U		P
7440-36-0	Antimony_	50.0	U		P
7440-38-2	Arsenic__	2.0	U		F
7440-39-3	Barium___	7.6	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	5.0	U		P
7440-70-2	Calcium__	28200			P
7440-47-3	Chromium_	21.5			P
7440-48-4	Cobalt___	10.0	U		P
7440-50-8	Copper___	10.0	U		P
7439-89-6	Iron_____	114			P
7439-92-1	Lead_____	2.0	U	W	F
7439-95-4	Magnesium	8400			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P
7440-09-7	Potassium	5330			P
7782-49-2	Selenium_	2.0	U	W	F
7440-22-4	Silver___	5.0	U		P
7440-23-5	Sodium___	12600			P
7440-28-0	Thallium_	2.0	U		F
7440-62-2	Vanadium_	20.5	B		P
7440-66-6	Zinc_____	7.6	B		P
5955-70-0	Cyanide__				NR

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
TOTAL

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP11

Lab Name: ITAS_KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: WO427 SAS No.: SDG No.: WOO40
Matrix (soil/water): WATER Lab Sample ID: AA7384
Level (low/med): LOW Date Received: 04/25/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.0	U		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	2.0	U		F
7440-39-3	Barium	10.1	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	35500			P
7440-47-3	Chromium	25.6			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	12.1	B		P
7439-92-1	Lead	2.0	U		F
7439-95-4	Magnesium	10700			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	6940			P
7782-49-2	Selenium	2.0	U	W	F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	16100			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	25.6	B		P
7440-66-6	Zinc	5.3	B		P
5955-70-0	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP26

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___
Lab Code: ITSTU_ Case No.: WO427 SAS No.: _____ SDG No.: WOO40_
Matrix (soil/water): WATER Lab Sample ID: AA7382
Level (low/med): LOW__ Date Received: 04/25/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.0	U		P_
7440-36-0	Antimony_	50.0	U		P_
7440-38-2	Arsenic__	2.0	U		F_
7440-39-3	Barium___	23.9	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	5.0	U		P_
7440-70-2	Calcium__	51200			P_
7440-47-3	Chromium_	12.1			P_
7440-48-4	Cobalt___	10.0	U		P_
7440-50-8	Copper___	10.0	U		P_
7439-89-6	Iron____	20.4	B		P_
7439-92-1	Lead____	2.0	U		F_
7439-95-4	Magnesium	8310			P_
7439-96-5	Manganese	2.0	U		P_
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P_
7440-09-7	Potassium	4850	B		P_
7782-49-2	Selenium_	2.5	B		F_
7440-22-4	Silver___	5.0	U		P_
7440-23-5	Sodium___	11700			P_
7440-28-0	Thallium_	2.0	U		F_
7440-62-2	Vanadium_	10.0	U		P_
7440-66-6	Zinc____	5.0	U		P_
5955-70-0	Cyanide__				NR

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
TOTAL_____

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP27

Lab Name: ITAS_KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: WO427 SAS No.: SDG No.: WOO40
Matrix (soil/water): WATER Lab Sample ID: AA7388
Level (low/med): LOW Date Received: 04/25/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.0	U		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	4.1	B		F
7440-39-3	Barium	22.8	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	49700			P
7440-47-3	Chromium	10.6			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	22.0	B		P
7439-89-6	Iron	10.0	U		P
7439-92-1	Lead	2.0	U		F
7439-95-4	Magnesium	7550			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	4070	B		P
7782-49-2	Selenium	2.4	B		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	10700			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	8.1	B		P
5955-70-0	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
DISSOLVED

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Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE

Lab Code: ITSTU_ Case No.: W0437 SAS No.: _____ SDG No.:W0040_

SOW No.: ILM02

EPA Sample No.	Lab Sample ID
BOBNZ0	AA7557
BOBNZ1	AA7567
BOBNZ6	AA7553
BOBNZ7	AA7563
BOBNZ8	AA7555
BOBNZ9	AA7565
BOBP04	AA7551
BOBP05	AA7559

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:
Samples are batched w/ QC from WO#427.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Christopher Kaufer Name: Christopher Kaufer

Date: June 9, 1994 Title: Chemist

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EPA SAMPLE NO.

BOBNZ9

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE
Lab Code: ITSTU_ Case No.: W0437 SAS No.: _____ SDG No.: W0040_
Matrix (soil/water): WATER Lab Sample ID: AA7565
Level (low/med): LOW__ Date Received: 04/27/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.0	U		P
7440-36-0	Antimony_	50.0	U		P
7440-38-2	Arsenic__	2.6	B		F
7440-39-3	Barium___	13.7	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	5.0	U		P
7440-70-2	Calcium__	33300			P
7440-47-3	Chromium_	16.0			P
7440-48-4	Cobalt___	10.0	U		P
7440-50-8	Copper___	10.2	B		P
7439-89-6	Iron_____	14.1	B		P
7439-92-1	Lead_____	2.0	U		F
7439-95-4	Magnesium	8590			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P
7440-09-7	Potassium	5930			P
7782-49-2	Selenium_	2.6	B		F
7440-22-4	Silver___	5.0	U		P
7440-23-5	Sodium___	9390			P
7440-28-0	Thallium_	2.0	U		F
7440-62-2	Vanadium_	10.9	B		P
7440-66-6	Zinc_____	6.0	B		P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A___
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
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EPA SAMPLE NO.

BOBP04

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE
Lab Code: ITSTU_ Case No.: WO437 SAS No.: _____ SDG No.: W0040_
Matrix (soil/water): WATER Lab Sample ID: AA7551
Level (low/med): LOW__ Date Received: 04/27/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.0	U		P_
7440-36-0	Antimony_	50.0	U		P_
7440-38-2	Arsenic__	3.3	B		F_
7440-39-3	Barium___	12.0	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	5.0	U		P_
7440-70-2	Calcium__	37700			P_
7440-47-3	Chromium_	16.0			P_
7440-48-4	Cobalt___	10.0	U		P_
7440-50-8	Copper___	10.0	U		P_
7439-89-6	Iron____	27.5	B		P_
7439-92-1	Lead____	2.0	U		F_
7439-95-4	Magnesium	8790			P_
7439-96-5	Manganese	2.0	U		P_
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P_
7440-09-7	Potassium	5600			P_
7782-49-2	Selenium_	2.8	B		F_
7440-22-4	Silver___	5.0	U		P_
7440-23-5	Sodium___	9610			P_
7440-28-0	Thallium_	2.0	U		F_
7440-62-2	Vanadium_	10.1	B		P_
7440-66-6	Zinc____	5.7	B		P_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A___
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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EPA SAMPLE NO.

BOBP05

Lab Name: ITAS_KNOXVILLE Contract: HANFORD/WE
Lab Code: ITSTU Case No.: WO437 SAS No.: SDG No.: W0040
Matrix (soil/water): WATER Lab Sample ID: AA7559
Level (low/med): LOW Date Received: 04/27/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.0	U		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	3.1	B		F
7440-39-3	Barium	12.6	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	42900			P
7440-47-3	Chromium	15.3			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	63.2	B		P
7439-92-1	Lead	2.0	U		F
7439-95-4	Magnesium	10100			P
7439-96-5	Manganese	2.4	B		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	6210			P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	5.9	B		P
7440-23-5	Sodium	11000			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	13.1	B		P
7440-66-6	Zinc	8.4	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: N/A
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
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EPA SAMPLE NO.

BOBNZ0

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE
Lab Code: ITSTU_ Case No.: WO437 SAS No.: _____ SDG No.: W0040_
Matrix (soil/water): WATER Lab Sample ID: AA7557
Level (low/med): LOW__ Date Received: 04/27/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	45.0	B		P_
7440-36-0	Antimony_	50.0	U		P_
7440-38-2	Arsenic__	2.8	B		F_
7440-39-3	Barium___	22.7	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	5.0	U		P_
7440-70-2	Calcium__	47500			P_
7440-47-3	Chromium_	13.8			P_
7440-48-4	Cobalt___	10.0	U		P_
7440-50-8	Copper___	10.0	U		P_
7439-89-6	Iron____	35.4	B		P_
7439-92-1	Lead____	2.0	U		F_
7439-95-4	Magnesium	7680			P_
7439-96-5	Manganese	2.4	B		P_
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P_
7440-09-7	Potassium	5950			P_
7782-49-2	Selenium_	3.0	B	W	F_
7440-22-4	Silver___	5.0	U		P_
7440-23-5	Sodium___	10400			P_
7440-28-0	Thallium_	2.0	U		F_
7440-62-2	Vanadium_	10.0	U		P_
7440-66-6	Zinc_____	14.6	B		P_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A___
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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EPA SAMPLE NO.

BOBNZ1

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE
Lab Code: ITSTU_ Case No.: W0437 SAS No.: _____ SDG No.: W0040_
Matrix (soil/water): WATER Lab Sample ID: AA7567
Level (low/med): LOW__ Date Received: 04/27/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.0	U		P_
7440-36-0	Antimony_	50.0	U		P_
7440-38-2	Arsenic__	2.6	B		F_
7440-39-3	Barium___	24.3	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	5.0	U		P_
7440-70-2	Calcium__	50300			P_
7440-47-3	Chromium_	10.0	U		P_
7440-48-4	Cobalt___	10.0	U		P_
7440-50-8	Copper___	10.0	U		P_
7439-89-6	Iron____	10.0	U		P_
7439-92-1	Lead____	2.0	U		F_
7439-95-4	Magnesium	8180			P_
7439-96-5	Manganese	2.0	U		P_
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P_
7440-09-7	Potassium	5530			P_
7782-49-2	Selenium_	2.6	B	W	F_
7440-22-4	Silver___	5.0	U		P_
7440-23-5	Sodium___	11000			P_
7440-28-0	Thallium_	2.0	U		F_
7440-62-2	Vanadium_	10.0	U		P_
7440-66-6	Zinc_____	5.0	U		P_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A___
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
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EPA SAMPLE NO.

BOBNZ6

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE
Lab Code: ITSTU_ Case No.: WO437 SAS No.: _____ SDG No.: W0040_
Matrix (soil/water): WATER Lab Sample ID: AA7553
Level (low/med): LOW__ Date Received: 04/27/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.0	U		P_
7440-36-0	Antimony_	50.0	U		P_
7440-38-2	Arsenic__	5.1	B		F_
7440-39-3	Barium___	32.1	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	5.0	U		P_
7440-70-2	Calcium__	52700			P_
7440-47-3	Chromium_	14.9			P_
7440-48-4	Cobalt___	10.0	U		P_
7440-50-8	Copper___	10.0	U		P_
7439-89-6	Iron____	22.8	B		P_
7439-92-1	Lead____	2.0	U		F_
7439-95-4	Magnesium	6730			P_
7439-96-5	Manganese	2.2	B		P_
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P_
7440-09-7	Potassium	5710			P_
7782-49-2	Selenium_	3.7	B	+	F_
7440-22-4	Silver___	5.0	U		P_
7440-23-5	Sodium___	11000			P_
7440-28-0	Thallium_	2.0	U		F_
7440-62-2	Vanadium_	10.0	U		P_
7440-66-6	Zinc____	5.0	U		P_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A___
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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EPA SAMPLE NO.

BOBNZ7

Lab Name: ITAS_KNOXVILLE Contract: HANFORD/WE
Lab Code: ITSTU Case No.: WO437 SAS No.: SDG No.: W0040
Matrix (soil/water): WATER Lab Sample ID: AA7563
Level (low/med): LOW Date Received: 04/27/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.0	U		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	2.7	B		F
7440-39-3	Barium	28.2	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	47600			P
7440-47-3	Chromium	10.9			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	10.0	U		P
7439-92-1	Lead	4.0			F
7439-95-4	Magnesium	6120			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	4850	B		P
7782-49-2	Selenium	3.2	B	W	F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	9960			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	5.5	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: N/A
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
DISSOLVED.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNZ8

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE

Lab Code: ITSTU_ Case No.: W0437 SAS No.: _____ SDG No.: W0040_

Matrix (soil/water): WATER Lab Sample ID: AA7555

Level (low/med): LOW__ Date Received: 04/27/94

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.0	U		P_
7440-36-0	Antimony_	50.0	U		P_
7440-38-2	Arsenic__	2.9	B		F_
7440-39-3	Barium___	13.1	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	5.0	U		P_
7440-70-2	Calcium__	30500			P_
7440-47-3	Chromium_	18.8			P_
7440-48-4	Cobalt___	10.0	U		P_
7440-50-8	Copper___	10.0	U		P_
7439-89-6	Iron____	25.4	B		P_
7439-92-1	Lead____	2.0	U		F_
7439-95-4	Magnesium	7850			P_
7439-96-5	Manganese	2.0	U		P_
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P_
7440-09-7	Potassium	5840			P_
7782-49-2	Selenium_	2.0	U	W	F_
7440-22-4	Silver___	5.0	U		P_
7440-23-5	Sodium___	8510			P_
7440-28-0	Thallium_	2.0	U		F_
7440-62-2	Vanadium_	12.5	B		P_
7440-66-6	Zinc____	5.0	U		P_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A___

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___

Lab Code: ITSTU_ Case No.: WO453 SAS No.: _____ SDG No.:WO040_

SOW No.: ILM02

EPA Sample No.	Lab Sample ID
BOBNY8	AA7725
BOBNY9	AA7746

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Christopher Kanker Name: Christopher Kanker

Date: June 9, 1994 Title: Chemist

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EPA SAMPLE NO.

BOBNY8

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: WO453 SAS No.: SDG No.: WOO40
Matrix (soil/water): WATER Lab Sample ID: AA7725
Level (low/med): LOW Date Received: 04/29/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	65.5	B		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	2.4	B		F
7440-39-3	Barium	20.0	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	51900			P
7440-47-3	Chromium	19.8			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	49.6	B		P
7439-92-1	Lead	2.0	U	W	F
7439-95-4	Magnesium	8170			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	5090			P
7782-49-2	Selenium	2.4	B	W	F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	12000			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	5.0	U		P
5955-70-0	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
TOTAL

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNY9

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO453 SAS No.: SDG No.: WO040

Matrix (soil/water): WATER Lab Sample ID: AA7746

Level (low/med): LOW Date Received: 04/29/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	46.9	B		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	2.8	B	W	F
7440-39-3	Barium	17.7	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	44100			P
7440-47-3	Chromium	13.1			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	46.6	B		P
7439-92-1	Lead	2.0	U	W	F
7439-95-4	Magnesium	6970			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	4060	B		P
7782-49-2	Selenium	2.8	B	W	F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	10400			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	6.6	B		P
5955-70-0	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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pH ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	standard units	Analysis Date:	04/26/94

Client Sample ID	Lab Sample ID	Result
Method Blank	*	-
BOBNY4	AA7379	7.92
BOBP26	AA7383	7.98
BOBP02	AA7381	7.78
BOBP00	AA7377	7.97
BOBP10	AA7375	7.98

* - A method blank is not applicable for this analysis.

9613495.2352

DUPLICATE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBP10	Analysis Date:	04/26/94
Lab Sample ID:	AA7375	Concentration Units:	standard units
Sample Matrix:	Water		

Parameter	Original Sample	Duplicate	RPD
pH	7.98	7.98	0

RPD - Relative percent difference.

pH ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	standard units	Analysis Date:	05/03/94

Client Sample ID	Lab Sample ID	Result
Method Blank	*	-
BOBNZ0	AA7558	8.32
BOBNZ6	AA7554	8.18
BOBP04	AA7552	8.01
BOBNZ8	AA7556	7.91

* - A method blank is not applicable for this analysis.

pH ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	453
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	standard units	Analysis Date:	05/03/94

Client Sample ID	Lab Sample ID	Result
Method Blank	*	-
BOBNY8	AA7726	7.99

* - A method blank is not applicable for this analysis.

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SPECIFIC CONDUCTANCE ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	umhos/cm	Analysis Date:	04/27/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6155	1	U
BOBNY4	AA7379	442	+
BOBP26	AA7383	444	+
BOBP02	AA7381	545	+
BOBP00	AA7377	437	+
BOBP10	AA7375	378	+

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

DUPLICATE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBP10	Extraction Date:	N/A
Lab Sample ID:	AA7375	Analysis Date:	04/27/94
Sample Matrix:	Water	Concentration Units:	umhos/cm

Parameter	Original Sample	Duplicate	RPD
specific conductance	378 +	378 +	0

RPD - Relative percent difference.
\+ - Positive result.

SPECIFIC CONDUCTANCE ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	umhos/cm	Analysis Date:	05/02/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6133	1	U
BOBNZ0	AA7558	457	+
BOBNZ6	AA7554	442	+
BOBP04	AA7552	4	+
BOBNZ8	AA7556	323	+

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

SPECIFIC CONDUCTANCE ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	453
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	umhos/cm	Analysis Date:	05/02/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6133	1	U
BOBNY8	AA7726	435	+

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBP10	Preparation Date:	05/17/94
Lab Sample ID:	AA7375	Analysis Date:	05/17/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	33	+	3.0

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBP00	Preparation Date:	05/17/94
Lab Sample ID:	AA7377	Analysis Date:	05/17/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	45	+	7.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBNY4	Preparation Date:	05/17/94
Lab Sample ID:	AA7379	Analysis Date:	05/17/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	53	+	7.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBP02	Preparation Date:	05/17/94
Lab Sample ID:	AA7381	Analysis Date:	05/17/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	82	+	7.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBP26	Preparation Date:	05/17/94
Lab Sample ID:	AA7383	Analysis Date:	05/17/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	52	+	7.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Client Sample ID:	BOBP04	Preparation Date:	05/18/94
Lab Sample ID:	AA7552	Analysis Date:	05/18/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	45	+	7.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Client Sample ID:	BOBNZ6	Preparation Date:	05/18/94
Lab Sample ID:	AA7554	Analysis Date:	05/18/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	50	+	7.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Client Sample ID:	BOBNZ8	Preparation Date:	05/18/94
Lab Sample ID:	AA7556	Analysis Date:	05/18/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	27	+	3.0

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Client Sample ID:	BOBNZ0	Preparation Date:	05/18/94
Lab Sample ID:	AA7558	Analysis Date:	05/18/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	50	+	7.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	453
Client Sample ID:	BOBNY8	Preparation Date:	05/18/94
Lab Sample ID:	AA7726	Analysis Date:	05/18/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	51	+	7.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

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INTERNATIONAL TECHNOLOGY CORPORATION

JUN 1996 RECEIVED SDLA

Analytical Data Package Prepared For

Westinghouse Hanford

Radiochemical Analysis By

IT Analytical Services
Richland Laboratory

Sample Delivery Group Number: W0040

WHC IDENTIFICATION NUMBER	ITAS RICHLAND ID NUMBER
B0BPI0	404432-01
B0BP00	404432-02
B0BNY4	404432-03
B0BP02	404432-04
B0BP26	404432-05
B0BP04	404457-01
B0BNZ6	404457-02
B0BNZ8	404457-03
B0BNZ0	404457-04
B0BNY8	404500-01

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INTERNATIONAL TECHNOLOGY CORPORATION

RECORD COPY

CERTIFICATE OF ANALYSIS

JUN 1994 RECEIVED SDLA

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

June 14, 1994

Attention: J.A.Lerch

SAF Number	:	94-129
Date SDG Closed	:	April 27, 1994
Number of Samples	:	Ten (10)
Sample Type	:	Water
SDG Number	:	W0040
Data Deliverable	:	Stand Alone

I. Introduction

On April 22, 25, and 27, 1994, ten water samples were received by ITAS-Richland for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the WHC specific IDs:

ITAS-Richland ID	WHC ID	Matrix	Date of Receipt
404432-01A	B0BP10	Water	4/22/94
404432-02A	B0BP00	Water	4/22/94
404432-03A	B0BNY4	Water	4/22/94
404432-04A	B0BP02	Water	4/22/94
404432-05A	B0BP26	Water	4/22/94
404457-01A	B0BP04	Water	4/25/94
404457-02A	B0BNZ6	Water	4/25/94
404457-03A	B0BNZ8	Water	4/25/94
404457-04A	B0BNZ0	Water	4/25/94
404500-01A	B0BNY8	Water	4/27/94

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gas Proportional Counting
Gross Alpha by method ITAS-RD-3222
Gross Beta by method ITAS-RD-3222
Strontium-90 by method ITAS-RD-3204
Liquid Scintillation Counting
Carbon-14 by method ITAS-RD-3247
Technetium-99 by method ITAS-IT-RS-0001
Tritium by method ITAS-RD-3205

III. Quality Control

The analytical results for each analysis performed under SDG W0040 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate. Any exceptions have been noted in the "Comments" section.

Quality control sample results are reported in the same units as sample results.

IV. Comments

Results from the initial radioactivity screening of these samples classified them as Category I.

Gas Proportional Counting

Gross Alpha by method ITAS-RD-3222
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0BNZ0) results are within contractual limits.

Gross Beta by method ITAS-RD-3222
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0BNZ0) results are within contractual limits.

Strontium-90 by method ITAS-RD-3204
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0BNY8) results are within contractual requirements.

Liquid Scintillation Counting
Carbon-14 by method ITAS-RD-3247
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0BNY4) results are within contractual requirements.

Technetium-99 by method ITAS-IT-RS-0001
The matrix spikes, LCS, batch blank, sample and sample duplicate (duplicate of sample B0BNY4) results are within contractual requirements.

Tritium by method ITAS-RD-3205
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0BP10) results are within contractual requirements.

I certify that this Certificate of Analysis 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.

Reviewed and approved:

Suzanne Gaines

Suzanne Gaines
Project Manager

9613495.2353

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0040
LAB SAMPLE ID: 40443201
MATRIX: WATER
WHC ID: B0BP10
DATE RECEIVED: 4/22/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	6.50E-01	6.78E-01	6.83E-01	1.23E+00	1	RD3222
BETA	1.12E+01	2.05E+00	2.19E+00	2.81E+00	1	RD3222
TOTAL-SR	-9.86E-02	2.39E-01	2.41E-01	7.48E-01	1	RD3204
C-14	-1.26E+00	1.52E+00	3.22E+00	3.62E+00	1	RD3263
TC-99	7.79E+00	1.05E+00	4.75E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	9.27E+02	1.34E+02	2.57E+02	2.49E+02	0.94	RD3205

LAB SAMPLE ID: 40443202
MATRIX: WATER
WHC ID: B0BP00
DATE RECEIVED: 4/22/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	7.27E-01	6.73E-01	6.79E-01	1.13E+00	1	RD3222
BETA	1.57E+01	2.35E+00	2.60E+00	3.03E+00	1	RD3222
TOTAL-SR	8.62E-01	3.82E-01	4.38E-01	8.29E-01	0.88	RD3204
C-14	1.01E+00	1.56E+00	3.28E+00	3.62E+00	1	RD3263
TC-99	3.54E+01	1.46E+00	7.33E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	1.76E+03	1.55E+02	3.08E+02	2.49E+02	0.94	RD3205

682A-6-93

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0040

LAB SAMPLE ID: 40443203
MATRIX: WATER
WHC ID: B0BNY4
DATE RECEIVED: 4/22/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	7.16E-01	6.82E-01	6.88E-01	1.17E+00	1	RD3222
BETA	7.88E+01	4.49E+00	7.15E+00	2.89E+00	1	RD3222
TOTAL-SR	2.66E+01	1.58E+00	6.51E+00	9.75E-01	0.703	RD3204
C-14	4.50E-02	1.54E+00	3.25E+00	3.62E+00	1	RD3263
TC-99	6.03E+01	1.68E+00	9.85E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	2.91E+03	1.81E+02	3.84E+02	2.49E+02	0.94	RD3205

LAB SAMPLE ID: 40443204
MATRIX: WATER
WHC ID: B0BP02
DATE RECEIVED: 4/22/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	2.95E-01	7.28E-01	7.29E-01	1.64E+00	1	RD3222
BETA	1.64E+01	2.42E+00	2.69E+00	3.14E+00	1	RD3222
TOTAL-SR	-4.31E-02	3.24E-01	3.24E-01	9.60E-01	0.74	RD3204
C-14	7.21E-01	1.55E+00	3.27E+00	3.62E+00	1	RD3263
TC-99	4.59E+01	1.54E+00	8.38E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	2.58E+03	1.73E+02	3.62E+02	2.49E+02	0.94	RD3205

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IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0040
LAB SAMPLE ID: 40443205
MATRIX: WATER
WHC ID: B0BP26
DATE RECEIVED: 4/22/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	1.11E+00	7.26E-01	7.38E-01	9.45E-01	1	RD3222
BETA	7.81E+01	4.46E+00	7.09E+00	2.78E+00	1	RD3222
TOTAL-SR	2.82E+01	1.62E+00	6.87E+00	9.66E-01	0.703	RD3204
C-14	7.66E-01	1.55E+00	3.27E+00	3.62E+00	1	RD3263
TC-99	6.04E+01	1.67E+00	9.86E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	2.95E+03	1.81E+02	3.87E+02	2.49E+02	0.94	RD3205

LAB SAMPLE ID: 40445701
MATRIX: WATER
WHC ID: B0BP04
DATE RECEIVED: 4/25/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	1.68E+00	8.91E-01	9.15E-01	1.08E+00	1	RD3222
BETA	2.01E+01	2.53E+00	2.90E+00	2.89E+00	1	RD3222
TOTAL-SR	3.43E-01	4.20E-01	4.27E-01	1.11E+00	0.627	RD3204
C-14	-2.25E-02	1.54E+00	3.25E+00	3.62E+00	1	RD3263
TC-99	5.29E+01	1.61E+00	9.09E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	2.40E+03	1.70E+02	3.50E+02	2.49E+02	0.94	RD3205

9613495.2356

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0040
LAB SAMPLE ID: 40445702
MATRIX: WATER
WHC ID: B0BNZ6
DATE RECEIVED: 4/25/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	8.94E-01	7.18E-01	7.27E-01	1.16E+00	1	RD3222
BETA	5.52E+01	3.81E+00	5.45E+00	2.82E+00	1	RD3222
TOTAL-SR	1.46E+01	1.04E+00	3.91E+00	7.51E-01	0.972	RD3204
C-14	4.50E-02	1.54E+00	3.25E+00	3.62E+00	1	RD3263
TC-99	6.69E+01	1.75E+00	1.05E+01	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	6.44E+03	2.42E+02	6.29E+02	2.49E+02	0.94	RD3205

LAB SAMPLE ID: 40445703
MATRIX: WATER
WHC ID: B0BNZ8
DATE RECEIVED: 4/25/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	6.57E-01	6.76E-01	6.82E-01	1.25E+00	1	RD3222
BETA	1.30E+01	2.19E+00	2.38E+00	2.99E+00	1	RD3222
TOTAL-SR	-3.74E-02	2.65E-01	2.65E-01	7.94E-01	0.935	RD3204
C-14	8.78E-01	1.56E+00	3.28E+00	3.62E+00	1	RD3263
TC-99	3.21E+01	1.37E+00	7.00E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	1.52E+03	1.49E+02	2.93E+02	2.49E+02	0.94	RD3205

682A-6-93

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0040
LAB SAMPLE ID: 40445704
MATRIX: WATER
WHC ID: B0BNZ0
DATE RECEIVED: 4/25/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	8.10E-01	6.88E-01	6.95E-01	1.11E+00	1	RD3222
BETA	2.52E+01	2.76E+00	3.28E+00	2.90E+00	1	RD3222
TOTAL-SR	1.30E+00	3.92E-01	5.20E-01	7.52E-01	0.989	RD3204
C-14	1.28E+00	1.56E+00	3.29E+00	3.62E+00	1	RD3263
TC-99	6.94E+01	1.76E+00	1.08E+01	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	3.30E+03	1.88E+02	4.10E+02	2.49E+02	0.94	RD3205

LAB SAMPLE ID: 40450001
MATRIX: WATER
WHC ID: B0BNY8
DATE RECEIVED: 4/27/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	1.49E+00	8.45E-01	8.65E-01	1.08E+00	1	RD3222
BETA	3.25E+01	3.05E+00	3.82E+00	2.90E+00	1	RD3222
TOTAL-SR	5.31E+00	6.61E-01	1.53E+00	7.79E-01	0.976	RD3204
C-14	1.96E+00	1.57E+00	3.30E+00	3.62E+00	1	RD3263
TC-99	5.77E+01	1.66E+00	9.58E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	2.47E+03	1.71E+02	3.54E+02	2.49E+02	0.94	RD3205

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K Tiapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: SMC-144	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0578-11	Bill of Lading/Air Bill No.: N/A NOWG
Possible Sample Hazards/Remarks		

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE Stored in Lab Frig 3B A-35

SAMPLE ANALYSIS: 404499

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	aG2	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40mL	1000ml
	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 404500	Tc-99 01	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD 02A

Sample No.	Matrix*	Date Sampled	Time Sampled															
BOBNY8 01	W	4/25/94	0930	X	X	X	X	X	X									
BOBNY9 02	W	↓	↓							X								

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
K. Umary / K. Tiapp	4/25/94 1359	AJ Simpson / AJ Simpson	4/25/94 1400
AJ Simpson	4/27/94 0921	L Sweeney / L Sweeney	4/27/94 0921
L Sweeney / L Sweeney	4/27/94 1210	Heidelberg	4/27 1210

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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: Title: Date/Time:

FINAL SAMPLE DISPOSITION Disposal Method: Disposed By: Date/Time:

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0026

Contractor: WHC	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT): W94-U-0518-11

PART I – TO BE COMPLETED BY ORIGINATOR

Department: ER Eng Support	Section: Field & Analytical Supp	Unit: ER Field Sampling

The following items are to be shipped from: ☒ Contractor ☐ Vendor

Routing: ☒ Contractor ☐ Vendor

Shipped to:
IT Analytical Services
2800 George Washington Way
Richland, WA 99352

Off-site Custodian:

Full Title:

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: B0BP13, B0BP13, B0BNY6, B0BNY7 Cooler ID: ER-9 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: B0BNY8, B0BNY9 Cooler ID: SMC-144 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property:
Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No. 15703	Date 4/27/94
Location of Property (Area & Bldg.): 100-BC-5	Contact: P. H. Butcher	Phone: (509) 376-4388
Date Ready for Shipment: 4-27-94	Cost Code to be Charged: 88410 PB5AA	Approximate Date This Property will be Returned: NA
Originated by: PH Butcher	Date: 4/27/94	Authorized By: [illegible] Date: 4/27/94
Signature and Name of Property Control	Custodian Date	Property Management Approval: [illegible] Date: [illegible]

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]				
Date 4/27 1230				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

0027

54-3000-479 (09/89)

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1300 George Washington Way
Richland, Washington 99352

9615495.2360

SAMPLE CHECK-IN LIST

(Per Shipping Container)

Date/Time Received 4/27 1210 Client Name DHC

Project/Client # 94-129 Batch or Case # na

Cooler ID (if noted on the outside of cooler) SML 144

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 14
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ____ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 40

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) ____
    Request for analysis #(s) na
    Airbill # ____ Carrier ____
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature [signature] Date/Time 4/27/94 1210

FORM NO. LS-042, Rev.0, 2/94

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Tiapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P
No. of Container(s)	1	1	5	2	6 ~~3~~	1	1
Volume	1000ml	1000ml	1000ml	1000ml	500 mL ~~1000ml~~	40mL	1000ml
SAMPLE ANALYSIS 40445601	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 40445701	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD A

Sample No.	Matrix*	Date Sampled	Time Sampled							
BOBP04 01	W	4/22/94	1200	X	X	X	X	X	X	
BOBP05 02	W	↓	↓							X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
K. Tiapp / K. Tiapp	4/22/94 1500	L Sweeney / L Sweeney	4/22/94 1500
L Sweeney / L Sweeney	4/25/94 1300	E. Bond	4/25/94 1300

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 DISPOSITION	Received By	Title	Date/Time
FIELD SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0029

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

SAMPLE ANALYSIS: 404456

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP 04A FILTERD
Preservative				HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container				G/P	P	G/P	G/P	Gs	GGS	G/P
No. of Container(s)				1	1	5	2	3	1	1
Volume				1000ml	1000ml	1000ml	1000ml	500ml ~~1000ml~~	40ml	1000ml
BOBNZ6 03	W	4/22/94	1040	X	X	X	X	X	X	
BOBNZ7 04	W	↓	↓							X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: K. Trapp / K. Trapp	Date/Time: 4/22/94 1500	Received By: L Sweeney / Sweeney	Date/Time: 4/22/94 1500
Relinquished By: L Sweeney / Sweeney	Date/Time: 4/25/94 1300	Received By: R. Bard	Date/Time: 4-25-94 / 1300
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0578-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

SAMPLE ANALYSIS: 404456

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P
No. of Container(s)	1	1	5	2	~~3~~ 6	1	1
Volume	1000ml	1000ml	1000ml	1000ml	~~1000ml~~ 500mL	40mL	1000ml
	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD A

Sample No.	Matrix*	Date Sampled	Time Sampled															
BOBNZ8 05	W	4/22/94	1330	X	X	X	X	X	X									
BOBNZ9 06	W	↓	↓							X								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: K. Trapp / K. Trapp	Date/Time: 1500 4/22/94	Received By: L Sweeney / L Sweeney	Date/Time: 4/22/94 1500
Relinquished By: L Sweeney / L Sweeney	Date/Time: 1300 4/25/94	Received By: R. Barb	Date/Time: 4/25/94 1300
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

9413187.2969

0030

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: ☐ Priorty ☒ Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 P	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks:		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

SAMPLE ANALYSIS: 4044576

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP	ANIONS F,SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD
Preservative				HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container				G/P	P	G/P	G/P	Gs	AGS	G/P
No. of Container(s)				1	1	5	2	~~3~~ 6	1	1
Volume				1000ml	1000ml	1000ml	1000ml	~~1000ml~~ 500mL	~~4L~~ 4L	1000ml
				A	B	4044570	4		08A	
BOBNZ0 07	W	4/22/94	0905	X	X	X	X	X	X	
BOBNZ1 08	W	↓	↓							X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
K. J. Morse / K. Trapp	4/22/94 1700	L. Sweeney / L. Sweeney	4/22/94 1300
Relinquished By	Date/Time	Received By	Date/Time
L. Sweeney / L. Sweeney	4/25/94 1300	R. Boyd / R. Boyd	4/25/94 1300
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0032

9615195.2365

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-0-0518-7

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to
IT Analytical Services
2800 George Washington Way
Richland, WA 99352

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: BOFN21, BOFN22, BOFN24, BOFN25 Cooler ID: ER-9 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: BOFN23, BOFN26, BOFN27, BOFN28 Cooler ID: ER-8 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release: Carla Lietz	RM Survey No. 157416	Date 4-25-94
Location of Property (Area & Bldg.): 100-BC-5	Contact: P. H. Butcher	Phone: (509) 376-4388
Date Ready for Shipment: 4-25-94	Cost Code to be Charged: 88410	Approximate Date This Property will be Returned: NA
Originated By: PH Butcher	Date: 4/25/94	Authorized By: [illegible] / Date: [illegible]
Signature and Name of Property Control	Custodian Date	Property Management Approval: [illegible] / Date: 4/25/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
R. Bayl Jr				
Date 4-25-94 300				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:	
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain	Green – Property Control Custodian (Issuing Office) Pink – Originator

0033

54-3000-479 (09/89)

INTERNATIONAL TECHNOLOGY CORPORATION
Regional Office
2300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-25-94 1300 Client Name WHC

Project/Client # SDF 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-8

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 34
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ✓ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 1°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) N/A
    Airbill # N/A Carrier N/A
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature R. Boyd R. Boyd Date/Time 4-25-94 1300

FORM NO. LS-042, Rev.0, 2/94

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-25-94 1300 Client Name WHC

Project/Client # SAF 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-9

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 304
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ✓ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 3°

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) N/A
    Airbill # N/A Carrier N/A
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature R. Boyd R. Boyd Date/Time 4-25-94 1300

FORM NO. LS-042, Rev.0, 2/94

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

Customer Code	Recieved Date	Time	Screening Prep Date	Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	Beta	Mnts
WHC			42594		425	10	6	52	60

Cat Category I
JRM 25 Apr 94

Customer ID WHC/WATER	pH <2 Rcvd/Req	RESIDUE Wght (mGrms)	Vol. Anal. mG mL	Sample Size Gm L	SMPLE CNT DATA Hldr Num.	Total Counts Alpha	Total Counts Beta	Net Sample Counts/Minute Alpha	Net Sample Counts/Minute Beta	DPM / Aliqout Alpha	DPM / Aliqout Beta	uCi per Sample Alpha	uCi per Sample Beta	2 Sigma Error uCi per Sample Alpha	2 Sigma Error uCi per Sample Beta	pCi/(Gm or L) Alpha	pCi/(Gm or L) Beta	Catagory 1 Yes/No	Aliquot to Cat 1 Gm or Ltr Alpha	Aliquot to Cat 1 Gm or Ltr Beta
B0BRL3		0.2	5	4.0	1	0	15	-0.10	0.63	-4E-01	1.4E+00	-1E-04	5.1E-04	-3E-07	4.0E-07	-4E+01	1.3E+02	Yes	-3E+02	7.9E+02
B0BNZ6		1.9	5	1.0	2	1	29	0.00	2.03	-6E-02	4.3E+00	-6E-06	3.9E-04	-3E-09	1.8E-07	-6E+00	3.9E+02	Yes	-2E+03	2.6E+02
B0BNZ0		1.6	5	1.0	3	5	25	0.40	1.63	1.5E+00	3.2E+00	1.4E-04	2.9E-04	1.6E-07	3.4E-07	1.4E+02	2.9E+02	Yes	7.2E+01	3.4E+02
B0BP04		1.6	5	1.0	4	1	23	0.00	1.43	-5E-02	3.1E+00	-4E-06	2.6E-04	-3E-09	9.8E-06	-4E+00	2.8E+02	Yes	-2E+03	3.6E+02
B0BNP5		1.2	5	4.0	5	0	9	-0.10	0.03	-4E-01	1.4E-01	-1E-04	4.9E-05	-3E-07	3.8E-08	-4E+01	1.2E+01	Yes	-3E+02	8.1E+03
B0BNZ8		0.7	5	1.0	6	2	6	0.10	-0.07	3.9E-01	-2E-01	3.5E-05	-2E-05	7.3E-08	-2E-08	3.5E+01	-2E+01	Yes	2.8E+02	-5E+03
TOTAL	uCi							-0.10	-0.87	-4E-01	-2E+00	-1E-04	1.5E-03	ERR	ERR	ERR	ERR	Yes	ERR	ERR

0036

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp / K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-7	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-U-0518-3	Bill of Lading/Air Bill No.: N/A NONE

Possible Sample Hazards/Remarks

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	OGS	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40ml	1000ml
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD
484431			404432 01				

	Sample No.	Matrix*	Date Sampled	Time Sampled															
01	BOBP10	W	4/22/94	1510	X	X	X	X	X	X									
02	BOBP11	W	↓	↓							XA								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	L Sweeney L Sweeney	4/22/94 0752
L Sweeney L Sweeney	4/22/94 1400	R. Bond	4/22/94 1400

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0037

9413197.2369

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-4	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	Gs	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40ml	1000ml
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD
404431			40443202				

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE

	Sample No.	Matrix*	Date Sampled	Time Sampled							
03	BOBP00	W	4/21/94	1410	X	X	X	X	X	X	
04	BOBP01	W	↓	1410							XA

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Mapp / K. Trapp	4/22/94 0752	L Sweeney / L Sweeney	4/22/94 0752
L Sweeney / L Sweeney	4/22/94 1400	R. Boyd II	4/22/94 1400

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original - Sample Yellow - Sampler

BC-6000-828 (12/92)

0038

9413195.2370

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100B	SAF No.: 94-129
Ice Chest No.: EIR-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-3	Bill of Lading/Air Bill No.: N/A NONE

Possible Sample Hazards/Remarks									
	Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2	
	Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P	
	No. of Container(s)	1	1	5	2	3	1	1	
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE	Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40mL	1000ml	
SAMPLE ANALYSIS		ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD	

404431 404432 03

Sample No.	Matrix*	Date Sampled	Time Sampled															
05 BOBNY4	W	04/21/94	1100	X	X	X	X	X	X									
06 BOBNY5	W	↓	↓							X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K Trapp	4/22/94 0752	L Sweeney / L Sweeney	4.22.94 0752
L Sweeney / L Sweeney	4/22/94 1480	R. Boyd	4/22/94 1480

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0039

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100-B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A U294-0-0518-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE

SAMPLE ANALYSIS																	
Preservative			HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2								
Type of Container			G/P	P	G/P	G/P	Gs	aGs	G/P								
No. of Container(s)			1	1	5	2	6 ~~8~~	1	1								
Volume			1000ml	1000ml	1000ml	1000ml	500mL ~~1000ml~~	40mL	1000ml								
			ICP METALS AA METALS Hg CLP	ANIONS F,SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Acidity Scan	ICP METALS, AA METALS, Hg CLP FILTERD								
404431			A	B	404432		04										
Sample No.	Matrix*	Date Sampled	Time Sampled														
07 BOBP02	W	4/21/94	1245	X	X	X	X	X	X								
08 BOBP03	W	↓	↓							XA							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	L Sweeney / L Sweeney	4/22/94 0752
L Sweeney / L Sweeney	4/22/94 1400	R Boyd	4/22/94 1400

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

Matrix*
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- 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 | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

9413195.2372

0060

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: EMERY
Shipped To: TMA	Offsite Property No.: W94-0-0518-3	Bill of Lading/Air Bill No.: ~~W9~~ LCS 4/22/94 NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4		HNO3<2										
Type of Container	G/P	P	G/P	G/P	Gs		G/P										
No. of Container(s)	1	1	~~4~~ 1 KT 4/21/94	1	2		1										
Volume	1000ml	1000ml	~~1000ml~~ 4L KT 4/21/94	1000ml	1000ml		1000ml										
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14		ICP METALS, AA METALS, Hg FILTERD CLP										
404431				40443265													

	Sample No.	Matrix*	Date Sampled	Time Sampled															
09	B0BP26	W	4/21/94	1100	X	X	X	X	X										
10	B0BP27	W	↓	↓							~~X~~ A								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	L Sweeney / L Sweeney	4/22/94 0752
L Sweeney / L Sweeney	4/22/94 1400	R Boyd	4/22/94 1400

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

Matrix*
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- 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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

1400

BC-6000-R28 (12/92)

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
[redacted]		W94-0-0518-4

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

[redacted] ☒ Contractor ☐ Vendor

Shipped to: [redacted] Analytical Services, 2800 George Washington Way, [redacted]land, WA 99352

Off-site Custodian:

Full Title:

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
[redacted]	Sample #: B0B P00, B0B P01, B0BNV4, B0BNV5 Cooler ID: ER-8 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
[redacted]	Sample #: Cooler ID: Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

[redacted] ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

[redacted] Off-site Use of this Property

[redacted] supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
[redacted]	27 06	4-22-94

Location of Property (Area & Bldg.)	Contact	Phone
[redacted]	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
[redacted] 4/22/94	BB410 PR5AA	NA

Originated By	Date	Authorized By	Date
[redacted]	4/22/94	P H Butcher	4/22/94

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		P Henkel	4/22/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[redacted]				
Date: [redacted] 94 1400				

DISTRIBUTION

By Originator: White, Green, Yellow, Pink – Property Management; Goldenrod – Retain

Shipping Operation – Sign all Copies and Forward to: White – Property Management; Green – Property Control Custodian (Issuing Office); Yellow – Retain; Pink – Originator

0042

54-3000-479 (09/89)

9413495.2575

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
3300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-22-94 14:00 Client Name WHC

Project/Client # 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-8

1. Condition of shipping container? O.K.
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: ~~12~~ 24 4-22-94
8. Samples have: X tape ____ hazard labels
   X custody seals ____ appropriate sample labels
9. Samples are: X in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 2°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) n/a
    Request for analysis #(s) n/a
    Airbill # n/a Carrier n/a
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☒

Printed Name/Signature Karen Achtenberg Date/Time 4-22-94 14:00

FORM NO. LS-042, Rev.0, 2/94

9615495.2576

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1350 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-22-94 14:00 Client Name WHC

Project/Client # 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-9

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 21
8. Samples have: X tape ____ hazard labels
   X custody seals ____ appropriate sample labels
9. Samples are: X in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 2°c

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) NA
    Request for analysis #(s) NA
    Airbill # NA Carrier NA
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☒

Printed Name/Signature [illegible] Date/Time 4-22-94 14:00

FORM NO. LS-042, Rev.0, 2/94

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

all Cat. I
JRN 22 Apr 94

Customer Code	Recieved Date	Recieved Time	Screening Prep Date	Screening Prep Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	BACKGROUND Beta	BACKGROUND Mnts
WHC			42294		422	10	13	232	240

Customer ID WHC/WATER	pH <2 Rcvd/Reiq	RESIDUE Wght (mGrms)	Vol. Anal. mG	Vol. Anal. mL	Sample Size Gm	Sample Size L	SMPLE CNT DATA Hldr Num.	Total Counts Alpha	Total Counts Beta	Net Sample Counts/Minute Alpha	Net Sample Counts/Minute Beta	DPM / Aliqout Alpha	DPM / Aliqout Beta	uCi per Sample Alpha	uCi per Sample Beta	2 Sigma Error uCi per Sample Alpha	2 Sigma Error uCi per Sample Beta	pCi/(Gm or L) Alpha	pCi/(Gm or L) Beta	Catagory 1 Yes/No	Aliquot to Cat 1 Gm or Ltr Alpha	Aliquot to Cat 1 Gm or Ltr Beta
B0BP26		0.9	5		4.0		5	6	46	0.55	3.63	2.0E+00	7.4E+00	7.3E-04	2.7E-03	7.3E-07	1.0E-06	1.8E+02	6.7E+02	Yes	5.5E+01	1.5E+02
B0BP10		0.7	5		1.0		6	1	20	0.05	1.03	1.5E-01	2.2E+00	1.3E-05	2.0E-04	4.9E-08	1.3E-07	1.3E+01	2.0E+02	Yes	7.6E+02	5.1E+02
B0BNY2		0.9	5		1.0		7	8	25	0.55	1.53	2.1E+00	2.9E+00	1.9E-04	2.6E-04	1.8E-07	2.2E-07	1.9E+02	2.6E+02	Yes	5.3E+01	3.8E+02
B0BP02		1.3	5		1.0		8	2	11	0.15	0.13	5.7E-01	1.9E-01	5.1E-05	1.7E-05	9.0E-08	1.6E-08	5.1E+01	1.7E+01	Yes	1.9E+02	5.9E+03
B0BP00		1.2	5		1.0		9	1	14	0.05	0.43	1.7E-01	8.9E-01	1.5E-05	8.1E-05	4.9E-08	4.3E-07	1.5E+01	8.1E+01	Yes	6.7E+02	1.2E+03
B0BNY4		0.6	5		1.0		10	3	22	0.25	1.23	9.2E-01	2.5E+00	8.3E-05	2.2E-04	1.2E-07	3.7E-07	8.3E+01	2.2E+02	Yes	1.2E+02	4.5E+02
B0BNP7		0.5	5		4.0		11	1	17	0.05	0.73	1.6E-01	1.5E+00	5.8E-05	5.5E-04	1.9E-07	4.1E-06	1.4E+01	1.4E+02	Yes	7.2E+02	7.2E+02
B0BNM5		2.8	5		4.0		12	5	173	0.45	16.33	1.3E+00	3.5E+01	4.6E-04	1.2E-02	6.6E-07	5.4E-05	1.2E+02	3.1E+03	Yes	8.7E+01	3.2E+01
B0BNP3		0.5	5		4.0		14	1	17	0.05	0.73	1.6E-01	1.5E+00	5.6E-05	5.5E-04	1.9E-07	4.1E-06	1.4E+01	1.4E+02	Yes	7.2E+02	7.2E+02
TOTAL	uCi									-0.05	-0.97	-2E-01	-2E+00	1.7E-03	1.7E-02	ERR	ERR	ERR	ERR	Yes	ERR	ERR

9613495.2378

SAMPLE STATUS REPORT FOR E 6271. E-BLANK 1-B8-6 TIME: 4/25/94 10:17
DISPATCHED: 4/ 1/94 15:17 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/25/94 8:48

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBNZ8
BOBNZ9
KCS
4/25/94

9613495.2379

SAMPLE STATUS REPORT FOR E 6273. E-BLANK 1-B9-2 TIME: 4/22/94 8:19
DISPATCHED: 4/ 1/94 15:17 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/22/94 7:43

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBP02
BOBP03
LCS
4/22/94

9613495.2380

SAMPLE STATUS REPORT FOR E 6277. E-BLANK 6-65-83 TIME: 4/22/94 8:19
DISPATCHED: 4/ 1/94 15:20 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/22/94 7:44

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBP10
BOBP11
LCS
4/22/94

SAMPLE STATUS REPORT FOR E 6264. E-BLANK 1-B4-4 TIME: 4/22/94 8:1
DISPATCHED: 4/ 1/94 15:12 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/22/94 7:43

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARG CODE
****	********	**********	***	***	*****
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

~~BOBNP4~~
~~BOBNP~~
BOBNY4
BOBNY5
LEJ
4/22/94

9613495.2382

SAMPLE STATUS REPORT FOR E 6272. E-BLANK 1-B9-1 TIME: 4/22/94 8:19
DISPATCHED: 4/ 1/94 15:17 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/22/94 7:44

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBP00
~~BOBB~~
BOBP01
LCS
4/22/94

96195.2386

SAMPLE STATUS REPORT FOR E 6267. E-BLANK 1-B4-8 TIME: 4/25/94 10:17
DISPATCHED: 4/ 1/94 15:15 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/25/94 8:48

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBNZO
BOBNZI
LCS
4/25/94

9613495.2384

SAMPLE STATUS REPORT FOR E 6270. E-BLANK 1-B5-2 TIME: 4/25/94 10:17
DISPATCHED: 4/ 1/94 15:16 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/25/94 8:48

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

BOBNZ6
BOBNZ7
KS
4/25/94

9613495.2385

SAMPLE STATUS REPORT FOR E 6274. E-BLANK 1-B9-3 TIME: 4/25/94 10:17
DISPATCHED: 4/ 1/94 15:18 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/25/94 8:48

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

B0B P04
B0B P05
LCS
4/25/94

9613495.23B6

SAMPLE STATUS REPORT FOR E 6266. E-BLANK 1-B4-7 TIME: 4/26/94 10: 3
DISPATCHED: 4/ 1/94 15:13 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/26/94 8:15

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT ✓

BO BNY8
BO BNY9

AJS
4/26/94

9413195.2387

IT BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS ALPHA MATRIX WATER DUE DATE 6-1-94

W0040

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L04432	-1B	WHC	QC BATCH REAGENT BLANK
L	-1X		QC BATCH MATRIX BLANK
L04432	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE EQE6214 10.005E.05554S
L	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
F04457	-04		Duplicate of Sample # 40445704
404432	-01-5		
404457	-01-04		
~~404500~~ 404500 5/21/94	-01		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		

Batched and QC updated by [illegible] on 5-25-94 Rec'd in C.R. by [illegible] on 5-25-94

Rec'd in Prep Lab by [illegible] on 5-26-94 Data Reviewed and anal. Prep stored [illegible] on 5-26-94

Rec'd in Sep Lab by N/A on _____

Rec'd in Sep lab by N/A on _____ Samples Disposed by _____ on _____

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

9613495.2388 *** ALPHA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-432

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L0443218 L0443215				
1)	40443201		WHC	BOBP10	
2)	40443202		WHC	BOBP00	
3)	40443203		WHC	BOBNY4	
4)	40443204		WHC	BOBP02	
5)	40443205		WHC	BOBP26	

ACTIONS (Initial & Date)

1) INITIATED RB 4/25/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9616495.2389 *** ALPHA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1994
Page 1

CUSTOMER: WHC SAF

MATRIX : WATER 94-129

SAMPLE DELIVERY GROUP W0040

BATCH NUMBER 4-457

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	B0BP04	
2)	40445702		WHC	B0BNZ6	
3)	40445703		WHC	B0BNZ8	
4)	40445704 F0445704		WHC	B0BNZ0	

ACTIONS (Initial & Date)

1) INITIATED JH 4/26/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2390 *** ALPHA ***

Due 6-1-94

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

28-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

SAF 94-129

BATCH NUMBER 4-500

ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1) 40450001		WHC	BOBNY8	

ACTIONS (Initial & Date)

1) INITIATED JH 4/28/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS BETA MATRIX WATER DUE DATE 6-1-94

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L 04432	-1B	WHC	QC BATCH REAGENT BLANK
L	-1X		QC BATCH MATRIX BLANK
L 04432	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE EQAH 2111 9.98785 ± .1454
L	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
F 04457 ~~01~~ 5-25-94	-04		Duplicate of Sample # 404457 04
404432	-01-05		
404457	-01-04		
404500	-01		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		

Batched and QC updated by [signature] on 5-25-94 Rec'd in C.R. by [signature] on 5-25-94

Rec'd in Prep Lab by [signature] on 5-26-94 Data Reviewed and anal. Prep stored [signature] on 5-31-94

Rec'd in Sep Lab by N/A on

Rec'd in Sep lab by N/A on Samples Disposed by on

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

9613495.2300 *** BETA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-432

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L0443218 L0443215				
1)	40443201		WHC	B0BP10	
2)	40443202		WHC	B0BP00	
3)	40443203		WHC	B0BNY4	
4)	40443204		WHC	B0BP02	
5)	40443205		WHC	B0BP26	

ACTIONS (Initial & Date)

) INITIATED RB 4/25/94

) PREP LAB RECEIVED _____

) SAMPLE REMAINDER STORED _____

) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2396 *** BETA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1994
Page 1

CUSTOMER: WHC SAF

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER 94-129

BATCH NUMBER 4-457

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	BOBF04	
2)	40445702		WHC	BOBNZ6	
3)	40445703		WHC	BOBNZ8	
4)	40445704 F0445704		WHC	BOBNZ0	

ACTIONS (Initial & Date)

) INITIATED JH 4/26/94

) PREP LAB RECEIVED _____

) SAMPLE REMAINDER STORED _____

) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

Due 6-1-94

9615495.2594 *** BETA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

28-Apr-1994
Page 1

CUSTOMER: WHC

SAF 94-124

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-500

ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1) 40450001		WHC	BOBNY8	

ACTIONS (Initial & Date)

INITIATED JH 4/28/94

PREP LAB RECEIVED _____

SAMPLE REMAINDER STORED _____

SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613195.2395

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS T Sr MATRIX H_2O DUE DATE 6-1

WC040

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L 04432	-1B	WHC	QC BATCH REAGENT BLANK
L	-1X		QC BATCH MATRIX BLANK
L 04432	-1M or 1S (circle)	EQL 1045	QC BATCH MATRIX/REAGENT SPIKE 13.563 E.1558
L	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
F F0450001	-		Duplicate of Sample # 40450001
4-432	01 → 05		
4-457	01 → 04		
4-500	01		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		

Batched and QC updated by Sjh on 5-18-94 Rec'd in C.R. by OD on 22 May 94

Rec'd in Prep Lab by Sjh on 5-19-94 Data Reviewed and anal. Prep stored GFa on 9/23/94.

Rec'd in Sep Lab by ↓ on ↓

Rec'd in Sep lab by Wa on _____ Samples Disposed by _____ on _____

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

9613495.2396 *** TOTAL-SR ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-432

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L0443218				ESF7967
	L0443215				EQL1045
1)	40443201		WHC	BOBP10	ESF7968 SD 5/12/94 RT 5/12/95
2)	40443202		WHC	BOBP00	ESF7969 SD 5/12/94 RT 5/12/95
3)	40443203		WHC	BOBNY4	ESF7970 SD 5/12/94 RT 5/12/95
4)	40443204		WHC	BOBP02	ESF7971 SD 5/12/94 RT 5/12/95
5)	40443205		WHC	BOBP26	ESF7972 SD 5/12/94 RT 5/12/95

ACTIONS (Initial & Date)

1) INITIATED RB 4/25/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED N/A

4) SEPARATION LAB RECEIVED RB 5-20-94

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

0064

9615195.2397 *** TOTAL-SR ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1994
Page 1

CUSTOMER: WHC SAF

SAMPLE DELIVERY GROUP WW40

MATRIX : WATER 04-129

BATCH NUMBER 4-4517

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	B0BP04	ESF7973
2)	40445702		WHC	B0BNZ6	ESF7974 DD 5/12/04 PT 5/12/05
3)	40445703		WHC	B0BNZ8	ESF7975 DD 5/12/04 PT 5/12/05
4)	40445704		WHC	B0BNZ0	ESF7976 DD 5/12/04 PT 5/12/05

ACTIONS (Initial & Date)

1) INITIATED JH 4/26/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9615195.2399 *** TOTAL-SR ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

28-Apr-1994

Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP 10040

MATRIX : WATER

BATCH NUMBER 41-500

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40450001		WHC	BOBNY8	ESF7977
	F0450001				ESF7978

ACTIONS (Initial & Date)

1) INITIATED 4/28/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9413495.2399

W0040

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS C-14 MATRIX WATER DUE DATE 6-1-94

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L 04432	-1B-1N-2N	WHC	QC BATCH REAGENT BLANK
L	-1X		QC BATCH MATRIX BLANK
L 04432	-1M or 1S (circle)	IQFL 024	QC BATCH MATRIX/REAGENT SPIKE 20.401 ± .7407 DPM
L	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
F 0443203	-		Duplicate of Sample #
4-432	1-5		
4-457	1-4		
4-500	1		
	-		
4-430	1		SDG 43. See NCM
	-		in W0043
	-		
	-		
	-		
	-		
	-		
	-		

Batched and QC updated by DM on 5-26-94 Rec'd in C.R. by GK on 5-27-94

Rec'd in Prep Lab by N/A on _____ Data Reviewed and anal. Prep stored GK on 6/2/94

Rec'd in Sep Lab by DM on 5-10-94

Rec'd in Sep lab by N/A on _____ Samples Disposed by _____ on _____

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

9613495.2400

*** C-14 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP ___W0040___

MATRIX : WATER

BATCH NUMBER ___4-432___

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L0443218-TN-2W				
	L0443215				
1)	40443201		WHC	BOBP10	
2)	40443202		WHC	BOBP00	
3)	40443203		WHC	BOBNY4	
	F0443203				
4)	40443204		WHC	BOBP02	
5)	40443205		WHC	BOBP26	

ACTIONS (Initial & Date)

1) INITIATED ___RB 4/25/94___

2) PREP LAB RECEIVED ___N/A___

3) SAMPLE REMAINDER STORED ___5-12-94 DM___

4) SEPARATION LAB RECEIVED ___5-10-94 DM___

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2401 *** C-14 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1994
Page 1

CUSTOMER: WHC SAF

MATRIX : WATER 94-129

SAMPLE DELIVERY GROUP W0040

BATCH NUMBER 4-457

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	B0BP04	
2)	40445702		WHC	B0BNZ6	
3)	40445703		WHC	B0BNZ8	
4)	40445704		WHC	B0BNZ0	

ACTIONS (Initial & Date)

1) INITIATED JH 4/26/94

2) PREP LAB RECEIVED DJH

3) SAMPLE REMAINDER STORED 5-12-94 DM

4) SEPARATION LAB RECEIVED 5-10-94 DM

5) COUNTING/MEASUREMENT LAB

6) DATA REVIEWED AND ANALYTICAL PREP STORED

Dul 6-1-94

9613495.2402 *** C-14 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD 28-Apr-1994

Page 1

CUSTOMER: WHC SAF 94-129 SAMPLE DELIVERY GROUP W0040

MATRIX : WATER BATCH NUMBER 4-500

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40450001		WHC	BOBNY8	

ACTIONS (Initial & Date)

1) INITIATED JH 4/28/94

2) PREP LAB RECEIVED N/A

3) SAMPLE REMAINDER STORED 5-12-94 Dm

4) SEPARATION LAB RECEIVED 5-10-94 Dm

5) COUNTING/MEASUREMENT LAB

6) DATA REVIEWED AND ANALYTICAL PREP STORED

9613495.2403

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS Tc-99 MATRIX water DUE DATE 6/01/94

W0040

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L 04500	-1B	WHC	QC BATCH REAGENT BLANK
L 04500	-1X		QC BATCH MATRIX BLANK
L 04500 W04445704	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE
L W0443201	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
F 0443203	-		Duplicate of Sample # 40443203
40450001	- 01		L04500 1N L04500 2N instrument
40443201	- 05		L04500 3N L04500 4N Beaker
40445701	- 04		
	-		
	-		
	-		
L045001m	- EQnI229		302.27 ± 3.7104 DPM 270.5135 ± 3.3427 f
W0445704	- EQnI227		300.00 ± 3.7041 270.3514 ± 3.3406
W0443201	- EQnI228		300.12 ± 3.7085 270.3784 ± 3.3471
	-		
	-		
	-		

Batched and QC updated by mm on 6/03/94 Rec'd in C.R. by RH on 6/3/94

Rec'd in Prep Lab by mm on 5/23/94 Data Reviewed and anal. Prep stored GW on 6/10/94

Rec'd in Sep Lab by mm on 5/23/94

Rec'd in Sep lab by NA on NA Samples Disposed by _____ on _____

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

9613195.2404

*** TC-99 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP WS0410

MATRIX : WATER

BATCH NUMBER 4-432

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40443201		WHC	B0BP10	
2)	40443202		WHC	B0BP00	
3)	40443203		WHC	B0BNY4	
4)	40443204		WHC	B0BP02	
5)	40443205		WHC	B0BP26	

ACTIONS (Initial & Date)

1) INITIATED RG 4/25/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2405

*** TC-99 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1994
Page 1

CUSTOMER: WHC SAF

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER 94-129

BATCH NUMBER 4-457

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	B0BP04	
2)	40445702		WHC	B0BNZ6	
3)	40445703		WHC	B0BNZ8	
4)	40445704		WHC	B0BNZ0	

ACTIONS (Initial & Date)

1) INITIATED JH 4/26/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2406

Due 6-1-94

*** TC-99 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

28-Apr-1994
Page 1

CUSTOMER: WHC

SAF 94-129

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-500

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40450001		WHC	BOBNY8	

ACTIONS (Initial & Date)

1) INITIATED JA 4/28/94

2) PREP LAB RECEIVED 5/23/94 MM

3) SAMPLE REMAINDER STORED 5/24/94 MM

4) SEPARATION LAB RECEIVED 5/23/94 MM

5) COUNTING/MEASUREMENT LAB

6) DATA REVIEWED AND ANALYTICAL PREP STORED

9613495.2407

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS tritium MATRIX water DUE DATE _____

W0040

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L N/A	-1B	WHC	QC BATCH REAGENT BLANK
L 04432	-1X		QC BATCH MATRIX BLANK
L 04432	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE 31.037 ± .295 # 2877
L 04432	-2M or 2S (circle) 1S		QC BATCH MATRIX/REAGENT SPIKE EQMJ103/30.144 ± .3069
F 04443201	-		Duplicate of Sample # 40443201
40443201	- 05		
40445701	- 04		
40450001	-		
	-		L044321n → L044323n
	-		
	-		
	-	BAB	
	-		5-26-94
	-		
	-		
	-		
	-		

Batched and QC updated by BAB on 5-26-94 Rec'd in C.R. by SK on 5-26-94

Rec'd in Prep Lab by N/A on N/A Data Reviewed and anal. Prep stored SR on 5/30/94

Rec'd in Sep Lab by _____ on _____

Rec'd in Sep lab by _____ on _____ Samples Disposed by _____ on _____

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

9613495.2408

*** TRITIUM ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP WD040

MATRIX : WATER

BATCH NUMBER 4-432

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L044321N L044322N L044323N				
1)	40443201 E044320L		WHC	BOBP10	
2)	40443202		WHC	BOBP00	
3)	40443203		WHC	BOBNY4	
4)	40443204		WHC	BOBP02	
5)	40443205 L044321 X L044321 m L044321 S		WHC 31.037 I.295 #2877 EQMJ103	BOBP26	

RR.5/20/94

S (Initial & Date)

) INITIATED RB 4/25/94

) PREP LAB RECEIVED BAB 5-23-94

) SAMPLE REMAINDER STORED N/A

) SEPARATION LAB RECEIVED N/A

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2409

*** TRITIUM ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1994
Page 1

CUSTOMER: WHC SAF

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER 94-129

BATCH NUMBER 4-457

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	B0BP04	
2)	40445702		WHC	B0BNZ6	
3)	40445703		WHC	B0BNZ8	
4)	40445704		WHC	B0BNZ0	

ACTIONS (Initial & Date)

) INITIATED JH 4/26/94

) PREP LAB RECEIVED BAB 5-23-94

) SAMPLE REMAINDER STORED N/A

) SEPARATION LAB RECEIVED N/A

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2410

*** TRITIUM ***

Due 6-1-94

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

28-Apr-1994
Page 1

CUSTOMER: WHC

SAF 94-129

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-500

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40450001		WHC	BOBNY8	

ACTIONS (Initial & Date)

INITIATED JH 4/28/94

PREP LAB RECEIVED BAB 5-23-94

SAMPLE REMAINDER STORED N/A

SEPARATION LAB RECEIVED N/A

5) COUNTING/MEASUREMENT LAB

6) DATA REVIEWED AND ANALYTICAL PREP STORED

9613495.2411

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS ALPHA MATRIX WATER DUE DATE 6-1-94

W0040

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L04432	-1B	WHC	QC BATCH REAGENT BLANK
L	-1X		QC BATCH MATRIX BLANK
L04432	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE EQ8G214 10.0055 .05545
L	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
F04457	-04		Duplicate of Sample # 40445704
404432	-01-5		
404457	-01-04		
~~4045500~~ 404500 R2 1/94	-01		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		

Batched and QC updated by [illegible] on 5-25-94 Rec'd in C.R. by [illegible] on 5-25-94

Rec'd in Prep Lab by [illegible] on 5-26-94 Data Reviewed and anal. Prep stored [illegible] on 5-26-94

Rec'd in Sep Lab by N/A on

Rec'd in Sep lab by N/A on Samples Disposed by on

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

9613495.2412 *** ALPHA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-432

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L0443218 L0443215				
1)	40443201		WHC	B0BP10	
2)	40443202		WHC	B0BP00	
3)	40443203		WHC	B0BNY4	
4)	40443204		WHC	B0BP02	
5)	40443205		WHC	B0BP26	

ACTIONS (Initial & Date)

1) INITIATED RB 4/25/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9615495.2413

*** ALPHA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1
Page 1

CUSTOMER: WHC SAF

MATRIX : WATER 94-129

SAMPLE DELIVERY GROUP WO040

BATCH NUMBER 4-457

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	B0BF04	
2)	40445702		WHC	B0BNZ6	
3)	40445703		WHC	B0BNZ8	
4)	40445704 F0445704		WHC	B0BNZ0	

ACTIONS (Initial & Date)

1) INITIATED JH 4/20/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2414

1. Due 6-1-94

*** ALPHA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

28-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

SAF 94-124

BATCH NUMBER 41-500

ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1) 40450001		WHC	BOBNY8	

ACTIONS (Initial & Date)

1) INITIATED JH 4/28/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2415

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 404432, 404457, 404500

Lab Sample Numbers or SDG: 60040

Method/Test/Parameter: Alpha

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?			✓	✓
2.	Were all sample holding times met?	✓			✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?			✓	✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?			✓	✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	✓			✓
8.	MS/MSD results and yield meet acceptance criteria?			✓	✓
9.	Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. 1.	**Other** Are all nonconformances included and noted?			✓	✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?	✓			✓
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			✓

Comments on any "No" response:

Analyst: [illegible] Date: 5-26-94

Second Level Review: [illegible] Date: 5/31/94

Form No: LS-038, 3/94, Rev 2

9613195.2416

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS BETA MATRIX WATER DUE DATE 6-1-94

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L 04432	-1B	WHC	QC BATCH REAGENT BLANK
L	-1X		QC BATCH MATRIX BLANK
L 04432	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE EQAH 2111 9.9878± .1454
L	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
F 04457 ~~01~~ 5-25-94	-04		Duplicate of Sample # 40445704
404432	-01-05		
404457	-01-04		
404500	-01		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		

Batched and QC updated by [illegible] on 5-25-94 Rec'd in C.R. by [illegible] on 5-25-94

Rec'd in Prep Lab by [illegible] on 5-25-94 Data Reviewed and anal. Prep stored [illegible] on 5-31-94

Rec'd in Sep Lab by N/A on

Rec'd in Sep lab by N/A on Samples Disposed by on

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

9613495.2417

*** BETA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-432

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L0443218 L0443215				
1)	40443201		WHC	BOBP10	
2)	40443202		WHC	BOBP00	
3)	40443203		WHC	BOBNY4	
4)	40443204		WHC	BOBP02	
5)	40443205		WHC	BOBP26	

ACTIONS (Initial & Date)

) INITIATED RB 4/25/94

) PREP LAB RECEIVED _____

) SAMPLE REMAINDER STORED _____

) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9614995.2418

*** BETA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1994
Page 1

CUSTOMER: WHC SAF

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER 94-129

BATCH NUMBER 4-457

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	B0BP04	
2)	40445702		WHC	B0BNZ6	
3)	40445703		WHC	B0BNZ8	
4)	40445704 F04457041		WHC	B0BNZ0	

ACTIONS (Initial & Date)

) INITIATED JH 4/26/94

) PREP LAB RECEIVED _____

) SAMPLE REMAINDER STORED _____

) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2419

Due 6-1-94

*** BETA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

28-Apr-1994
Page 1

CUSTOMER: WHC

SAF 94-124

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-500

ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1) 40450001		WHC	BOBNY8	

ACTIONS (Initial & Date)

INITIATED JH 4/28/94

PREP LAB RECEIVED _____

SAMPLE REMAINDER STORED _____

SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 404432 404457 404500

Lab Sample Numbers or SDG: W0040

Method/Test/Parameter: Beta

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?			✓	✓
2.	Were all sample holding times met?	✓			✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?			✓	✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?			✓	✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	✓			✓
8.	MS/MSD results and yield meet acceptance criteria?			✓	✓
9.	Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. 1.	**Other** Are all nonconformances included and noted?			✓	✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?	✓			
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			✓

Comments on any "No" response:

Analyst: Joel T Kempema Date: 5-31-94

Second Level Review: Chris Davies Date: 6/6/94

Form No: LS-038, 3/94, Rev 2

9613495.2421

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS T Sr MATRIX H_2O DUE DATE 6-1

WC040

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L 04432	-1B	WHC	QC BATCH REAGENT BLANK
L	-1X		QC BATCH MATRIX BLANK
L 04432	-1M or 1S (circle)	EQL 1045	QC BATCH MATRIX/REAGENT SPIKE 13.563 ±.1558
L	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
F F0450001	-		Duplicate of Sample # 40450001
4-432	01 → 05		
4-457	01 → 04		
4-500	01		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		

Batched and QC updated by Syh on 5-18-94 Rec'd in C.R. by OD on 22 May 94

Rec'd in Prep Lab by Syh on 5-19-94 Data Reviewed and anal. Prep stored SFE on 9/23/94.

Rec'd in Sep Lab by ↓ on ↓

Rec'd in Sep lab by Wa on - Samples Disposed by _____ on _____

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-432

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L0443218				ESF7967
	L0443215				EQL1045
1)	40443201		WHC	B0BP10	ESF7968 DD 5/12/94 RY 5/12/95
2)	40443202		WHC	B0BP00	ESF7969 DD 5/12/94 RY 5/12/95
3)	40443203		WHC	B0BNY4	ESF7970 DD 5/12/94 RY 5/12/95
4)	40443204		WHC	B0BP02	ESF7971 DD 5/12/94 RY 5/12/95
5)	40443205		WHC	B0BP26	ESF7972 DD 5/12/94 RY 5/12/95

ACTIONS (Initial & Date)

) INITIATED RB 4/25/94

) PREP LAB RECEIVED _____

) SAMPLE REMAINDER STORED N/A

) SEPARATION LAB RECEIVED 3-B 5-20-94

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2423 *** TOTAL-SR ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1994
Page 1

CUSTOMER: WHC SAF

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER 94-129

BATCH NUMBER 4-457

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	B0BP04	ESF7973
2)	40445702		WHC	B0BNZ6	ESF7974 SD 5/12/04 BY 5/12/05
3)	40445703		WHC	B0BNZ8	ESF7975 SD 5/12/04 BY 5/12/05
4)	40445704		WHC	B0BNZ0	ESF7976 SD 5/12/04 BY 5/12/05

ACTIONS (Initial & Date)

) INITIATED JH 4/26/94

) PREP LAB RECEIVED _____

) SAMPLE REMAINDER STORED _____

) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2424 *** TOTAL-SR ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD 28-Apr-1994

Page 1

CUSTOMER: WHC SAMPLE DELIVERY GROUP W0040

MATRIX : WATER BATCH NUMBER 4-500

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40450001		WHC	BOBNY8	ESF7977
	F0450001				ESF7978 PD 5/12/94 EY 5/12/95

ACTIONS (Initial & Date)

INITIATED JH 4/28/94

PREP LAB RECEIVED _____

SAMPLE REMAINDER STORED _____

SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 404432, 404457, 404500

Lab Sample Numbers or SDG: - W0040

Method/Test/Parameter: SUTOT

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?	X			
2.	Were all sample holding times met?			X	
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?	X			
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	X			
3.	Is the Blank result ≤ the Contract Detection Limit?	X			
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			X	
5.	Is the LCS result within acceptance criteria?	X			
6.	Is the LCS yield within acceptance criteria?	X			
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	X			
8.	MS/MSD results and yield meet acceptance criteria?			X	
9.	Duplicate sample results and yield meet acceptance criteria?	X			
D. 1.	**Other** Are all nonconformances included and noted?	X			
2.	Are all required forms filled out?	X			
3.	Correct methodology used?	X			
4.	Transcription checked?	X			
5.	Were all calculations checked at a minimum frequency?	X			
6.	Units checked?	X			

Comments on any "No" response:

Analyst: [signature] Date: 5/23/91

Second Level Review: [signature] Date: 5/24/91

Form No: LS-038, 3/94, Rev 2

9613495 2426

W0040

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS C-14 MATRIX WATER DUE DATE 6-1-94

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L 04432	-1B-1N-2N	WHC	QC BATCH REAGENT BLANK
L	-1X		QC BATCH MATRIX BLANK
L 04432	-1M or 1S (circle)	IQFL 024	QC BATCH MATRIX/REAGENT SPIKE 20.401 ± .7407 DPM
L	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
F 0443203	-		Duplicate of Sample #
4-432	- 1-5		
4-457	- 1-4		
4-500	- 1		
	-		
4-430	- 1		SDG 43. See NCM
	-		in W0043
	-		
	-		
	-		
	-		
	-		
	-		

Batched and QC updated by DM on 5-26-94 Rec'd in C.R. by SK on 5-27-94

Rec'd in Prep Lab by N/A on _____ Data Reviewed and anal. Prep stored GB on 6/2/94

Rec'd in Sep Lab by DM on 5-10-94

Rec'd in Sep lab by N/A on _____ Samples Disposed by _____ on _____

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

9613495.2427 *** C-14 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-432

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L0443218-TN-2W				
	L0443215				
1)	40443201		WHC	B0BP10	
2)	40443202		WHC	B0BP00	
3)	40443203		WHC	B0BNY4	
	F0443203				
4)	40443204		WHC	B0BP02	
5)	40443205		WHC	B0BP26	

ACTIONS (Initial & Date)

1) INITIATED RB 4/25/94

2) PREP LAB RECEIVED N/A

3) SAMPLE REMAINDER STORED 5-12-94 DW

4) SEPARATION LAB RECEIVED 5-10-94 DM

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2428 *** C-14 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1994
Page 1

CUSTOMER: WHC SAF 94-129 SAMPLE DELIVERY GROUP W0040

MATRIX : WATER BATCH NUMBER 4-457

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	B0BF04	
2)	40445702		WHC	B0BNZ6	
3)	40445703		WHC	B0BNZ8	
4)	40445704		WHC	B0BNZ0	

ACTIONS (Initial & Date)

1) INITIATED JH 4/26/94

2) PREP LAB RECEIVED N/A

3) SAMPLE REMAINDER STORED 5-12-94 DM

4) SEPARATION LAB RECEIVED 5/10/94 DM

5) COUNTING/MEASUREMENT LAB

6) DATA REVIEWED AND ANALYTICAL PREP STORED

Dul 6-1-94

9613495.2429 *** C-14 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD 28-Apr-1994

CUSTOMER: WHC SAF 94-129 SAMPLE DELIVERY GROUP W0040

MATRIX : WATER BATCH NUMBER 4-500

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40450001		WHC	BOBNY8	

ACTIONS (Initial & Date)

1) INITIATED JH 4/28/94

2) PREP LAB RECEIVED N/A

3) SAMPLE REMAINDER STORED 5-12-94 DM

4) SEPARATION LAB RECEIVED 5-10-94 DM

5) COUNTING/MEASUREMENT LAB _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2430

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 404432 404457 404500 + 404430

Lab Sample Numbers or SDG: W0040

Method/Test/Parameter: C14

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			X	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?			X	✓
2.	Were all sample holding times met?			X	✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?			X	✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	X			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	X			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			X	✓
5.	Is the LCS result within acceptance criteria?	X			✓
6.	Is the LCS yield within acceptance criteria?	X			✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	X			✓
8.	MS/MSD results and yield meet acceptance criteria?			X	✓
9.	Duplicate sample results and yield meet acceptance criteria?	X			✓
D. 1.	**Other** Are all nonconformances included and noted?	X			✓
2.	Are all required forms filled out?	X			✓
3.	Correct methodology used?	X			✓
4.	Transcription checked?	JM			✓
5.	Were all calculations checked at a minimum frequency?	X			✓
6.	Units checked?	X			✓

Comments on any "No" response:

Analyst: [signature] Date: 6/2/94

Second Level Review: Suzy Davios Date: 6/6/94

Form No: LS-038, 3/94, Rev 2

9612495 2431

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS Tc. 99 MATRIX water DUE DATE 6/01/94

W0040

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L 04500	-1B	WHC	QC BATCH REAGENT BLANK
L 04500	-1X		QC BATCH MATRIX BLANK
L 04500 W04445704	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE
L W0443201	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
F 0443203	-		Duplicate of Sample # 40443203
40450001	- 01		L04500 1N L04500 2N instrument
40443201	- 05		L04500 3N L0450004N Beaks
40445701	- 04		
	-		
	-		
	-		
L045001m	- EQnI229		302.27 ± 3.7104 DPM 270.5135 ± 3.3427 PCi/L
W0445704	- EQnI227		30[illegible] ± 3.70[illegible] 270.3514 ± 3.3406
W0443201	- EQnI228		30[illegible] ± 3.70[illegible] 270.3784 ± 3.341
	-		
	-		
	-		

Batched and QC updated by MM on 6/03/94 Rec'd in C.R. by RH on 6/3/94

Rec'd in Prep Lab by MM on 5/23/94 Data Reviewed and anal. Prep stored GR on 6/6/94

Rec'd in Sep Lab by MM on 5/23/94

Rec'd in Sep lab by NA on NA Samples Disposed by _____ on _____

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

9613495.2432 *** TC-99 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP WO040

MATRIX : WATER

BATCH NUMBER 4-432

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40443201		WHC	B0BP10	
2)	40443202		WHC	B0BP00	
3)	40443203		WHC	B0BNY4	
4)	40443204		WHC	B0BP02	
5)	40443205		WHC	B0BP26	

ACTIONS (Initial & Date)

1) INITIATED DG 4/25/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

9613495.2457 *** TC-99 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1994
Page 1

CUSTOMER: WHC SAF

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER 94-129

BATCH NUMBER 4-457

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	B0BP04	
2)	40445702		WHC	B0BNZ6	
3)	40445703		WHC	B0BNZ8	
4)	40445704		WHC	B0BNZ0	

ACTIONS (Initial & Date)

1) INITIATED JH 4/26/94

2) PREP LAB RECEIVED _____

3) SAMPLE REMAINDER STORED _____

4) SEPARATION LAB RECEIVED _____

5) COUNTING/MEASUREMENT LAB_____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

Due 6-1-94

9613495.2454 *** TC-99 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

28-Apr-1994
Page 1

CUSTOMER: WHC

SAF 94-129

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-500

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40450001		WHC	BOBNY8	

ACTIONS (Initial & Date)

1) INITIATED JH 4/28/94

2) PREP LAB RECEIVED 5/23/94 MM

3) SAMPLE REMAINDER STORED 5/24/94 MM

4) SEPARATION LAB RECEIVED 5/23/94 MM

5) COUNTING/MEASUREMENT LAB

6) DATA REVIEWED AND ANALYTICAL PREP STORED

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 404500, 404432, 404457

Lab Sample Numbers or SDG: W0040

Method/Test/Parameter: Tc-99

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			X	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?	X			✓
2.	Were all sample holding times met?			✓	✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?	X			✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	X			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	X			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	✓
5.	Is the LCS result within acceptance criteria?	X			✓
6.	Is the LCS yield within acceptance criteria?	X			✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	X			✓
8.	MS/MSD results and yield meet acceptance criteria?	X			✓
9.	Duplicate sample results and yield meet acceptance criteria?	X			✓
D. 1.	**Other** Are all nonconformances included and noted?	X			✓
2.	Are all required forms filled out?	X			✓
3.	Correct methodology used?	X			✓
4.	Transcription checked?	Jm			✓
5.	Were all calculations checked at a minimum frequency?	X			✓
6.	Units checked?	X			✓

Comments on any "No" response:

Analyst: [signature] Date: 6/6/94

Second Level Review: [signature] Date: 6/7/94

Form No: LS-038, 3/94, Rev 2

9613495.2436

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS tritium MATRIX water DUE DATE _____

W0040

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
L N/A	-1B	WHC	QC BATCH REAGENT BLANK
L 04432	-1X		QC BATCH MATRIX BLANK
L 04432	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE 31.037 ± .295 # 2877
L 04432	-2M or 2S (circle) 1S		QC BATCH MATRIX/REAGENT SPIKE EQMJ103/30.144 ± .3069
F 0443201	-		Duplicate of Sample # 40443201
40443201	- 05		
40445701	- 04		
40450001	-		
	-		L044321n → L044323n
	-		
	-		
	-	BAB	
	-		5-26-94
	-		
	-		
	-		
	-		

Batched and QC updated by BAB on 5-26-94 Rec'd in C.R. by SK on 5-26-94

Rec'd in Prep Lab by N/A on N/A Data Reviewed and anal. Prep stored SR on 5/30/94

Rec'd in Sep Lab by _____ on _____

Rec'd in Sep lab by _____ on _____ Samples Disposed by _____ on _____

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/94, Rev. 4

9613495.2037 *** TRITIUM ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

25-Apr-1994
Page 1

CUSTOMER: WHC

SAMPLE DELIVERY GROUP WD040

MATRIX : WATER

BATCH NUMBER 4-432

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L044321N L044322N L044323N				
1)	40443201		WHC	BOBP10	
	E044320L				
2)	40443202		WHC	BOBP00	
3)	40443203		WHC	BOBNY4	
4)	40443204		WHC	BOBP02	
5)	40443205		WHC	BOBP26	
	L044321 X L044321 m L044321 S		31.0371.295 #2877 EQMJ103		

PR.5/20/94

3 (Initial & Date)

INITIATED RB 4/25/94

PREP LAB RECEIVED BAB 5-23-94

SAMPLE REMAINDER STORED N/A

SEPARATION LAB RECEIVED N/A

5) COUNTING/MEASUREMENT LAB

6) DATA REVIEWED AND ANALYTICAL PREP STORED

9613495.2438 *** TRITIUM ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Apr-1994
Page 1

CUSTOMER: WHC SAF

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER 94-129

BATCH NUMBER 4-457

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40445701		WHC	B0BP04	
2)	40445702		WHC	B0BNZ6	
3)	40445703		WHC	B0BNZ8	
4)	40445704		WHC	B0BNZ0	

ACTIONS (Initial & Date)

INITIATED JH 4/26/94

PREP LAB RECEIVED BAB 5-23-94

SAMPLE REMAINDER STORED N/A

SEPARATION LAB RECEIVED N/A

5) COUNTING/MEASUREMENT LAB

6) DATA REVIEWED AND ANALYTICAL PREP STORED

9413495.2139 *** TRITIUM ***

Due 6-1-94

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

28-Apr-1994
Page 1

CUSTOMER: WHC

SAF 94-129

SAMPLE DELIVERY GROUP W0040

MATRIX : WATER

BATCH NUMBER 4-500

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	40450001		WHC	BOBNY8	

ACTIONS (Initial & Date)

INITIATED JH 4/28/94

PREP LAB RECEIVED BAB 5-23-94

SAMPLE REMAINDER STORED N/A

SEPARATION LAB RECEIVED N/A

5) COUNTING/MEASUREMENT LAB

6) DATA REVIEWED AND ANALYTICAL PREP STORED

9613495.2440

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 404432 404457 404500

Lab Sample Numbers or SDG: W0040

Method/Test/Parameter: H3

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?			✓	✓
2.	Were all sample holding times met?			✓	✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?			✓	✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?	✓			✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	✓			✓
8.	MS/MSD results and yield meet acceptance criteria?			✓	✓
9.	Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. 1.	**Other** Are all nonconformances included and noted?	✓			✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?	JM			✓
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			

Comments on any "No" response:

Analyst: [signature] Date: 5/30/94

Second Level Review: Suzy Davies Date: 6/6/94

Form No: LS-038, 3/94, Rev 2

9613495.2441

RECORD COPY

Date: September 19, 1994
To: Westinghouse Hanford Company (technical representative)
From: A.T. Kearney, Inc.
Subject: Inorganics - Data Package No. W0040-ITC-046 (SDG No. W0040)

INTRODUCTION

This memo presents the results of data validation on Data Package No. W0040-ITC-046 prepared by the International Technology Corporation (ITC) laboratory. A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analysis
B0BNY4	04/21/94	Water	D	See Note 1
B0BNY5	04/21/94	Water (Filtered)	D	See Note 2
B0BNY8	04/25/94	Water	D	See Note 1
B0BNY9	04/25/94	Water (Filtered)	D	See Note 2
B0BNZ0	04/22/94	Water	D	See Note 1
B0BNZ1	04/22/94	Water (Filtered)	D	See Note 2
B0BNZ6	04/22/94	Water	D	See Note 1
B0BNZ7	04/22/94	Water (Filtered)	D	See Note 2
B0BNZ8	04/22/94	Water	D	See Note 1
B0BNZ9	04/22/94	Water (Filtered)	D	See Note 2
B0BP00	04/21/94	Water	D	See Note 1
B0BP01	04/21/94	Water (Filtered)	D	See Note 2
B0BP02	04/21/94	Water	D	See Note 1
B0BP03	04/21/94	Water (Filtered)	D	See Note 2
B0BP04	04/22/94	Water	D	See Note 1
B0BP05	04/22/94	Water (Filtered)	D	See Note 2
B0BP10	04/21/94	Water	D	See Note 1
B0BP11	04/21/94	Water (Filtered)	D	See Note 2
B0BP26	04/21/94	Water	D	See Note 1
B0BP27	04/21/94	Water (Filtered)	D	See Note 2

Note 1. Requested Method: CLP-ICP Metals/AA Metals: Hg (unfiltered)
Note 2. Requested Method: CLP-ICP Metals/AA Metals: Hg (filtered)

Data validation was conducted in accordance with the WHC statement of work (WHC 1994) and validation procedures (WHC 1993). Appendices 1 through 5 provide the following information as indicated below:

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

DATA QUALITY OBJECTIVES

- **Holding Times**

  Analytical holding times for ICP metals, GFAA metals and CVAA mercury analyses were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: samples must be analyzed within 28 days for mercury, and within six months for all other metals.

  All holding time requirements for all analytes in the data package were met.

- **Blanks**

  Positive Blanks

  In the case of positive blank results, samples with digestate concentrations (in ug/L) of less than five times (<5x) the highest amount found in any of the associated blanks have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times (>5x) the highest amount found in any of the associated blanks do not require qualification.

  Due to the presence of laboratory blank contamination, sample numbers B0BNY4 and B0BP02 in SDG No. W0040 were flagged "U" for aluminum.

  Due to the presence of laboratory blank contamination, sample numbers B0BNY4, B0BNZ0, B0BNZ6, B0BNZ8, B0BNZ9, B0BP00, B0BP01, B0BP02, B0BP03, B0BP04 and B0BP11 in SDG No. W0040 were flagged "U" for iron.

  Due to the presence of laboratory blank contamination, sample numbers B0BNZ0, B0BNZ1, B0BNZ6, B0BNZ7, B0BNZ9, B0BP04 and B0BP05 in SDG No. W0040 were flagged "U" for potassium.

Due to the presence of laboratory blank contamination, sample numbers B0BNZ0, B0BNZ7, B0BNZ9, B0BP04 and B0BP05 in SDG No. W0040 were flagged "U" for zinc.

Negative Blanks

In the case of negative blank results, if the absolute value of any calibration blank exceeds the Instrument Detection Limit (IDL), all non-detects are qualified as estimates and flagged "J", and all positive results within two times the absolute value of the blank result are qualified as estimates and flagged "J". In the case of preparation blanks, if the absolute value exceeds the Contract Required Detection Limit (CRDL), all non-detects are rejected and flagged "R" and all detects that are less than ten times the absolute value of the preparation blank result are qualified as estimates and flagged "J".

Due to the presence of negative laboratory contamination, sample number B0BP10 in SDG No. W0040 was flagged "UJ" for arsenic.

Due to the presence of negative laboratory contamination, sample number B0BP26 in SDG No. W0040 was flagged "BJ" for iron.

All other laboratory blank results were acceptable.

- **Accuracy**

Matrix Spike

Matrix spike analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike recoveries must generally fall within the range of 75 to 125 percent. Samples with a spike recovery of less than 30% and a sample value below the IDL were rejected and flagged "R". All other samples with a spike recovery outside the QC limits are qualified as estimates and flagged "J".

All matrix spike recovery results were acceptable.

Laboratory Control Sample Recovery

The LCS monitors the overall performance of the analysis, including the sample preparation. An LCS should be digested or distilled and analyzed with every group of samples which have been prepared together. The performance criteria for solid LCS samples are established through interlaboratory studies coordinated by a certifying agency (e.g., EPA or an independent commercial supplier).

One liquid LCS was digested and analyzed for each of the cases in this report that contained water samples. The results were compared against the control limit of 80-120% as required by the EPA CLP SOW 3/90 protocol and found to be acceptable.

All LCS results were found to be acceptable.

- **Precision**

Laboratory Duplicate Samples

The laboratory duplicate result measures the precision of the method by measuring a second aliquot of the sample that is treated the same way as the original. Samples whose precision fell outside the quality control requirements were flagged as estimates "J".

All laboratory duplicate recovery results were acceptable.

ICP Serial Dilution

The ICP serial dilution is used to determine whether significant physical or chemical interferences exist due to sample matrix. If sample concentration is $\geq$50 times the IDL for an analyte and the %D is outside the control limits the associated data must be qualified as estimates "J".

All ICP serial dilution results were acceptable.

Field Split Samples

Two sets of field split samples were submitted to IT as shown below.

Sample No.	Duplicate Sample No.	Well Location
B0BP06	B0BP26	1-B4-4
B0BP07	B0BP27	1-B4-4

The split sample results were compared using the sample guidelines for determining the RPD between a sample and its duplicate. All results fell within the required control limit. All results for both well locations appear in the summary tables within this report.

- **Total and Dissolved Sample Analysis**

Inorganics parameters included the analysis of the total as well as dissolved samples. Total samples include particulate and dissolved fractions while dissolved samples are first filtered prior to preparation. The purpose of the analysis is to determine what metals are inherent in the particulate matter found in the aqueous sample.

Since Westinghouse Validation Guidelines do not address this issue, the total and dissolved samples are presented in the report, but no judgement on the data was made.

Below is a table of the total and filtered samples which were validated.

Total	Filtered
B0BNY4	B0BNY5
B0BNY8	B0BNY9
B0BNZ0	B0BNZ1
B0BNZ6	B0BNZ7
B0BNZ8	B0BNZ9
B0BP00	B0BP01
B0BP02	B0BP03
B0BP04	B0BP05
B0BP10	B0BP11
B0BP26	B0BP27

- **Furnace AA Quality Control**

The post-digestion analytical spike is analyzed to determine the extent of interference in the digestate matrix. When the results of the analytical spike analyses exceeds the control window of 85 to 115 percent recovery and the absorbance of the sample is greater than fifty percent of the analytical spike absorbance, then the sample must be reanalyzed using the MSA. The duplicate injections and the analytical spike recoveries establish the precision and accuracy of the individual GFAA determinations.

Duplicate Injections

Each furnace analysis requires a minimum of two injections (burns), except for full MSA. For concentrations greater than CRDL, the duplicate injection readings must agree within 20% RSD or CV. If these requirements are not met, the analytical sample must be rerun once (i.e., two additional burns). If the readings

are then still outside the QC limits, the result is qualified as an estimate and flagged "J".

All duplicate injection quality control requirements were met.

Analytical Spike Recoveries

For all samples whose analytical spike results are outside the 85 to 115 percent control limit, but whose absorbances are less than 50 percent of the analytical spike absorbance, the samples were flagged as estimates "J". In cases where the analytical spike recovery was 0.0 percent, the results were rejected and flagged "R".

The analytical spike recovery fell outside the established QC limits and the associated result was flagged "BJ" for arsenic in the sample numbers B0BNY9, B0BP02 and B0BP03 in SDG No. W0040.

The analytical spike recovery fell outside the established QC limits and the associated result was flagged "UJ" for lead in the sample numbers B0BNY4, B0BNY8, B0BNY9, B0BP00, B0BP02 and B0BP10 in SDG No. W0040.

The analytical spike recovery fell outside the established QC limits and the associated result was flagged "BJ" for selenium in the sample numbers B0BNY8, B0BNY9, B0BNZ0, B0BNZ1 and B0BNZ7 in SDG No. W0040.

The analytical spike recovery fell outside the established QC limits and the associated result was flagged "UJ" for selenium in the sample numbers B0BNZ8, B0BP01, B0BP05, B0BP10 and B0BP11 in SDG No. W0040.

The MSA correlation coefficient was less than 0.995 for selenium in sample number B0BNZ6 in SDG No. W0040. The associated sample result was qualified as an estimate and flagged "J".

All other analytical spike recovery results were acceptable.

- **Sample Result Verification and Detection Limits**

Sample results and reported detection limits were recalculated to ensure that the reported results were accurate. Raw data were examined for anomalies, transcription errors, and reduction errors.

The reviewer verified that the results and detection limits fell within the linear range of the instrument. All sample results and reported detection limits were acceptable.

- **Completeness**

  Data Package No. W0040-ITC-046 (SDG No. W0040) was submitted for validation and verified for completeness.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Positive and negative blank contamination were noted in several samples. Associated sample results were flagged accordingly. Contamination, however, was not sufficiently high to affect the usability of the data. All results were flagged accordingly. Data flagged "J" are usable for limited purposes only. Except as noted in the preceding sections, all other validated data are usable for all purposes.

REFERENCES

EPA, 1987, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, Environmental Protection Agency, Washington, D.C.

EPA, 1988c, *EPA Contract Laboratory Program Statement of Work for Inorganics Analyses, Multi-Media, Multi-Concentration*, U.S. Environmental Protection Agency, Washington, D.C.

EPA, 1988d, *Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses*, U.S. Environmental Protection Agency, Washington, D.C.

EPA, 1990, *EPA Contract Laboratory Program Statement of Work for Inorganic Analyses, Multi-media, Multi-Concentration*, U.S. Environmental Protection Agency, Washington, D.C.

WHC, 1992a, *Data Validation Procedures for Chemical Analyses*, WHC-SD-EN-SPP-002, Rev. 2, Westinghouse Hanford Company, October 1993.

9613495.2448

Appendix 1

Glossary of Data Reporting Qualifiers

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

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. The associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified QC deficiency.

JN - Indicates a tentatively identified compound (TIC) that has been determined to be valid in terms of identification and quantitation.

UJN - Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected (U) due to associated blank contamination.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

9613495.2450

Appendix 2

Summary of Data Qualification

DATA QUALIFICATION SUMMARY

SDG: W0040	REVIEWER: RJS	DATE: 7/19/94	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Aluminum	U	B0BNY4, B0BP02	Lab Blank Contamination
Iron	U	B0BNY4, B0BP00, B0BP01, B0BP02, B0BP03, B0BP11	Lab Blank Contamination
Arsenic	UJ	B0BP10	Negative Lab Blank Contamination
Iron	BJ	B0BP26	Negative Lab Blank Contamination
Arsenic	BJ	B0BP02, B0BP03	GFAA Analytical Spike
Lead	UJ	B0BNY4, B0BP00, B0BP02, B0BP10	GFAA Analytical Spike
Selenium	UJ	B0BP01, B0BP10, B0BP11	GFAA Analytical Spike

9613195.2452

DATA QUALIFICATION SUMMARY

SDG: W0040	REVIEWER: RJS	DATE: 7/20/94	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Iron	U	B0BNZ0, B0BNZ6, B0BNZ8, B0BNZ9, B0BP04	Lab Blank Contamination
Potassium	U	B0BNZ0, B0BNZ1, B0BNZ6, B0BNZ7, B0BNZ9, B0BP04, B0BP05	Lab Blank Contamination
Zinc	U	B0BNZ0, B0BNZ7, B0BNZ9, B0BP04, B0BP05	Lab Blank Contamination
Selenium	UJ	B0BNZ8, B0BP05	GFAA Analytical Spike
Selenium	BJ	B0BNZ0, B0BNZ1, B0BNZ7	GFAA Analytical Spike
Selenium	BJ	B0BNZ6	MSA

9613495.2453

DATA QUALIFICATION SUMMARY

SDG: W0040	REVIEWER: RJS	DATE: 7/20/94	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Arsenic	BJ	B0BNY9	GFAA Analytical Spike
Lead	UJ	B0BNY8, B0BNY9	GFAA Analytical Spike
Selenium	BJ	B0BNY8, B0BNY9	GFAA Analytical Spike

9613495.2454

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: IT																					
Case	SDG: W0040																				
Sample Number		B0BNY4		B0BNY5		B0BP00		B0BP01		B0BP02		B0BP03		B0BP10		B0BP11		B0BP26		B0BP27	
Location		1-B4-4		1-B4-4		1-B9-1		1-B9-1		1-B9-2		1-B9-2		6-65-83		6-65-83		1-B4-4		1-B4-4	
Remarks				FIL				FIL				FIL				FIL		SPLIT		FIL,SPLIT	
Sample Date		04/21/94		04/21/94		04/21/94		04/21/94		04/21/94		04/21/94		04/21/94		04/21/94		04/21/94		04/21/94	
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	43.9	U	40.0	U	40.0	U	40.0	U	48.0	U	40.0	U	40.0	U	40.0	U	40.0	U	40.0	U
Antimony	60	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Arsenic	10	2.1	B	2.0	U	4.0	B	2.4	B	3.7	BJ	2.7	BJ	2.0	UJ	2.0	U	2.0	U	4.1	B
Barium	200	23.5	B	27.8	B	10.7	B	11.0	B	16.1	B	17.9	B	7.6	B	10.1	B	23.9	B	22.8	B
Beryllium	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Cadmium	5	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Calcium	5000	50600		60500		41300		44300		54000		58000		28200		35500		51200		49700	
Chromium	10	14.3		13.2		19.8		16.5		25.0		19.0		21.5		25.6		12.1		10.6	
Cobalt	50	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U
Copper	25	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	22.0	B
Iron	100	11.6	U	10.0	U	51.8	U	14.1	U	41.2	U	12.9	U	114		12.1	U	20.4	BJ	10.0	U
Lead	3	2.0	UJ	2.0	U	2.0	UJ	2.0	U	2.0	UJ	2.0	U	2.0	UJ	2.0	U	2.0	U	2.0	U
Magnesium	5000	7710		9250		8940		9630		12300		13100		8400		10700		8310		7550	
Manganese	15	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Mercury	0.2	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U
Nickel	40	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U
Potassium	5000	4130	B	5190		5290		5580		5890		6010		5330		6940		4850	B	4070	B
Selenium	5	2.1	B	2.6	B	2.6	B	2.0	UJ	2.5	B	2.6	B	2.0	UJ	2.0	UJ	2.5	B	2.4	B
Silver	10	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Sodium	5000	10800		13200		11300		12400		12100		12900		12600		16100		11700		10700	
Thallium	10	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Vanadium	50	10.0	U	10.0	U	10.0	U	10.3	B	10.0	U	10.0	U	20.5	B	25.6	B	10.0	U	10.0	U
Zinc	20	5.0	U	17.0	B	5.0	U	5.5	B	5.0	U	5.0	U	7.6	B	5.3	B	5.0	U	8.1	B
Cyanide	10	NA		N/A		NA		N/A		NA		N/A		NA		N/A		NA		N/A	

FIL = Filtered, NA = Not Analyzed, N/A = Not Applicable

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: IT																					
Case	SDG: W0040																				
Sample Number		B0BNZ0		B0BNZ1		B0BNZ6		B0BNZ7		B0BNZ8		B0BNZ9		B0BP04		B0BP05					
Location		1-B4-8		1-B4-8		1-B5-2		1-B5-2		1-B8-6		1-B8-6		1-B9-3		1-B9-3					
Remarks				FIL				FIL				FIL				FIL					
Sample Date		04/22/94		04/22/94		04/22/94		04/22/94		04/22/94		04/22/94		04/22/94		04/22/94					
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	45.0	B	40.0	U	40.0	U	40.0	U	40.0	U	40.0	U	40.0	U	40.0	U				
Antimony	60	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U				
Arsenic	10	2.8	B	2.6	B	5.1	B	2.7	B	2.9	B	2.6	B	3.3	B	3.1	B				
Barium	200	22.7	B	24.3	B	32.1	B	28.2	B	13.1	B	13.7	B	12.0	B	12.6	B				
Beryllium	5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U				
Cadmium	5	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U				
Calcium	5000	47500		50300		52700		47600		30500		33300		37700		42900					
Chromium	10	13.8		10.0	U	14.9		10.9		18.8		16.0		16.0		15.3					
Cobalt	50	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U				
Copper	25	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.2	B	10.0	U	10.0	U				
Iron	100	35.4	U	10.0	U	22.8	U	10.0	U	25.4	U	14.1	U	27.5	U	63.2	B				
Lead	3	2.0	U	2.0	U	2.0	U	4.0		2.0	U	2.0	U	2.0	U	2.0	U				
Magnesium	5000	7680		8180		6730		6120		7850		8590		8790		10100					
Manganese	15	2.4	B	2.0	U	2.2	B	2.0	U	2.0	U	2.0	U	2.0	U	2.4	B				
Mercury	0.2	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U				
Nickel	40	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U				
Potassium	5000	5950	U	5530	U	5710	U	4850	U	5840	U	5930	U	5600	U	6210	U				
Selenium	5	3.0	BJ	2.6	BJ	3.7	BJ	3.2	BJ	2.0	UJ	2.6	B	2.8	B	2.0	UJ				
Silver	10	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.9	B				
Sodium	5000	10400		11000		11000		9960		8510		9390		9610		11000					
Thallium	10	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U				
Vanadium	50	10.0	U	10.0	U	10.0	U	10.0	U	12.5	B	10.9	B	10.1	B	13.1	B				
Zinc	20	14.6	U	5.0	U	5.0	U	5.5	U	5.0	U	6.0	U	5.7	U	8.4	U				
Cyanide	10	NA		N/A		NA		N/A		NA		N/A		NA		N/A					

FIL = Filtered, NA = Not Analyzed, N/A = Not Applicable

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																							
Laboratory: IT																							
Case	SDG: W0040																						
Sample Number		B0BNY8		B0BNY9																			
Location		1-B4-7		1-B4-7																			
Remarks				FIL																			
Sample Date		04/25/94		04/25/94																			
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	65.5	B	46.9	B																		
Antimony	60	50.0	U	50.0	U																		
Arsenic	10	2.4	B	2.8	BJ																		
Barium	200	20.0	B	17.7	B																		
Beryllium	5	1.0	U	1.0	U																		
Cadmium	5	5.0	U	5.0	U																		
Calcium	5000	51900		44100																			
Chromium	10	19.8		13.1																			
Cobalt	50	10.0	U	10.0	U																		
Copper	25	10.0	U	10.0	U																		
Iron	100	49.6	B	46.6	B																		
Lead	3	2.0	UJ	2.0	UJ																		
Magnesium	5000	8170		6970																			
Manganese	15	2.0	U	2.0	U																		
Mercury	0.2	0.20	U	0.20	U																		
Nickel	40	20.0	U	20.0	U																		
Potassium	5000	5090		4060	B																		
Selenium	5	2.4	BJ	2.8	BJ																		
Silver	10	5.0	U	5.0	U																		
Sodium	5000	12000		10400																			
Thallium	10	2.0	U	2.0	U																		
Vanadium	50	10.0	U	10.0	U																		
Zinc	20	5.0	U	6.6	B																		
Cyanide	10	NA		N/A																			

FIL = Filtered, NA = Not Analyzed, N/A = Not Applicable

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNZ0

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE
Lab Code: ITSTU_ Case No.: WO437 SAS No.: _____ SDG No.: W0040_
Matrix (soil/water): WATER Lab Sample ID: AA7557
Level (low/med): LOW__ Date Received: 04/27/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum_	45.0	B		P_	
7440-36-0	Antimony_	50.0	U		P_	
7440-38-2	Arsenic__	2.8	B		F_	
7440-39-3	Barium__	22.7	B		P_	
7440-41-7	Beryllium	1.0	U		P_	
7440-43-9	Cadmium__	5.0	U		P_	
7440-70-2	Calcium__	47500			P_	
7440-47-3	Chromium_	13.8			P_	
7440-48-4	Cobalt___	10.0	U		P_	
7440-50-8	Copper___	10.0	U		P_	
7439-89-6	Iron_____	35.4	~~B~~		P_	u
7439-92-1	Lead_____	2.0	U		F_	
7439-95-4	Magnesium	7680			P_	
7439-96-5	Manganese	2.4	B		P_	
7439-97-6	Mercury__	0.20	U		CV	
7440-02-0	Nickel___	20.0	U		P_	
7440-09-7	Potassium	5950	/		P_	u
7782-49-2	Selenium_	3.0	~~B~~	~~W~~	F_	~~B~~ BJ
7440-22-4	Silver___	5.0	U		P_	
7440-23-5	Sodium___	10400			P_	
7440-28-0	Thallium_	2.0	U		F_	
7440-62-2	Vanadium_	10.0	U		P_	
7440-66-6	Zinc_____	14.6	~~B~~		P_	u

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A__
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNZ1

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE

Lab Code: ITSTU_ Case No.: WO437 SAS No.: _____ SDG No.: W0040_

Matrix (soil/water): WATER Lab Sample ID: AA7567

Level (low/med): LOW__ Date Received: 04/27/94

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.0	U		P_
7440-36-0	Antimony_	50.0	U		P_
7440-38-2	Arsenic__	2.6	B		F_
7440-39-3	Barium__	24.3	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	5.0	U		P_
7440-70-2	Calcium__	50300			P_
7440-47-3	Chromium_	10.0	U		P_
7440-48-4	Cobalt___	10.0	U		P_
7440-50-8	Copper___	10.0	U		P_
7439-89-6	Iron____	10.0	U		P_
7439-92-1	Lead____	2.0	U		F_
7439-95-4	Magnesium	8180			P_
7439-96-5	Manganese	2.0	U		P_
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P_
7440-09-7	Potassium	5530			P_
7782-49-2	Selenium_	2.6	~~B~~ U	~~N~~ ~~J~~ BJ	F_
7440-22-4	Silver___	5.0	U		P_
7440-23-5	Sodium___	11000			P_
7440-28-0	Thallium_	2.0	U		F_
7440-62-2	Vanadium_	10.0	U		P_
7440-66-6	Zinc____	5.0	U		P_

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Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: ___

Comments:

DISSOLVED.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNZ6

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE
Lab Code: ITSTU Case No.: W0437 SAS No.: SDG No.: W0040
Matrix (soil/water): WATER Lab Sample ID: AA7553
Level (low/med): LOW Date Received: 04/27/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	40.0	U		P	
7440-36-0	Antimony	50.0	U		P	
7440-38-2	Arsenic	5.1	B		F	
7440-39-3	Barium	32.1	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	52700			P	
7440-47-3	Chromium	14.9			P	
7440-48-4	Cobalt	10.0	U		P	
7440-50-8	Copper	10.0	U		P	
7439-89-6	Iron	22.8	~~B~~		P	U
7439-92-1	Lead	2.0	U		F	
7439-95-4	Magnesium	6730			P	
7439-96-5	Manganese	2.2	B		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	20.0	U		P	
7440-09-7	Potassium	5710			P	U
7782-49-2	Selenium	3.7	~~B~~		F	~~B~~ BJ as 9/15/94
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	11000			P	
7440-28-0	Thallium	2.0	U		F	
7440-62-2	Vanadium	10.0	U		P	
7440-66-6	Zinc	5.0	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture: N/A
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNZ7

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE
Lab Code: ITSTU Case No.: W0437 SAS No.: SDG No.: W0040
Matrix (soil/water): WATER Lab Sample ID: AA7563
Level (low/med): LOW Date Received: 04/27/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	40.0	U		P	
7440-36-0	Antimony	50.0	U		P	
7440-38-2	Arsenic	2.7	B		F	
7440-39-3	Barium	28.2	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	47600			P	
7440-47-3	Chromium	10.9			P	
7440-48-4	Cobalt	10.0	U		P	
7440-50-8	Copper	10.0	U		P	
7439-89-6	Iron	10.0	U		P	
7439-92-1	Lead	4.0			F	
7439-95-4	Magnesium	6120			P	
7439-96-5	Manganese	2.0	U		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	20.0	U		P	
7440-09-7	Potassium	4850	~~B~~		P	U
7782-49-2	Selenium	3.2	~~B~~	~~W~~	F	~~J~~ BJ RTS 9/15/
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	9960			P	
7440-28-0	Thallium	2.0	U		F	
7440-62-2	Vanadium	10.0	U		P	
7440-66-6	Zinc	5.5	~~B~~		P	U

Color Before: COLORLESS Clarity Before: CLEAR Texture: N/A
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNZ8

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: W0437 SAS No.: SDG No.: W0040

Matrix (soil/water): WATER Lab Sample ID: AA7555

Level (low/med): LOW Date Received: 04/27/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	40.0	U		P	
7440-36-0	Antimony	50.0	U		P	
7440-38-2	Arsenic	2.9	B		F	
7440-39-3	Barium	13.1	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	30500			P	
7440-47-3	Chromium	18.8			P	
7440-48-4	Cobalt	10.0	U		P	
7440-50-8	Copper	10.0	U		P	
7439-89-6	Iron	25.4	~~B~~		P	u
7439-92-1	Lead	2.0	U		F	
7439-95-4	Magnesium	7850			P	
7439-96-5	Manganese	2.0	U		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	20.0	U		P	
7440-09-7	Potassium	5840			P	u
7782-49-2	Selenium	2.0	~~U~~	N	F	uJ
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	8510			P	
7440-28-0	Thallium	2.0	U		F	
7440-62-2	Vanadium	12.5	B		P	
7440-66-6	Zinc	5.0	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture: N/A

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNZ9

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO437 SAS No.: SDG No.: W0040

Matrix (soil/water): WATER Lab Sample ID: AA7565

Level (low/med): LOW Date Received: 04/27/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	40.0	U		P	
7440-36-0	Antimony	50.0	U		P	
7440-38-2	Arsenic	2.6	B		F	
7440-39-3	Barium	13.7	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	33300			P	
7440-47-3	Chromium	16.0			P	
7440-48-4	Cobalt	10.0	U		P	
7440-50-8	Copper	10.2	B		P	
7439-89-6	Iron	14.1	~~B~~		P	u
7439-92-1	Lead	2.0	U		F	
7439-95-4	Magnesium	8590			P	
7439-96-5	Manganese	2.0	U		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	20.0	U		P	
7440-09-7	Potassium	5930	/		P	u
7782-49-2	Selenium	2.6	B		F	
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	9390			P	
7440-28-0	Thallium	2.0	U		F	
7440-62-2	Vanadium	10.9	B		P	
7440-66-6	Zinc	6.0	~~B~~		P	u

Color Before: COLORLESS Clarity Before: CLEAR Texture: N/A

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DISSOLVED.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP04

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE

Lab Code: ITSTU_ Case No.: WO437 SAS No.: _____ SDG No.: W0040_

Matrix (soil/water): WATER Lab Sample ID: AA7551

Level (low/med): LOW__ Date Received: 04/27/94

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum_	40.0	U		P_	
7440-36-0	Antimony_	50.0	U		P_	
7440-38-2	Arsenic__	3.3	B		F_	
7440-39-3	Barium___	12.0	B		P_	
7440-41-7	Beryllium	1.0	U		P_	
7440-43-9	Cadmium__	5.0	U		P_	
7440-70-2	Calcium__	37700			P_	
7440-47-3	Chromium_	16.0			P_	
7440-48-4	Cobalt___	10.0	U		P_	
7440-50-8	Copper___	10.0	U		P_	
7439-89-6	Iron____	27.5	~~B~~		P_	u
7439-92-1	Lead____	2.0	U		F_	
7439-95-4	Magnesium	8790			P_	
7439-96-5	Manganese	2.0	U		P_	
7439-97-6	Mercury__	0.20	U		CV	
7440-02-0	Nickel___	20.0	U		P_	
7440-09-7	Potassium	5600			P_	u
7782-49-2	Selenium_	2.8	B		F_	
7440-22-4	Silver___	5.0	U		P_	
7440-23-5	Sodium___	9610			P_	
7440-28-0	Thallium_	2.0	U		F_	
7440-62-2	Vanadium_	10.1	B		P_	
7440-66-6	Zinc____	5.7	~~B~~		P_	u

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A_

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP05

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE
Lab Code: ITSTU Case No.: W0437 SAS No.: SDG No.: W0040
Matrix (soil/water): WATER Lab Sample ID: AA7559
Level (low/med): LOW Date Received: 04/27/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	40.0	U		P	
7440-36-0	Antimony	50.0	U		P	
7440-38-2	Arsenic	3.1	B		F	
7440-39-3	Barium	12.6	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	42900			P	
7440-47-3	Chromium	15.3			P	
7440-48-4	Cobalt	10.0	U		P	
7440-50-8	Copper	10.0	U		P	
7439-89-6	Iron	63.2	B		P	
7439-92-1	Lead	2.0	U		F	
7439-95-4	Magnesium	10100			P	
7439-96-5	Manganese	2.4	B		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	20.0	U		P	
7440-09-7	Potassium	6210			P	u
7782-49-2	Selenium	2.0	~~U~~		F	UJ
7440-22-4	Silver	5.9	B		P	
7440-23-5	Sodium	11000			P	
7440-28-0	Thallium	2.0	U		F	
7440-62-2	Vanadium	13.1	B		P	
7440-66-6	Zinc	8.4	~~U~~		P	u

Color Before: COLORLESS Clarity Before: CLEAR Texture: N/A
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
DISSOLVED.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNY8

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___
Lab Code: ITSTU_ Case No.: WO453 SAS No.: _____ SDG No.: WO040_
Matrix (soil/water): WATER Lab Sample ID: AA7725
Level (low/med): LOW__ Date Received: 04/29/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum_	65.5	B		P_	
7440-36-0	Antimony_	50.0	U		P_	
7440-38-2	Arsenic__	2.4	B		F_	
7440-39-3	Barium__	20.0	B		P_	
7440-41-7	Beryllium	1.0	U		P_	
7440-43-9	Cadmium__	5.0	U		P_	
7440-70-2	Calcium__	51900			P_	
7440-47-3	Chromium_	19.8			P_	
7440-48-4	Cobalt___	10.0	U		P_	
7440-50-8	Copper___	10.0	U		P_	
7439-89-6	Iron____	49.6	B		P_	
7439-92-1	Lead____	2.0	~~B~~	~~N~~	F_	UJ
7439-95-4	Magnesium	8170			P_	
7439-96-5	Manganese	2.0	U		P_	
7439-97-6	Mercury__	0.20	U		CV	
7440-02-0	Nickel___	20.0	U		P_	
7440-09-7	Potassium	5090			P_	
7782-49-2	Selenium_	2.4	~~B~~	~~N~~	F_	~~J~~ BJ RJ 9/
7440-22-4	Silver___	5.0	U		P_	
7440-23-5	Sodium___	12000			P_	
7440-28-0	Thallium_	2.0	U		F_	
7440-62-2	Vanadium_	10.0	U		P_	
7440-66-6	Zinc____	5.0	U		P_	
5955-70-0	Cyanide__				NR	

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
TOTAL

FORM I - IN

RJS 7.19.94

ILM02.1

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNY9

Lab Name: ITAS_KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO453 SAS No.: SDG No.: WO040

Matrix (soil/water): WATER Lab Sample ID: AA7746

Level (low/med): LOW Date Received: 04/29/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	46.9	B		P	
7440-36-0	Antimony	50.0	U		P	
7440-38-2	Arsenic	2.8	~~B~~	W	F	~~J~~ BJ es 9/15/94
7440-39-3	Barium	17.7	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	44100			P	
7440-47-3	Chromium	13.1			P	
7440-48-4	Cobalt	10.0	U		P	
7440-50-8	Copper	10.0	U		P	
7439-89-6	Iron	46.6	B		P	
7439-92-1	Lead	2.0	~~B~~	W	F	UJ
7439-95-4	Magnesium	6970			P	
7439-96-5	Manganese	2.0	U		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	20.0	U		P	
7440-09-7	Potassium	4060	B		P	
7782-49-2	Selenium	2.8	~~B~~	W	F	~~J~~ BJ es 9/15/94
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	10400			P	
7440-28-0	Thallium	2.0	U		F	
7440-62-2	Vanadium	10.0	U		P	
7440-66-6	Zinc	6.6	B		P	
5955-70-0	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DISSOLVED

FORM I - IN

ILM02.1

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNY4

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0427 SAS No.: SDG No.: W0040

Matrix (soil/water): WATER Lab Sample ID: AA7378

Level (low/med): LOW Date Received: 04/25/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	43.9	~~B~~		P	U
7440-36-0	Antimony	50.0	U		P	
7440-38-2	Arsenic	2.1	B		F	
7440-39-3	Barium	23.5	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	50600			P	
7440-47-3	Chromium	14.3			P	
7440-48-4	Cobalt	10.0	U		P	
7440-50-8	Copper	10.0	U		P	
7439-89-6	Iron	11.6	~~B~~		P	U
7439-92-1	Lead	2.0	~~B~~	~~W~~	F	UJ
7439-95-4	Magnesium	7710			P	
7439-96-5	Manganese	2.0	U		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	20.0	U		P	
7440-09-7	Potassium	4130	B		P	
7782-49-2	Selenium	2.1	B		F	
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	10800			P	
7440-28-0	Thallium	2.0	U		F	
7440-62-2	Vanadium	10.0	U		P	
7440-66-6	Zinc	5.0	U		P	
5955-70-0	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

TOTAL

FORM I - IN

ILM02.1

RJS 7.14.94

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNY5

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO427 SAS No.: SDG No.: WO040

Matrix (soil/water): WATER Lab Sample ID: AA7386

Level (low/med): LOW Date Received: 04/25/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.0	U		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	2.0	U		F
7440-39-3	Barium	27.8	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	60500			P
7440-47-3	Chromium	13.2			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	10.0	U		P
7439-92-1	Lead	2.0	U		F
7439-95-4	Magnesium	9250			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	5190			P
7782-49-2	Selenium	2.6	B		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	13200			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	17.0	B		P
5955-70-0	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DISSOLVED

FORM I - IN

ILM02.1

RJS 7.15.94

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP00

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___
Lab Code: ITSTU_ Case No.: W0427 SAS No.: _____ SDG No.: W0040_
Matrix (soil/water): WATER Lab Sample ID: AA7376
Level (low/med): LOW__ Date Received: 04/25/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.0	U		P
7440-36-0	Antimony_	50.0	U		P
7440-38-2	Arsenic__	4.0	B		F
7440-39-3	Barium___	10.7	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	5.0	U		P
7440-70-2	Calcium__	41300			P
7440-47-3	Chromium_	19.8			P
7440-48-4	Cobalt___	10.0	U		P
7440-50-8	Copper___	10.0	U		P
7439-89-6	Iron_____	51.8	~~B~~		P
7439-92-1	Lead_____	2.0	~~B~~	~~W~~	F
7439-95-4	Magnesium	8940			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P
7440-09-7	Potassium	5290			P
7782-49-2	Selenium_	2.6	B		F
7440-22-4	Silver___	5.0	U		P
7440-23-5	Sodium___	11300			P
7440-28-0	Thallium_	2.0	U		F
7440-62-2	Vanadium_	10.0	U		P
7440-66-6	Zinc_____	5.0	U		P
5955-70-0	Cyanide__				NR

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UJ

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
TOTAL_____

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP01

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___
Lab Code: ITSTU_ Case No.: WO427 SAS No.: _____ SDG No.: WO040_
Matrix (soil/water): WATER Lab Sample ID: AA7385
Level (low/med): LOW__ Date Received: 04/25/94
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.0	U		P_
7440-36-0	Antimony_	50.0	U		P_
7440-38-2	Arsenic__	2.4	B		F_
7440-39-3	Barium___	11.0	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	5.0	U		P_
7440-70-2	Calcium__	44300			P_
7440-47-3	Chromium_	16.5			P_
7440-48-4	Cobalt___	10.0	U		P_
7440-50-8	Copper___	10.0	U		P_
7439-89-6	Iron____	14.1	~~B~~		P_ U
7439-92-1	Lead____	2.0	U		F_
7439-95-4	Magnesium	9630			P_
7439-96-5	Manganese	2.0	U		P_
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	20.0	U		P_
7440-09-7	Potassium	5580			P_
7782-49-2	Selenium_	2.0	~~U~~	~~W~~	F_ UJ
7440-22-4	Silver___	5.0	~~U~~		P_
7440-23-5	Sodium___	12400			P_
7440-28-0	Thallium_	2.0	U		F_
7440-62-2	Vanadium_	10.3	B		P_
7440-66-6	Zinc____	5.5	B		P_
5955-70-0	Cyanide__				NR

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
DISSOLVED

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP02

Lab Name: ITAS_KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO427 SAS No.: SDG No.: WOO40

Matrix (soil/water): WATER Lab Sample ID: AA7380

Level (low/med): LOW Date Received: 04/25/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	48.0	~~B~~		P	U
7440-36-0	Antimony	50.0	U		P	
7440-38-2	Arsenic	3.7	~~B~~	~~N~~	F	~~J~~ BJ RS 9/15/94
7440-39-3	Barium	16.1	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	54000			P	
7440-47-3	Chromium	25.0			P	
7440-48-4	Cobalt	10.0	U		P	
7440-50-8	Copper	10.0	U		P	
7439-89-6	Iron	41.2	~~B~~		P	U
7439-92-1	Lead	2.0	~~B~~	~~N~~	F	UJ
7439-95-4	Magnesium	12300			P	
7439-96-5	Manganese	2.0	U		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	20.0	U		P	
7440-09-7	Potassium	5890			P	
7782-49-2	Selenium	2.5	B		F	
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	12100			P	
7440-28-0	Thallium	2.0	U		F	
7440-62-2	Vanadium	10.0	U		P	
7440-66-6	Zinc	5.0	U		P	
5955-70-0	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

TOTAL

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP03

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___

Lab Code: ITSTU_ Case No.: WO427 SAS No.: _____ SDG No.: WO040_

Matrix (soil/water): WATER Lab Sample ID: AA7387

Level (low/med): LOW__ Date Received: 04/25/94

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum_	40.0	U		P_	
7440-36-0	Antimony_	50.0	U		P_	
7440-38-2	Arsenic__	2.7	~~B~~	~~N~~	F_	~~B~~ BJ RS 7/8/94
7440-39-3	Barium___	17.9	B		P_	
7440-41-7	Beryllium	1.0	U		P_	
7440-43-9	Cadmium__	5.0	U		P_	
7440-70-2	Calcium__	58000	_		P_	
7440-47-3	Chromium_	19.0			P_	
7440-48-4	Cobalt___	10.0	U		P_	
7440-50-8	Copper___	10.0	U		P_	
7439-89-6	Iron_____	12.9	~~B~~		P_	U
7439-92-1	Lead____	2.0	U		F_	
7439-95-4	Magnesium	13100			P_	
7439-96-5	Manganese	2.0	U		P_	
7439-97-6	Mercury__	0.20	U		CV	
7440-02-0	Nickel___	20.0	U		P_	
7440-09-7	Potassium	6010			P_	
7782-49-2	Selenium_	2.6	B		F_	
7440-22-4	Silver___	5.0	U		P_	
7440-23-5	Sodium___	12900			P_	
7440-28-0	Thallium_	2.0	U		F_	
7440-62-2	Vanadium_	10.0	U		P_	
7440-66-6	Zinc____	5.0	U		P_	
5955-70-0	Cyanide__		_		NR	

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

DISSOLVED

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP10

Lab Name: ITAS_KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO427 SAS No.: SDG No.: WO040

Matrix (soil/water): WATER Lab Sample ID: AA7374

Level (low/med): LOW Date Received: 04/25/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	40.0	U		P	
7440-36-0	Antimony	50.0	U		P	
7440-38-2	Arsenic	2.0	~~U~~		F	UJ
7440-39-3	Barium	7.6	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	28200			P	
7440-47-3	Chromium	21.5			P	
7440-48-4	Cobalt	10.0	U		P	
7440-50-8	Copper	10.0	U		P	
7439-89-6	Iron	114			P	
7439-92-1	Lead	2.0	~~U~~	~~W~~	F	UJ
7439-95-4	Magnesium	8400			P	
7439-96-5	Manganese	2.0	U		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	20.0	U		P	
7440-09-7	Potassium	5330			P	UJ
7782-49-2	Selenium	2.0	~~U~~	~~W~~	F	
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	12600			P	
7440-28-0	Thallium	2.0	U		F	
7440-62-2	Vanadium	20.5	B		P	
7440-66-6	Zinc	7.6	B		P	
5955-70-0	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

TOTAL

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP11

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO427 SAS No.: SDG No.: WO040

Matrix (soil/water): WATER Lab Sample ID: AA7384

Level (low/med): LOW Date Received: 04/25/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	40.0	U		P	
7440-36-0	Antimony	50.0	U		P	
7440-38-2	Arsenic	2.0	U		F	
7440-39-3	Barium	10.1	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	35500			P	
7440-47-3	Chromium	25.6			P	
7440-48-4	Cobalt	10.0	U		P	
7440-50-8	Copper	10.0	U		P	
7439-89-6	Iron	12.1	~~B~~		P	u
7439-92-1	Lead	2.0	U		F	
7439-95-4	Magnesium	10700			P	
7439-96-5	Manganese	2.0	U		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	20.0	U		P	
7440-09-7	Potassium	6940			P	
7782-49-2	Selenium	2.0	~~U~~	~~W~~	F	UJ
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	16100			P	
7440-28-0	Thallium	2.0	U		F	
7440-62-2	Vanadium	25.6	B		P	
7440-66-6	Zinc	5.3	B		P	
5955-70-0	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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FORM I - IN

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RJS 7.15.94

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP26

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0427 SAS No.: SDG No.: W0040
Matrix (soil/water): WATER Lab Sample ID: AA7382
Level (low/med): LOW Date Received: 04/25/94
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.0	U		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	2.0	U		F
7440-39-3	Barium	23.9	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	51200			P
7440-47-3	Chromium	12.1			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	20.4	~~B~~		P → BJ RS 9/15/
7439-92-1	Lead	2.0	U		F
7439-95-4	Magnesium	8310			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	4850	B		P
7782-49-2	Selenium	2.5	B		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	11700			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	5.0	U		P
5955-70-0	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
TOTAL

FORM I - IN

ILM02.1

RJS 7.15.94

9613195.2477

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBP27

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO427 SAS No.: SDG No.: WO040

Matrix (soil/water): WATER Lab Sample ID: AA7388

Level (low/med): LOW Date Received: 04/25/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.0	U		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	4.1	B		F
7440-39-3	Barium	22.8	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	49700			P
7440-47-3	Chromium	10.6			P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	22.0	B		P
7439-89-6	Iron	10.0	U		P
7439-92-1	Lead	2.0	U		F
7439-95-4	Magnesium	7550			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	4070	B		P
7782-49-2	Selenium	2.4	B		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	10700			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	8.1	B		P
5955-70-0	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DISSOLVED

FORM I - IN

ILM02.1

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7-15-94

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

9613495.2479

INTERNATIONAL TECHNOLOGY CORPORATION

JUN 1994 RECEIVED SDLA

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Dear J.A. Lerch

Thank you for purchasing analytical testing services from IT Corporation. It is our intention to supply our clients with data packages which not only meet the industry's highest standards for quality, but are also easy to use. Features which we point out are:

1. A Data Summary Packet which allows you to review your data without searching through the complete data package.

   Your Data Summary Packet contains the following items:

   - Case Narrative: listing of sample identifications, analyses performed, explanation of any problem associated with samples, corrective action taken.
   - Quality control sample identifications and analyses performed.
   - Data summary.

2. A data package which meets the specific requirements you requested and is easy to use as well. The package is organized in accordance with the Table of Contents which you will find at the beginning of each section. Sections are separated by color-coded tabs, making it easy to find individual analytical parameters which may be of particular interest to you. The data package is custody-sealed at the laboratory - your assurance that parts of the package are not missing.

We are constantly searching for ways to improve our service to you. This current product has many of the features which you have told us are important to you. Your suggestions regarding additional improvements will be appreciated.

Please contact me with any questions or suggestions.

Sincerely,

Sheree A. Schneider

Sheree' Schneider
Project Manager

PROOF COPY

Regional Office
5815 Middlebrook Pike • Knoxville, Tennessee 37921 • 615-588-8401

000038

IT Corporation is a wholly owned subsidiary of International Technology Corporation

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INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

JUN 1994
RECEIVED
SDLA

CERTIFICATE OF ANALYSIS

IT Corporation
2800 George Washington Way
Richland, WA 99352
Attn: Van Pettey

RECORD COPY

June 9, 1994

Job Number: 427; 437; 453

This is the Certificate of Analysis for the following samples:

SDG:	W0040
Client Project ID:	WHC SAF 94-129 100-BC-5 Groundwater Round 6
Date Received by Lab:	April 25; April 27; April 29, 1994
Number of Samples:	Twenty (20)
Sample Type:	Water

I. Introduction

On April 25, April 27 and April 29, 1994, twenty (20) water samples arrived at ITAS-Richland, Washington and were transferred to ITAS-Knoxville for chemical analysis. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results.

The samples were analyzed for Target Analyte List (TAL) metals by cold vapor atomic absorption spectroscopy (CVAA), graphite furnace atomic absorption spectroscopy (GFAA), and inductively coupled plasma spectroscopy (ICP) in accordance with the EPA CLP ILM03 Statement of Work.

Reviewed and Approved:

Sheree A. Schneider

Sheree' A. Schneider
Project Manager

American Council of Independent Laboratories
International Association of Environmental Testing Laboratories
American Association for Laboratory Accreditation

IT Analytical Services, 5815 Middlebrook Pike, Knoxville, TN 37921

681-1-89

9612495.2481

II. Analytical Results/Methodology (Continued)

The pH of the samples was determined using EPA method 9040.

The specific conductance of the samples was measured using EPA method 120.1.

The samples were analyzed for anions by ion chromatography using EPA method 300.0.

III. Quality Control

The samples for work order #427 were digested on May 5 and June 8, 1994 for ICP and May 5, 1994 for GFAA. The CVAA analysis for mercury was performed on May 16, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from May 5 through May 18, 1994; the remaining metals were analyzed by ICP on May 25, May 31 and June 8, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample numbers BOBP10 and BOBP11. Spike recovery (accuracy) results were within acceptance limits for all parameters . Duplicate RPD (precision) results were within acceptance limits for all parameters. The CRA standard for mercury analysis was double spiked. The serial dilution for BOBP11 was performed at a 1/2 dilution instead of a 1/5 dilution.

The samples for work order #437 were digested on May 11, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on May 16, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from May 12 through May 17, 1994; the remaining metals were analyzed by ICP on May 24, 1994. All run QC was acceptable. The CRA sample for the mercury analysis was double spiked. The samples were batched with QC from work order #427.

The samples for work order #453 were digested on May 12, 1994 for ICP and GFAA. The samples for mercury analysis was performed on May 16, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from May 16 through May 24, 1994; the remaining metals were analyzed by ICP on May 25, 1994. All run QC was acceptable. The CRA standard for mercury analysis was double spiked. The samples were batched with QC from work order #427.

Data were reported with qualifiers as follows:

"C" Qualifiers

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
B - Value greater than instrument detection limit, but less than contract required quantitation limit.

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III. Quality Control (Continued)

"Q" Qualifiers

* - Duplicate analysis outside control limits.
N - Spiked sample recovery outside control limits.
W - Post-digestion spike for GFAA was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.
S - The reported value was determined by method of standard additions.

"M" Qualifiers

P - Analysis performed by ICP.
V - Analysis performed by CVAA.
F - Analysis performed by GFAA.
C - Cyanide analysis by manual distillation/colorimetric determination.

Miscellaneous

D - Duplicate.
S - Spike.
NR - Not required.
G - Native analyte > 4 times spike added, therefore, acceptance criteria do not apply.
X - Detection limits higher than normal due to sample matrix interferences.

The samples were analyzed for pH on April 26 and May 3, 1994. A duplicate was analyzed using sample number BOBP10. All quality control results were acceptable.

The samples were analyzed for specific conductance on April 27 and May 2, 1994. A duplicate was analyzed using sample number BOBP10. All quality control results were acceptable.

The samples were analyzed for fluoride, chloride, nitrite, phosphate and sulfate by EPA method 300.0 on May 19 and May 23, 1994. A matrix spike and matrix spike duplicate were analyzed using sample number BOBP10. All quality control results were acceptable.

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III. Quality Control (Continued)

Table I is a cross reference between client sample IDs and laboratory sample IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Test
AA7374	404431-01A	BOBP10	METALS-T
AA7375	404431-01B	"	ANIONS
AA7375	"	"	pH
AA7375	"	"	CONDUCTIVITY
AA7384	404431-02A	BOBP11	METALS-D
AA7376	404431-03A	BOBP00	METALS-T
AA7377	404431-03B	"	ANIONS
AA7377	"	"	pH
AA7377	"	"	CONDUCTIVITY
AA7385	404431-04A	BOBP01	METALS-D
AA7378	404431-05A	BOBNY4	METALS-T
AA7379	404431-05B	"	ANIONS
AA7379	"	"	pH
AA7379	"	"	CONDUCTIVITY
AA7386	404431-06A	BOBNY5	METALS-D
AA7380	404431-07A	BOBP02	METALS-T
AA7381	404437-07B	"	ANIONS
AA7381	"	"	pH
AA7381	"	"	CONDUCTIVITY-

9613495.2484

III. Quality Control (Continued)

Table I is a cross reference between client sample IDs and laboratory sample IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Test
AA7387	404431-08A	BOBP03	METALS-D
AA7382	404431-09A	BOBP26	METALS-T
AA7383	404431-09B	"	ANIONS
AA7383	"	"	pH
AA7383	"	"	CONDUCTIVITY
AA7388	404431-10A	BOBP27	METALS-D
AA7551	404456-01A	BOBP04	METALS-T
AA7552	404456-01B	"	ANIONS
AA7552	"	"	pH
AA7552	"	"	CONDUCTIVITY
AA7559	404456-02A	BOBP05	METALS-D
AA7553	404456-03A	BOBNZ6	METALS-T
AA7554	404456-03B	"	ANIONS
AA7554	"	"	pH
AA7554	"	"	CONDUCTIVITY
AA7563	404456-04A	BOBNZ7	METALS-D
AA7555	404456-05A	BOBNZ8	METALS-T
AA7556	404456-05B	"	ANIONS
AA7556	"	"	pH

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III. Quality Control (Continued)

Table I is a cross reference between client sample IDs and laboratory sample IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Test
AA7556	404456-05B	BOBNZ8	CONDUCTIVITY
AA7565	404456-06A	BOBNZ9	METALS-D
AA7557	404457-07A	BOBNZ0	METALS-T
AA7558	404457-07B	"	ANIONS
AA7558	"	"	pH
AA7558	"	"	CONDUCTIVITY
AA7567	404456-08A	BOBNZ1	METALS-D
AA7725	404499-01A	BOBNY8	METALS-T
AA7726	404499-01B	"	ANIONS
AA7726	"	"	pH
AA7726	"	"	CONDUCTIVITY
AA7746	404499-02A	BOBNY9	METALS-D

IV. Certification

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature:

Reviewed and Approved:

Sheree A. Schneider

Sheree' A. Schneider
Project Manager

9613495.2487

WO#427

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1100 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-22-94 1400 Client Name WHC

Project/Client # 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-7

1. Condition of shipping container? n.1C
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 4-22-94 24
8. Samples have: X tape ____ hazard labels
   X custody seals ____ appropriate sample labels
9. Samples are: X in good condition ____ leaking
   X broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 2°C.

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) n/a
    Request for analysis #(s) n/a
    Airbill # n/a Carrier n/a
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☒

Printed Name/Signature Karen Achterlucy Date/Time 4-22-94 1400

FORM NO. LS-042, Rev.0, 2/94

9615195.2488

WO#427

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1550 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

1 Per Shipping Container

Date/Time Received 4-12-94 14:00 Client Name WHC

Project/Client # 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-9

1. Condition of shipping container? Ok
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 21
8. Samples have: X tape ____ hazard labels
   X custody seals ____ appropriate sample labels
9. Samples are: X in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 2°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #(s) NA
    Request for analysis #(s) NA
    Airbill # NA Carrier NA
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☒

Printed Name/Signature [illegible] Date/Time 4-12-94 14:00

FORM NO. LS-042, Rev.0, 2/94

9613495.2489

WO #437

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-25-94 1300 Client Name WHC

Project/Client # SAF 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-9

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☑ No ☐
3. Custody Seals dated and signed? Yes ☑ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 304 ok 4-25-94
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ✓ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 5°

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) N/A
    Airbill # N/A Carrier N/A
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature R. Boyd R. Boyd Date/Time 4-25-94 1300

FORM NO. LS-042, Rev.0, 2/94

9613495.2490

WO#437

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-25-94 1300 Client Name LWHC

Project/Client # SAF 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) EX-7

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☑ No ☐
3. Custody Seals dated and signed? Yes ☑ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☑ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☑
6. Each sample is in a plastic bag? Yes ☑ No ☐
7. Number of sample containers in cooler: 34
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ✓ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☑ No ☐

Sample temperature 10°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) N/A
    Airbill # N/A Carrier N/A
12. Have any anomalies been identified above? Yes ☐ No ☑
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature R. Boyd R. Boyd Date/Time 4-25-94 1300

FORM NO. LS-042, Rev.0, 2/94

9613495.2491

W07#453

INTERNATIONAL TECHNOLOGY CORPORATION

National Office
1020 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(For Shipping Containers)

Date/Time Received 11/27 1210 Client Name ITC

Project/Client # 94-129 Batch or Case # na

Cooler ID (if noted on the outside of cooler) SMC 144

1. Condition of shipping container? AR
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 14
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ____ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 40

11. The following paperwork should be accounted for (N/A if not applicable):

    Chain of Custody #(s) ____

    Request for analysis #(s) [illegible]

    Airbill # ____ Carrier ____
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature [illegible] Date/Time 11/27/94 1210

FORM NO. LS-042, Rev.0, 3 94

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

WO#427

Page 1 of 1

Date Turnaround: [ ] Priority [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100-B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-10246	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A 11794-0-0518-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks:		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

SAMPLE ANALYSIS: 404431

	Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP	ANIONS F,SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Anions	ICP METALS, AA METALS, Hg CLP FILTERD							
Preservative					HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2							
Type of Container					G/P	P	G/P	G/P	Gs	Gs	G/P							
No. of Container(s)					1	1	5	2	6	1	1							
Volume					1000ml	1000ml	1000ml	1000ml	500ml ~~1000ml~~	40ml	1000ml							
					A	B	404432		04									
01	BOBP02	W	4/21/94	1245	X	X	X	X	X	X								
08	BOBP03	W	↓	↓							XA							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	L Sweeney / L Sweeney	4/22/94 0752
L Sweeney / L Sweeney	4/22/94 1400	E Boyl	4/22/94 1400

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0000029

000051

9412205.2002

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#427

Page 1 of 1

Date Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp / K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: EA-7	Field Logbook No.: EFL-103C	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	40mL	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40mL	1000ml

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE

SAMPLE ANALYSIS: 404431

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Nitrate scan	ICP METALS, AA METALS, Hg CLP FILTERD
01 BOBP10	W	4/21/94	1510	X	X	X	X	X	X	
02 BOBP11	W	↓	↓							XA

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: K. Trapp / K. Trapp	Date/Time: 4/22/94 0752	Received By: Sweeney / Sweeney	Date/Time: 4/22/94 0752
Relinquished By: Sweeney / Sweeney	Date/Time: 4/22/94 1400	Received By: R. Boyd	Date/Time: 4/22/94 1400
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS: DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

000052

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#427

Page 1 of 1

Data Turnaround: ☐ Priorty ☒ Normal

Collector: K. Tropp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 1CCB	SAF No.: 94-129
Ice Chest No.: EA-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0516-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40mL	1000ml
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 404432	Tc-99 03	TRITIUM C-14	Radioactivity Screen	ICP METALS, AA METALS, Hg CLP FILTERD

404431

	Sample No.	Matrix*	Date Sampled	Time Sampled															
05	B0BNY4	W	04/21/94	1100	X	X	X	X	X	X									
06	B0BNY5	W	↓	↓							XA								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
K. Tropp / K Tropp	4/22/94 0752	Sweeney / Sweeney	4.22.94 0752
Relinquished By	Date/Time	Received By	Date/Time
Sweeney / Sweeney	4/22/94 1480	R. Boyd	4/22/94 1480
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

000053

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

WO#427

Page 1 of 1

Date Turnaround: [ ] Priority [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: FR-9	Field Logbook No.: EFL-1036	Method of Shipment: EMERY
Shipped To: TMA	Offsite Property No.: W94-0-0518-3	Bill of Lading/Air Bill No.: ~~HW~~ 4/22/94 NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4		HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs		G/P
No. of Container(s)	1	1	~~4~~ 1 4/21/94	1	2		1
Volume	1000ml	1000ml	~~4000ml~~ 4L 4/21/94	1000ml	1000ml		1000ml
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 40443205	Tc-99	TRITIUM C-14		ICP METALS, AA METALS, Hg FILTERD CLP

404431

	Sample No.	Matrix*	Date Sampled	Time Sampled							
09	B0BP26	W	4/21/94	1100	X	X	X	X	X		
10	B0BP27	W	↓	↓							XA

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	0752 4/22/94	L. Sweeney / L. Sweeney	4/22/94 0752
L. Sweeney / L. Sweeney	4/22/94 1400	R. Bayd	4/22/94 1400

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

000054

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

WO#427

Page 1 of 1

Date Turnaround: [ ] Priority [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W194-0-0518-4	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2								
Type of Container	G/P	P	G/P	G/P	Gs	[illegible]	G/P								
No. of Container(s)	1	1	5	2	3	1	1								
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40ml	1000ml								
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP	ANIONS F,SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Gamma Scan	ICP METALS, AA METALS, Hg CLP FILTERD								
464431	A	B	464432	02											

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE

	Sample No.	Matrix*	Date Sampled	Time Sampled															
03	BOBP00	W	4/21/94	1410	X	X	X	X	X	X									
04	BOBP01	W	↓	1410							XA								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	J. Sweeney / J. Sweeney	4/22/94 0752
J. Sweeney / J. Sweeney	4/22/94 1480	R. Boyd II	4/22/94 1480

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

000055

WO# 437

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priority [X] Normal

Collector: K. Tropp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W74-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None		HNO3<2								
Type of Container	G/P	P	G/P	G/P	Gs	G		G/P								
No. of Container(s)	1	1	3	2	3	1		1								
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	500ml		1000ml								
SAMPLE ANALYSIS 404486	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14			ICP METALS, AA METALS, Hg 04A CLP FILTERD								

Sample No.	Matrix*	Date Sampled	Time Sampled															
BOBNZ6 03	W	4/22/94	1640	X	X	X	X	X	X									
BOBNZ7 04	W	↓	↓							X								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: K. Tropp / K. Tropp	Date/Time: 4/22/94 1500	Received By: L Sweeney / L Sweeney	Date/Time: 4/22/94 1500
Relinquished By: L Sweeney / L Sweeney	Date/Time: 4/25/94 1300	Received By: R. Bard IT	Date/Time: 4-25-94 / 1300
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original - Sample Yellow - Sampler

BC-6000-828 (12/92)

0000034

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9412956197

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Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: [ ] Priority [X] Normal

Collector: K. Tiepo	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 1607 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0318-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	Gas	G/P
No. of Container(s)	1	1	5	2	6	1	1
Volume	1000ml	1000ml	1000ml	1000ml	500ml ~~1000ml~~	40ml	1000ml
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F, SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Radiochem Screen	ICP METALS, AA METALS, Hg CLP FILTERD A

40445601 40445701

Sample No.	Matrix*	Date Sampled	Time Sampled							
BOBP04 01	W	4/22/94	1200	X	X	X	X	X	X	
BOBP05 02	W	↓	↓							X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Tiepo / K. Tiepo	4/22/94 1500	L. Sweeney / L. Sweeney	4/22/94 1500
L. Sweeney / L. Sweeney	4/25/94 1300	R. Bond / R. Bond	4/25/94 1300

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original - Sample Yellow - Sampler

BC-6000-828 (12/92)

000057

9413242.0796

WO# 434

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: [ ] Priority [X] Normal

Collector: K. Tripp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0578-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	4000ml	40mL	1000ml
SAMPLE ANALYSIS 404456	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 40445703	Tc-99	TRITIUM C-14	Barium, Gran	ICP METALS, AA METALS, Hg CLP FILTERD A

Sample No.	Matrix*	Date Sampled	Time Sampled														
B0BNZ8 05	W	4/22/94	1330	X	X	X	X	X	X								
B0BNZ9 06	W	↓	↓							X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Tripp / K. Tripp	4/22/94 1500	L Sweeney / L Sweeney	4/22/94 1500
L Sweeney / L Sweeney	4/25/94 1300	R. Boyd	4/25/94 1300

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

000058

9412162.2179

WO#434

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: ☐ Priority ☒ Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-103C	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W34-0-0718-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Gross	ICP METALS, AA METALS, Hg CLP FILTERD 08A
Preservative				HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2
Type of Container				G/P	P	G/P	G/P	Gs	GGS	G/P
No. of Container(s)				1	1	5	2	~~3~~ 6	1	1
Volume				1000ml	1000ml	1000ml	1000ml	500mL ~~1000ml~~	4L/2L 4L/2L	1000ml
SAMPLE ANALYSIS 404456						404457	04			
BOBNZ0 07	W	4/22/94	0905	X	X	X	X	X	X	
BOBNZ1 08	W	↓	↓							X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 1900	T. Sweeney / T. Sweeney	4/23/94 1300
T. Sweeney / T. Sweeney	4/25/94 1300	E. Boyl / JT	4/25/94 1300

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original - Sample Yellow - Sampler

BC-6000-828 (12/92)

000059

WO# 453

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: [ ] Priority [X] Normal

Collector: K. Tiapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: SMC-144	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W74-0-0578-11	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE Standard Refrig 38 Air		

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	nG?	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40mL	1000ml
SAMPLE ANALYSIS 404499	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 4045000	Tc-99	TRITIUM C-14 1	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD DRA

Sample No.	Matrix*	Date Sampled	Time Sampled							
BOBNY8 01	W	4/25/94	0930	X	X	X	X	X	X	
BOBNY9 02	W	↓	↓							X

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
K. Umary / K. Tiapp	1359 4/25/94	AJ Simpson / AJ Simpson	4/25/94 1400
AJ Simpson	4/27/94 0921	L Sweeney / L Sweeney	4/27/94 0921
L Sweeney / L Sweeney	4/27/94 1210	Heidelberg	4/27 1210

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

090000

190000

WO#427

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W91-C-0518-3

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: BUFR22, BUFR23, BUFR26, BUFR27 Cooler ID: ER-4 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: BUFN22, BUBN23, BUBP10, BUBP11 Cooler ID: ER-7 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
R Adelin	157906	4-22-94

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4-22-94	8B410 PB5AA	NA

Originated By	Date	Authorized By	Date
P H Butcher	4/22/94	P H Butcher	4/22/94
Signature and Name of Property Control	**Custodian Date**	**Property Management Approval**	**Date**
		P H Butcher	4/22/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
R. Boyd Jr				
Date 4-22-94 1400				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

9613495.2503

WO#427

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		WHC-C-0518-4

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: B0BFC0, B0BFC1, B0BNY4, B0BNY5 Cooler ID: ER-5 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: Cooler ID: Polycooler with groundwater samples packed in wet ice and vermiculite NA	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
[illegible]	[illegible]	4-22-94

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
~~4/22/94~~ 4/22/94	8B410 PR5AN	NA

Originated By	Date	Authorized By	Date
P H Butcher	4/22/94	P H Butcher	4/22/94
Signature and Name of Property Control	**Custodian Date**	**Property Management Approval**	**Date**
		[illegible]	4/22/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible] IT				
Date 4.22.94 1400				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

9613495.2504

WO#437

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-6-6518-=

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: [illegible] Cooler ID: ER-[illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: [illegible] Cooler ID: ER-[illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release: Carla Little		RM Survey No. 15741C	Date 4-25-94
Location of Property (Area & Bldg.): 100-FC-5	Contact: P. H. Butcher		Phone (509) 376-4388
Date Ready for Shipment: 4-25-94	Cost Code to be Charged: 88410	Approximate Date This Property will be Returned: NA	
Originated By: PH Butcher	Date: 4/25/94	Authorized By: [illegible]	Date: 4-25-94
Signature and Name of Property Control	Custodian Date	Property Management Approval: [illegible]	Date: 4/25/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
R Baul IT				
Date 4-25-94				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

54-3000-479 (09/89)

9613495.2505

WO#453

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W194-L-00518-11

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: BGN13, BGN13, BGN16, BGN17 Cooler ID: ER-9 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: BGN18, BGN19 Cooler ID: SMC-144 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # None

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No	Date
[illegible]	15733	[illegible]

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4-27-94	88410 PB5AA	N/A

Originated By	Date	Authorized By	Date
DH Butcher	4/27/94	[illegible]	4/27/94

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	[illegible]

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]				
Date 4/27 1230				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
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INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001524*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO# 427 RL# 539

Reference Document No. 340395
Page 1 of 2

Project Name/No. [1] SAF 94-129
Sample Team Members [2]
Profit Center No. [3] 4632
Project Manager [4] Van Pettey
Purchase Order No. [6]
Required Report Date [11]

Samples Shipment Date [7] 4-23-94
Lab Destination [8] Middlebrook
Lab Contact [9]
Project Contact/Phone [12]
Carrier/Waybill No. [13] 8875576065

Bill to: [5] IT Richland
Report to: [10] IT Richland

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Preservative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
40443101 A	BOBP10 / water	4-21-1510	G/P	1000ml	Cool 4°	ICP Metals AA ↓ Hg	5°C BPB 4/25/94 <2	
↓ B	↓	4-21-94 1510	P			Anions, Cond, PH		
40443102 A	BOBP11	↓	G/P			ICP, GFAA, Hg	<2	
40443103 A	BOBP00	4-21-94 1410	G/P			↓	<2	
↓ B	~~BOBP01~~ BB 4-22-94	↓	P			Anions, Cond, PH		
40443104 A	BOBP01	↓	G/P			ICP, GFAA, Hg	<2	
40443105 A	BOBNY4	4-21-94 1100	G/P			↓	<2	
↓ B	↓	↓	P			Anions, Cond, PH		

Special Instructions: [23]

Possible Hazard Identification: [24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: [25]
Return to Client ☒ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: [26]
Normal ☐ Rush ☐ AS Per WHC Contract

QC Level: [27]
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG W0040

1. Relinquished by [28] (Signature/Affiliation) R Boyd IT — Date: 4-23-94 Time: 1200	1. Received by [28] (Signature/Affiliation) Bryan Blomquist ITASKA — Date: 4/25/94 Time: 8:55
2. Relinquished by (Signature/Affiliation) — Date: Time:	2. Received by (Signature/Affiliation) — Date: Time:
3. Relinquished by (Signature/Affiliation) — Date: Time:	3. Received by (Signature/Affiliation) — Date: Time:

Comments: [29]

MCA 3/15/91

White: to accompany samples
Yellow: field copy

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INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

WO#427

Reference Document No.[30] 340395

Page 2 of 2

Project Name SAF 94-129

Project No.

Samples Shipment Date

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
40443106A	BOBNY5 / water	4-21-94 1100	G/P	1000ml	cool 4°	ICP, GFAA, Hg	5°C BB 4/25/94 <2	
40443107A	BOBP02	4-21-94 1245	G/P			↓	<2	
↓ B	↓		P			Anions, Cond, pH		
40443108A	BOBP03	↓	G/P			ICP, GFAA, Hg	<2	
40443109A	BOBP26	4-21-94 1100	G/P			↓	<2	
↓ B	↓		P			Anions, Cond, pH		
40443110A	BOBP27	↓	G/P	↓	↓	ICP, GFAA, Hg	<2	

BB 4-22-94

White: To accompany samples

Yellow: Field copy

*See back of form for special instructions.

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INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001534*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO #487 RL #516

Reference Document No. 453602
Page 1 of ___

Project Name/No. 1 SAF 94-129
Sample Team Members 2
Profit Center No. 3 4632
Project Manager 4 YAN PETTEY
Purchase Order No. 6
Required Report Date 11

Samples Shipment Date 7 4-26-94
Lab Destination 8 Middlebrook
Lab Contact 9
Project Contact/Phone 12
Carrier/Waybill No. 13

Bill to: 5 IT Richland
Report to: 10 IT Richland

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Preservative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
40445601A	BOBP04 /Water	4/22 1200	G/P	1000ml	Cool 4°	ICP, GFAA, Hg	6°C BPB 4/27/94 <2	
B	↓		P			Anions, SO4, Cond, PH		
02A	BOBP05 /Water	↓	G/P			ICP, GFAA, Hg	<2	
03A	BOBNZ6 /Water	4/22 1040	G/P			ICP, GFAA, Hg	<2	
B	↓		P			Anions, SO4, Cond, PH		
04A	BOBNZ7 /Water	↓	G/P			ICP, GFAA, Hg	<2	
05A	BOBNZ8 /Water	4/22 1330	G/P			ICP, GFAA, Hg	<2	
B	↓		P			Anions, SO4, Cond, PH		

FOR LAB USE ONLY

Special Instructions: 23 As per WHC Contract

Possible Hazard Identification: 24
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: 25
Return to Client ☒ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: 26
Normal ☒ Rush! ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG W0040

1. Relinquished by 28 (Signature/Affiliation) [signature] ITAS Date: 4/26/94 Time: 1600	1. Received by 28 (Signature/Affiliation) Bryan Blanquist ITASKN Date: 4/27/94 Time: 9:20
2. Relinquished by (Signature/Affiliation) Date: Time:	2. Received by (Signature/Affiliation) Date: Time:
3. Relinquished by (Signature/Affiliation) Date: Time:	3. Received by (Signature/Affiliation) Date: Time:

Comments: 29

MCA 3/15/91

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

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INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

WO# 437

Reference Document No.[30] 453602

Page 2 of 2

Project Name SAF 94-129

Project No. STX-W0040

Samples Shipment Date 4-26-94

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
40445606A	BOBNZ9 /water	4/22 1330	G/P	1000ml	Cool 4°	ICP, GFAA, Hg	6° C SDB 4/27/94 <2	
07A	BOBNZ0 /water	4/22 0905	G/P			ICP, GFAA, Hg	<2	FOR LAB
B			P			Anions, SO4, Cond, pH.		USE ONLY
08A	BOBNZ1 /water		G/P			ICP, GFAA, Hg	<2	
	JH 4/25/94							

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

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INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001549*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO# 453 R# 564

Reference Document No. 453609
Page 1 of 1

Project Name/No. [1] SAF 94-129
Sample Team Members [2]
Profit Center No. [3] 4632
Project Manager [4] Van Petteys
Purchase Order No. [6]
Required Report Date [11]

Samples Shipment Date [7] 4-28-94
Lab Destination [8] Middlebrook
Lab Contact [9]
Project Contact/Phone [12]
Carrier/Waybill No. [13] 150 9384 335

Bill to: [5] IT Richland
Report to: [10] IT Richland

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Pre-servative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
40449901 A	BOBN48 /water	11/25 0930	G/P	1000ml	Cool 4°	ICP, GFAA, Hg	5°C BPB 4/29/94 <2	
B	↓	↓	P	↓	↓	ANIONS, SO4, Cond, PH.	↓ FOR LAB USE ONLY	
02A	BOBN49 /water	↓	G/P	↓	↓	ICP, GFAA, Hg	↓	
	JH 4/28/94						FOR LAB USE ONLY	

Special Instructions: [23] As per WHC Contract

Possible Hazard Identification: [24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: [25]
Return to Client ☒ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: [26]
Normal ☒ Rush ☐

QC Level: [27]
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG W0040

1. Relinquished by [28] (Signature/Affiliation) L. Boyd IT — Date: 4-28-94 Time: 1600	1. Received by [28] (Signature/Affiliation) Bryan Blomquist ITASK — Date: 4/29/94 Time: 8:45
2. Relinquished by (Signature/Affiliation) — Date: Time:	2. Received by (Signature/Affiliation) — Date: Time:
3. Relinquished by (Signature/Affiliation) — Date: Time:	3. Received by (Signature/Affiliation) — Date: Time:

Comments: [29]

MCA 3/15/91

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

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Appendix 5

Data Validation Supporting Documentation

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Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

N	A	B	C	D	E

T:	WHC/BHI	DATA PACKAGE:	T00555
ATOR: RJS	LAB: ITC	DATE: 7/15/94	
E: 100-BC-5		SDG:	W0040

ANALYSES PERFORMED

☒ CLP/ICP	☒ CLP/GFAA	☒ CLP/Hg	☐ CLP/Cyanide	☐	☐
☐ SW-846/ICP	☐ SW-846/GFAA	☐ SW-846/Hg	☐ SW-846 Cyanide	☐	☐

SAMPLES/MATRIX BOBNY4, BOBNY5, BOBP00, BOBP01, BOBP02, BOBP03, BOBP10, BOBP11, BOBP26, BOBP27, BOBP04 BOBP05, BOBNZ0, BOBNZ1, BOBNZ6, BOBNZ7 BOBNZ8, BOBNZ9, BOBNY8, BOBNY9

CASE NO.'S W0427, W0437, W0453 (20 WATER SAMPLES)

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . (Yes) No N/A

Is a case narrative present? . . . . . (Yes) No N/A

Comments:

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments: Metals < 6 months ✓
Hg < 28 days ✓

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

Were initial calibrations performed on all instruments? . . . . Yes No N/A

Are initial calibrations acceptable? . . . . . Yes No N/A

Are ICP interference checks acceptable? . . . . . Yes No N/A

Were ICV and CCV checks performed on all instruments? . . . . . Yes No N/A

Are ICV and CCV checks acceptable? . . . . . Yes No N/A

Comments:

4. BLANKS

Were ICB and CCB checks performed for all applicable analyses? Yes No N/A

Are ICB and CCB results acceptable? . . . . . Yes No N/A

Were preparation blanks analyzed? . . . . . Yes No N/A

Are preparation blank results acceptable? . . . . . Yes No N/A

Were field/trip blanks analyzed? . . . . . Yes No N/A

Are field/trip blank results acceptable? . . . . . Yes No N/A

Comments: Al: B0BN74, B0BP02

(Blank Contaminants) Iron: B0BN74, B0BN20, B0BN26, B0BN27, B0BN29, B0BP00, B0BP01 B0BP02 B0BP03, B0BP04 + B0BP91

Potassium: B0BN20, B0BN21, B0BN26, B0BN27, B0BN29, B0BP04, B0BP05

Zinc: B0BN20, B0BN27, B0BN29, B0BP04 + B0BP05

5. ACCURACY

Were spike samples analyzed? . . . . . Yes No N/A

Are spike sample recoveries acceptable? . . . . . Yes No N/A

Were laboratory control samples (LCS) analyzed? . . . . . Yes No N/A

Are LCS recoveries acceptable? . . . . . Yes No N/A

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

6. PRECISION

Were laboratory duplicates analyzed? . . . . . Yes No N/A
Are laboratory duplicate samples RPD values acceptable? . . . . Yes No N/A
Were ICP serial dilution samples analyzed? . . . . . Yes No N/A
Are ICP serial dilution %D values acceptable? . . . . . Yes No N/A
Are field duplicate RPD values acceptable? . . . . . Yes No N/A
Are field split RPD values acceptable? . . . . . Yes No N/A

SC 8/11

Comments: ICP Serial Dilution reported in Case W00437 (BOBPM1) at 1/2 Dilution instead of 1/5 Dilution. Reported Results on Form IX (W00437) - were disregarded and evaluated as normal.

7. FURNACE AA QUALITY CONTROL

Were duplicate injections performed as required? . . . . . Yes No N/A
Are duplicate injection %RSD values acceptable? . . . . . Yes No N/A
Were analytical spikes performed as required? . . . . . Yes No N/A
Are analytical spike recoveries acceptable? . . . . . Yes No N/A
Was MSA performed as required? . . . . . Yes No N/A
Are MSA results acceptable? . . . . . Yes No N/A

Comments: An MSA was ran for BOBNZ6 - although sample absorbance was not greater than half the Spike Absorbance. MSA was ran twice, each time failing (r < .995) and Qualified as estimated

8. REPORTED RESULTS AND DETECTION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A
Are all results supported in the raw data? . . . . . Yes No N/A
Are results calculated properly? . . . . . Yes No N/A
Do results meet the CRDLs? . . . . . Yes No N/A

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

Comments (attach additional sheets as necessary):

BLANK AND SAMPLE DATA SUMMARY

SDG: W0040	REVIEWER: RJS			DATE: 7/19/94				PAGE 1 OF 2	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
CCB5	Aluminum	41.40			ug/L	207.00	414.00	B0BNY4, B0BP02	U
PB	Aluminum	44.98			ug/L	225.00	450.00	B0BNY4, B0BP02	U
PB	Iron	10.87			ug/L	54.40	108.70	B0BNY4, B0BP00, B0BP01, B0BP02, B0BP03, B0BP11	U

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BLANK AND SAMPLE DATA SUMMARY

SDG: W0040	REVIEWER: RJS			DATE: 7/19/94				PAGE 2 OF 2	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	2X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
CCB4	Arsenic	-2.20			ug/L	4.40	22.00	B0BP10	UJ
CCB14	Iron	-13.80			ug/L	27.60	-138.00	B0BP26	BJ

ACCURACY DATA SUMMARY

SDG: W0040	REVIEWER: RJS	DATE: 7/19/94	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B0BP02A	Arsenic	83.3	B0BP02	BJ
B0BP03A	Arsenic	83.5	B0BP03	BJ
B0BNY4A	Lead	121.6	B0BNY4	UJ
B0BP00A	Lead	117.2	B0BP00	UJ
B0BP02A	Lead	125.7	B0BP02	UJ
B0BP10A	Lead	123.3	B0BP10	UJ
B0BP01A	Selenium	126.8	B0BP01	UJ
B0BP10A	Selenium	122.0	B0BP10	UJ
B0BP11A	Selenium	118.5	B0BP11	UJ

ACCURACY DATA SUMMARY

SDG: W0040	REVIEWER: RJS	DATE: 7/20/94	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B0BNY9A	Arsenic	81.3	B0BNY9	BJ
B0BNY9A	Lead	82.4	B0BNY9	UJ
B0BNY8A	Lead	82.1	B0BNY8	UJ
B0BNY9A	Selenium	74.9	B0BNY9	BJ
B0BNY8A	Selenium	77.1	B0BNY8	BJ

BLANK AND SAMPLE DATA SUMMARY

SDG: W0040	REVIEWER: RJS			DATE: 7/20/94				PAGE_1_OF_1_	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
PB	Iron	10.11			ug/L	50.60	101.10	B0BNZ0, B0BNZ6, B0BNZ8, B0BNZ9, B0BP04	U
CCB4	Potassium	1382.50			ug/L	6912.50	13825.00	B0BNZ0, B0BNZ1, B0BNZ6, B0BNZ7, B0BNZ9, B0BP05	U
CCB3	Potassium	1395.10			ug/L	6975.00	13951.00	B0BP04	U
PB	Zinc	17.79			ug/L	88.95	177.90	B0BNZ0, B0BNZ7, B0BNZ9, B0BP04, B0BP05	U

95 7195 252

ACCURACY DATA SUMMARY

SDG: W0040	REVIEWER: RJS	DATE: 7/20/94	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B0BNZ0A	Selenium	74.8	B0BNZ0	J
B0BNZ1A	Selenium	75.7	B0BNZ1	J
B0BNZ7A	Selenium	72.3	B0BNZ7	J
B0BNZ8A	Selenium	117.8	B0BNZ8	UJ
B0BP05A	Selenium	82.7	B0BP05	UJ

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RECORD COPY

Date: September 19, 1994
To: Westinghouse Hanford Company (technical representative)
From: A.T. Kearney, Inc.
Subject: Wet Chemistry - Data Package No. W0040-ITC-046 (SDG No. W0040)

INTRODUCTION

This memo presents the results of data validation on Data Package No. W0040-ITC-046 prepared by the International Technology Corporation (ITC) laboratory. A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analysis
B0BNY4	04/21/94	Water	D	See Note 1
B0BNY8	04/25/94	Water	D	See Note 1
B0BNZ0	04/22/94	Water	D	See Note 1
B0BNZ6	04/22/94	Water	D	See Note 1
B0BNZ8	04/22/94	Water	D	See Note 1
B0BP00	04/21/94	Water	D	See Note 1
B0BP02	04/21/94	Water	D	See Note 1
B0BP04	04/22/94	Water	D	See Note 1
B0BP10	04/21/94	Water	D	See Note 1
B0BP26	04/21/94	Water	D	See Note 1

Note 1. Requested Method: Anions: F, S04, Cond., pH

Data validation was conducted in accordance with the WHC statement of work (WHC 1994) and validation procedures (WHC 1993). Appendices 1 through 5 provide the following information as indicated below:

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

DATA QUALITY OBJECTIVES

- **Holding Times**

Analytical holding times for fluoride, pH, sulfate, and specific conductance were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: 28 days for fluoride, specific conductance and sulfate; and 24 hours for pH.

The 24-hour holding time for pH was exceeded for sample numbers B0BNY4, B0BNY8, B0BNZ0, B0BNZ6, B0BNZ8, B0BP00, B0BP02, B0BP04, B0BP10 and B0BP26 in SDG No. W0040. All associated results were qualified as estimates and flagged "J".

Holding times for all other analytes reviewed met QC requirements.

- **Blanks**

One laboratory preparation blank is analyzed at a frequency of one every 20 samples. All blank results must fall below the CRQL and if not, all associated data <5 times the amount found in the blank are qualified as non-detected "U".

All laboratory blank results were acceptable.

- **Accuracy**

Matrix Spike

Matrix spike analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations.

All matrix spike results were acceptable.

Laboratory Control Sample Recovery

The LCS monitors the overall performance of the analysis, including the sample preparation. An LCS should be prepared (e.g., digested or distilled) and analyzed with every group of samples which have been prepared together. The performance criteria for aqueous LCS percent recovery is 80 to 120 percent. The performance criteria for solid LCS samples are established through interlaboratory studies coordinated by a certifying agency (e.g., EPA or an independent commercial supplier).

All LCS results were found to be acceptable.

- **Precision**

  Analytical duplicate sample analyses are used to measure laboratory precision and sample homogeneity. Field duplicate analyses are used to measure both the laboratory and the field sampling procedure precision.

  All duplicate analyses results were acceptable for this data.

- **Sample Result Verification and Detection Limits**

  Sample results and reported detection limits were recalculated to ensure that the reported results were accurate. Raw data were examined for anomalies, transcription errors, and reduction errors.

  The reviewer verified that the results and detection limits fell within the linear range of the instrument. All sample results and reported detection limits were acceptable.

- **Completeness**

  Data Package No. W0040-ITC-046 (SDG No. W0040) was submitted for validation and verified for completeness.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

A review of instrument continuing calibration information and QC data indicate that instrument performance was adequate for all analyses. Holding times were exceeded for pH in all samples and associated results were qualified as estimates and flagged "J". Estimated results are usable for limited purposes only. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

EPA, 1987, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, Environmental Protection Agency, Washington, D.C.

EPA, 1988c, *EPA Contract Laboratory Program Statement of Work for Inorganics Analyses, Multi-Media, Multi-Concentration*, U.S. Environmental Protection Agency, Washington, D.C.

EPA, 1988d, *Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses*, U.S. Environmental Protection Agency, Washington, D.C.

EPA, 1990, *EPA Contract Laboratory Program Statement of Work for Inorganic Analyses, Multi-media, Multi-Concentration*, U.S. Environmental Protection Agency, Washington, D.C.

WHC, 1992a, *Data Validation Procedures for Chemical Analyses*, WHC-SD-EN-SPP-002, Rev. 2, Westinghouse Hanford Company, October 1993.

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Appendix 1

Glossary of Data Reporting Qualifiers

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

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. The associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified QC deficiency.

JN - Indicates a tentatively identified compound (TIC) that has been determined to be valid in terms of identification and quantitation.

UJN - Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected (U) due to associated blank contamination.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

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Appendix 2

Summary of Data Qualification

DATA QUALIFICATION SUMMARY

SDG: W0040	REVIEWER: SC	DATE: 8/02/94	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
pH	J	B0BNY4, B0BNY8, B0BNZ0, B0BNZ6, B0BNZ8, B0BP00, B0BP02, B0BP04, B0BP10, B0BP26	Holding Times Exceeded

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Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

WET CHEMISTRY/ANIONS ANALYSIS, WATER MATRIX, (mg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: IT																					
Case	SDG: W0040																				
Sample Number		B0BNY4		B0BNY8		B0BNZ0		B0BNZ6		B0BNZ8		B0BP00		B0BP02		B0BP04		B0BP10		B0BP26	
Location		1-B4-4		1-B4-7		1-B4-8		1-B5-2		1-B8-6		1-B9-1		1-B9-2		1-B9-3		6-65-83		1-B4-4	
Remarks																				SPLIT	
Sample Date		04/21/94		04/25/94		04/22/94		04/22/94		04/22/94		04/21/94		04/21/94		04/22/94		04/21/94		04/21/94	
Wet Chemistry Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
pH	9040	7.92	J	7.99	J	8.32	J	8.18	J	7.91	J	7.97	J	7.78	J	8.01	J	7.98	J	7.98	J
Specific Conductance	120.1	442		435		457		442		323		437		545		4.00		378		444	
Fluoride	300.0	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U
Sulfate	300.0	53		51		50		50		27		45		82		45		33		52	

000010

pH ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	standard units	Analysis Date:	04/26/94

Client Sample ID	Lab Sample ID	Result
Method Blank	*	-
BOBNY4	AA7379	7.92 J
BOBP26	AA7383	7.98 J
BOBP02	AA7381	7.78 J
BOBP00	AA7377	7.97 J
BOBP10	AA7375	7.98 J

RJS
9/15/94

* - A method blank is not applicable for this analysis.

pH ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	standard units	Analysis Date:	05/03/94

Client Sample ID	Lab Sample ID	Result
Method Blank	*	-
BOBNZ0	AA7558	8.32 J
BOBNZ6	AA7554	8.18 J
BOBP04	AA7552	8.01 J
BOBNZ8	AA7556	7.91 J

RES
9/15/94

* - A method blank is not applicable for this analysis.

pH ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	453
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	standard units	Analysis Date:	05/03/94

Client Sample ID	Lab Sample ID	Result
Method Blank	*	-
BOBNY8	AA7726	7.99 J

RFS
9/15/94

* - A method blank is not applicable for this analysis.

9613495.2536

SPECIFIC CONDUCTANCE ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	umhos/cm	Analysis Date:	04/27/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6155	1	U
BOBNY4	AA7379	442	+
BOBP26	AA7383	444	+
BOBP02	AA7381	545	+
BOBP00	AA7377	437	+
BOBP10	AA7375	378	+

RJS 9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

SPECIFIC CONDUCTANCE ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	umhos/cm	Analysis Date:	05/02/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6133	1	U
BOBNZ0	AA7558	457	+
BOBNZ6	AA7554	442	+
BOBP04	AA7552	4	+
BOBNZ8	AA7556	323	+

RJS 9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

SPECIFIC CONDUCTANCE ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	453
Sample Matrix:	Water	Extraction Date:	N/A
Concentration Units:	umhos/cm	Analysis Date:	05/02/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6133	1	U
BOBNY8	AA7726	435	+

RJS
9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBP10	Preparation Date:	05/17/94
Lab Sample ID:	AA7375	Analysis Date:	05/17/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	33	+	3.0

RJS 9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBP00	Preparation Date:	05/17/94
Lab Sample ID:	AA7377	Analysis Date:	05/17/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	45	+	7.5

RJS 9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBNY4	Preparation Date:	05/17/94
Lab Sample ID:	AA7379	Analysis Date:	05/17/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	53	+	7.5

RJJ
9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBP02	Preparation Date:	05/17/94
Lab Sample ID:	AA7381	Analysis Date:	05/17/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	82	+	7.5

RJS
9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	427
Client Sample ID:	BOBP26	Preparation Date:	05/17/94
Lab Sample ID:	AA7383	Analysis Date:	05/17/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	52	+	7.5

RJS
9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Client Sample ID:	BOBP04	Preparation Date:	05/18/94
Lab Sample ID:	AA7552	Analysis Date:	05/18/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	45	+	7.5

RJS
9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Client Sample ID:	BOBNZ6	Preparation Date:	05/18/94
Lab Sample ID:	AA7554	Analysis Date:	05/18/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	50	+	7.5

RJS
9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Client Sample ID:	BOBNZ8	Preparation Date:	05/18/94
Lab Sample ID:	AA7556	Analysis Date:	05/18/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	27	+	3.0

9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	437
Client Sample ID:	BOBNZ0	Preparation Date:	05/18/94
Lab Sample ID:	AA7558	Analysis Date:	05/18/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	50	+	7.5

RJS
9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-Knoxville	SDG Number:	W0040
Contract Name:	Westinghouse Hanford	Job Number:	453
Client Sample ID:	BOBNY8	Preparation Date:	05/18/94
Lab Sample ID:	AA7726	Analysis Date:	05/18/94
Sample Matrix:	Water	Concentration Units:	mg/l

Compound	Result	Qualifier	Detection Limit
fluoride	0.40	U	0.40
sulfate	51	+	7.5

RJS
9/15/94

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

9613495.2550

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

JUN 1994 RECEIVED SDLA

CERTIFICATE OF ANALYSIS

RECORD COPY

IT Corporation
2800 George Washington Way
Richland, WA 99352
Attn: Van Pettey

June 9, 1994

Job Number: 427; 437; 453

This is the Certificate of Analysis for the following samples:

SDG:	W0040
Client Project ID:	WHC SAF 94-129 100-BC-5 Groundwater Round 6
Date Received by Lab:	April 25; April 27; April 29, 1994
Number of Samples:	Twenty (20)
Sample Type:	Water

I. Introduction

On April 25, April 27 and April 29, 1994, twenty (20) water samples arrived at ITAS-Richland, Washington and were transferred to ITAS-Knoxville for chemical analysis. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results.

The samples were analyzed for Target Analyte List (TAL) metals by cold vapor atomic absorption spectroscopy (CVAA), graphite furnace atomic absorption spectroscopy (GFAA), and inductively coupled plasma spectroscopy (ICP) in accordance with the EPA CLP ILM03 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

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II. Analytical Results/Methodology (Continued)

The pH of the samples was determined using EPA method 9040.

The specific conductance of the samples was measured using EPA method 120.1.

The samples were analyzed for anions by ion chromatography using EPA method 300.0.

III. Quality Control

The samples for work order #427 were digested on May 5 and June 8, 1994 for ICP and May 5, 1994 for GFAA. The CVAA analysis for mercury was performed on May 16, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from May 5 through May 18, 1994; the remaining metals were analyzed by ICP on May 25, May 31 and June 8, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample numbers BOBP10 and BOBP11. Spike recovery (accuracy) results were within acceptance limits for all parameters . Duplicate RPD (precision) results were within acceptance limits for all parameters. The CRA standard for mercury analysis was double spiked. The serial dilution for BOBP11 was performed at a 1/2 dilution instead of a 1/5 dilution.

The samples for work order #437 were digested on May 11, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on May 16, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from May 12 through May 17, 1994; the remaining metals were analyzed by ICP on May 24, 1994. All run QC was acceptable. The CRA sample for the mercury analysis was double spiked. The samples were batched with QC from work order #427.

The samples for work order #453 were digested on May 12, 1994 for ICP and GFAA. The samples for mercury analysis was performed on May 16, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from May 16 through May 24, 1994; the remaining metals were analyzed by ICP on May 25, 1994. All run QC was acceptable. The CRA standard for mercury analysis was double spiked. The samples were batched with QC from work order #427.

Data were reported with qualifiers as follows:

"C" Qualifiers

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
B - Value greater than instrument detection limit, but less than contract required quantitation limit.

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III. Quality Control (Continued)

"Q" Qualifiers

* - Duplicate analysis outside control limits.
N - Spiked sample recovery outside control limits.
W - Post-digestion spike for GFAA was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.
S - The reported value was determined by method of standard additions.

"M" Qualifiers

P - Analysis performed by ICP.
V - Analysis performed by CVAA.
F - Analysis performed by GFAA.
C - Cyanide analysis by manual distillation/colorimetric determination.

Miscellaneous

D - Duplicate.
S - Spike.
NR - Not required.
G - Native analyte > 4 times spike added, therefore, acceptance criteria do not apply.
X - Detection limits higher than normal due to sample matrix interferences.

The samples were analyzed for pH on April 26 and May 3, 1994. A duplicate was analyzed using sample number BOBP10. All quality control results were acceptable.

The samples were analyzed for specific conductance on April 27 and May 2, 1994. A duplicate was analyzed using sample number BOBP10. All quality control results were acceptable.

The samples were analyzed for fluoride, chloride, nitrite, phosphate and sulfate by EPA method 300.0 on May 19 and May 23, 1994. A matrix spike and matrix spike duplicate were analyzed using sample number BOBP10. All quality control results were acceptable.

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III. Quality Control (Continued)

Table I is a cross reference between client sample IDs and laboratory sample IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Test
AA7374	404431-01A	BOBP10	METALS-T
AA7375	404431-01B	"	ANIONS
AA7375	"	"	pH
AA7375	"	"	CONDUCTIVITY
AA7384	404431-02A	BOBP11	METALS-D
AA7376	404431-03A	BOBP00	METALS-T
AA7377	404431-03B	"	ANIONS
AA7377	"	"	pH
AA7377	"	"	CONDUCTIVITY
AA7385	404431-04A	BOBP01	METALS-D
AA7378	404431-05A	BOBNY4	METALS-T
AA7379	404431-05B	"	ANIONS
AA7379	"	"	pH
AA7379	"	"	CONDUCTIVITY
AA7386	404431-06A	BOBNY5	METALS-D
AA7380	404431-07A	BOBP02	METALS-T
AA7381	404437-07B	"	ANIONS
AA7381	"	"	pH
AA7381	"	"	CONDUCTIVITY

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III. Quality Control (Continued)

Table I is a cross reference between client sample IDs and laboratory sample IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Test
AA7387	404431-08A	BOBP03	METALS-D
AA7382	404431-09A	BOBP26	METALS-T
AA7383	404431-09B	"	ANIONS
AA7383	"	"	pH
AA7383	"	"	CONDUCTIVITY
AA7388	404431-10A	BOBP27	METALS-D
AA7551	404456-01A	BOBP04	METALS-T
AA7552	404456-01B	"	ANIONS
AA7552	"	"	pH
AA7552	"	"	CONDUCTIVITY
AA7559	404456-02A	BOBP05	METALS-D
AA7553	404456-03A	BOBNZ6	METALS-T
AA7554	404456-03B	"	ANIONS
AA7554	"	"	pH
AA7554	"	"	CONDUCTIVITY
AA7563	404456-04A	BOBNZ7	METALS-D
AA7555	404456-05A	BOBNZ8	METALS-T
AA7556	404456-05B	"	ANIONS
AA7556	"	"	pH

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III. Quality Control (Continued)

Table I is a cross reference between client sample IDs and laboratory sample IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Test
AA7556	404456-05B	BOBNZ8	CONDUCTIVITY
AA7565	404456-06A	BOBNZ9	METALS-D
AA7557	404457-07A	BOBNZ0	METALS-T
AA7558	404457-07B	"	ANIONS
AA7558	"	"	pH
AA7558	"	"	CONDUCTIVITY
AA7567	404456-08A	BOBNZ1	METALS-D
AA7725	404499-01A	BOBNY8	METALS-T
AA7726	404499-01B	"	ANIONS
AA7726	"	"	pH
AA7726	"	"	CONDUCTIVITY
AA7746	404499-02A	BOBNY9	METALS-D

9413495.2556

IV. Certification

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature:

Reviewed and Approved:

Sheree A. Schneider

Sheree' A. Schneider
Project Manager

9613495.2557

WO#427

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1550 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

.1 Per Shipping Container

Date/Time Received 4-22-94 1400 Client Name WHC

Project/Client # 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-7

1. Condition of shipping container? n.1C
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 4-22-94 24
8. Samples have: X tape ____ hazard labels
   X custody seals ____ appropriate sample labels
9. Samples are: X in good condition ____ leaking
   X broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 2°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) n/a
    Request for analysis #(s) n/a
    Airbill # n/a Carrier n/a
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☒

Printed Name/Signature Karen Achterberg Date/Time 4-22-94 1400

FORM NO. LS-042, Rev.0, 2/94

9613495.2558

WO#427

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1330 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

1 Per Shipping Container

Date/Time Received 4-22-94 14:00 Client Name WHC

Project/Client # 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-9

1. Condition of shipping container? air
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 21
8. Samples have: X tape ____ hazard labels
   X custody seals ____ appropriate sample labels
9. Samples are: X in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 2°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) NA
    Request for analysis #(s) NA
    Airbill # NA Carrier NA
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☒

Printed Name/Signature [illegible] Date/Time 4-22-94 14:00

FORM NO. LS-042, Rev.0, 2/94

9615495.2559

WO #437

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-25-94 1300 Client Name WHC

Project/Client # SAF 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) FR-9

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 304 OK 4-25-94
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ✓ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 2°

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) N/A
    Airbill # N/A Carrier N/A
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature R. Boyd R. Boyd Date/Time 4-25-94 1300

FORM NO. LS-042, Rev.0, 2/94

9613495.2560

WO#437

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-25-94 1300 Client Name WHC

Project/Client # SDF 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) CR-3

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☑ No ☐
3. Custody Seals dated and signed? Yes ☑ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☑ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☑
6. Each sample is in a plastic bag? Yes ☑ No ☐
7. Number of sample containers in cooler: 34
8. Samples have: ____ tape ____ hazard labels
   ☑ custody seals ☑ appropriate sample labels
9. Samples are: ☑ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☑ No ☐

Sample temperature 1°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) N/A
    Airbill # N/A Carrier N/A
12. Have any anomalies been identified above? Yes ☐ No ☑
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature R. Boyd R. Boyd Date/Time 4-25-94 1300

FORM NO. LS-042, Rev.0, 2/94

9613495.2561

W077453

INTERNATIONAL TECHNOLOGY CORPORATION

National Office
1100 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(For Shipping Containers)

Date/Time Received 4/27 1210 Client Name JHC

Project/Client # 94-121 Batch or Case # na

Cooler ID (if noted on the outside of cooler) SmL 144

1. Condition of shipping container? AR
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 14
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ____ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 40

11. The following paperwork should be accounted for (N/A if not applicable):

    Chain of Custody #'(s) ____

    Request for analysis #(s) CMC

    Airbill # ____ Carrier ____
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature [signature] Date/Time 4/27/94 1210

FORM NO. LS-042, Rev.0, 2 94

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

WO#427

Page 1 of 1

Data Turnaround: [ ] Priority [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100-B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: ERL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A 4294-0-0518-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE

SAMPLE ANALYSIS: 404431

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP	ANIONS F,SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Anions	ICP METALS, AA METALS, Hg CLP FILTERD
Preservative				HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2
Type of Container				G/P	P	G/P	G/P	Gs	Poly	G/P
No. of Container(s)				1	1	5	2	6	1	1
Volume				1000ml	1000ml	1000ml	1000ml	500ml ~~1000ml~~	40ml	1000ml
01	BOBP02	W	4/21/94	1245	X	X	X	X	X	X	
02	BOBP03	W	↓	↓							XA

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: K. Trapp / K. Trapp	Date/Time: 4/22/94 0752	Received By: L Sweeney / L Sweeney	Date/Time: 4/22/94 0752
Relinquished By: L Sweeney / L Sweeney	Date/Time: 4/22/94 1400	Received By: R Boyd	Date/Time: 4/22/94 1400
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS: DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

0000029

000040

9413195.2592

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#427

Page 1 of 1

Date Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp / K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 120 B	SAF No.: 94-129
Ice Chest No.: EA-7	Field Logbook No.: EFL-103G	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-3	Bill of Lading/Air Bill No.: N/A NONE

Possible Sample Hazards/Remarks

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE

	Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2									
	Type of Container	G/P	P	G/P	G/P	Gs	Bag	G/P									
	No. of Container(s)	1	1	5	2	3	1	1									
	Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40ml	1000ml									
SAMPLE ANALYSIS 484431		ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Moisture Scan	ICP METALS, AA METALS, Hg CLP FILTERD									
Sample No.	Matrix*	Date Sampled	Time Sampled														
01 BOBP10	W	4/21/94	1510	X	X	X	X	X	X								
02 BOBP11	W	↓	↓							XA							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/21/94 0752	Lucinda K Sweeney	4/22/94 0752
Lucinda K Sweeney	4/22/94 1400	R. Bard	4/22/94 1400

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

000041

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#427

Page 1 of 1

Date Turnaround: [ ] Priority [X] Normal

Collector: K. Tropp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 1CCB	SAF No.: 94-129
Ice Chest No.: EA-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W74-0-0516-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		

SAMPLE ANALYSIS: 404431

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40mL	1000ml
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE							
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F, SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 404432	Tc-99	TRITIUM C-14 3	Radionuclide Scan	ICP METALS, AA METALS, Hg CLP FILTERD

	Sample No.	Matrix*	Date Sampled	Time Sampled	A	B					
05	BOBNY4	W	04/21/94	1100	X	X	X	X	X	X	
06	BOBNY5	W	↓	↓							XA

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By: K. Tropp / K Tropp	4/22/94 0752	Received By: L Sweeney / L Sweeney 4.22.94 0752
Relinquished By: L Sweeney / L Sweeney	4/22/94 1480	Received By: R. Boyd 4/22/94 1480
Relinquished By:		Received By:
Relinquished By:		Received By:

SPECIAL INSTRUCTIONS: DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

9413195.2564

0000042

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

WO#427

Page 1 of 1

Date Turnaround: [ ] Priority [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: FR-9	Field Logbook No.: EFL-1036	Method of Shipment: EMERY
Shipped To: TMA	Offsite Property No.: W94-0-0518-3	Bill of Lading/Air Bill No.: ~~HH~~ KCS 4/22/94 NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4		HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs		G/P
No. of Container(s)	1	1	~~4~~ 1 L	1	2		1
Volume	1000ml	1000ml	~~1000ml~~ 4L	1000ml	1000ml		1000ml
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14		ICP METALS, AA METALS, Hg FILTERD CLP
404431			40443205				

	Sample No.	Matrix*	Date Sampled	Time Sampled															
09	B0BP26	W	4/21/94	1100	X	X	X	X	X										
10	B0BP27	W	↓	↓							XA								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	L Sweeney / L Sweeney	4/22/94 0752
L Sweeney / L Sweeney	4/22/94 1400	R. Boyd	4/22/94 1400

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

000043

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

WO#427

Page 1 of 1

Date Turnaround: ☐ Priority ☒ Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: FFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-4	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

SAMPLE ANALYSIS: 404431

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP	ANIONS F,SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Gamma Scan	ICP METALS, AA METALS, Hg CLP FILTERD
Preservative				HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container				G/P	P	G/P	G/P	Gs	G/P	G/P
No. of Container(s)				1	1	5	2	3	1	1
Volume				1000ml	1000ml	1000ml	1000ml	1000ml	40ml	1000ml
				A	B	404432	02			A
03 BOBP00	W	4/21/94	1410	X	X	X	X	X	X	
04 BOBP01	W	↓	1410							X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: K. Trapp / K. Trapp	Date/Time: 4/22/94 0752	Received By: L Sweeney / L Sweeney	Date/Time: 4/22/94 0752
Relinquished By: L Sweeney / L Sweeney	Date/Time: 4/22/94 1480	Received By: R. Boyd	Date/Time: 4/22/94 1480
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

000044

9613495.2566

WO# 437

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: [ ] Priorty [X] Normal

Collector: K. Tropp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W74-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	G	G/P
No. of Container(s)	1	1	5	2	6	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	1000ml	1000ml
SAMPLE ANALYSIS 404456	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99 40445702	TRITIUM C-14	Purgeable Organics	ICP METALS, AA METALS, Hg CLP FILTERD

Sample No.	Matrix*	Date Sampled	Time Sampled															
B0BNZ6 03	W	4/22/94	1040	X	X	X	X	X	X									
B0BNZ7 04	W	↓	↓							X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Tropp / K. Tropp	4/22/94 1500	L Sweeney / L Sweeney	4/22/94 1500
L Sweeney / L Sweeney	4/25/94 1300	R. Bard / R. Bard	4.25.94 / 1300

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

Matrix*
- S = Soil
- SE = Sediment
- SD = 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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

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9408245.2567

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Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Tiegd	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: F.FL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W74-0-0318-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2									
Type of Container	G/P	P	G/P	G/P	Gs	Gas	G/P									
No. of Container(s)	1	1	5	2	6	1	1									
Volume	1000ml	1000ml	1000ml	1000ml	~~1000ml~~	40ml	1000ml									
SAMPLE ANALYSIS 40445601	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 40445701	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD 02A									
Sample No.	Matrix*	Date Sampled	Time Sampled													
BOBP04 01	W	4/22/94	1200	X	X	X	X	X	X							
BOBP05 02	W	↓	↓							X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Tiegd / K. Tiegd	4/22/94 1500	L Sweeney / L Sweeney	4/22/94 1500
L Sweeney / L Sweeney	4/25/94 1300	R. Boyd / R. Boyd	4/25/94 1300
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

000046

WO# 437

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priority [X] Normal

Collector: K. Tiepp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0578-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Sample No.	Matrix*	Date Sampled	Time Sampled	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2								
Preservative				HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2								
Type of Container				G/P	P	G/P	G/P	Gs	aGs	G/P								
No. of Container(s)				1	1	5	2	3	1	1								
Volume				1000ml	1000ml	1000ml	1000ml	4000ml	40ml	1000ml								
SAMPLE ANALYSIS 404456				ICP METALS AA METALS Hg CLP A	ANIONS F, SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 40445703	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERED A								
BOBNZ8 05	W	4/22/94	1330	X	X	X	X	X	X									
BOBNZ9 06	W	↓	↓							X								

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By	K. Tiepp / K. Tiepp	4/22/94 1500
Received By	L Sweeney / L Sweeney	4/22/94 1500
Relinquished By	L Sweeney / L Sweeney	4/25/94 1300
Received By	R. Bagl	4/25/94 1300
Relinquished By		
Received By		
Relinquished By		
Received By		

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

9413195.2569

000047

WO#437

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priority [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	2GG	G/P
No. of Container(s)	1	1	5	2	6 ~~3~~	1	1
Volume	1000ml	1000ml	1000ml	1000ml	500mL ~~1000mL~~	4/22/94 40mL	1000ml
SAMPLE ANALYSIS 404456	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99 404	TRITIUM C-14 5704	Activity Gram	ICP METALS, AA METALS, Hg CLP FILTERD 08A

Sample No.	Matrix*	Date Sampled	Time Sampled							
BOBNZ0 07	W	4/22/94	0903	X	X	X	X	X	X	
BOBNZ1 08	W	↓	↓							X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 1500	T. Sweeney / T. Sweeney	4/22/94 1300
T. Sweeney / T. Sweeney	4/25/94 1300	R. Bay / IT	4/25/94 1300

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original - Sample Yellow - Sampler

BC-6000-828 (12/92)

000048

9518495.2570

WO# 453

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priority [X] Normal

Collector: K Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: SMC-114	Field Logbook No.: EFL-1636	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W74-0-0578-11	Bill of Lading/Air Bill No.: N/A NONE

Possible Sample Hazards/Remarks

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE Stoudin Le Frois 3B Air

SAMPLE ANALYSIS: 404499

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	uG7	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40mL	1000ml
	ICP METALS AA METALS Hg CLP A	ANIONS F, SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 4045000	Tc-99 1	TRITIUM C-14	Acidify Hcl	ICP METALS, AA METALS, Hg CLP FILTERD ORA

Sample No.	Matrix*	Date Sampled	Time Sampled															
BOBNY8 01	W	4/25/94	0930	X	X	X	X	X	X									
BOBNY9 02	W	↓	↓							X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Umary / K. Trapp	4/25/94 1359	AJ Simpson / RG Simpson	4/25/94 1400
RG Simpson	4/27/94 0921	L Sweeney / L Sweeney	4/27/94 0921
L Sweeney / L Sweeney	4/27/94 1210	H Herdeberg	4/27 1210

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

Matrix*
S = Soil
SE = Sediment
SD = 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 | Title | Date/Time

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

000049

WO#427

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-C-0518-3

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: BUF02, BUF03, BUF26, BUF27 Cooler ID: ER-4 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: BUFNY2, BUBNY3, BUBP10, BUBP11 Cooler ID: ER-7 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
R Alelin	157906	4-22-94

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4-22-94	8B410 PB5AA	NA

Originated By	Date	Authorized By	Date
P H Butcher	4/22/94	P H Butcher	4/22/94
Signature and Name of Property Control	**Custodian Date**	**Property Management Approval**	**Date**
		P H Hanke	4/22/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
R. Boyd Jr				
Date 4-22-94 1400				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

9613495.2573

WO#427

Contractor	OFF-SITE — PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		WHC-C-0518-4

PART I – TO BE COMPLETED BY ORIGINATOR

Department	ER Eng Support	Section	Field & Analytical Supp	Unit	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: B0B100, B0B101, B0B1Y4, B0B1Y5 Cooler ID: ER-S Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: Cooler ID: NA Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
[illegible]	[illegible]	4-22-94

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
~~PH~~ 4/22/94	8B410 PR5AN	NA

Originated By	Date	Authorized By	Date
P H Butcher	4/22/94	PH Butcher	4/22/94

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	4/22/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible] IT				
Date 4-22-94 1400				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

9613495.2574

WO#437

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-6-0518-[illegible]

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: [illegible] Cooler ID: ER-[illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: [illegible] Cooler ID: ER-[illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
Carla Little	15741C	4-25-94

Location of Property (Area & Bldg.)	Contact	Phone
100-FC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4-25-94	8B410	NA

Originated By	Date	Authorized By	Date
PH Butcher	4/25/94	[illegible]	04-94

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	4/25/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
R Boul JT				
Date 4-25-94 300				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

54-3000-479 (09/89)

9613495.2575

WO#453

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W194-C-00518-11

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to

IT Analytical Services
2800 George Washington Way
Richland, WA 99352

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: B0FN13, B0FN13, B0FNY6, B0FNY7 Cooler ID: ER-9 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: B0FNY8, B0FNY9 Cooler ID: SMC-144 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # None

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No. 15733	Date 4-27-94
Location of Property (Area & Bldg.) 100-BC-5	Contact P. H. Butcher	Phone (509) 376-4388
Date Ready for Shipment 4-27-94	Cost Code to be Charged 8B410 PB5AA	Approximate Date This Property will be Returned NA
Originated By PH Butcher	Date 4/27/94	Authorized By [illegible] Date 4/27/94
Signature and Name of Property Control	Custodian Date	Property Management Approval [illegible] Date [illegible]

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]				
Date 4/27 1230				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Green – Property Control Custodian (Issuing Office) Yellow – Retain Pink – Originator

INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001524*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO# 427 RL# 539

Reference Document No. 340395
Page 1 of 2

Project Name/No. [1] SAF 94-129
Sample Team Members [2]
Profit Center No. [3] 4632
Project Manager [4] Van Pettey
Purchase Order No. [6]
Required Report Date [11]

Samples Shipment Date [7] 4-23-94
Lab Destination [8] Middlebrook
Lab Contact [9]
Project Contact/Phone [12]
Carrier/Waybill No. [13] 8875576065

Bill to: [5] IT Richland
Report to: [10] IT Richland

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Preservative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
40443101 A	BOBP10 /water	4-21-1510	G/P	1000ml	Cool 4°	ICP Metals AA ↓ Hg	5°C BPB 4/25/94 <2	
↓ B	↓	4-21-94 1510	P			Anions, Cond, pH	FUME LAB	
4044 3102 A	BOBP11	↓	G/P			ICP, GFAA, Hg	USE <2	
4044 3103 A	BOBP00	4-21-94 1410	G/P			↓	<2	
↓ B	~~BOBP01~~ DS 4-22-94	↓	P			Anions, Cond, pH		
4044 3104 A	BOBP01	↓	G/P			ICP, GFAA, Hg	USE <2	
4044 3105 A	BOBNY4	4-21-94 1100	G/P			↓	<2	
↓ B	↓	↓	P	↓	↓	Anions, Cond, pH		

Special Instructions: [23]

Possible Hazard Identification: [24] Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: [25] Return to Client ☒ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: [26] Normal ☐ Rush ☐ AS Per WHC Contract

QC Level: [27] I. ☐ II. ☐ III. ☐ Project Specific (specify): SOG W0040

1. Relinquished by [28] (Signature/Affiliation) R Boyd IT — Date: 4-23-94 Time: 1200	1. Received by [28] (Signature/Affiliation) Bryan Blomquist ITASKA — Date: 4/25/94 Time: 8:55
2. Relinquished by (Signature/Affiliation) — Date: Time:	2. Received by (Signature/Affiliation) — Date: Time:
3. Relinquished by (Signature/Affiliation) — Date: Time:	3. Received by (Signature/Affiliation) — Date: Time:

Comments: [29]

MCA 3/15/91

Write: To accompany samples
Yellow: Field copy

0000043

0000054

WO#427

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.[30] 340395

Page 2 of 2

Project Name SAF 94-129

Project No.

Samples Shipment Date

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
40443106A	BOBNY5 / water	4-21-94 1100	G/P	1000ml	COOL 4°	ICP, GFAA, Hg	5°C PB 4/25/94 <2	
40443107A	BOBP02	4-21-94 1245	G/P			↓	<2	
↓ B	↓		P			Anions, Cond, pH		
40443108A	BOBP03	↓	G/P			ICP, GFAA, Hg	<2	
40443109A	BOBP26	4-21-94 1100	G/P			↓	<2	
↓ B	↓		P			Anions, Cond, pH		
40443110A	BOBP27	↓	G/P	↓	↓	ICP, GFAA, Hg	<2	

PB 4-22-94

White: To accompany samples

Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

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9412195.2577

INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001534*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO #487 RL #548

Reference Document No. 453602
Page 1 of ___

Project Name/No.[1] SAF 94-129
Sample Team Members[2]
Profit Center No.[3] 4632
Project Manager[4] VAN PETTEY
Purchase Order No.[6]
Required Report Date[11]

Samples Shipment Date[7] 4-26-94
Lab Destination[8] Middlebrook
Lab Contact[9]
Project Contact/Phone[12]
Carrier/Waybill No.[13]

Bill to:[5] IT Richland
Report to:[10] IT Richland

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Pre-servative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
40445601A	BOBP04 /Water	4/22 1200	G/P	1000ml	Cool 4°	ICP, GFAA, Hg	6°C BPB 4/27/94 <2	
B	↓	↓	P	↓	↓	Anions, SO4, Cond, PH	↓	
02A	BOBP05 /Water	↓	G/P			ICP, GFAA, Hg	<2	
03A	BOBNZ6 /Water	4/22 1040	G/P			ICP, GFAA, Hg	<2	
B	↓	↓	P			Anions, SO4, Cond, PH		
04A	BOBNZ7 /Water	↓	G/P			ICP, GFAA, Hg	<2	
05A	BOBNZ8 /Water	4/22 1330	G/P			ICP, GFAA, Hg	<2	
B	↓		P	↓	↓	Anions, SO4, Cond, PH	↓	

FOR LAB USE ONLY

Special Instructions:[23] As per WHC Contract

Possible Hazard Identification:[24] Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal:[25] Return to Client ☒ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required:[26] Normal ☒ Rush ☐

QC Level:[27] I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG W0040

1. Relinquished by[28] (Signature/Affiliation) [signature] ITAS Date: 4/26/94 Time: 1600	1. Received by[28] (Signature/Affiliation) Bryan Blomquist ITASKN Date: 4/27/94 Time: 9:20
2. Relinquished by (Signature/Affiliation) Date: Time:	2. Received by (Signature/Affiliation) Date: Time:
3. Relinquished by (Signature/Affiliation) Date: Time:	3. Received by (Signature/Affiliation) Date: Time:

Comments:[29]

MCA 3/15/91

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

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INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

WO# 437

Reference Document No.[30] 453602

Page 2 of 2

Project Name SAF 94-129

Project No. STX-W0040

Samples Shipment Date 4-26-94

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
404456 06A	BOBNZ9 /water	4/22 1330	G/P	1000ml	Cool 4°	ICP, GFAA, Hg	6° C SOB 4/27/94 <2	
07A	BOBNZ0 /water	4/22 0905	G/P			ICP, GFAA, Hg	<2	
B			P			Anions, SO4, Cond, PH.		
08A	BOBNZ1 /water		G/P			ICP, GFAA, Hg	<2	
	JH 4/25/94							

White: To accompany samples

Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

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INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001549*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO# 453 RL# 564

Reference Document No. 453609
Page 1 of 1

Project Name/No. 1 SAF 94-129
Sample Team Members 2
Profit Center No. 3 4632
Project Manager 4 Van Petteys
Purchase Order No. 6
Required Report Date 11

Samples Shipment Date 7 4-28-94
Lab Destination 8 Middlebrook
Lab Contact 9
Project Contact/Phone 12
Carrier/Waybill No. 13 150 9384 335

Bill to: 5 IT Richland
Report to: 10 IT Richland

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
40449901 A	BOBNY8 / water	4/25 0930	G/P	1000ml	Cool 4°	ICP, GFAA, Hg	5°C BPB 4/29/94 <2	
B	↓	↓	P	↓	↓	ANIONS, SO4, Cond, Pth.	↓ FOR LAB USE ONLY	
02A	BOBNY9 / water		G/P			ICP, GFAA, Hg		
	JH 4/28/94						FOR LAB USE ONLY	

Special Instructions: 23 As per WHC Contract

Possible Hazard Identification: 24
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: 25
Return to Client ☒ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: 26
Normal ☒ Rush ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG W0040

1. Relinquished by 28 (Signature/Affiliation) L. Boyd IT — Date: 4-28-94 Time: 1600	1. Received by 28 (Signature/Affiliation) Bryan Blomquist ITASK — Date: 4/29/94 Time: 8:45
2. Relinquished by (Signature/Affiliation) — Date: Time:	2. Received by (Signature/Affiliation) — Date: Time:
3. Relinquished by (Signature/Affiliation) — Date: Time:	3. Received by (Signature/Affiliation) — Date: Time:

Comments: 29

MCA 3/15/91

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

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Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: BHI/WHC		DATA PACKAGE: T00555	
VALIDATOR: RJS	LAB: IT	DATE: 9/15/94	
CASE:		SDG: W0040	

ANALYSES PERFORMED

☒ Anions/IC	☐ TOC	☐ TOX	☐ TPH-418.1	Oil and Grease	Alkalinity
☐ Ammonia	☐ BOD/COD	☐ Chloride	☐ Chromium-VI	☒ pH	☐ NO_3/NO_2
☒ Sulfate	☐ TDS	☐ TKN	☐ Phosphate	☒ Spec. Conductance	☐
☐	☐	☐	☐	☒ fluoride	☐

SAMPLES/MATRIX B0BNY4, B0BNY8, B0BNZ0, B0BNZ6
B0BNZ8, B0BP00, B0BP02, B0BP04, B0BP10, B0BP26

(10 water Samples)

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . Yes No N/A

Is a case narrative present? . . . . . Yes No N/A

Comments:

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . Yes No N/A

Comments:

pH – All sample not analyzed within 24 hours of sample collection. (J)

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

3. INSTRUMENT CALIBRATION

Was initial calibration performed for all applicable analyses? Yes No N/A
Are initial calibration results acceptable? . . . . . Yes No N/A
Was a calibration check performed for all applicable analyses? Yes No N/A
Are calibration check results acceptable? . . . . . Yes No N/A
Comments:

4. BLANKS

Were laboratory blanks analyzed? . . . . . Yes No N/A
Are laboratory blank results acceptable? . . . . . Yes No N/A
Were field/trip blanks analyzed? . . . . . Yes No N/A
Are field/trip blank results acceptable? . . . . . Yes No N/A
Comments:

5. ACCURACY

Were spike samples analyzed at the required frequency? . . . . Yes No N/A
Are spike recoveries acceptable? . . . . . Yes No N/A
Were LCS analyses performed at the required frequency? . . . . Yes No N/A
Are LCS recoveries acceptable? . . . . . Yes No N/A
Comments:

6. PRECISION

Were laboratory duplicate samples analyzed
at the required frequency? . . . . . Yes No N/A
Are laboratory duplicate sample RPD values acceptable? . . . . Yes No N/A
Are field duplicate RPD values acceptable? . . . . . 9/25/94 ES Yes No N/A
Are field split RPD values acceptable? . . . . . Yes No N/A

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

Comments:

7. ANALYTE QUANTITATION

Was analyte quantitation performed properly? . . . . . Yes No N/A

Comments:

8. REPORTED RESULTS AND DETECTION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A

Are results supported in the raw data? . . . . . Yes No N/A

Are results calculated properly? . . . . . Yes No N/A

Do results meet the CRDLs? . . . . . Yes No N/A

Comments:

HOLDING TIME SUMMARY

SDG: W0040	REVIEWER: SC			DATE: 8/02/94		PAGE 1 OF 1	
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B0BNY4	pH	4/21/94		4/26/94		24 hours	J
B0BNY8	pH	4/25/94		5/03/94		24 hours	J
B0BNZ0	pH	4/22/94		5/03/94		24 hours	J
B0BNZ6	pH	4/22/94		5/03/94		24 hours	J
B0BNZ8	pH	4/22/94		5/03/94		24 hours	J
B0BP00	pH	4/21/94		4/26/94		24 hours	J
B0BP02	pH	4/21/94		4/26/94		24 hours	J
B0BP04	pH	4/22/94		5/03/94		24 hours	J
B0BP10	pH	4/21/94		4/26/94		24 hours	J
B0BP26	pH	4/21/94		4/26/94		24 hours	J

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96/2005 2596

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RECORD COPY

Date: September 19, 1994
To: Westinghouse Hanford Company (technical representative)
From: A.T. Kearney, Inc.
Subject: Radiochemistry - Data Package No. W0040-ITC-046 (SDG No. W0040)

INTRODUCTION

This memo presents the results of data validation on Data Package No. W0040-ITC-046 prepared by the International Technology Corporation (ITC) laboratory. A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analysis
B0BNY4	04/21/94	Water	D	See Note 1
B0BNY8	04/25/94	Water	D	See Note 1
B0BNZ0	04/22/94	Water	D	See Note 1
B0BNZ6	04/22/94	Water	D	See Note 1
B0BNZ8	04/22/94	Water	D	See Note 1
B0BP00	04/21/94	Water	D	See Note 1
B0BP02	04/21/94	Water	D	See Note 1
B0BP04	04/22/94	Water	D	See Note 1
B0BP10	04/21/94	Water	D	See Note 1
B0BP26	04/21/94	Water	D	See Note 1

Note 1. Requested Method: Gross Alpha/Beta, Sr-90, Tc-99, Tritium/C-14, Total Activity

Data validation was conducted in accordance with the WHC statement of work (WHC 1994) and validation procedures (WHC 1993). Appendices 1 through 5 provide the following information as indicated below:

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

DATA QUALITY OBJECTIVES

- **Holding Times**

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

  All holding times were acceptable.

- **Instrument Calibration and Performance**

  Instrument calibration is performed to establish that the counters used to determine radionuclide activities are capable of producing acceptable and reliable analytical data. Each counting system must be factory calibrated at installation and after any maintenance or repair. Calibration consists of an instrument efficiency determination for each applicable radionuclide. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible.

  All calibration results, including efficiency checks and background counts, were acceptable.

- **Blanks**

  Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above both the MDA and the statistical uncertainty associated with that MDA, the following qualifiers were applied: All positive sample results less than five times the highest blank concentration were qualified as estimated; sample results below the MDA were elevated to the MDA and qualified as undetected; sample results above the MDA and greater than five times the highest blank concentration were not qualified.

  All blank results were acceptable.

- **Accuracy**

  Accuracy was evaluated by analyzing soil or distilled water samples spiked with known amounts of radionuclides. The sample activity as determined by analysis is compared to the known activity to assess accuracy. The acceptable laboratory control sample recovery range is 70 to 130 percent, while that for a matrix spike is 60 to 140 percent. Spike sample results outside the above ranges resulted in associated sample results being qualified as estimated,

rejected, or not qualified, depending on the activity of the individual sample. A chemical tracer is used to determine the efficiency of the analytical method, with tracer yield limits of 30 to 105 percent. Sample results above the MDA with chemical yields outside the above stated limits were qualified as estimated or rejected.

All accuracy results were acceptable.

- **Precision**

Analytical precision is expressed by the RPD between the recoveries of duplicate matrix spike analyses performed on a sample. When the laboratory has not performed duplicate spike analyses, precision may also be assessed using unspiked duplicate sample analyses. If both sample and replicate activities are greater than five times the RDL and the RPD is less than 35 percent for soil samples and 20 percent for water samples, the results are acceptable. If either activities are <5xRDL, a control limit of $\leq$2xRDL is used for soil samples and $\leq$RDL for water samples. If either the original or replicate value is below the RDL, the applicable control limits are $\leq$RDL for water samples and $\leq$2xRDL for soil samples. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All precision results were acceptable.

- **Sample Result Verification and Detection Limits**

Sample results and reported detection limits were recalculated to ensure that the reported results were accurate. Raw data were examined for anomalies, transcription errors, and reduction errors.

The reviewer verified that the results and detection limits fell within the linear range of the instrument. All sample result verification and detection limits were acceptable.

- **Completeness**

Data Package No. W0040-ITC-046 (SDG No. W0040) was submitted for validation and verified for completeness.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

WHC, 1992a, *Data Validation Procedures for Chemical Analyses*, WHC-SD-EN-SPP-002, Rev. 2, Westinghouse Hanford Company, October 1993.

WHC, 1992b, *Data Validation Procedures for Radiochemical Analyses*, WHC-SD-EN-001, Rev. 2, Westinghouse Hanford Company, 1993.

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Appendix 1

Glossary of Data Reporting Qualifiers

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

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified QC deficiency.

JN - Indicates a tentatively identified compound (TIC) that has been determined to be valid in terms of identification and quantitation.

UJN - Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected (U) due to associated blank contamination.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (usable for decision-making purposes).

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Appendix 2

Summary of Data Qualification

DATA QUALIFICATION SUMMARY

SDG: W0040	REVIEWER: RJS	DATE: 7/20/94	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
No data qualified.			

9613495.2594

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

RADIOCHEMISTRY ANALYSIS, WATER MATRIX, (pCi/L+ −2 standard deviations)

Project: WESTINGHOUSE−HANFORD
Laboratory: TMA
Case SDG: W0040

Sample Number	B0BNY4		B0BNY8		B0BNZ0		B0BNZ6		B0BNZ8		B0BP00		B0BP02		B0BP04		B0BP10		B0BP26	
Location	1−B4−4		1−B4−7		1−B4−8		1−B5−2		1−B8−6		1−B9−1		1−B9−2		1−B9−3		6−65−83		1−B4−4	
Remarks																				
Sample Date	04/21/94		04/25/94		04/22/94		04/22/94		04/22/94		04/21/94		04/21/94		04/22/94		04/21/94		04/21/94	
Radiochemistry Analysis	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	0.716	U	1.49		0.810	U	0.894	U	0.657	U	0.727	U	0.295	U	1.68		0.650	U	1.11	
Gross Beta	78.8		32.5		25.2		55.2		13.0		15.7		16.4		20.1		11.2		78.1	
Tritium	2910		2470		3300		6440		1520		1760		2580		2400		927.0		2950	
Carbon−14	0.0450	U	1.96	U	1.28	U	0.0450	U	0.878	U	1.01	U	0.721	U	−0.0225	U	−1.26	U	0.766	U
Strontium−90	26.6		5.31		1.30		14.6		−0.0374	U	0.862		−0.0431	U	0.343	U	−0.0986	U	28.2	
Technetium−99	60.3		57.7		69.4		66.9		32.1		35.4		45.9		52.9		7.79		60.4	

000010

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0040
LAB SAMPLE ID: 40443201
MATRIX: WATER
WHC ID: B0BP10
DATE RECEIVED: 4/22/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	6.50E-01	6.78E-01	6.83E-01	1.23E+00	1	RD3222
BETA	1.12E+01	2.05E+00	2.19E+00	2.81E+00	1	RD3222
TOTAL-SR	-9.86E-02	2.39E-01	2.41E-01	7.48E-01	1	RD3204
C-14	-1.26E+00	1.52E+00	3.22E+00	3.62E+00	1	RD3263
TC-99	7.79E+00	1.05E+00	4.75E+00	2.15E+00	0.951	ITAS-IT-RS 0001
TRITIUM	9.27E+02	1.34E+02	2.57E+02	2.49E+02	0.94	RD3205

LAB SAMPLE ID: 40443202
MATRIX: WATER
WHC ID: B0BP00
DATE RECEIVED: 4/22/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	7.27E-01	6.73E-01	6.79E-01	1.13E+00	1	RD3222
BETA	1.57E+01	2.35E+00	2.60E+00	3.03E+00	1	RD3222
TOTAL-SR	8.62E-01	3.82E-01	4.38E-01	8.29E-01	0.88	RD3204
C-14	1.01E+00	1.56E+00	3.28E+00	3.62E+00	1	RD3263
TC-99	3.54E+01	1.46E+00	7.33E+00	2.15E+00	0.951	ITAS-IT-RS 0001
TRITIUM	1.76E+03	1.55E+02	3.08E+02	2.49E+02	0.94	RD3205

RJS 7/20/94

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IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND SDG NO.: W0040

LAB SAMPLE ID: 40443203 MATRIX: WATER

WHC ID: B0BNY4 DATE RECEIVED: 4/22/94

REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	7.16E-01	6.82E-01	6.88E-01	1.17E+00	1	RD3222
BETA	7.88E+01	4.49E+00	7.15E+00	2.89E+00	1	RD3222
TOTAL-SR	2.66E+01	1.58E+00	6.51E+00	9.75E-01	0.703	RD3204
C-14	4.50E-02	1.54E+00	3.25E+00	3.62E+00	1	RD3263
TC-99	6.03E+01	1.68E+00	9.85E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	2.91E+03	1.81E+02	3.84E+02	2.49E+02	0.94	RD3205

LAB SAMPLE ID: 40443204 MATRIX: WATER

WHC ID: B0BP02 DATE RECEIVED: 4/22/94

REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	2.95E-01	7.28E-01	7.29E-01	1.64E+00	1	RD3222
BETA	1.64E+01	2.42E+00	2.69E+00	3.14E+00	1	RD3222
TOTAL-SR	-4.31E-02	3.24E-01	3.24E-01	9.60E-01	0.74	RD3204
C-14	7.21E-01	1.55E+00	3.27E+00	3.62E+00	1	RD3263
TC-99	4.59E+01	1.54E+00	8.38E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	2.58E+03	1.73E+02	3.62E+02	2.49E+02	0.94	RD3205

RJS 7/20/94

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IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0040
LAB SAMPLE ID: 40443205
MATRIX: WATER
WHC ID: B0BP26
DATE RECEIVED: 4/22/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	1.11E+00	7.26E-01	7.38E-01	9.45E-01	1	RD3222
BETA	7.81E+01	4.46E+00	7.09E+00	2.78E+00	1	RD3222
TOTAL-SR	2.82E+01	1.62E+00	6.87E+00	9.66E-01	0.703	RD3204
C-14	7.66E-01	1.55E+00	3.27E+00	3.62E+00	1	RD3263
TC-99	6.04E+01	1.67E+00	9.86E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	2.95E+03	1.81E+02	3.87E+02	2.49E+02	0.94	RD3205

LAB SAMPLE ID: 40445701
MATRIX: WATER
WHC ID: B0BP04
DATE RECEIVED: 4/25/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	1.68E+00	8.91E-01	9.15E-01	1.08E+00	1	RD3222
BETA	2.01E+01	2.53E+00	2.90E+00	2.89E+00	1	RD3222
TOTAL-SR	3.43E-01	4.20E-01	4.27E-01	1.11E+00	0.627	RD3204
C-14	-2.25E-02	1.54E+00	3.25E+00	3.62E+00	1	RD3263
TC-99	5.29E+01	1.61E+00	9.09E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	2.40E+03	1.70E+02	3.50E+02	2.49E+02	0.94	RD3205

RJS 7/20/94

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IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0040
LAB SAMPLE ID: 40445702
MATRIX: WATER
WHC ID: B0BNZ6
DATE RECEIVED: 4/25/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	8.94E-01	7.18E-01	7.27E-01	1.16E+00	1	RD3222
BETA	5.52E+01	3.81E+00	5.45E+00	2.82E+00	1	RD3222
TOTAL-SR	1.46E+01	1.04E+00	3.91E+00	7.51E-01	0.972	RD3204
C-14	4.50E-02	1.54E+00	3.25E+00	3.62E+00	1	RD3263
TC-99	6.69E+01	1.75E+00	1.05E+01	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	6.44E+03	2.42E+02	6.29E+02	2.49E+02	0.94	RD3205

LAB SAMPLE ID: 40445703
MATRIX: WATER
WHC ID: B0BNZ8
DATE RECEIVED: 4/25/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	6.57E-01	6.76E-01	6.82E-01	1.25E+00	1	RD3222
BETA	1.30E+01	2.19E+00	2.38E+00	2.99E+00	1	RD3222
TOTAL-SR	-3.74E-02	2.65E-01	2.65E-01	7.94E-01	0.935	RD3204
C-14	8.78E-01	1.56E+00	3.28E+00	3.62E+00	1	RD3263
TC-99	3.21E+01	1.37E+00	7.00E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	1.52E+03	1.49E+02	2.93E+02	2.49E+02	0.94	RD3205

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IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0040
LAB SAMPLE ID: 40445704
MATRIX: WATER
WHC ID: B0BNZ0
DATE RECEIVED: 4/25/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	8.10E-01	6.88E-01	6.95E-01	1.11E+00	1	RD3222
BETA	2.52E+01	2.76E+00	3.28E+00	2.90E+00	1	RD3222
TOTAL-SR	1.30E+00	3.92E-01	5.20E-01	7.52E-01	0.989	RD3204
C-14	1.28E+00	1.56E+00	3.29E+00	3.62E+00	1	RD3263
TC-99	6.94E+01	1.76E+00	1.08E+01	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	3.30E+03	1.88E+02	4.10E+02	2.49E+02	0.94	RD3205

LAB SAMPLE ID: 40450001
MATRIX: WATER
WHC ID: B0BNY8
DATE RECEIVED: 4/27/94
REPORTING UNITS: pCi/L

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
ALPHA	1.49E+00	8.45E-01	8.65E-01	1.08E+00	1	RD3222
BETA	3.25E+01	3.05E+00	3.82E+00	2.90E+00	1	RD3222
TOTAL-SR	5.31E+00	6.61E-01	1.53E+00	7.79E-01	0.976	RD3204
C-14	1.96E+00	1.57E+00	3.30E+00	3.62E+00	1	RD3263
TC-99	5.77E+01	1.66E+00	9.58E+00	2.15E+00	0.951	ITAS-IT-RS-0001
TRITIUM	2.47E+03	1.71E+02	3.54E+02	2.49E+02	0.94	RD3205

RJS 7/20

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

INTERNATIONAL TECHNOLOGY CORPORATION

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

June 14, 1994

Attention: J.A.Lerch

SAF Number	:	94-129
Date SDG Closed	:	April 27, 1994
Number of Samples	:	Ten (10)
Sample Type	:	Water
SDG Number	:	W0040
Data Deliverable	:	Stand Alone

I. Introduction

On April 22, 25, and 27, 1994, ten water samples were received by ITAS-Richland for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the WHC specific IDs:

ITAS-Richland ID	WHC ID	Matrix	Date of Receipt
404432-01A	B0BP10	Water	4/22/94
404432-02A	B0BP00	Water	4/22/94
404432-03A	B0BNY4	Water	4/22/94
404432-04A	B0BP02	Water	4/22/94
404432-05A	B0BP26	Water	4/22/94
404457-01A	B0BP04	Water	4/25/94
404457-02A	B0BNZ6	Water	4/25/94
404457-03A	B0BNZ8	Water	4/25/94
404457-04A	B0BNZ0	Water	4/25/94
404500-01A	B0BNY8	Water	4/27/94

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gas Proportional Counting
Gross Alpha by method ITAS-RD-3222
Gross Beta by method ITAS-RD-3222
Strontium-90 by method ITAS-RD-3204
Liquid Scintillation Counting
Carbon-14 by method ITAS-RD-3247
Technetium-99 by method ITAS-IT-RS-0001
Tritium by method ITAS-RD-3205

III. Quality Control

The analytical results for each analysis performed under SDG W0040 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate. Any exceptions have been noted in the "Comments" section.

Quality control sample results are reported in the same units as sample results.

IV. Comments

Results from the initial radioactivity screening of these samples classified them as Category I.

Gas Proportional Counting

Gross Alpha by method ITAS-RD-3222
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0BNZ0) results are within contractual limits.

Gross Beta by method ITAS-RD-3222
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0BNZ0) results are within contractual limits.

Strontium-90 by method ITAS-RD-3204
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0BNY8) results are within contractual requirements.

Liquid Scintillation Counting
Carbon-14 by method ITAS-RD-3247
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0BNY4) results are within contractual requirements.

Technetium-99 by method ITAS-IT-RS-0001
The matrix spikes, LCS, batch blank, sample and sample duplicate (duplicate of sample B0BNY4) results are within contractual requirements.

Tritium by method ITAS-RD-3205
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0BP10) results are within contractual requirements.

I certify that this Certificate of Analysis 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.

Reviewed and approved:

Suzanne Gaines

Suzanne Gaines
Project Manager

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: SMC-144	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0578-11	Bill of Lading/Air Bill No.: N/A NOWG
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE Stored in Le Frig 313 A35		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40mL	1000ml
SAMPLE ANALYSIS 404499	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 4045000	Tc-99 1	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD ORA

Sample No.	Matrix*	Date Sampled	Time Sampled																
BOBNY8 01	W	4/25/94	0930	X	X	X	X	X	X										
BOBNY9 02	W	↓	↓							X									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Umari / K. Trapp	4/25/94 1359	A.J. Simpson / A.J. Simpson	4/25/94 1400
A.J. Simpson	4/27/94 0921	L. Sweeney / L. Sweeney	4/27/94 0921
L. Sweeney / L. Sweeney	4/27/94 1210	Heidelberg	4/27 1210

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

9413495.2605

9613495.2606

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-U-0518-11

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to
IT Analytical Services
2800 George Washington Way
Richland, WA 99352

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
11 lbs.	Sample #: BOBP12, BOBP13, BOBNY6, BOBNY7 Cooler ID: ER-9 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: BOBNY8, BOBRY9 Cooler ID: SMC-144 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property
Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
[illegible]	15[illegible]	[illegible]

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4-27-94	8B410 PB5AA	NA

Originated By	Date	Authorized By	Date
PH Butcher	4/27/94	[illegible]	4/27/94

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	[illegible]

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]				
Date 4/27 1230				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

0027

54-3000-479 (09/89)

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1800 George Washington Way
Richland, Washington 99352

0613495.2607

SAMPLE CHECK-IN LIST

(Per Shipping Container)

Date/Time Received 4/27 1210 Client Name DHC

Project/Client # 94-129 Batch or Case # na

Cooler ID (if noted on the outside of cooler) SML 144

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 14
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ____ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 40

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) ____
    Request for analysis #(s) na
    Airbill # ____ Carrier ____
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature [signature] Date/Time 4/27/94 1210

FORM NO. LS-042, Rev.0, 2/94

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Tiapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0318-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	aGS	G/P
No. of Container(s)	1	1	5	2	6 3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	500ml ~~1000ml~~	40ml	1000ml
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD A

40445601 40445701

Sample No.	Matrix*	Date Sampled	Time Sampled														
BOBP04 01	W	4/22/94	1200	X	X	X	X	X	X								
BOBP05 02	W	↓	↓							X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Vinson / K. Tiapp	4/22/94 1500	L Sweeney / L Sweeney	4/22/94 1500
L Sweeney / L Sweeney	4/25/94 1300	R. Bond / RT	4/25/94 1300

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

000023

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

SAMPLE ANALYSIS: 404456

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP A	ANIONS F, SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD								
Preservative				HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2								
Type of Container				G/P	P	G/P	G/P	Gs	GGS	G/P								
No. of Container(s)				1	1	5	2	6	1	1								
Volume				1000ml	1000ml	1000ml	1000ml	500ml ~~1000ml~~	40ml	1000ml								
404456																		
30BNZ6 03	W	4/22/94	1040	X	X	X	X	X	X									
30BNZ7 04	W	↓	↓							X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 1500	L Sweeney / L Sweeney	4/22/94 1500
L Sweeney / L Sweeney	4/25/94 1300	R. Bard JT	4-25-94 / 1300

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

9413495.2609

0000024

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0578-7	Bill of Lading/Air Bill No.: N/A NONG
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2								
Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P								
No. of Container(s)	1	1	5	2	~~3~~ 6 4/22/94	1	1								
Volume	1000ml	1000ml	1000ml	1000ml	~~1000ml~~ 500mL 4/22/94	40mL	1000ml								
SAMPLE ANALYSIS 404456	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD A								

Sample No.	Matrix*	Date Sampled	Time Sampled															
BOBNZ8 05	W	4/22/94	1330	X	X	X	X	X	X									
BOBNZ9 06	W	↓	↓							X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 1500	L Sweeney / L Sweeney	4/22/94 1500
L Sweeney / L Sweeney	4/25/94 1300	R. Bard	4/25/94 1300

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

9413195.2610

000025

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-7	Bill of Lading/Air Bill No.: N/A NONE

Possible Sample Hazards/Remarks:

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE

SAMPLE ANALYSIS: 404456

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD 08A
			Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
			Type of Container	G/P	P	G/P	G/P	Gs	uGs	G/P
			No. of Container(s)	1	1	5	2	~~3~~ 6	1	1
			Volume	1000ml	1000ml	1000ml	1000ml	~~1000ml~~ 500mL	4oz	1000ml
90BNZ0 07	W	4/22/94	0905	X	X	X	X	X	X	
90BNZ1 08	W	↓	↓							X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp/K. Trapp	4/22/94 1500	L Sweeney L Sweeney	4/22/94 1300
L Sweeney L Sweeney	4/22/94 1300	R. Boyd IT	4/25/94 1300

SPECIAL INSTRUCTIONS: DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original Sample - Yellow - Sample

9413495.2612

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-0-0518-7

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT Analytical Services 2800 George Washington Way Richland, WA 99352	
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: BOFNZL, BOFNZF, BOFPL4, BOFPL5 Cooler ID: ER-9 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: BOBNZS, BOBNZ3, BOBNZ4, BOBNZ1 Cooler ID: ER-8 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
[illegible]	15741[illegible]	4-25-94

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4-25-94	8B410	NA

Originated By	Date	Authorized By	Date
PH Butcher	4/25/94	[illegible]	[illegible]

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	4/25/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
R. Bauf IT				
Date 4-25-94 1300				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

0033

000027

54-3000-479 (09/89)

INTERNATIONAL TECHNOLOGY CORPORATION
Regional Office
2800 George Washington Way
Richland, Washington 99352

0013495.2613

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-25-94 1300 Client Name WHC

Project/Client # SDF 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-8

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 34
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ✓ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 10°

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) N/A
    Airbill # N/A Carrier N/A
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature R. Boyd R. Boyd Date/Time 4-25-94 1300

FORM NO. LS-042, Rev.0, 2/94

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2800 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-25-94 1300 Client Name WHC

Project/Client # SAF 94-129 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) ER-9

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 3~~0~~4 ~~4-25-94~~
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ✓ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 3°

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) N/A
    Airbill # N/A Carrier N/A
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature R. Boyd R. Boyd Date/Time 4-25-94 1300

FORM NO. LS-042, Rev.0, 2/94

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

Cell Category I
JRM 25 Apr 94

Customer Code	Recieved Date	Time	Screening Prep Date	Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	Beta	Mnts
WHC			42594		425	10	6	52	60

Customer ID WHC/WATER	pH <2 Rcvd/Reiq	RESIDUE Wght (mGrms)	Vol. Anal. mG	mL	Sample Size Gm	L	SMPLE CNT DATA Hldr Num.	Total Counts Alpha	Beta	Net Sample Counts/Minute Alpha	Beta	DPM / Aliqout Alpha	Beta	uCi per Sample Alpha	Beta	2 Sigma Error uCi per Sample Alpha	Beta	pCi/(Gm or L) Alpha	Beta	Catagory 1 Yes/No	Aliquot to Cat 1 Gm or Ltr Alpha	Beta
B0BRL3		0.2	5		4.0		1	0	15	-0.10	0.63	-4E-01	1.4E+00	-1E-04	5.1E-04	-3E-07	4.0E-07	-4E+01	1.3E+02	Yes	-3E+02	7.9E+02
B0BNZ6		1.9	5		1.0		2	1	29	0.00	2.03	-6E-02	4.3E+00	-6E-06	3.9E-04	-3E-09	1.8E-07	-6E+00	3.9E+02	Yes	-2E+03	2.6E+02
B0BNZ0		1.6	5		1.0		3	5	25	0.40	1.63	1.5E+00	3.2E+00	1.4E-04	2.9E-04	1.6E-07	3.4E-07	1.4E+02	2.9E+02	Yes	7.2E+01	3.4E+02
B0BP04		1.6	5		1.0		4	1	23	0.00	1.43	-5E-02	3.1E+00	-4E-06	2.8E-04	-3E-09	9.8E-06	-4E+00	2.8E+02	Yes	-2E+03	3.6E+02
B0BNP5		1.2	5		4.0		5	0	9	-0.10	0.03	-4E-01	1.4E-01	-1E-04	4.9E-05	-3E-07	3.6E-06	-4E+01	1.2E+01	Yes	-3E+02	8.1E+03
B0BNZ8		0.7	5		1.0		6	2	8	0.10	-0.07	3.9E-01	-2E-01	3.5E-05	-2E-05	7.3E-08	-2E-08	3.5E+01	-2E+01	Yes	2.8E+02	-5E+03
TOTAL	uCi									-0.10	-0.87	-4E-01	-2E+00	-1E-04	1.5E-03	ERR	ERR	ERR	ERR	Yes	ERR	ERR

000030

0036

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp / K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: EB-7	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-U-0518-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	AG	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40ml	1000ml
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F, SO4 COND pH B	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Acetone Scan	ICP METALS, AA METALS, Hg CLP FILTERD
484431			40443201				

	Sample No.	Matrix*	Date Sampled	Time Sampled														
01	BOBP10	W	4/21/94	1510	X	X	X	X	X	X								
02	BOBP11	W	↓	↓							XA							

000031

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	Sweeney / Sweeney	4/22/94 0752
Relinquished By	Date/Time	Received By	Date/Time
Sweeney / Sweeney	4/22/94 1400	R. Bond / R. Bond	4/22/94 1400
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

9412195.7616

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: ☐ Priorty ☒ Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0518-4	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	G	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40 ml	1000ml
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 404432	Tc-99	TRITIUM C-14 02	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD

404431

	Sample No.	Matrix*	Date Sampled	Time Sampled							
03	B0BP00	W	4/21/94	1410	X	X	X	X	X	X	
04	B0BP01	W	↓	1410							XA
	000032										

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	L Sweeney / L Sweeney	4/22/94 0752
L Sweeney / L Sweeney	4/22/94 1480	R. Boyd IT	4/22/94 1480

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original Sample Yellow Sample

0028

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Date Turnaround: [ ] Priorty [X] Normal

Collector: K. Tropp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100B	SAF No.: 94-129
Ice Chest No.: ER-8	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W94-0-0578-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		

Preservative	HNO3<2	COOL 4	HNO3<2	HCL pH<2	COOL 4	None	HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P
No. of Container(s)	1	1	5	2	3	1	1
Volume	1000ml	1000ml	1000ml	1000ml	1000ml	40mL	1000ml

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE

SAMPLE ANALYSIS: 404431

	ICP METALS AA METALS Hg CLP	ANIONS F, SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD
	A	B	404432	0.3			

Sample No.	Matrix*	Date Sampled	Time Sampled	ICP METALS AA METALS Hg CLP	ANIONS F, SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Activity Scan	ICP METALS, AA METALS, Hg CLP FILTERD
05 B0BNY4	W	04/21/94	1100	X	X	X	X	X	X	
06 B0BNY5	W	↓	↓							X A
00033										

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Tropp / K Tropp	4/22/94 0752	L Sweeney / L Sweeney	4.22.94 0752
L Sweeney / L Sweeney	4/22/94 1480	R. Boyd	4/22/94 1480

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

9512195.7918

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: loc. B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: HAND DELIVER
Shipped To: IT	Offsite Property No.: N/A W294-0-0518-3	Bill of Lading/Air Bill No.: N/A NONE
Possible Sample Hazards/Remarks		

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4	None	HNO3<2								
Type of Container	G/P	P	G/P	G/P	Gs	aGs	G/P								
No. of Container(s)	1	1	5	2	6 ~~8~~	1	1								
Volume	1000ml	1000ml	1000ml	1000ml	500mL ~~1000ml~~	40mL	1000ml								
SAMPLE ANALYSIS	ICP METALS AA METALS Hg CLP	ANIONS F,SO4 COND pH	GROSS ALPHA/ BETA Sr-90	Tc-99	TRITIUM C-14	Acidity Scan	ICP METALS, AA METALS, Hg CLP FILTERD								
404431	A	B	404432		04										

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE

Sample No.	Matrix*	Date Sampled	Time Sampled														
01 BOBP02	W	4/21/94	1245	X	X	X	X	X	X								
08 BOBP03	W	↓	↓							XA							

000034

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	L Sweeney / L Sweeney	4/22/94 0752
Relinquished By	Date/Time	Received By	Date/Time
L Sweeney / L Sweeney	4/22/94 1400	R Boyd	4/22/94 1400
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
DATA DELIVERABLE-STANDALONE

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	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

0040

9412195.2016

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [ ] Priorty [X] Normal

Collector: K. Trapp	Company Contact: PH BUTCHER	Telephone No.: 509-376-4388
Project Designation: 100-BC-5	Sampling Location: 100 B	SAF No.: 94-129
Ice Chest No.: ER-9	Field Logbook No.: EFL-1036	Method of Shipment: EMERY
Shipped To: TMA	Offsite Property No.: W94-0-0518-3	Bill of Lading/Air Bill No.: HW 4/22/94 NONE

Possible Sample Hazards/Remarks:

Special Handling and/or Storage: COOL TO 4 DEGREES CENTIGRADE

SAMPLE ANALYSIS: 404431

Preservative	HNO3<2	COOL 4	HNO3<2	HCLpH<2	COOL 4		HNO3<2
Type of Container	G/P	P	G/P	G/P	Gs		G/P
No. of Container(s)	1	1	~~4~~ 1 HW 4/21/94	1	2		1
Volume	1000ml	1000ml	~~1000ml~~ 4L HW 4/21/94	1000ml	1000ml		1000ml
	ICP METALS AA METALS Hg CLP A	ANIONS F,SO4 COND pH B	GROSS ALPHA/ BETA Sr-90 40443265	Tc-99	TRITIUM C-14		ICP METALS, AA METALS, Hg FILTERD CLP

Sample No.	Matrix*	Date Sampled	Time Sampled							
030BP26	W	4/21/94	1100	X	X	X	X	X		
030BP27	W	↓	↓							~~X A~~
030035										

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
K. Trapp / K. Trapp	4/22/94 0752	L Sweeney / L Sweeney	4/22/94 0752
L Sweeney / L Sweeney	4/22/94 1400	R Boyd	4/22/94 1400

SPECIAL INSTRUCTIONS: DATA DELIVERABLE-STANDALONE

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 | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-0-0518-4

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
JT Analytical Services 2800 George Washington Way Richland, WA 99352	
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1	Sample #: BOBP00, BOBP01, BOBNY4, BOBNY5 Cooler ID: ER-8 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1	Sample #: Cooler ID: NA Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # NONE

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
[illegible]	57 06	4-[illegible]-94

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	P. H. Butcher	(509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4/22/94	8B410 PR5AA	NA

Originated By	Date	Authorized By	Date
P.H. Butcher	4/22/94	P.H. Butcher	4/22/94
Signature and Name of Property Control	**Custodian Date**	**Property Management Approval**	**Date**
		W. Hankel	4/22/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
R. Brad [illegible]				
Date 4-22-94 1400				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:	
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain	Green – Property Control Custodian (Issuing Office) Pink – Originator

54-3000-479 (09/89)

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INTERNATIONAL TECHNOLOGY CORPORATION
Regional Office
1300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-22-94 14:00 Client Name WHC

Project/Client # 94-129 Batch or Case #

Cooler ID (if noted on the outside of cooler) ER-8

1. Condition of shipping container? O.K.
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: ~~12~~ 24
8. Samples have: X tape ____ hazard labels
   X custody seals ____ appropriate sample labels
9. Samples are: X in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 2°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) n/a
    Request for analysis #(s) n/a
    Airbill # n/a Carrier n/a
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☒

Printed Name/Signature Karen Achtenling Date/Time 4-22-94 14:00

FORM NO. LS-042, Rev.0, 2/94

INTERNATIONAL TECHNOLOGY CORPORATION
Regional Office
2300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-22-94 14:00 Client Name WHC

Project/Client # 94-129 Batch or Case #

Cooler ID (if noted on the outside of cooler) ER-9

1. Condition of shipping container? Ok
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 21
8. Samples have: X tape ____ hazard labels
   X custody seals ____ appropriate sample labels
9. Samples are: X in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 2°c

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) NA
    Request for analysis #(s) NA
    Airbill # NA Carrier NA
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☒

Printed Name/Signature [signature] Date/Time 4-22-94 14:00

FORM NO. LS-042, Rev.0, 2/94

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

All Cat. I.
JRn 22 Apr 94

Customer Code	Recieved Date	Time	Screening Prep Date	Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	Beta	Mnts
WHC			42294		422	10	13	232	240

Customer ID WHC/WATER	pH <2 Rcvd/Reiq	RESIDUE Wght (mGrms)	Vol. Anal. mG mL	Sample Size Gm L	SMPLE CNT DATA Hldr Num.	Total Alpha	Counts Beta	Net Sample Counts/Minute Alpha	Beta	DPM / Aliqout Alpha	Beta	uCi per Sample Alpha	Beta	2 Sigma Error uCi per Sample Alpha	Beta	pCi/(Gm or L) Alpha	Beta	Catagory 1 Yes/No	Aliquot to Cat 1 Gm or Ltr Alpha	Beta
B0BP26		0.9	5	4.0	5	6	46	0.55	3.63	2.0E+00	7.4E+00	7.3E-04	2.7E-03	7.3E-07	1.0E-06	1.6E+02	6.7E+02	Yes	5.5E+01	1.5E+02
B0BP10		0.7	5	1.0	6	1	20	0.05	1.03	1.5E-01	2.2E+00	1.3E-05	2.0E-04	4.9E-08	1.3E-07	1.3E+01	2.0E+02	Yes	7.6E+02	5.1E+02
B0BNY2		0.9	5	1.0	7	6	25	0.55	1.53	2.1E+00	2.9E+00	1.9E-04	2.6E-04	1.6E-07	2.2E-07	1.9E+02	2.6E+02	Yes	5.3E+01	3.8E+02
B0BP02		1.3	5	1.0	8	2	11	0.15	0.13	5.7E-01	1.9E-01	5.1E-05	1.7E-05	9.0E-08	1.6E-08	5.1E+01	1.7E+01	Yes	1.9E+02	5.9E+03
B0BP00		1.2	5	1.0	9	1	14	0.05	0.43	1.7E-01	8.9E-01	1.5E-05	8.1E-05	4.9E-08	4.3E-07	1.5E+01	8.1E+01	Yes	6.7E+02	1.2E+03
B0BNY4		0.6	5	1.0	10	3	22	0.25	1.23	9.2E-01	2.5E+00	8.3E-05	2.2E-04	1.2E-07	3.7E-07	8.3E+01	2.2E+02	Yes	1.2E+02	4.5E+02
B0BNP7		0.5	5	4.0	11	1	17	0.05	0.73	1.6E-01	1.5E+00	5.8E-05	5.5E-04	1.9E-07	4.1E-06	1.4E+01	1.4E+02	Yes	7.2E+02	7.2E+02
B0BNM5		2.8	5	4.0	12	5	173	0.45	16.33	1.3E+00	3.5E+01	4.6E-04	1.2E-02	6.6E-07	5.4E-05	1.2E+02	3.1E+03	Yes	8.7E+01	3.2E+01
B0BNP3		0.5	5	4.0	14	1	17	0.05	0.73	1.6E-01	1.5E+00	5.8E-05	5.5E-04	1.9E-07	4.1E-06	1.4E+01	1.4E+02	Yes	7.2E+02	7.2E+02
TOTAL	uCi							-0.05	-0.97	-2E-01	-2E+00	1.7E-03	1.7E-02	ERR	ERR	ERR	ERR	Yes	ERR	ERR

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Appendix 5

Data Validation Supporting Documentation

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	~~D~~	E

PROJECT:		DATA PACKAGE: T00555
VALIDATOR: RJS	LAB: IT	DATE: 7·20·94
CASE: 100-BC-5		SDG: W0040

ANALYSES PERFORMED

☒ Gross Alpha/Beta	☒ Strontium-90	☒ Technetium-99	☐ Alpha Spectroscopy	☐ Gamma Spectroscopy	
☐ Total Uranium	☐ Radium-22	☒ Tritium	☒ C^{14}		

SAMPLES/MATRIX BOBP10, BOBP00, BOBNY4, BOBP02, BOBP26, BOBP04, BOBNZ6, BOBNZ8, BOBNZ0, BOBNY8

1. Completeness . . . . . ☐ N/A

Technical verification forms present? . . . . . (Yes) No N/A

Comments:

2. Initial Calibration . . . . . ☐ N/A

Instruments/detectors calibrated within one year of sample analysis? . . . . . (Yes) No N/A

Initial calibration acceptable? . . . . . (Yes) No N/A

Standards NIST traceable? . . . . . (Yes) No N/A

Standards Expired? . . . . . Yes (No) N/A

Comments: Gross α ✓ >20% @ 0 mg
Gross β ✓ >20% @ 0 mg.
* Sr^{90} – no efficiency given at 0% solids – method of determining Empirical efficiencies are not described (R)?
RS. – Lab Supplement Submitted 8/26/94
C^{14} ✓
Tc^{99} ✓ 3H ✓

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3. Continuing Calibration . . . . . ☐ N/A

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

Comments: Gross α ✓ bkg ✓ Sr^{90} ✓ BKg ✓
Gross β ✓ bkg ✓
C^{14} ✓ BKg ✓
Tc^{99} — counting Date June 4 — May Supplement ?
3H ✓ BKg ✓

4. Blanks . . . . . ☐ N/A

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

Comments: Gross α ✓ < MDA 3H / < MDA
Gross β ✓ < MDA
Sr^{90} ✓ < MDA
C^{14} ✓ < MDA
Tc^{99} ✓ < MDA

5. Matrix Spikes . . . . . ☐ N/A

Matrix spike analyzed? . . . . . Yes No N/A
Spike recoveries acceptable? . . . . . Yes No N/A
Spike source traceable? . . . . . Yes ~~No~~ KC 9/8/94 N/A
Spike source expired? . . . . . Yes No N/A
Transcription/Calculation Errors? . . . . . Yes No N/A

Comments: *C^{14} no Matrix Spike Analyzed (J, UJ)
Tc^{99} Two Matrix Spikes Run ? Results within QC limits ✓ 99.26% and 102.59% (OK RS 8/26/94)

* 3H - no Matrix spike Analyzed (J, UJ)
sample #M^{A-2} in LCS Data (two LCS ?)

NO Data Qualified (RJS 9/15/94)

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6. Laboratory Control Samples . . . . . ☐ N/A

LCS analyzed? . . . . . Yes No N/A
LCS recoveries acceptable? . . . . . Yes No N/A
LCS traceable? . . . . . Yes No N/A
Transcription/Calculation Errors? . . . . . Yes No N/A

Comments: Gross α ✓ 3H ✓
Gross β ✓
Sr 90 ✓
C14 ✓
Tc 99 ✓

7. Chemical Recovery . . . . . ☐ N/A

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

Comments: Sr 90 ✓

8. Duplicates . . . . . ☐ N/A

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

Comments: Gross α 30.3% within 1RDL Range sample <5xRDL ✓
Gross β 8.7% ✓ results >5xRDL
Sr 90 ✓
C14 ✓
3H ✓

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9. Field QC Samples . . . . . ☒ N/A

Field duplicate sample(s) analyzed? . . . . . Yes No N/A
Field duplicate RPD values acceptable? . . . . . Yes No N/A
Field split sample(s) analyzed? . . . . . Yes No N/A
Field split RPD values acceptable? . . . . . Yes No N/A
Performance audit sample(s) analyzed? . . . . . Yes No N/A
Performance audit sample results acceptable? . . . . . Yes No N/A

Comments:

10. Holding Times

Are sample holding times acceptable? . . . . . Yes No N/A

Comments:

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

Results reported for all required sample analyses? . . . . . Yes No N/A
Results supported in raw data? . . . . . Yes No N/A
Results Acceptable? . . . . . Yes No N/A
Transcription/Calculation errors? . . . . . Yes No N/A
MDA's meet required detection limits? . . . . . Yes No N/A
Transcription/calculation errors? . . . . . Yes No N/A

Comments: 3H - no distillation log provided (~~J~~/UJ) OK 8/26/99
RS. Log submitted by lab
Tc99 - by liquid Scintillation ?