START 9613474.0218

W0013-ITC-C29

0045190

Sec 1 of 2

INTERNATIONAL TECHNOLOGY CORPORATION

MAY 1994 RECEIVED SDLA

May 20, 1994

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

RE: SDG W0014 Chemical Data Package

Dear Mr. Lerch:

Enclosed is a copy of the Chain of Custody (COC) we received for samples B09WK0 and B09WK1 on March 25, 1994. Sample B09WK0 was screened as Category II and sample B09WK1 was screened as Category I. Samples received for chemical testing under SAF 94-065 are targeted for analysis at ITAS-Middlebrook. When these samples were received, ITAS-Middlebrook was not licensed to receive Category II samples, therefore, sample B09WK0 was assigned to SDG W0014 and sent to ITAS-St Louis for analysis and sample B09WK1 was assigned to SDG W0013 and sent to ITAS-Middlebrook for analysis.

This assignment of SDGs for samples submitted under the same COC may have caused some confusion. To prevent a reoccurrence of this situation in the future we will make efforts to ensure that instances where samples submitted on a single COC are shipped to different locations and/or assigned to different SDGs are clearly noted in the case narrative for their respective SDGs.

If you have any questions I can be reached at 375-3131.

Sincerely,

Suzanne Gaines

Suzanne Gaines

xc: Van Pettey
Wade Price
Sheree Schneider
Jim Harvey
Tami Heidelberg
W0013 project file
W0014 project file

SEP 1996 RECEIVED EDMC

Regional Office
2800 George Washington Way • Richland, Washington 99352-1613 • 509-375-3131 • FAX: 509-375-5590

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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,

Jan Patterson for
Sheree' Schneider
Project Manager

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

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613474 0220

WO013

HANFORD ANALYTICAL SERVICES MANAGEMENT

RECORD OF DISPOSITION

ROD-94-0066
Record of Disposition No.

DATE: March 28, 1994	LABORATORY: IT
PROJECT TITLE/NO.: 200-UP-2/SAF 94-065	NCR NO.: n/a

SAMPLE IDENTIFICATION NUMBERS: All samples to be analyzed for Kerosene and/or Titanium.

DESCRIPTION OF EVENT:

Clarification is being provided to the laboratory for samples being analyzed for Kerosene and Titanium (Ti).

DISPOSITION OF SAMPLES:

IT will analyze for Kerosene by performing a modification to method 8015 (TPH) in which the peak search is started earlier to pick up the kerosene. As an additional element to the metals TAL, Ti will be analyzed for using ICP methodology.

APPROVAL SIGNATURES:

J. A. Lerch — 3/28/94
CAS Project Coordinator (Print/Sign Name) — Date

M. A. Wasemiller — 3/28/94
Technical Representative (Print/Sign Name) — Date

N/A
Quality Assurance (Print/Sign Name) — Date

IT/WHC ISSUE RESOLUTION FORM

SAF No. 94-065 Project 200-UP-2 LFI-3 Date 3/23/94

Sample No.(s) Any requesting Kerosene / Ti

Submitted By: Jim Harvey

Submitted To: Jeff Lerch

Phone No. 615-690-3211 x5611

Phone No. 509-372-2596

Fax No. 615-693-2348

Fax No. 509-372-2106

ISSUE	PROPOSED RESOLUTION
SAF indicates request for TPH Diesel Range COC's requesting Kerosene	Lab will run TPH Diesel Range modified to begin Search early to pick up Kerosene.
Ti is requested as additional Metal	Lab will run Ti by ICP as additional metal.

IT/WHC0001

9615474.0222

0000001

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

RECORD COPY

May 17, 1994

Job Number: 263; 290; 299; 306

This is the Certificate of Analysis for the following samples:

SDG:	W0013
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	March 26, 1994; April 1, 1994; April 4, 1994, April 6, 1994
Number of Samples:	Twenty-two (22)
Sample Type:	Soil

I. Introduction

On March 26, April 1, April 4 and April 6, 1994, twenty-two (22) soil samples arrived at the 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. Soil results are reported on a dry weight basis.

The samples were analyzed for Target Compound List (TCL) volatiles and semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

MAY 1994
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American Council of Independent Laboratories
International Association of Environmental Testing Laboratories
American Association for Laboratory Accreditation

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

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.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for total organic carbon (TOC) based on EPA method 9060.

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

III. Quality Control

The volatiles analyses were performed by purge and trap with a J & W DB-624 capillary column on a Hewlett-Packard 5970 GC/MS/DS and a Finnigan INCOS 500 GC/MS/DS. All QC results were within method specified limits.

The semivolatiles analyses were performed by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL GC/MS/DS. All QC results were within method specified limits. The matrix spike and matrix spike duplicate for sample BOBNQ5 showed high recoveries for one matrix spike compound, phenol.

III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WK2 with acceptable recoveries. One laboratory control sample was analyzed and reported with acceptable recoveries. GPC check sample did not meet criteria when compared against the initial calibration. However, when compared against a GPC solution that was not subjected to GPC clean-up, the GPC sample passed all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples for work order #263 were digested on April 11, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA arsenic, lead, selenium and thallium were performed from April 11 through April 27, 1994; the remaining metals were analyzed by ICP on April 13, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number BO9WK2. Spike recovery (accuracy) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for antimony and manganese by ICP analysis. Poor spike recovery for antimony appears to be attributable to matrix interferences. Poor spike recovery for manganese is

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III. Quality Control (Continued)

attributable to sample nonhomogeneity. As the titanium concentration is greater than four times (4X) the spike added, spiking criteria do not apply for this analyte. A post digestion spike was performed for antimony and manganese as required by CLP protocol. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for aluminum and chromium by ICP analysis. These two analytes were slightly outside acceptance limits due to probable sample nonhomogeneity.

The samples for work order #290 were digested on April 12, 4994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14 and April 15, 1994. All run QC was acceptable

The samples for work order #299 were digested on April 12, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14, 1994. All run QC was acceptable. In sample BOBKM7, the titanium concentration exceeded the linear range by 0.6%, which is less than the 5% acceptance range. During the cyanide analysis, the continuing calibration verification #2 was below the acceptable lower limit of 80%. All sample concentrations were nondetects. The samples were reanalyzed with acceptable limits.

The samples for work order #306 were digested on April 15, 1994 for ICP and April 12, 1994 for GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 12 through April 19, 1994; the remaining metals were analyzed by ICP on April 20, 1994. All run QC was acceptable.

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.

"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.

III. Quality Control (Continued)

"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 total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike duplicate analyses were performed using sample numbers BOBNQ5 and B09WK2 with acceptable results.

On April 15, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WK2. All QC results were acceptable.

The samples were analyzed for anions on April 20, April 22 and April 28, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for total organic carbon by an O.I. TOC 700. Matrix spike/matrix spike duplicate analyses were performed using sample BOBNQ5.

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4589	403489-01 (A-H)	B09WK2	SOIL	METALS
AA4590	"	"	"	VOC
AA4591	"	"	"	SVOC
AA4592	"	"	"	ANIONS
AA4593	"	"	"	NO3NO2
AA4594	"	"	"	PEST/PCB
AA4595	"	"	"	CN
AA4596	"	"	"	TPH
AA4599	403489-02 (A-H)	B09WK4	"	METALS
AA4600	"	"	"	VOC
AA4601	"	"	"	SVOC
AA4602	"	"	"	ANIONS
AA4603	"	"	"	NO3NO2
AA4604	"	"	"	PEST/PCB
AA4605	"	"	"	CN
AA4606	"	"	"	TPH
AA4607	403489-03 (A-H)	B09WK5	"	METALS
AA4608	"	"	"	VOC
AA4609	"	"	"	SVOC
AA4610	"	"	"	ANIONS
AA4611	"	"	"	NO3NO2
AA4612	"	"	"	PEST/PCB
AA4613	"	"	"	CN
AA4614	"	"	"	TPH

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5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

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III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4615	403489-04 (A)	B09WK6	SOIL	VOC
AA4616	403489-05 (A-H)	B09WJ9	"	METALS
AA4617	"	"	"	VOC
AA4618	"	"	"	SVOC
AA4619	"	"	"	ANIONS
AA4620	"	"	"	NO3NO2
AA4621	"	"	"	PEST/PCB
AA4622	"	"	"	CN
AA4623	"	"	"	TPH
AA4624	403489-06 (A-H)	B09WK1	"	METALS
AA4625	"	"	"	VOC
AA4626	"	"	"	SVOC
AA4627	"	"	"	ANIONS
AA4628	"	"	"	NO3NO3
AA4629	"	"	"	PEST/PCB
AA4630	"	"	"	CN
AA4631	"	"	"	TPH
AA4633	403489-07 (A,B)	Trip Blank	"	VOC
AA4634	403489-08 (A,B)	"	"	VOC
AA5075	40363001 (A-G)	BOBKM4	"	SVOC
AA5076	"	"	"	METALS
AA5077	"	"	"	ANIONS
AA5078	"	"	"	NO3NO2
AA5079	"	"	"	CN
AA5080	"	"	"	TPH
AA5081	"	"	"	TOC

III. **Quality Control** (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5082	40363002 (A-G)	BOBKM6	SOIL	SVOC
AA5083	"	"	"	METALS
AA5084	"	"	"	ANIONS
AA5085	"	"	"	NO3NO2
AA5086	"	"	"	CN
AA5087	"	"	"	TPH
AA5088	"	"	"	TOC
AA5089	40363003 (A-G)	BOBKM1	"	SVOC
AA5090	"	"	"	METALS
AA5091	"	"	"	ANIONS
AA5092	"	"	"	NO3NO2
AA5093	"	"	"	CN
AA5094	"	"	"	TPH
AA5095	"	"	"	TOC
AA5096	40363004 (A-G)	BOBKM3	"	SVOC
AA5097	"	"	"	METALS
AA5098	"	"	"	ANIONS
AA5099	"	"	"	NO3NO2
AA5100	"	"	"	CN
AA5101	"	"	"	TPH
AA5102	"	"	"	TOC
AA5103	40363005 (A-G)	BOBKM5	"	SVOC
AA5104	"	"	"	METALS
AA5105	"	"	"	ANIONS
AA5106	"	"	"	NO3NO2
AA5107	"	"	"	CN
AA5108	"	"	"	TPH
AA5109	"	"	"	TOC

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5189	404016-01 (A-G)	BOBNQ5	SOIL	SVOC
AA5190	"	"	"	METALS
AA5191	"	"	"	ANIONS
AA5192	"	"	"	NO3NO2
AA5193	"	"	"	CN
AA5194	"	"	"	TPH
AA5195	"	"	"	TOC
AA5196	404016-02 (A-G)	BOBNQ4	"	SVOC
AA5197	"	"	"	METALS
AA5198	"	"	"	ANIONS
AA5199	"	"	"	NO3NO2
AA5200	"	"	"	CN
AA5201	"	"	"	TPH
AA5202	"	"	"	TOC
AA5203	404016-03 (A-G)	BOBKP7	"	SVOC
AA5204	"	"	"	METALS
AA5205	"	"	"	ANIONS
AA5206	"	"	"	NO3NO2
AA5207	"	"	"	CN
AA5208	"	"	"	TPH
AA5209	"	"	"	TOC
AA5210	404016-04 (A-G)	BOBKP8	"	SVOC
AA5211	"	"	"	METALS
AA5212	"	"	"	ANIONS
AA5213	"	"	"	NO3NO2
AA5214	"	"	"	CN
AA5215	"	"	"	TPH
AA5216	"	"	"	TOC

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5217	404016-05 (A-G)	BOBKN9	SOIL	SVOC
AA5218	"	"	"	METALS
AA5219	"	"	"	ANIONS
AA5220	"	"	"	NO3NO2
AA5221	"	"	"	CN
AA5222	"	"	"	TPH
AA5223	"	"	"	TOC
AA5224	404016-06 (A-G)	BOBKM7	"	SVOC
AA5225	"	"	"	METALS
AA5226	"	"	"	ANIONS
AA5227	"	"	"	NO3NO2
AA5228	"	"	"	CN
AA5229	"	"	"	TPH
AA5230	"	"	"	TOC
AA5231	404016-07 (A-G)	BOBKP5	"	SVOC
AA5232	"	"	"	METALS
AA5233	"	"	"	ANIONS
AA5234	"	"	"	NO3NO2
AA5235	"	"	"	CN
AA5236	"	"	"	TPH
AA5237	"	"	"	TOC
AA5423	404065-01	BOBNQ8	"	SVOC
AA5424	"	"	"	METALS
AA5425	"	"	"	ANIONS
AA5426	"	"	"	NO3NO2
AA5427	"	"	"	CN
AA5428	"	"	"	TPH

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

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III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5435	404065-02	BOBNQ3	SOIL	SVOC
AA5436	"	"	"	METALS
AA5437	"	"	"	ANIONS
AA5438	"	"	"	NO3NO2
AA5439	"	"	"	CN
AA5440	"	"	"	TPH

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

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
Project Manager

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4617

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4617R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 19 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	BJ
67-64-1	Acetone	13	B
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B09WJ9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4617

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4617R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 19 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.00	30	BJ

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4625

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4625R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 16 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	9	BJ
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4625

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4625R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 16 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.00	24	BJ

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK2

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4590

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4590

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 15 Date Analyzed: 03/28/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	J
67-64-1	Acetone	7	BJ
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	4	J
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WK2

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4590

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4590

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 15 Date Analyzed: 03/28/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.03	20	BJ

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4600

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4600

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/28/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	4	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	48	
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	1	J
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WK4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4600

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4600

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/28/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.07	89	BJ

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WK5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4608

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4608R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	BJ
67-64-1	Acetone	8	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WK5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4608

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4608R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.00	19	BJ

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK6

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4615

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4615R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	BJ
67-64-1	Acetone	12	B
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B09WK6

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4615

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4615R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.00	5	BJ
2.	UNKNOWN	15.80	5	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WJ9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4618

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA4618

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 19 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-Propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)Methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-Methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	990	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	990	U
131-11-3	Dimethylphthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	990	U
83-32-9	Acenaphthene	410	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4618

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA4618

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 19 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	990	U
100-02-7	4-Nitrophenol	990	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	990	U
534-52-1	4,6-Dinitro-2-Methylphenol	990	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	990	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-Butylphthalate	410	U
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)Anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)Phthalate	410	U
117-84-0	Di-n-Octyl Phthalate	410	U
205-99-2	Benzo(b)Fluoranthene	410	U
207-08-9	Benzo(k)Fluoranthene	410	U
50-32-8	Benzo(a)Pyrene	410	U
193-39-5	Indeno(1,2,3-cd)Pyrene	410	U
53-70-3	Dibenz(a,h)Anthracene	410	U
191-24-2	Benzo(g,h,i)Perylene	410	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BO9WJ9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4618

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA4618

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 19 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.58	140	AJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.82	7400	AJN
3.	UNKNOWN PHTHALATE	16.20	200	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4626

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4626

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 16 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	940	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	940	U
83-32-9	Acenaphthene	390	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WK1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4626

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4626

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 16 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	940	U
100-02-7	4-Nitrophenol	940	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	940	U
534-52-1	4,6-Dinitro-2-Methylphenol	940	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	390	U
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B09WK1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4626

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4626

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 16 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.57	170	AJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.83	8300	AJN
3.	UNKNOWN PHTHALATE	16.22	90	J
4.	UNKNOWN	23.53	260	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WK2

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4591

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4591

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	930	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	930	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	930	U
83-32-9	Acenaphthene	390	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK2

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4591

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4591

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	930	U
100-02-7	4-Nitrophenol	930	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	930	U
534-52-1	4,6-Dinitro-2-Methylphenol	930	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	930	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	390	U
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B09WK2

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4591

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4591

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.57	140	AJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.87	6300	AJN
3.	UNKNOWN PHTHALATE	16.22	200	J
4.	UNKNOWN	20.37	80	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WK4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4601

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4601

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	790	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	790	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	790	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WK4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4601

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4601

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	790	U
100-02-7	4-Nitrophenol	790	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	790	U
534-52-1	4,6-Dinitro-2-Methylphenol	790	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	790	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	38	J
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BO9WK4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4601

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4601

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.58	110	AJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.80	5500	AJN
3.	UNKNOWN PHTHALATE	16.20	82	J
4.	UNKNOWN	19.42	1900	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4609

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA4609

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BO9WK5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4609

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA4609

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-Methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	37	J
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B09WK5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4609

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA4609

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.57	130	AJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.82	6900	AJN
3.	UNKNOWN	6.30	1600	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5089

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5089

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5089

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5089

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	42	J
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBKM1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5089

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5089

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.57	1100	BAJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.92	8000	BAJN
3.	UNKNOWN	5.67	500	AJ
4.	UNKNOWN	6.00	84	AJ
5.	UNKNOWN	6.42	240	AJ
6.	UNKNOWN	20.37	8600	J
7.	UNKNOWN	22.05	160	J
8.	UNKNOWN	23.52	550	J
9.	UNKNOWN	25.55	280	J
10.	UNKNOWN	26.42	110	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5096

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA5096

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	810	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5096

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA5096

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	43	J
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBKM3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5096

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA5096

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

Number TICs found: 22

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.57	910	BAJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.92	6200	BAJN
3.	UNKNOWN	5.67	450	AJ
4.	UNKNOWN	5.98	77	AJ
5.	UNKNOWN	6.42	240	AJ
6.	UNKNOWN PHTHALATE	16.20	130	J
7.	UNKNOWN	18.87	78	J
8.	UNKNOWN	20.35	1600	J
9.	UNKNOWN	20.87	130	J
10.	UNKNOWN	22.05	300	J
11.	UNKNOWN	22.73	86	J
12.	UNKNOWN	22.83	270	J
13.	UNKNOWN	23.12	83	J
14.	UNKNOWN	23.22	77	J
15.	UNKNOWN	23.32	77	J
16.	UNKNOWN	23.52	790	J
17.	UNKNOWN	23.98	76	J
18.	UNKNOWN	24.67	76	J
19.	UNKNOWN	25.53	390	J
20.	UNKNOWN	26.10	100	J
21.	UNKNOWN	26.42	130	J
22.	UNKNOWN	27.68	130	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5075

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5075

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	840	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	840	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	840	U
83-32-9	Acenaphthene	350	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5075

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5075

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	840	U
100-02-7	4-Nitrophenol	840	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	840	U
534-52-1	4,6-Dinitro-2-Methylphenol	840	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	840	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBKM4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5075

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5075

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.57	1100	BAJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.92	7900	BAJN
3.	UNKNOWN	5.67	550	AJ
4.	UNKNOWN	6.40	190	AJ
5.	UNKNOWN	18.73	120	J
6.	UNKNOWN	20.35	9600	J
7.	UNKNOWN	23.50	140	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5103

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5103

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5103

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5103

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-Methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	34	J
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBKM5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5103

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5103

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.62	1200	BAJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.97	8100	BAJN
3.	UNKNOWN	5.70	810	AJ
4.	UNKNOWN	6.33	1400	J
5.	UNKNOWN	6.43	400	AJ
6.	UNKNOWN PHTHALATE	16.22	68	J
7.	UNKNOWN	20.38	8000	J
8.	UNKNOWN	21.88	88	J
9.	UNKNOWN	22.07	110	J
10.	UNKNOWN	23.53	370	J
11.	UNKNOWN	25.55	350	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM6

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5082

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5082

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM6

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5082

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5082

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBKM6

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5082

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5082

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.58	1100	BAJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.93	7600	BAJN
3.	UNKNOWN	5.67	680	AJ
4.	UNKNOWN	6.42	230	AJ
5.	UNKNOWN	16.20	300	J
6.	UNKNOWN	20.35	170	J
7.	UNKNOWN	23.50	140	J
8.	UNKNOWN	25.52	80	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM7

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5224

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5224

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKM7

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5224

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5224

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBKM7

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5224

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5224

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.45	11000	BAJN
2.	UNKNOWN	16.70	70	J
3.	UNKNOWN	22.03	1000	J
4.	UNKNOWN	22.37	84	J
5.	UNKNOWN	22.63	190	J
6.	UNKNOWN	24.38	90	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKN9

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5217

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5217

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 7.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	810	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKN9

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5217

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5217

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 7.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBKN9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5217

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5217

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.43	12000	BAJN
2.	UNKNOWN	5.88	1100	J
3.	UNKNOWN	6.30	690	J
4.	UNKNOWN	22.62	69	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKP5

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5231

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5231

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKP5

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5231

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5231

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBKP5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5231

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5231

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.42	16000	BAJN
2.	UNKNOWN	6.28	930	J
3.	UNKNOWN	22.62	120	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKP7

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5203

ample wt/vol: 30.1 (g/mL) G Lab File ID: AA5203

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	810	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKP7

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5203

ample wt/vol: 30.1 (g/mL) G Lab File ID: AA5203

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBKP7

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5203

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5203

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.42	10000	BAJN
2.	UNKNOWN	6.28	620	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKP8

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5210

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5210

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	810	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBKP8

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5210

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5210

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBKP8

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5210

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5210

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.43	10000	BAJN

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBNQ4

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5196

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5196

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	810	U
83-32-9	Acenaphthene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBNQ4

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5196

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5196

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	36	J
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBNQ4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5196

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5196

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.47	16000	BAJN

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBNQ5

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5189

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5189

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	810	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBNQ5

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5189

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5189

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBNQ5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5189

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5189

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.45	19000	BAJN
2.	UNKNOWN	6.30	1000	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBNQ3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: WO013

Matrix: (soil/water) SOIL Lab Sample ID: AA5435

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5435A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	810	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBNQ3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5435

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5435A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOBNQ3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: WO013

Matrix: (soil/water) SOIL Lab Sample ID: AA5435

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5435A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.37	210	BAJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.18	6800	BAJN
3.	UNKNOWN	16.68	110	BJ
4.	UNKNOWN	20.85	130	BJ

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBNQ8

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5423

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5423A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOBNQ8

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: WO013

Matrix: (soil/water) SOIL Lab Sample ID: AA5423

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5423A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBNQ8

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: WO013

Matrix: (soil/water) SOIL Lab Sample ID: AA5423

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5423A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.02	75	BJ
2.	UNKNOWN	2.35	230	BAJ
3. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.17	6600	BAJN
4.	UNKNOWN	16.67	99	BJ
5.	UNKNOWN	20.83	120	BJ
6.	UNKNOWN	22.17	78	J
7.	UNKNOWN	23.42	190	J
8.	UNKNOWN	24.63	85	J

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK2

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0013 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4594

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 15 decanted: (Y/N) N Date Received: 03/26/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/08/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.9	U
72-55-9	4,4'-DDE	3.9	U
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	3.9	U
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	3.9	U
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.9	U
7421-93-4	Endrin aldehyde	3.9	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	79	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK4

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0013 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4604

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 0 decanted: (Y/N) N Date Received: 03/26/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/08/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK5

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0013 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4612

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 0 decanted: (Y/N) N Date Received: 03/26/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/08/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ9

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0013 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4621

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 19 decanted: (Y/N) N Date Received: 03/26/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/08/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	2.1	U
319-86-8	delta-BHC	2.1	U
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	2.1	U
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor epoxide	2.1	U
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	4.1	U
72-55-9	4,4'-DDE	4.1	U
72-20-8	Endrin	4.1	U
33213-65-9	Endosulfan II	4.1	U
72-54-8	4,4'-DDD	4.1	U
1031-07-8	Endosulfan sulfate	4.1	U
50-29-3	4,4'-DDT	4.1	U
72-43-5	Methoxychlor	21	U
53494-70-5	Endrin ketone	4.1	U
7421-93-4	Endrin aldehyde	4.1	U
5103-71-9	alpha-Chlordane	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0013 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4629

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 17 decanted: (Y/N) N Date Received: 03/26/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/08/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.9	U
72-55-9	4,4'-DDE	3.9	U
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	3.9	U
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	3.9	U
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.9	U
7421-93-4	Endrin aldehyde	3.9	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___

Lab Code: ITSTU_ Case No.: W0263 SAS No.: _____ SDG No.:W0013_

SOW No.: ILM02

EPA Sample No.	Lab Sample ID
BO9WJ9	AA4616
BO9WJ9	AA4622
BO9WK1	AA4624
BO9WK1	AA4630
BO9WK2	AA4589
BO9WK2	AA4595D
BO9WK2	AA4589D
BO9WK2	AA4595S
BO9WK2	AA4589S
BO9WK2	AA4595
BO9WK4	AA4599
BO9WK4	AA4605
BO9WK5	AA4607
BO9WK5	AA4613

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 Kaufer Name: Christopher Kaufer

Date: May 12, 1994 Title: Chemist

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BO9WJ9

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4616

Level (low/med): LOW Date Received: 03/26/94

% Solids: 80.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12900		*	P
7440-36-0	Antimony	11.7	U	N	P
7440-38-2	Arsenic	3.7			F
7440-39-3	Barium	146			P
7440-41-7	Beryllium	1.00	B		P
7440-43-9	Cadmium	1.2	U		P
7440-70-2	Calcium	14100			P
7440-47-3	Chromium	16.1		*	P
7440-48-4	Cobalt	20.9			P
7440-50-8	Copper	18.9			P
7439-89-6	Iron	38000			P
7439-92-1	Lead	8.8		S	F
7439-95-4	Magnesium	7920			P
7439-96-5	Manganese	519		N	P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	16.2			P
7440-09-7	Potassium	2180			P
7782-49-2	Selenium	0.47	U		F
7440-22-4	Silver	2.0	B		P
7440-23-5	Sodium	269	B		P
7440-28-0	Thallium	0.47	U		F
7440-62-2	Vanadium	74.0			P
7440-66-6	Zinc	51.5			P
	Titanium	2130			P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE CLIENT I.D.: 403489-05(A-H)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BO9WJ9

Lab Name: ITAS_KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4622

Level (low/med): LOW Date Received: 03/26/94

% Solids: 80.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.2	U		AS

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 403489-05(A-H)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4624

Level (low/med): LOW Date Received: 03/26/94

% Solids: 83.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8290		*	P
7440-36-0	Antimony	11.1	U	N	P
7440-38-2	Arsenic	3.5		S	F
7440-39-3	Barium	93.0			P
7440-41-7	Beryllium	0.51	B		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	20900			P
7440-47-3	Chromium	16.6		*	P
7440-48-4	Cobalt	10.6	B		P
7440-50-8	Copper	14.7			P
7439-89-6	Iron	18100			P
7439-92-1	Lead	5.7			F
7439-95-4	Magnesium	7480			P
7439-96-5	Manganese	342		N	P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	15.6			P
7440-09-7	Potassium	1660			P
7782-49-2	Selenium	0.47	U		F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	174	B		P
7440-28-0	Thallium	0.47	U		F
7440-62-2	Vanadium	32.6			P
7440-66-6	Zinc	32.1			P
	Titanium	833			P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE CLIENT I.D.: 403489-06(A-H)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BO9WK1

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___
Lab Code: ITSTU_ Case No.: WO263 SAS No.: _____ SDG No.: W0013_
Matrix (soil/water): SOIL_ Lab Sample ID: AA4630
Level (low/med): LOW__ Date Received: 03/26/94
% Solids: _83.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_				NR
7440-36-0	Antimony_				NR
7440-38-2	Arsenic__				NR
7440-39-3	Barium___				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium__				NR
7440-70-2	Calcium__				NR
7440-47-3	Chromium_				NR
7440-48-4	Cobalt___				NR
7440-50-8	Copper___				NR
7439-89-6	Iron____				NR
7439-92-1	Lead____				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury__				NR
7440-02-0	Nickel___				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium_				NR
7440-22-4	Silver___				NR
7440-23-5	Sodium___				NR
7440-28-0	Thallium_				NR
7440-62-2	Vanadium_				NR
7440-66-6	Zinc____				NR
	Titanium_				NR
5955-70-0_	Cyanide__	3.0			AS

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

Comments:
COMPLETE_CLIENT_I.D.:_403489-06(A-H)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WK2

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4589

Level (low/med): LOW Date Received: 03/26/94

% Solids: 84.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7920		*	P
7440-36-0	Antimony	13.0	B	N	P
7440-38-2	Arsenic	4.3		S	F
7440-39-3	Barium	107			P
7440-41-7	Beryllium	0.62	B		P
7440-43-9	Cadmium	1.2	U		P
7440-70-2	Calcium	70900			P
7440-47-3	Chromium	13.6		*	P
7440-48-4	Cobalt	12.5			P
7440-50-8	Copper	14.2			P
7439-89-6	Iron	19900			P
7439-92-1	Lead	4.5			F
7439-95-4	Magnesium	6950			P
7439-96-5	Manganese	439		N	P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	15.4			P
7440-09-7	Potassium	1390			P
7782-49-2	Selenium	0.47	U		F
7440-22-4	Silver	2.2	B		P
7440-23-5	Sodium	226	B		P
7440-28-0	Thallium	0.47	U		F
7440-62-2	Vanadium	52.7			P
7440-66-6	Zinc	30.0			P
	Titanium	1390			P
5955-70-0	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 403489-01(A-H)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BO9WK2

Lab Name: ITAS_KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4595

Level (low/med): LOW Date Received: 03/26/94

% Solids: 84.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.2	U		AS

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 403489-01(A-H)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BO9WK4

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4599

Level (low/med): LOW Date Received: 03/26/94

% Solids: 99.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	98.9		*	P
7440-36-0	Antimony	9.5	U	N	P
7440-38-2	Arsenic	0.40	U		F
7440-39-3	Barium	0.39	B		P
7440-41-7	Beryllium	0.19	U		P
7440-43-9	Cadmium	0.95	U		P
7440-70-2	Calcium	44.3	B		P
7440-47-3	Chromium	1.9	U	*	P
7440-48-4	Cobalt	1.9	U		P
7440-50-8	Copper	1.9	U		P
7439-89-6	Iron	218			P
7439-92-1	Lead	0.40	U		F
7439-95-4	Magnesium	11.8	B		P
7439-96-5	Manganese	0.56	B	N	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.8	U		P
7440-09-7	Potassium	191	U		P
7782-49-2	Selenium	0.40	U		F
7440-22-4	Silver	0.95	U		P
7440-23-5	Sodium	33.3	B		P
7440-28-0	Thallium	0.40	U		F
7440-62-2	Vanadium	1.9	U		P
7440-66-6	Zinc	9.6			P
	Titanium	3.8			P
5955-70-0	Cyanide				NR

Color Before: WHITE Clarity Before: Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE CLIENT I.D.: 403489-02(A-H)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BO9WK4

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4605

Level (low/med): LOW Date Received: 03/26/94

% Solids: 99.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: WHITE Clarity Before: Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE CLIENT I.D.: 403489-02(A-H)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WK5

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4607

Level (low/med): LOW Date Received: 03/26/94

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	74.9		*	P
7440-36-0	Antimony	9.6	U	N	P
7440-38-2	Arsenic	0.37	U		F
7440-39-3	Barium	0.38	U		P
7440-41-7	Beryllium	0.19	U		P
7440-43-9	Cadmium	0.96	U		P
7440-70-2	Calcium	27.6	B		P
7440-47-3	Chromium	1.9	U	*	P
7440-48-4	Cobalt	1.9	U		P
7440-50-8	Copper	1.9	U		P
7439-89-6	Iron	171			P
7439-92-1	Lead	0.37	U		F
7439-95-4	Magnesium	5.8	U		P
7439-96-5	Manganese	0.56	B	N	P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	3.8	U		P
7440-09-7	Potassium	192	U		P
7782-49-2	Selenium	0.37	U		F
7440-22-4	Silver	0.96	U		P
7440-23-5	Sodium	38.7	B		P
7440-28-0	Thallium	0.37	U		F
7440-62-2	Vanadium	1.9	U		P
7440-66-6	Zinc	0.96	U		P
	Titanium	3.1			P
5955-70-0	Cyanide				NR

Color Before: WHITE Clarity Before: Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE CLIENT I.D.: 403489-03(A-H)

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EPA SAMPLE NO.

B09WK5

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___
Lab Code: ITSTU_ Case No.: WO263 SAS No.: _____ SDG No.: W0013_
Matrix (soil/water): SOIL_ Lab Sample ID: AA4613
Level (low/med): LOW__ Date Received: 03/26/94
% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

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

Comments:
COMPLETE_CLIENT_I.D.:_403489-03(A-H)

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Lab Name: ITAS_KNOXVILLE_____ Contract: WESTING/HA

Lab Code: ITSTU_ Case No.: W0290 SAS No.: _____ SDG No.:W0013_

SOW No.: ILM02

EPA Sample No.	Lab Sample ID
BOBKM1	AA5090
BOBKM1	AA5093
BOBKM3	AA5097
BOBKM3	AA5100
BOBKM4	AA5076
BOBKM4	AA5079
BOBKM5	AA5104
BOBKM5	AA5107
BOBKM6	AA5083
BOBKM6	AA5086

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 Kauker Name: Christopher Kauker

Date: May 16, 1994 Title: Chemist

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM1

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA

Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5090

Level (low/med): LOW Date Received: 04/01/94

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5590			P
7440-36-0	Antimony	9.8	U		P
7440-38-2	Arsenic	3.0		N	F
7440-39-3	Barium	73.9			P
7440-41-7	Beryllium	0.50	B		P
7440-43-9	Cadmium	0.98	U		P
7440-70-2	Calcium	7980			P
7440-47-3	Chromium	7.2		*	P
7440-48-4	Cobalt	12.0			P
7440-50-8	Copper	11.8			P
7439-89-6	Iron	21100			P
7439-92-1	Lead	7.8		S	F
7439-95-4	Magnesium	4970			P
7439-96-5	Manganese	335			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	8.6			P
7440-09-7	Potassium	1790			P
7782-49-2	Selenium	0.39	U		F
7440-22-4	Silver	1.4	B		P
7440-23-5	Sodium	116	B		P
7440-28-0	Thallium	0.39	U		F
7440-62-2	Vanadium	42.6			P
7440-66-6	Zinc	38.3			P
	Titanium	1420			P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Lead 1/2 dilution

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM1

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA

Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5093

Level (low/med): LOW Date Received: 04/01/94

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM3

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA

Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5097

Level (low/med): LOW Date Received: 04/01/94

% Solids: 97.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7290			P
7440-36-0	Antimony	11.2	B		P
7440-38-2	Arsenic	3.4		N	F
7440-39-3	Barium	90.5			P
7440-41-7	Beryllium	0.70	B		P
7440-43-9	Cadmium	0.97	U		P
7440-70-2	Calcium	7800			P
7440-47-3	Chromium	9.4		*	P
7440-48-4	Cobalt	15.3			P
7440-50-8	Copper	13.0			P
7439-89-6	Iron	25900			P
7439-92-1	Lead	10.9		S	F
7439-95-4	Magnesium	5810			P
7439-96-5	Manganese	379			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	10.7			P
7440-09-7	Potassium	2150			P
7782-49-2	Selenium	0.40	U		F
7440-22-4	Silver	1.8	B		P
7440-23-5	Sodium	199	B		P
7440-28-0	Thallium	0.40	U		F
7440-62-2	Vanadium	59.4			P
7440-66-6	Zinc	42.1			P
	Titanium	1910			P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Lead 1/2 dilution

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EPA SAMPLE NO.

BOBKM3

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA

Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5100

Level (low/med): LOW Date Received: 04/01/94

% Solids: 97.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

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EPA SAMPLE NO.

BOBKM4

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA

Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5076

Level (low/med): LOW Date Received: 04/01/94

% Solids: 95.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6310			P
7440-36-0	Antimony	9.9	U		P
7440-38-2	Arsenic	4.4		N	F
7440-39-3	Barium	94.4			P
7440-41-7	Beryllium	0.69	B		P
7440-43-9	Cadmium	0.99	U		P
7440-70-2	Calcium	11000			P
7440-47-3	Chromium	8.5		*	P
7440-48-4	Cobalt	13.7			P
7440-50-8	Copper	13.4			P
7439-89-6	Iron	21400			P
7439-92-1	Lead	7.2		S	F
7439-95-4	Magnesium	5880			P
7439-96-5	Manganese	389			P
7439-97-6	Mercury	0.08	U		CV
7440-02-0	Nickel	11.4			P
7440-09-7	Potassium	2100			P
7782-49-2	Selenium	0.40	U		F
7440-22-4	Silver	1.4	B		P
7440-23-5	Sodium	127	B		P
7440-28-0	Thallium	0.40	U	W	F
7440-62-2	Vanadium	47.9			P
7440-66-6	Zinc	38.2			P
	Titanium	1660			P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Lead 1/2 dilution

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM4

Lab Name: ITAS_KNOXVILLE Contract: WESTING/HA
Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5079
Level (low/med): LOW Date Received: 04/01/94
% Solids: 95.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.1	U		AS

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
CYANIDE_ONLY.

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EPA SAMPLE NO.

BOBKM5

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA

Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5104

Level (low/med): LOW Date Received: 04/01/94

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6420			P
7440-36-0	Antimony	9.6	U		P
7440-38-2	Arsenic	2.2		N	F
7440-39-3	Barium	73.0			P
7440-41-7	Beryllium	0.50	B		P
7440-43-9	Cadmium	0.96	U		P
7440-70-2	Calcium	3970			P
7440-47-3	Chromium	7.9		*	P
7440-48-4	Cobalt	11.8			P
7440-50-8	Copper	9.9			P
7439-89-6	Iron	21300			P
7439-92-1	Lead	5.7		S	F
7439-95-4	Magnesium	4750			P
7439-96-5	Manganese	355			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	9.0			P
7440-09-7	Potassium	1990			P
7782-49-2	Selenium	0.39	U		F
7440-22-4	Silver	1.1	B		P
7440-23-5	Sodium	169	B		P
7440-28-0	Thallium	0.39	U	W	F
7440-62-2	Vanadium	48.6			P
7440-66-6	Zinc	36.5			P
	Titanium	1610			P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Lead 1/2 dilution

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM5

Lab Name: ITAS_KNOXVILLE_____ Contract: WESTING/HA

Lab Code: ITSTU_ Case No.: WO290 SAS No.: _____ SDG No.: W0013_

Matrix (soil/water): SOIL_ Lab Sample ID: AA5107

Level (low/med): LOW_ Date Received: 04/01/94

% Solids: _98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

CYANIDE_ONLY.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM6

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA
Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5083
Level (low/med): LOW Date Received: 04/01/94
% Solids: 97.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6310			P
7440-36-0	Antimony	9.7	U		P
7440-38-2	Arsenic	2.9		N	F
7440-39-3	Barium	82.3			P
7440-41-7	Beryllium	0.50	B		P
7440-43-9	Cadmium	0.97	U		P
7440-70-2	Calcium	3660			P
7440-47-3	Chromium	8.7		*	P
7440-48-4	Cobalt	13.5			P
7440-50-8	Copper	11.9			P
7439-89-6	Iron	21800			P
7439-92-1	Lead	6.3		S	F
7439-95-4	Magnesium	4710			P
7439-96-5	Manganese	362			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	9.2			P
7440-09-7	Potassium	1540			P
7782-49-2	Selenium	0.38	U		F
7440-22-4	Silver	1.5	B		P
7440-23-5	Sodium	107	B		P
7440-28-0	Thallium	0.38	U		F
7440-62-2	Vanadium	43.7			P
7440-66-6	Zinc	35.6			P
	Titanium	1550			P
5955-70-0	Cyanide				NR

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

Comments:
Lead 1/2 dilution

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM6

Lab Name: ITAS_KNOXVILLE_____ Contract: WESTING/HA

Lab Code: ITSTU_ Case No.: WO290 SAS No.: _____ SDG No.: W0013_

Matrix (soil/water): SOIL_ Lab Sample ID: AA5086

Level (low/med): LOW_ Date Received: 04/01/94

% Solids: _97.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

CYANIDE_ONLY.

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Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE

Lab Code: ITSTU_ Case No.: WO299 SAS No.: _____ SDG No.:W0013_

SOW No.: ILM02

EPA Sample No.	Lab Sample ID
BOBKM7	AA5225
BOBKM7	AA5228
BOBKN9	AA5218
BOBKN9	AA5221
BOBKP5	AA5232
BOBKP5	AA5235
BOBKP7	AA5204
BOBKP7	AA5207
BOBKP8	AA5211
BOBKP8	AA5214
BOBNQ4	AA5197
BOBNQ4	AA5200
BOBNQ5	AA5190
BOBNQ5	AA5193

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: May 16, 1994 Title: Chemist

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM7

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: W0299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5225

Level (low/med): LOW Date Received: 09/12/93

% Solids: 97.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7940			P
7440-36-0	Antimony	9.7	U		P
7440-38-2	Arsenic	2.9		N	F
7440-39-3	Barium	85.1			P
7440-41-7	Beryllium	0.74	B		P
7440-43-9	Cadmium	0.97	U		P
7440-70-2	Calcium	12400			P
7440-47-3	Chromium	10.1		*	P
7440-48-4	Cobalt	14.7			P
7440-50-8	Copper	12.4			P
7439-89-6	Iron	25800			P
7439-92-1	Lead	8.5		S	F
7439-95-4	Magnesium	4960			P
7439-96-5	Manganese	360			P
7439-97-6	Mercury	0.08	U		CV
7440-02-0	Nickel	10.0			P
7440-09-7	Potassium	2400			P
7782-49-2	Selenium	0.38	U		F
7440-22-4	Silver	1.5	B		P
7440-23-5	Sodium	224	B		P
7440-28-0	Thallium	0.38	U	W	F
7440-62-2	Vanadium	64.3			P
7440-66-6	Zinc	42.1			P
	Titanium	1940			P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Titanium is right at upper linear range of 10 mg/L. Exceeded linear range by 0.6%, which did not exceed 5% acceptance range.

Lead 1/2 dilution.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM7

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5228

Level (low/med): LOW Date Received: 09/12/93

% Solids: 97.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKN9

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5218

Level (low/med): LOW Date Received: 09/12/93

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6500			P
7440-36-0	Antimony	12.4			P
7440-38-2	Arsenic	2.3		N	F
7440-39-3	Barium	79.9			P
7440-41-7	Beryllium	0.55	B		P
7440-43-9	Cadmium	0.99	U		P
7440-70-2	Calcium	5720			P
7440-47-3	Chromium	9.0		*	P
7440-48-4	Cobalt	13.1			P
7440-50-8	Copper	12.3			P
7439-89-6	Iron	22800			P
7439-92-1	Lead	5.4		S	F
7439-95-4	Magnesium	4330			P
7439-96-5	Manganese	340			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	10.1			P
7440-09-7	Potassium	1370			P
7782-49-2	Selenium	0.39	U		F
7440-22-4	Silver	1.7	B		P
7440-23-5	Sodium	165	B		P
7440-28-0	Thallium	0.39	U	W	F
7440-62-2	Vanadium	56.6			P
7440-66-6	Zinc	34.7			P
	Titanium	1610			P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKN9

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5221

Level (low/med): LOW Date Received: 09/12/93

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKP5

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5232

Level (low/med): LOW Date Received: 09/12/93

% Solids: 98.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8440			P
7440-36-0	Antimony	9.6	U		P
7440-38-2	Arsenic	2.6		N	F
7440-39-3	Barium	86.2			P
7440-41-7	Beryllium	0.71	B		P
7440-43-9	Cadmium	0.96	U		P
7440-70-2	Calcium	6340			P
7440-47-3	Chromium	11.3		*	P
7440-48-4	Cobalt	14.3			P
7440-50-8	Copper	13.0			P
7439-89-6	Iron	25100			P
7439-92-1	Lead	5.6		S	F
7439-95-4	Magnesium	5150			P
7439-96-5	Manganese	377			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	11.5			P
7440-09-7	Potassium	2110			P
7782-49-2	Selenium	0.39	U		F
7440-22-4	Silver	1.2	B		P
7440-23-5	Sodium	202	B		P
7440-28-0	Thallium	0.39	U	W	F
7440-62-2	Vanadium	59.2			P
7440-66-6	Zinc	38.4			P
	Titanium	1760			P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKP5

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5235

Level (low/med): LOW Date Received: 09/12/93

% Solids: 98.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKP7

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5204

Level (low/med): LOW Date Received: 09/12/93

% Solids: 99.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	117			P
7440-36-0	Antimony	9.3	U		P
7440-38-2	Arsenic	0.37	U	N	F
7440-39-3	Barium	0.47	B		P
7440-41-7	Beryllium	0.19	U		P
7440-43-9	Cadmium	0.93	U		P
7440-70-2	Calcium	31.0	B		P
7440-47-3	Chromium	1.9	U	*	P
7440-48-4	Cobalt	1.9	U		P
7440-50-8	Copper	1.9	U		P
7439-89-6	Iron	172			P
7439-92-1	Lead	0.37	U		F
7439-95-4	Magnesium	10.3	B		P
7439-96-5	Manganese	4.2			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.7	U		P
7440-09-7	Potassium	187	U		P
7782-49-2	Selenium	0.37	U		F
7440-22-4	Silver	0.93	U		P
7440-23-5	Sodium	28.3	B		P
7440-28-0	Thallium	0.37	U	W	F
7440-62-2	Vanadium	1.9	U		P
7440-66-6	Zinc	1.0	B		P
	Titanium	4.8			P
5955-70-0	Cyanide				NR

Color Before: WHITE Clarity Before: N/A Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKP7

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: W0299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5207

Level (low/med): LOW Date Received: 09/12/93

% Solids: 99.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKP8

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5211

Level (low/med): LOW Date Received: 09/12/93

% Solids: 99.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	146			P
7440-36-0	Antimony	9.5	U		P
7440-38-2	Arsenic	0.40	U	N	F
7440-39-3	Barium	0.69	B		P
7440-41-7	Beryllium	0.19	U		P
7440-43-9	Cadmium	0.95	U		P
7440-70-2	Calcium	32.9	B		P
7440-47-3	Chromium	1.9	U	*	P
7440-48-4	Cobalt	1.9	U		P
7440-50-8	Copper	1.9	U		P
7439-89-6	Iron	173			P
7439-92-1	Lead	0.40	U		F
7439-95-4	Magnesium	17.6	B		P
7439-96-5	Manganese	0.94	B		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.8	U		P
7440-09-7	Potassium	191	U		P
7782-49-2	Selenium	0.40	U	W	F
7440-22-4	Silver	0.95	U		P
7440-23-5	Sodium	36.0	B		P
7440-28-0	Thallium	0.40	U	W	F
7440-62-2	Vanadium	1.9	U		P
7440-66-6	Zinc	1.0	B		P
	Titanium	5.3			P
5955-70-0	Cyanide				NR

Color Before: WHITE Clarity Before: N/A Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKP8

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: W0299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5214

Level (low/med): LOW Date Received: 09/12/93

% Solids: 99.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ4

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5197

Level (low/med): LOW Date Received: 09/12/93

% Solids: 99.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	72.1			P
7440-36-0	Antimony	10	U		P
7440-38-2	Arsenic	0.37	U	N	F
7440-39-3	Barium	0.47	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.00	U		P
7440-70-2	Calcium	40.4	B		P
7440-47-3	Chromium	2.0	U	*	P
7440-48-4	Cobalt	2.0	U		P
7440-50-8	Copper	2.0	U		P
7439-89-6	Iron	133			P
7439-92-1	Lead	0.45	B		F
7439-95-4	Magnesium	12.7	B		P
7439-96-5	Manganese	1.2	B		P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	4.0	U		P
7440-09-7	Potassium	200	U		P
7782-49-2	Selenium	0.37	U		F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	36.4	B		P
7440-28-0	Thallium	0.37	U		F
7440-62-2	Vanadium	2.0	U		P
7440-66-6	Zinc	1.00	U		P
	Titanium	4.0			P
5955-70-0	Cyanide				NR

Color Before: WHITE Clarity Before: N/A Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ4

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5200

Level (low/med): LOW Date Received: 09/12/93

% Solids: 99.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ5

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE
Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5190
Level (low/med): LOW Date Received: 09/12/93
% Solids: 99.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	81.3			P
7440-36-0	Antimony	9.6	U		P
7440-38-2	Arsenic	0.38	U	N	F
7440-39-3	Barium	0.52	B		P
7440-41-7	Beryllium	0.19	U		P
7440-43-9	Cadmium	0.96	U		P
7440-70-2	Calcium	36.3	B		P
7440-47-3	Chromium	1.9	U	*	P
7440-48-4	Cobalt	1.9	U		P
7440-50-8	Copper	1.9	U		P
7439-89-6	Iron	148			P
7439-92-1	Lead	0.38	U		F
7439-95-4	Magnesium	14.6	B		P
7439-96-5	Manganese	0.85	B		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.8	U		P
7440-09-7	Potassium	192	U		P
7782-49-2	Selenium	0.38	U		F
7440-22-4	Silver	0.96	U		P
7440-23-5	Sodium	32.8	B		P
7440-28-0	Thallium	0.38	U		F
7440-62-2	Vanadium	1.9	U		P
7440-66-6	Zinc	1.9	B		P
	Titanium	3.8			P
5955-70-0	Cyanide				NR

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

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ5

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE

Lab Code: ITSTU_ Case No.: WO299 SAS No.: _____ SDG No.: W0013_

Matrix (soil/water): SOIL_ Lab Sample ID: AA5193

Level (low/med): LOW_ Date Received: 09/12/93

% Solids: _99.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.00	U		AS

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

CYANIDE_ONLY.

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___

Lab Code: ITSTU_ Case No.: WO306 SAS No.: _____ SDG No.:W0013_

SOW No.: ILM02

EPA Sample No.	Lab Sample ID
BOBNQ3	AA5436
BOBNQ3	AA5439
BOBNQ8	AA5427
BOBNQ8	AA5424

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 Kunker Name: Christopher Kunker

Date: May 12, 1994 Title: Chemist

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ3

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0306 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5439

Level (low/med): LOW Date Received: 04/06/94

% Solids: 97.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: Clarity After: Artifacts:

Comments:

COMPLETE CLIENT I.D.: 404065-02

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ3

Lab Name: ITAS_KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0306 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5436

Level (low/med): LOW Date Received: 04/06/94

% Solids: 97.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5760			P
7440-36-0	Antimony	9.9	U	N	P
7440-38-2	Arsenic	2.1			F
7440-39-3	Barium	85.5			P
7440-41-7	Beryllium	0.60	B		P
7440-43-9	Cadmium	0.99	U		P
7440-70-2	Calcium	8430			P
7440-47-3	Chromium	8.7			P
7440-48-4	Cobalt	14.2			P
7440-50-8	Copper	17.6			P
7439-89-6	Iron	24200			P
7439-92-1	Lead	3.7			F
7439-95-4	Magnesium	4290			P
7439-96-5	Manganese	337			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	8.4			P
7440-09-7	Potassium	1180			P
7782-49-2	Selenium	0.39	U		F
7440-22-4	Silver	1.2	B		P
7440-23-5	Sodium	285	B		P
7440-28-0	Thallium	0.39	U	WN	F
7440-62-2	Vanadium	67.2			P
7440-66-6	Zinc	40.3			P
	Titanium	2140			P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 404065-02

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ8

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO306 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5424

Level (low/med): LOW Date Received: 04/06/94

% Solids: 97.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6380			P
7440-36-0	Antimony	9.9	U	N	P
7440-38-2	Arsenic	2.5			F
7440-39-3	Barium	89.4			P
7440-41-7	Beryllium	0.55	B		P
7440-43-9	Cadmium	0.99	U		P
7440-70-2	Calcium	5930			P
7440-47-3	Chromium	9.3			P
7440-48-4	Cobalt	11.7			P
7440-50-8	Copper	11.0			P
7439-89-6	Iron	19000			P
7439-92-1	Lead	4.5			F
7439-95-4	Magnesium	4350			P
7439-96-5	Manganese	345			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	10.8			P
7440-09-7	Potassium	1470			P
7782-49-2	Selenium	0.38	U		F
7440-22-4	Silver	1.1	B		P
7440-23-5	Sodium	128	B		P
7440-28-0	Thallium	0.38	U	WN	F
7440-62-2	Vanadium	44.2			P
7440-66-6	Zinc	33.0			P
	Titanium	1380			P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 404065-01

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ8

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0306 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5427
Level (low/med): LOW Date Received: 04/06/94
% Solids: 97.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: Clarity After: Artifacts:

Comments:
COMPLETE_CLIENT_I.D.: 404065-01

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NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg	Analysis Date:	04/15/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6096	2.5	U
B09WJ9	AA4620	2.5	U
B09WK1	AA4628	2.5	U
B09WK2	AA4593	2.5	U
B09WK4	AA4603	2.5	U
B09WK5	AA4611	2.5	U

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

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg	Analysis Date:	04/15/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6096	2.5	U
B0BKM1	AA5092	28	+
BOBKM3	AA5099	22	+
BOBKM4	AA5078	12	+
BOBKM5	AA5106	18	+
BOBKM6	AA5085	2.6	+

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

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg	Analysis Date:	04/15/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6096	2.5	U
BOBKP8	AA5213	2.5	U
BOBKM7	AA5227	13	+
BOBKP7	AA5206	2.5	U
BOBKN9	AA5220	7.2	+
BOBNQ4	AA5199	2.5	U
BOBKP5	AA5234	10	+
BOBNQ5	AA5192	2.5	U

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

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	306
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg	Analysis Date:	05/06/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6153	2.5	U
BOBNQ3	AA5438	2.5	U
BOBNQ8	AA5426	23	+

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM4	Analysis Date:	05/13/94
Lab Sample ID:	AA5081	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	1800		100

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM6	Analysis Date:	05/13/94
Lab Sample ID:	AA5088	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	1900		100

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM1	Analysis Date:	05/13/94
Lab Sample ID:	AA5095	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	2000		100

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM3	Analysis Date:	05/13/94
Lab Sample ID:	AA5102	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	3600		100

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM5	Analysis Date:	05/13/94
Lab Sample ID:	AA5109	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	2500		100

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ5	Analysis Date:	05/13/94
Lab Sample ID:	AA5195	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	100	U	100

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ4	Analysis Date:	05/13/94
Lab Sample ID:	AA5202	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	100	U	100

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP7	Analysis Date:	05/13/94
Lab Sample ID:	AA5209	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	100	U	100

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP8	Analysis Date:	05/13/94
Lab Sample ID:	AA5216	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	100	U	100

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKN9	Analysis Date:	05/13/94
Lab Sample ID:	AA5223	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	1000		100

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKM7	Analysis Date:	05/13/94
Lab Sample ID:	AA5230	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	2200		100

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP5	Analysis Date:	05/13/94
Lab Sample ID:	AA5237	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
total organic carbon	1200		100

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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WJ9	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4619	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.40	+	0.4
fluoride	0.4	U	0.4
sulfate	2.2	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK1	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4627	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.4	U	0.4
fluoride	0.4	U	0.4
sulfate	2.5	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK2	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4592	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.4	U	0.4
fluoride	0.4	U	0.4
sulfate	3.3	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK4	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4602	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	4.1	+	0.4
fluoride	0.7	+	0.4
sulfate	1.7	+	1.5

+ - Positive result.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK5	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4610	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	2.9	+	0.4
fluoride	0.4	U	0.4
sulfate	1.8	+	1.5

+ - Positive result.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM4	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA5077	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	7.7	+	0.4
fluoride	0.4	U	0.4
sulfate	11	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM3	Analysis Date:	04/20/94
Lab Sample ID:	AA5098	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	4.7	+	0.4
fluoride	0.4	U	0.4
sulfate	9.4	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM5	Analysis Date:	04/20/94
Lab Sample ID:	AA5105	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	3	+	0.4
fluoride	0.7	+	0.4
sulfate	7.1	+	1.5

+ - Positive result.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM6	Analysis Date:	04/20/94
Lab Sample ID:	AA5084	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.4	U	0.4
fluoride	0.4	U	0.4
sulfate	1.5	U	1.5

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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM1	Analysis Date:	04/28/94
Lab Sample ID:	AA5091	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	3.0	+	0.4
fluoride	0.4	U	0.4
sulfate	6.6	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP8	Analysis Date:	04/22/94
Lab Sample ID:	AA5212	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	3.2	+	0.4
fluoride	0.68	+	0.4
sulfate	1.8	+	1.5

+ - Positive result.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKM7	Analysis Date:	04/22/94
Lab Sample ID:	AA5226	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	16	+	0.4
fluoride	0.5	+	0.4
sulfate	14	+	1.5

+ - Positive result.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP7	Analysis Date:	04/22/94
Lab Sample ID:	AA5205	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	2.7	+	0.4
fluoride	0.4	U	0.4
sulfate	1.6	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKN9	Analysis Date:	04/22/94
Lab Sample ID:	AA5219	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	1.2	+	0.4
fluoride	0.4	U	0.4
sulfate	4.8	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ4	Analysis Date:	04/22/94
Lab Sample ID:	AA5198	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	2.9	+	0.4
fluoride	0.4	U	0.4
sulfate	2	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP5	Analysis Date:	04/22/94
Lab Sample ID:	AA5233	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	9.4	+	0.4
fluoride	0.4	U	0.4
sulfate	7.8	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ5	Analysis Date:	04/22/94
Lab Sample ID:	AA5191	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	2.6	+	0.4
fluoride	0.4	U	0.4
sulfate	1.6	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	306
Client Sample ID:	BOBNQ8	Analysis Date:	04/22/94
Lab Sample ID:	AA5425	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.9	+	0.4
fluoride	0.4	U	0.4
sulfate	19	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	306
Client Sample ID:	BOBNQ3	Analysis Date:	04/22/94
Lab Sample ID:	AA5437	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.4	U	0.4
fluoride	0.4	U	0.4
sulfate	37	U	1.5

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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WJ9	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4619	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.40	+	0.4
fluoride	0.4	U	0.4
sulfate	2.2	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK1	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4627	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.4	U	0.4
fluoride	0.4	U	0.4
sulfate	2.5	+	1.5

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK2	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4592	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.4	U	0.4
fluoride	0.4	U	0.4
sulfate	3.3	+	1.5

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

9613474.0388

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ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	--	SDG Number:	W0013
Contract Name:	Westinghouse Hanford		Job Number:	263
Client Sample ID:	B09WK4		Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4602		Confirmation Date:	N/A
Sample Matrix:	SOIL		Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	4.1	+	0.4
fluoride	0.7	+	0.4
sulfate	1.7	+	1.5

+ - Positive result.

9613474.0389

0000548E

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK5	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4610	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	2.9	+	0.4
fluoride	0.4	U	0.4
sulfate	1.8	+	1.5

+ - Positive result.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	BO9WJ9	Extraction Date:	03/29/94
Lab Sample ID:	AA4623	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.8093
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	12	U	12

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4623	113	126

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	BO9WK1	Extraction Date:	03/29/94
Lab Sample ID:	AA4631	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.8346
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	12	U	12

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4631	123	136

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK2	Extraction Date:	03/29/94
Lab Sample ID:	AA4596	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.8468
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	12	U	12

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4596	115	126

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	BO9WK4	Extraction Date:	03/29/94
Lab Sample ID:	AA4606	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9981
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4606	104	112

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK5	Extraction Date:	03/29/94
Lab Sample ID:	AA4614	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9981
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4614	122	130

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM4	Extraction Date:	04/08/94
Lab Sample ID:	AA5080	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	0.9526
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5080	98	134

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM6	Extraction Date:	04/08/94
Lab Sample ID:	AA5087	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	0.9728
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5087	100	135

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM1	Extraction Date:	04/08/94
Lab Sample ID:	AA5094	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	0.9701
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5094	95	126

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM3	Extraction Date:	04/08/94
Lab Sample ID:	AA5101	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	0.9880
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5101	94	135

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM5	Extraction Date:	04/08/94
Lab Sample ID:	AA5108	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	0.9921
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5108	96	135

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ5	Extraction Date:	04/08/94
Lab Sample ID:	AA5194	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	1.00
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5194	115	155

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ4	Extraction Date:	04/08/94
Lab Sample ID:	AA5201	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	1.00
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5201	105	139

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP7	Extraction Date:	04/08/94
Lab Sample ID:	AA5215	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	1.00
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5208	104	139

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP8	Extraction Date:	04/08/94
Lab Sample ID:	AA5208	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	1.00
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5215	98	128

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	~~BOBKP9~~ BOBKN9	Extraction Date:	04/08/94
Lab Sample ID:	AA5222 J.C. 5/24/94	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	0.9920
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5222	101	137

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKM7	Extraction Date:	04/08/94
Lab Sample ID:	AA5236	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	0.9900
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5229	94	131

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP5	Extraction Date:	04/08/94
Lab Sample ID:	AA5229	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	0.9902
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5236	89	120

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	306
Client Sample ID:	BOBNQ8	Extraction Date:	04/08/94
Lab Sample ID:	AA5428	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	0.9731
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5428	97	134

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

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	306
Client Sample ID:	BOBNQ3	Extraction Date:	04/08/94
Lab Sample ID:	AA5440	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	0.9737
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	I	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5440	83	119

I - 64% of the DRO result was contributed by 1 component of an unknown identity.

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Analytical Data Package Prepared for

MAY 1994 RECEIVED SDLA

Westinghouse Hanford

Chemical Analysis By

IT Analytical Services

Middlebrook Laboratory

Sample Delivery Group Number: W0013

WHC IDENTIFICATION NUMBER	ITAS RICHLAND ID NUMBER	KNOXVILLE ID NUMBER

* See attached Table I.

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4589	403489-01 (A-H)	B09WK2	SOIL	METALS
AA4590	"	"	"	VOC
AA4591	"	"	"	SVOC
AA4592	"	"	"	ANIONS
AA4593	"	"	"	NO3NO2
AA4594	"	"	"	PEST/PCB
AA4595	"	"	"	CN
AA4596	"	"	"	TPH
AA4599	403489-02 (A-H)	B09WK4	"	METALS
AA4600	"	"	"	VOC
AA4601	"	"	"	SVOC
AA4602	"	"	"	ANIONS
AA4603	"	"	"	NO3NO2
AA4604	"	"	"	PEST/PCB
AA4605	"	"	"	CN
AA4606	"	"	"	TPH
AA4607	403489-03 (A-H)	B09WK5	"	METALS
AA4608	"	"	"	VOC
AA4609	"	"	"	SVOC
AA4610	"	"	"	ANIONS
AA4611	"	"	"	NO3NO2
AA4612	"	"	"	PEST/PCB
AA4613	"	"	"	CN
AA4614	"	"	"	TPH

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4615	403489-04 (A)	B09WK6	SOIL	VOC
AA4616	403489-05 (A-H)	B09WJ9	"	METALS
AA4617	"	"	"	VOC
AA4618	"	"	"	SVOC
AA4619	"	"	"	ANIONS
AA4620	"	"	"	NO3NO2
AA4621	"	"	"	PEST/PCB
AA4622	"	"	"	CN
AA4623	"	"	"	TPH
AA4624	403489-06 (A-H)	B09WK1	"	METALS
AA4625	"	"	"	VOC
AA4626	"	"	"	SVOC
AA4627	"	"	"	ANIONS
AA4628	"	"	"	NO3NO3
AA4629	"	"	"	PEST/PCB
AA4630	"	"	"	CN
AA4631	"	"	"	TPH
AA4633	403489-07 (A,B)	Trip Blank	"	VOC
AA4634	403489-08 (A,B)	"	"	VOC
AA5075	40363001 (A-G)	BOBKM4	"	SVOC
AA5076	"	"	"	METALS
AA5077	"	"	"	ANIONS
AA5078	"	"	"	NO3NO2
AA5079	"	"	"	CN
AA5080	"	"	"	TPH
AA5081	"	"	"	TOC

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5082	40363002 (A-G)	BOBKM6	SOIL	SVOC
AA5083	"	"	"	METALS
AA5084	"	"	"	ANIONS
AA5085	"	"	"	NO3NO2
AA5086	"	"	"	CN
AA5087	"	"	"	TPH
AA5088	"	"	"	TOC
AA5089	40363003 (A-G)	BOBKM1	"	SVOC
AA5090	"	"	"	METALS
AA5091	"	"	"	ANIONS
AA5092	"	"	"	NO3NO2
AA5093	"	"	"	CN
AA5094	"	"	"	TPH
AA5095	"	"	"	TOC
AA5096	40363004 (A-G)	BOBKM3	"	SVOC
AA5097	"	"	"	METALS
AA5098	"	"	"	ANIONS
AA5099	"	"	"	NO3NO2
AA5100	"	"	"	CN
AA5101	"	"	"	TPH
AA5102	"	"	"	TOC
AA5103	40363005 (A-G)	BOBKM5	"	SVOC
AA5104	"	"	"	METALS
AA5105	"	"	"	ANIONS
AA5106	"	"	"	NO3NO2
AA5107	"	"	"	CN
AA5108	"	"	"	TPH
AA5109	"	"	"	TOC

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5189	404016-01 (A-G)	BOBNQ5	SOIL	SVOC
AA5190	"	"	"	METALS
AA5191	"	"	"	ANIONS
AA5192	"	"	"	NO3NO2
AA5193	"	"	"	CN
AA5194	"	"	"	TPH
AA5195	"	"	"	TOC
AA5196	404016-02 (A-G)	BOBNQ4	"	SVOC
AA5197	"	"	"	METALS
AA5198	"	"	"	ANIONS
AA5199	"	"	"	NO3NO2
AA5200	"	"	"	CN
AA5201	"	"	"	TPH
AA5202	"	"	"	TOC
AA5203	404016-03 (A-G)	BOBKP7	"	SVOC
AA5204	"	"	"	METALS
AA5205	"	"	"	ANIONS
AA5206	"	"	"	NO3NO2
AA5207	"	"	"	CN
AA5208	"	"	"	TPH
AA5209	"	"	"	TOC
AA5210	404016-04 (A-G)	BOBKP8	"	SVOC
AA5211	"	"	"	METALS
AA5212	"	"	"	ANIONS
AA5213	"	"	"	NO3NO2
AA5214	"	"	"	CN
AA5215	"	"	"	TPH
AA5216	"	"	"	TOC

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5217	404016-05 (A-G)	BOBKN9	SOIL	SVOC
AA5218	"	"	"	METALS
AA5219	"	"	"	ANIONS
AA5220	"	"	"	NO3NO2
AA5221	"	"	"	CN
AA5222	"	"	"	TPH
AA5223	"	"	"	TOC
AA5224	404016-06 (A-G)	BOBKM7	"	SVOC
AA5225	"	"	"	METALS
AA5226	"	"	"	ANIONS
AA5227	"	"	"	NO3NO2
AA5228	"	"	"	CN
AA5229	"	"	"	TPH
AA5230	"	"	"	TOC
AA5231	404016-07 (A-G)	BOBKP5	"	SVOC
AA5232	"	"	"	METALS
AA5233	"	"	"	ANIONS
AA5234	"	"	"	NO3NO2
AA5235	"	"	"	CN
AA5236	"	"	"	TPH
AA5237	"	"	"	TOC
AA5423	404065-01	BOBNQ8	"	SVOC
AA5424	"	"	"	METALS
AA5425	"	"	"	ANIONS
AA5426	"	"	"	NO3NO2
AA5427	"	"	"	CN
AA5428	"	"	"	TPH

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5435	404065-02	BOBNQ3	SOIL	SVOC
AA5436	"	"	"	METALS
AA5437	"	"	"	ANIONS
AA5438	"	"	"	NO3NO2
AA5439	"	"	"	CN
AA5440	"	"	"	TPH

WO 263

SAMPLE RECEIPT VARIANCE REPORT
ITAS-RICHLAND LABORATORY

WORK ORDER NUMBER: 403489 DATE INITIATED: 3/25/94

INITIATED BY: T Gilmore

DATE/TIME OF SAMPLE (AND/OR RFA & COC) RECEIPT: 3/25/94 1000

CLIENT SAMPLE NUMBER	RFA/COC NUMBERS	ANALYSIS REQUESTED
B09WK2		
B09WK4		
B09WK5		
B09WK6		

Samples were received with the following deficiencies:

- ☐ 1. Not enough sample received for proper analysis.
- ☒ 2. Sample received without proper preservative.
- ☐ 3. No sample received in container.
- ☐ 4. Sample received without a RFA/COC form.
- ☐ 5. No sample ID on container.
- ☐ 6. Sample received broken or leaking.
- ☐ 7. Holding time exceeded at receipt.
- ☐ 8. Custody tape broken.
- ☐ 9. COC not relinquished by client.
- ☐ 10. Sample information on container does not match sample information on the paper work (Explain below).
- ☐ 11. All shipping containers (coolers) on waybill not received with shipment.
  - ☐ RFA/COC received
  - ☐ RFA/COC not received
- ☐ 12. Other (Explain below).

NOTES: Samples received at 8°C.

SUPERVISOR REVIEW: _____

PROJECT MANAGER REVIEW: _____

TELEPHONED TO: _____ ON _____ BY _____

TELEFAXED TO: _____ ON _____ BY _____

SIGNED ORIGINAL MUST BE RETAINED IN WORK ORDER FILE

FORM NO. LS-023, 3/92, Rev. 0

9613474.0417

0000035

WC 263

SAMPLE RECEIPT VARIANCE REPORT
ITAS-RICHLAND LABORATORY

WORK ORDER NUMBER: 403489 04 DATE INITIATED: 3-25-94

INITIATED BY: R. Boyd

DATE/TIME OF SAMPLE (AND/OR RFA & COC) RECEIPT: 3-25-94 18:00

CLIENT SAMPLE NUMBER	RFA/COC NUMBERS	ANALYSIS REQUESTED
B09WK6		VOA

Samples were received with the following deficiencies:

- ☐ 1. Not enough sample received for proper analysis.
- ☐ 2. Sample received without proper preservative.
- ☐ 3. No sample received in container.
- ☐ 4. Sample received without a RFA/COC form.
- ☐ 5. No sample ID on container.
- ☑ 6. Sample received broken or leaking.
- ☐ 7. Holding time exceeded at receipt.
- ☐ 8. Custody tape broken.
- ☐ 9. COC not relinquished by client.
- ☐ 10. Sample information on container does not match sample information on the paper work (Explain below).
- ☐ 11. All shipping containers (coolers) on waybill not received with shipment.
  - ☐ RFA/COC received
  - ☐ RFA/COC not received
- ☑ 12. Other (Explain below).

NOTES: sample was received Broken

SUPERVISOR REVIEW: _____

PROJECT MANAGER REVIEW: _____

TELEPHONED TO: _____ ON _____ BY _____

TELEFAXED TO: _____ ON _____ BY _____

SIGNED ORIGINAL MUST BE RETAINED IN WORK ORDER FILE

FORM NO. LS-023, 3/92, Rev. 0

9613474.0418

0000036

WO 263

SAMPLE RECEIPT VARIANCE REPORT
ITAS-RICHLAND LABORATORY

WORK ORDER NUMBER: 4034890 5 DATE INITIATED: 3/25/94

INITIATED BY: T Gilmore

DATE/TIME OF SAMPLE (AND/OR RFA & COC) RECEIPT: 3/25/94 1000

CLIENT SAMPLE NUMBER	RFA/COC NUMBERS	ANALYSIS REQUESTED
B09WJ9		NO2, NO3

Samples were received with the following deficiencies:

- ☐ 1. Not enough sample received for proper analysis.
- ☐ 2. Sample received without proper preservative.
- ☐ 3. No sample received in container.
- ☐ 4. Sample received without a RFA/COC form.
- ☐ 5. No sample ID on container.
- ☐ 6. Sample received broken or leaking.
- ☐ 7. Holding time exceeded at receipt.
- ☐ 8. Custody tape broken.
- ☐ 9. COC not relinquished by client.
- ☒ 10. Sample information on container does not match sample information on the paper work (Explain below).
- ☐ 11. All shipping containers (coolers) on waybill not received with shipment.
  - ☐ RFA/COC received
  - ☐ RFA/COC not received
- ☐ 12. Other (Explain below).

NOTES: Container shows B09WJ8, COC shows B09WJ9. JG 3/25/94
Samples have same date/time collected, there was no B09WJ8 received.

SUPERVISOR REVIEW: _____

PROJECT MANAGER REVIEW: _____

TELEPHONED TO: _____ ON _____ BY _____

TELEFAXED TO: _____ ON _____ BY _____

SIGNED ORIGINAL MUST BE RETAINED IN WORK ORDER FILE

FORM NO. LS-023, 3/92, Rev. 0

9613474.0419

0000039

WO 263

INTERNATIONAL TECHNOLOGY CORPORATION

National Office
1010 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

For Shipping Containers

Date/Time Received 3/25/94 [illegible] Client Name WHC

Project/Client # S4F-065 Batch or Case # N/A

Cooler ID (if noted on the outside of cooler) -US 127

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: 27
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 [illegible] 5°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 Tom Gilange [signature] Date/Time 3/25/94

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

9613474.0420

0000040

WO 263

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1400 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST
SAMPLE NUMBER MATRIX

WHC ID NUMBER	SAMPLE LABEL NUMBER	LABORATORY ID NUMBER	AGREEMENT OF INFORMATION
B09W1K0	N/A	40349101 40349201	Yes
B09W1K1		40348906 40349005	
B09WJ9		40348905 40349004	

FORM NO. LS-043, Rev. 0, 2/94

9613474.0421

0000041

WO 263

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1550 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3/25/94 1000 AM Client Name WHC

Project/Client # _____ Batch or Case # _____

Cooler ID (if noted on the outside of cooler) 512

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: 28
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 8°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 Tom Gilmore [signature] Date/Time 3/25/94 1000

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

9613474.0422

0000042

WO 263

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2800 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST
SAMPLE NUMBER MATRIX

WHC ID NUMBER	SAMPLE LABEL NUMBER	LABORATORY ID NUMBER	AGREEMENT OF INFORMATION
B09Wk2	N/A	40348901 40349001	Yes
B09Wk4	|	40348902 40348902	|
B09Wk5	|	40348903 40349003	|
B09Wk6	|	40348904	|

FORM NO. LS-043, Rev. 0, 2/94

9613474.0423

0000043

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1330 George Washington Way
Richland, Washington 99352

WO#290

SAMPLE CHECK-IN LIST

* Per Shipping Container

Date/Time Received 3-31-94 1100 Client Name IWHC

Project/Client # SAF 94-065 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) SML 4159

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 ☒ laid on top of
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☐ No ☐
7. Number of sample containers in cooler: 24
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 6°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) 006448 006450, 006451
    Request for analysis #(s) N/A
    Airbill # N/A Carrier _____
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 3-31-94 1100

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

9613474.0424

0000044

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1100 George Washington Way
Richland, Washington 99352

WO# 290

SAMPLE CHECK-IN LIST

* Per Shipping Container

Date/Time Received 3-31-94 1100 Client Name WHC

Project/Client # SAF 94-065 Batch or Case #

Cooler ID (if noted on the outside of cooler) SML 526

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 ☒ (laid on top of)
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 16
8. Samples have: ____ tape ____ hazard labels
   12 custody seals 12 appropriate sample labels
9. Samples are: 12 in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 3°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) 006452, 006453 (RB 3-31-94)
    Request for analysis #(s) N/A
    Airbill # N/A Carrier
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 Robin Boyd Date/Time 3-31-94 1100

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

9613474.0425

0000045

WO # 299

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1200 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

* Per Shipping Container

Date/Time Received 4/1/94 1210 Client Name WHC

Project/Client # 94-005 Batch or Case # N/A

Cooler ID (if noted on the outside of cooler) SML 906

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: 32
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 6°C

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

Chain of Custody #'(s) 000454, 000466, 000473, 000474

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 [illegible] Date/Time 4/1/94 1210

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

9613474.0426

0000046

WO #299

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

* Per shipping Container

Date/Time Received 4/1/94 1210 Client Name WHC

Project/Client # 94-005 Batch or Case # N/A

Cooler ID (if noted on the outside of cooler) SML 413

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: 32
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 6°C

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

Chain of Custody #'(s) 006262, 006263, 006468, 006469

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 Tom Gilmore [signature] Date/Time 4/1/94 1210

FORM NO. LS-042, Rev.0, 2.94

9613474.0427

0000047

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

403489 01 — Sample Identification

1)

A 1,250ml P:CLP;TAL Metals,Hg,Tl — B09WK2
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900

2)

1,250ml P:CLP;TAL Metals,Hg,Tl
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

3-22-94

[] Field Transfer of Custody — Chain of Possession (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 1310	ITAS	3/25/94
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0428

0000048

WO 263

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-22-94
Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WK2	S	3-22-94	1313	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
			3-24-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information IT, Richland
Special Handling and/or Storage Maintain at 4C ; (SOIL)
Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.0429

0000049

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-23-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

40348902 — Sample Identification

1)

A 1,250ml P:CLP;TAL Metals,Hg,Tl B09WK4
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349002

2) 40348903 B09WK5

A 1,250ml P:CLP;TAL Metals,Hg,Tl
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349003

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 3-24-94 1310	Received by: 10 am	Date/Time: 3-25-94 10 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0430

0000050

WO 262

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-23-94
Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WK4	S	3-23-94	1230	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
B09WK5	S	3-23-94	1230	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.0431

0000051

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-24-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: 3-24-94 — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 403489 .04A

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~ B09WK6

1,250ml G:VOA CLP

~~1,250ml aG:Semi-VOA CLP~~

~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~

~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~

~~1,250ml aGs:PCB/Pest (8080)~~

~~1,125ml G:Cyanide CLP~~

~~1,125ml Gw:Kerosene (8015M)~~

~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

LEA 3-24-94

2)

1,250ml P:CLP;TAL Metals,Hg,Ti

1,250ml G:VOA CLP

1,250ml aG:Semi-VOA CLP

1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

1,250ml aGs:PCB/Pest (8080)

1,125ml G:Cyanide CLP

1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

LEA 3-24-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
1310 Joan E. Rogers 3-24-94	ITAS	3-25-94 1000
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0432

0000052

WO 263

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-23-94

Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WK6	S	3-23-94	0700	~~1,250ml P:CLP;TAL Metals,Hg,Ti~~ 1,250ml Gs:VOA CLP ~~1,250ml aG:Semi-VOA CLP~~ ~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~ ~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~ ~~1,250ml aGs:PCB/Pest (8080)~~ ~~1,125ml G:Cyanide CLP~~ ~~1,125ml Gw:Kerosene (8015M)~~ LER 3-24-94 ~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~
				1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) LER 3-24-94

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.0433

0000053

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-21-94

Ice Chest No.: SMB-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 403489 B09W39

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
05 C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
H 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900 4

~~2)~~
~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-21-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 1310	ITAS 3-25-94	10:00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0434

0000054

WO 265

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-21-94

Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09059	S	3-21-94	1240	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
				1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) 3-21-94

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.0435

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

40349101 — Sample Identification

1) B09WK0

40349 3/25/94

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349005 3/25/94 40349201

2) B09WK1

40349 3/25/94

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349006 3/25/94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 Lorene E. Rogers 1310	Kevin Stottlemyer ITA	3-25-94 10 00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0436

0000056

WO 263

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-22-94
Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B0RW40	S	3-22-94	1225	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
B0RW41	S	3-22-94	1225	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information IT, Richland
Special Handling and/or Storage Maintain at 4C ; (SOIL)
Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

WO# 290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006448

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SIVL 457
Bill of Lading/Airbill No. N/A
Offsite Property No. W74-0-0367 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
03680 03 A BOBKM1	S	3-29-94	0850	(1) 250ml aG	Semi-VOA CLP	
B BOBKM1	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBKM1	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBKM1	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBKM1	S			(1) 125ml G	Cyanide CPL	
F BOBKM1	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBKM1	S			(1) 125ml aGs	TOC 9060	
03631 03 BOBKM1	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
[illegible]	3-31-94	0815	D.F. Edwards
D.F. Edwards	3-31-94	0815	[illegible] RM Arnold
[illegible] RM Arnold	3-31-94	1055	L. Bond 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413479.0487

0000057

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006450

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. 5W4459
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
03630 04 A	BOBKM3	S	3-29-94	0944	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM3	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM3	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM3	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM3	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM3	S			(1) 125ml aGs	TOC	9060	
03631 04	BOBKM3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
RT Sickle RT Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	RM Arnold RM Arnold
RM Arnold RM Arnold	3-31-94	1055	R. Boyd 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9613474.0458

0000058

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006451

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. 562 459
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #46
Method of Shipment Government truck
Field Logbook No. KRAH 3-31-94
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
103 030 01A	BOBKM4	S	3-29-94	0950	(1) 250ml aG	Semi-VOA CLP	
B	BOBKM4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKM4	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
B	BOBKM4	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKM4	S			(1) 125ml G	Cyanide CPL	
F	BOBKM4	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKM4	S			(1) 125ml aGs	TOC 9060	
103 030 01	BOBKM4	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	3-31-94	0815	Donald L. Edwards
Donald L. Edwards	3-31-94	0815	Ray Arnold Ray Arnold
Ray Arnold Ray Arnold	3-31-94	1055	R. Boyd IT 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.0459

0000059

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006452

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. 526 SWL
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
03630 05 A BOBKM5	S	3-29-94	1030	(1) 250ml aG	Semi-VOA CLP	
B BOBKM5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBKM5	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBKM5	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBKM5	S			(1) 125ml G	Cyanide CPL	
F BOBKM5	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBKM5	S			(1) 125ml aGs	TOC 9060	
03631 05 BOBKM5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	3-31-94	0815	Daniel L. Edwards
Daniel L. Edwards	3-31-94	0815	R.M. Arnold
R.M. Arnold	3-31-94	1055	R. Boyd Jr 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413274.0440

00000060

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006453

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SML 526
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
8630 02A BOBKM6	S	3-29-94	1058	(1) 250ml aG	Semi-VOA	CLP	
B BOBKM6	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C BOBKM6	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D BOBKM6	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E BOBKM6	S			(1) 125ml G	Cyanide	CPL	
F BOBKM6	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G BOBKM6	S			(1) 125ml aGs	TOC	9060	
8631 02 BOBKM6	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	[illegible]
[illegible] RM Arnold	~~1055~~ 3-31-94	1055	[illegible] 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9515974.1144

00000061

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006454

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation ~~216-U-8 Vitrified Clay Pipeline~~ 200 UP2 3-30-94
Sampling Locations ~~216-U-8~~ Crib W/42 Field Note 3-30-94
Ice Chest No. SIYL906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
104046 06A	BOBKM7	S	3-30-94	17930	(1) 250ml aG	Semi-VOA CLP	
B	BOBKM7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKM7	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKM7	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKM7	S			(1) 125ml G	Cyanide CPL	
F	BOBKM7	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKM7	S			(1) 125ml aGs	TOC 9060	
904017 06	BOBKM7	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	Ray Harold Ray Harold
Ray Harold Ray Harold	4-1-94	1210	Tom Gilmore Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413474.0942

00000062

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006469

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SWL 413
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations Z Ditch
Offsite Property No. W94-C-0367 #47
Field Logbook No.

SPECIAL INSTRUCTIONS

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
04016 07 A BOBKP5	S	3-30-94	1330	(1) 250ml aG	Semi-VOA CLP	
B BOBKP5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBKP5	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBKP5	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBKP5	S			(1) 125ml G	Cyanide CPL	
F BOBKP5	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBKP5	S			(1) 125ml aGs	TOC 9060	
04019 07 BOBKP5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle	4-1-94	1000	R.W. Arnold
R.W. Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.4043

0000063

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006473

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SYL 906
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations U1/U2 Tile Field
Offsite Property No. W94-0-0369#47
Field Logbook No.

SPECIAL INSTRUCTIONS

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104016 03 A	BOBKP7	S	3-30-94	0940	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKP7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKP7	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKP7	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKP7	S			(1) 125ml G	Cyanide	CPL	
F	BOBKP7	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKP7	S			(1) 125ml aGs	TOC	9060	
104017 03	BOBKP7	S	3-30-94	0940	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413179.1944

0000064

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST W0#299	Page 1 of 1
		006474

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SML 906
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations U1/U2 Tile Field
Offsite Property No. W94-0-0369#47
Field Logbook No.

SPECIAL INSTRUCTIONS

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
104016 04 A BOBKP8	S	3-30-94	0900	(1) 250ml aG	Semi-VOA CLP	
B BOBKP8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBKP8	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBKP8	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBKP8	S			(1) 125ml G	Cyanide CPL	
F BOBKP8	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBKP8	S			(1) 125ml aGs	TOC 9060	
104017 04 BOBKP8	S	3-30-94	0900	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
[illegible] ITAS [illegible]	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	[illegible] ITAS Tom Gilmore

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.0165

0000065

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006466

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation ~~216-U-8 Vitrified Clay~~ Pipeline 200 [illegible] 3-30-94
Sampling Locations ~~216-U-8 Crib~~ [illegible] 3-30-94
Ice Chest No. SML 906
Bill of Lading/Airbill No. N/A
Offsite Property No. LW94-0-0367 #47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
404016 05 A	BOBKN9	S	3 30 94	1100	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKN9	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKN9	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKN9	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKN9	S			(1) 125ml G	Cyanide	CPL	
F	BOBKN9	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKN9	S			(1) 125ml aGs	TOC	9060	
404017 05	BOBKN9	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	R.M. Arnold R.M. Arnold
R.M. Arnold R.M. Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9612474.0046

9900066

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006262

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. 5L 415
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations 216-U-10 Pond
Offsite Property No. W94-0-0369 #47
Field Logbook No.

SPECIAL INSTRUCTIONS

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
104016 02 A BOBNQ4	S	3-30-94	1330	(1) 250ml aG	Semi-VOA CLP	
B BOBNQ4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBNQ4	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBNQ4	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBNQ4	S			(1) 125ml G	Cyanide CPL	
F BOBNQ4	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBNQ4	S			(1) 125ml aGs	TOC 9060	
104017 02 BOBNQ4	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	R.W. Arnold R.W. Arnold
R.W. Arnold R.W. Arnold	4-1-94	1210	Tom Gilmore Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9613474.0947

0000067

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006263

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SWL413
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations 216-U-10 Pond
Offsite Property No. WH94-0 0367-#47
Field Logbook No.

SPECIAL INSTRUCTIONS

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
04016 01 A BOBNQ5	S	3-30-94	1345	(1) 250ml aG	Semi-VOA CLP	
B BOBNQ5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBNQ5	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBNQ5	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBNQ5	S			(1) 125ml G	Cyanide CPL	
F BOBNQ5	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBNQ5	S			(1) 125ml aGs	TOC 9060	
04017 01 BOBNQ5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413474.0448

0000068

WO #306

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006261

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. GW5009
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations 216-U-10 Pond
Offsite Property No.
Field Logbook No.

SPECIAL INSTRUCTIONS
Analyze per SAF 94-065.

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
A	BOBNQ3	S	3-31-94	1200	(1) 250ml aG	Semi-VOA	CLP	
B	BOBNQ3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBNQ3	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBNQ3	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBNQ3	S			(1) 125ml G	Cyanide	CPL	
F	BOBNQ3	S			(1) 125ml Gs	TPH Diesel Range	8015m	
	~~BOBNQ3~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ RSK 3-31-94	9060	
	BOBNQ3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

4040602 Rad

4040602

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-4-94	0830	[illegible]
[illegible]	4-5-94	0815	Heidelberg IT
			4/5 1030

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413474.0449

6900069

WO#306

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006267

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-11 Trench
Ice Chest No. GW0020
Bill of Lading/Airbill No. N/A
Offsite Property No.
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
A	BOBNQ8	S	3-31-94	1405	(1) 250ml aG	Semi-VOA	CLP	
B	BOBNQ8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBNQ8	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBNQ8	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBNQ8	S			(1) 125ml G	Cyanide	CPL	
F	BOBNQ8	S			(1) 125ml Gs	TPH Diesel Range	8015m	
	~~BOBNQ8~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ RL 3-31-94	9060	
	BOBNQ8	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

404065 01
404066 01

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
RT Sickle	4-4-94	0830	Daniel L. Edwards
Daniel L. Edwards	4-5-94	0815	[illegible] ITAS 4-5-94 1830

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413974.0950

0000070

Contractor Westinghouse Hanford Company	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W94-0-0369 #42

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ENVIRONMENTAL	ENV. Field Services	ENV. Charac + Sampling

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

Routing ☐ Contractor ☐ Vendor

Shipped to
IT
2800 George Washington Way
Richland, Washington
99352

Off-site Custodian: Tammy Hiedelberg

Full Title: Project Coordinator

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
2 #512-67lbs #SMK-127 54lbs	#512 Poly Cooler. Contains soil samples SMK-127 that are double-bagged and packed in wet ice and vermiculite. Samples are NON- hazardous. Sample#'s B09WJ9, B09WK0, B09WK1, B09WK2, B09WK4 B09WK5, B09WK6	

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

Necessity for the Off-Site Use of this Property

To support drilling and sampling in the 200 Areas.

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
Michael S. Gee	157466	3-24-94

Location of Property (Area & Bldg.)	Contact	Phone
200 Area	K.E. Rogers	376-7690

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
	8B410 PT2AB	

Originated By	Date	Authorized By	Date
Relinquished by: Susan E. Rogers	3-24-94	Susan E. Rogers	3-24-94

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	3/25/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Kevin Stottlemyer Date 3/25/94 10:00				

DISTRIBUTION

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

Shipping Operation – Sign all Copies and Forward to 0092
White – Property Management Green – Property Control Custodian (Issuing Office)
Yellow – Retain Pink – Originator

Kevin Stottlemyer 3-25-94 10:00

9613474.0452

0000072

WO #290

HAND DELIVERED

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NO. (To be obtained from PROPERTY MANAGEMENT)
WESTINGHOUSE HANFORD		W94-U-269 #46

PART I - TO BE COMPLETED BY ORIGINATOR

Department:	Section	Unit
Processing & Analytical Lab	Analytical Chemistry	Sampling & Mobile Lab

The following items are to be shipped from [X] Contractor [ ] Vendor

Routing GOVERNMENT TRUCK [X] Prepaid [ ] Collect

Shipped to		Off-site Custodian
Company	IT Analytical	TANE HEIDELBERG
Address	2800 George Washington Way	
City	Richland State WA Zip Code 99352	On-site Custodian / Payroll No.
Country		

Qty.	Property No.	Description (include Manufacture Name, Model, Serial No.)	Acquisition Cost
2X		POLYCOOLER. SAMPLES PACKED IN PLASTIC BAGS AND STORED ON WET ICE WEIGHT 41 lbs. COOLER # SNL-459 BOBKM1 BOBKM3, BOBKM4 WEIGHT 19 lbs. COOLER # SNL-526 BOBKM5, BOBKM6	

[ ] Classified [X] Unclassified [ ] Shipped Under DOE Contract [ ] Shipped Under Contractor's Use Permit Contract

Necessity for the off-site use of this property

[X] Required for Project Work. List Project No. SAF #94-065 COC #006448 SAMPLE #BOBKM1
006450 BOBKM3
006451 BOBKM4
006452 BOBKM5
006453 BOBKM6

[ ] Business Trip

[ ] Off-site Assignment

[ ] Shipment to Subcontractor. List Subcontract No. _____

[ ] Other (Please specify) _____

Samples require analysis that are not presently available at this site.

BILL OF LADING # N/A

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
D M Crane	167638	3-31-94

Location of and Contact for Property (Name/Phone No./Bldg./Area)
200 WEST/202-S C. D. Hayes / 373-7074 / 6269 / 600

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
03/31/94	PT2WA/Org Code: 12910	N/A

Originated By / Relinquished by:	Date	Authorized By	Date
[illegible] RM Hr	03/31/94	Jeannette E. Hyatt	03/31/94

Property Management Approval	Date
	[illegible]

PART II - TO BE COMPLETED BY SHIPPING

Authorized Shipping Signature	Date

DISTRIBUTION (AFTER FINAL SIGNATURES)

White - Property Management Yellow - Shipping Green - Accounts Payable Pink - Originator Goldenrod - Property Management

54-3000-479 (05/93)

9613474.0453

0000073

WO#299

HAND DELIVERED

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NO. (To be obtained from PROPERTY MANAGEMENT)
WESTINGHOUSE HANFORD		W44-0-3641-47

PART I - TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Processing & Analytical Lab	Analytical Chemistry	Sampling & Mobile Lab

The following items are to be shipped from [X] Contractor [ ] Vendor

Routing GOVERNMENT TRUCK [ ] Prepaid [ ] Collect

Shipped to
Company IT ANALYTICAL
Address 2800 George Washington Way
City Richland State WA Zip Code 99352
Country

Off-site Custodian: Tami Heidelberg

On-site Custodian: Payroll No.

Qty.	Property No.	Description (include Manufacture Name, Model, Serial No.)	Acquisition Cost
3		POLYCOOLER. SAMPLES PACKED IN PLATIC BAGS AND STORED ON WET ICE	
2		WEIGHT 68 LBS. COOLER # SMLY26	
		WEIGHT 71 LBS COOLER # SMLY45	
		~~WEIGHT~~ ~~COOLER #~~	

[ ] Classified [X] Unclassified [ ] Shipped Under DOE Contract [ ] Shipped Under Contractor's Use Permit Contract

Necessity for the off-site use of this property

[X] Required for Project Work. List Project No. SAF #94-065

[ ] Business Trip

[ ] Off-site Assignment

[ ] Shipment to Subcontractor. List Subcontract No.

[ ] Other (Please specify)

COC #	SAMPLE #
6473	BOBKP7
6474	BOBKP8
6454	BOBKM7
6466	BOBKN9
6468	BOBKP4
6469	BOBKP5
6262	BOBNQ4
6263	BOBNQ5

Samples require analysis that are not presently available at this site.

BILL OF LADING # N/A

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]	16746	4-1-94

Location of and Contact for Property (Name/Phone No./Bldg./Area)
200 WEST/202-S C. D. Hayes / 373-7074 / 6269 / 600

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
03/01/94	PT2WA/Org Code: 12910	N/A

Originated By / Relinquished by:	Date / Time	Authorized By	Date
[illegible]	4-1-94 [illegible]	302139 Jeannette E. Hyatt	03/01/94

Property Management Approval	Date
[illegible]	4/1/94

PART II - TO BE COMPLETED BY SHIPPING

Authorized Shipping Signature	Date

DISTRIBUTION (AFTER FINAL SIGNATURES)

White - Property Management Yellow - Shipping Green - Accounts Payable Pink - Originator Goldenrod - Property Management

[illegible] ITAS 4/1/94 1210

54-3000-479 (05/93)

Recpt Lit # 354

COC NO. *0001359*

WO # 263

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST / CHAIN OF CUSTODY RECORD*

Reference Document No. 340344

Page 1 of 3

Project Name/No. 1 SAF # 94-065

Sample Team Members 2

Profit Center No. 3 4632

Project Manager 4 Van Pettey

Purchase Order No. 6

Required Report Date 11 4/29/94

Samples Shipment Date 7 3/25/94

Lab Destination 8 Middle brook

Lab Contact 9

Project Contact/Phone 12

Carrier/Waybill No. 13

Bill to: 5 ITAS Richland

Report to: 10 ITAS Richland

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-servative 19	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
403489-01 A	Bowwkz / Soil	3/22/94 1313	Glass	250ml	4°C	TAl Metal + Hg Ti	4°C RPC 3/26/94	
B						Voa clp	FOR LAB USE ONLY	
C						Semi Voa clp		
D				125ml		Anions F Cl SO4		
E						Anions NO2 NO3	FOR LAB USE ONLY	
F				250ml		PCB / Pest		
G				125ml		CN		
H						kerosene		

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 ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG # W0013

1. Relinquished by 28 (Signature/Affiliation)	Date: 3/25/94 Time: 1600	1. Received by 28 (Signature/Affiliation) R. Charles ITAS KN	Date: 3/26/93 Time: 9:40
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.

9413474.0454

0000074

WO# 263

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 340344

Project Name SAF #94-065

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.
403489-02A	B09WK4 / soil	3/23/94 1230	Glass	250ml	4°C	TAL Metals Hg Ti		
B						Voa Clp	FOR LAB USE ONLY	
C						Semi Voa Clp		
D				125ml		Anions F Cl SO4	FOR LAB USE ONLY	
E						Anions NO2 NO3		
F				250ml		3/25/94 CN PCB Pest		
G				125ml		3/25/94 ~~Kerosene~~ CN	FOR LAB USE ONLY	
H						Kerosene		
403489-03A	B09WK5 / soil	3/23/94 1230		250ml		TAL metals Hg Ti	FOR LAB USE ONLY	
B						Voa clp		
C						Semi Voa clp		
D				125ml		Anions F Cl SO4	FOR LAB USE ONLY	
E						Anions NO2 NO3		
F				250ml		PCB/Pest	FOR LAB USE ONLY	
G				125ml		CN		
H						Kerosene		
403489-04A	B09WK6 / soil	3/23/94 0900	Glass	250ml	4°C	Voa	FOR LAB USE ONLY	
403489-05A	B09WJ9 / soil	3/21/94 1240	Glass	250ml	4°C	TAL metals Hg Ti		
B						Voa Clp		
C						Semi Voa Clp		

White: To accompany samples

Yellow: Field copy

*See back of form for special instructions.

9613471.0066

WO # 263

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 340344
Page 3 of 3

Project Name SAF# 94-065 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.
403489-05D	B09WJ9 /Soil	3/21/94 1240	Glass	125ml	4°C	Anions F Cl SO4		
E						Anions NO2 NO3	FOR LAB USE ONLY	
F				250ml		PCB/Pest		
G				125ml		CN		
H						kerosene	FOR LAB USE ONLY	
403489-06A	B09WK1 /Soil	3/22/94 1225		250ml		Metals TAl Na Ti		
B						Voa clp	FOR LAB USE ONLY	
C						Semi Voa clp		
D				125ml		Anions F Cl SO4		
E						Anions NO2 NO3	FOR LAB USE ONLY	
F				250ml		PCB/Pest		
G				125ml		CN	FOR LAB USE ONLY	
H						kerosene		
403489-07A	Trip Blank/H2O	3/25/94		40ml		Voa		
B							FOR LAB USE ONLY	
403489-08A								
B							FOR LAB USE ONLY	
		(T) 3/25/94						

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

MCA 3/15/91

0000076

INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001386*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO#290 RL#380

Reference Document No. 340356
Page 1 of 3

Project Name/No. 1 94-065
Sample Team Members 2
Profit Center No. 3 4632
Project Manager 4 Van Pettey
Purchase Order No. 6
Required Report Date 11 5/5/94

Samples Shipment Date 7 3/31/94
Lab Destination 8 Middlebrook
Lab Contact 9
Project Contact/Phone 12
Carrier/Waybill No. 13 Fed Ex 395 2755 353

Bill to: 5 ITAS Richland
Report to: 10 ITAS Richland

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-servative 19	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
40363001 A	BOBkM4/ soil	3/29/94 0950	Glass	250ml	4°C	Semi VOA	5°C KAK 4/1/94	
B			Poly			Metals-TAl Hg, Ti	FOR LAB USE ONLY	
C			Glass	125ml		Anions		
D						NO_2 NO_3		
E						CN	FOR LAB USE ONLY	
F						TPH 8015M		
G						TOC		
40363002 A	BOBkM6 / soil	3/29/94 1058	Glass	250ml		Semi Voa		

Special Instructions: 23 Samples 01-2 are Cat I, 3,4,5 are CAT II

Possible Hazard Identification: 24 CAT II, CAT I
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 W0013

1. Relinquished by 28 (Signature/Affiliation) [signature] ITAS Date: 3/31/94 Time: 1600	1. Received by 28 (Signature/Affiliation) Kenya A. Flemm ITAS-KN Date: 04-01-94 Time: 08:50
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#290
RL#380

Reference Document No.[30] 340356
Page 2 of 3

Project Name

Project No. 94-065

Samples Shipment Date 3/31/94

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.
40363002 B	BOBkM6 /soil	3/29/94 1058	Poly	250ml	4°C	Metals-TAL, Hg, Tl	5°C KAK 4-1-94	
C			Glass	125ml		Anions	FOR LAB USE ONLY	
D						NO_2, NO_3		
E						CN		
F						TPH 8015M	FOR LAB USE ONLY	
G						TOC		
40363003 A	BOBkM1 /soil	3/29/94 0850	Glass	250ml		Semi Voa	FOR LAB USE ONLY	
B			Poly	1		Metals TAL, Hg, Tl		
C			Glass	125ml		Anions		
D						NO_2 NO_3	FOR LAB USE ONLY	
E						CN		
F						TPH 8015M	FOR LAB USE ONLY	
G						TOC		
40363004 A	BOBkM3/soil	3/29/94 0944	Glass	250ml		Semi Voa	FOR LAB USE ONLY	
B			Poly	1		Metals TAL, Hg, Tl		
C			Glass	125ml		Anions		
D						NO_2 NO_3	FOR LAB USE ONLY	
E						CN		
F						TPH 8015M		
G						TOC		

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

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

WO#290

RL#380

Reference Document No.[30] 340356

Page 3 of 3

Project Name

Project No. 94-065

Samples Shipment Date 3/31/94

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.
40363065 A	BOBKM5 / soil	3/29/94 1030	Glass	250ml	4°C	Semi Voa	5°C KMK 4-1-94	
B			Poly			Metals-TAL, Hg, Ti	FOR LAB USE ONLY	
C			Glass	125ml		Anions		
D						NO_2 NO_3	FOR LAB USE ONLY	
E						CN		
F						TPH 8015M		
G						TOC	FOR LAB USE ONLY	
~~40363000~~ 3/31/94								
		3/31/94					FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

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INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001394*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO#299
RL# 389
RL#390

Reference Document No. 340358
Page 1 of 4

Project Name/No. 1: 94-065
Sample Team Members 2:
Profit Center No. 3: 4632
Project Manager 4: Van Petters
Purchase Order No. 6:
Required Report Date 11: 5/6/94

Samples Shipment Date 7: 4/1/94
Lab Destination 8: Middlebrook
Lab Contact 9:
Project Contact/Phone 12:
Carrier/Weybill No. 13: 395 3087 582
395 3087 871

Bill to: 5 ITAS Richland

Report to: 10 ITAS 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
40401601 A	BOBNQ5 Soil	3/30/94 1345	Glass	250 ml	4°C	Semi Voa	3°C BJS 4/02/94	
B			Poly			Metals TAL, Na, Ti		
C			Glass	125 ml		Anions		
D						NO2/NO3		
E						CN		
F						TPH 8015		
G						TOC		
40401602 A	BOBNQ4 / Soil	3/30/94 1330		250 ml		Semi Voa		

FOR LAB USE ONLY

FOR LAB USE ONLY

Special Instructions: 23 Samples 1-4 are CAT I, 5-7 CAT II

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 W0013

1. Relinquished by 28 (Signature/Affiliation) [signature] ITAS	Date: 4/1/94 Time: 1600	1. Received by 28 (Signature/Affiliation) Bryan Blanquit ITASKN	Date: 4/02/94 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

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

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WO#299

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 340358
Page 2 of 4

Project Name _____ Project No. 94-065 Samples Shipment Date 4/1/94

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.
40401602 B	BOBNQ4 /Soil	3/30/94 1330	Poly	250ml	4°C	Metals TAL Hg, Ti	3°C BB 4/02/94	
C			Glass	125ml		Anions		FOR LAB
D						NO2/NO3		USE ONLY
E						CN		
F						TPH 8015		FOR LAB
G						TOC		USE ONLY
40401603 A	BOBKP7 /Soil	3/30/94 0940		250ml		SemiVoa		FOR LAB
B			Poly			Metals TAL Hg, Ti		USE ONLY
C			Glass	125ml		Anions		
D						NO2/NO3		FOR LAB
E						CN		USE ONLY
F						TPH 8015		FOR LAB
G						TOC		USE ONLY
40401604 A	BOBKP8 /Soil	3/30/94 0900		250ml		SemiVoa		FOR LAB
B			Poly			Metals TAL, Hg, Ti		USE ONLY
C			Glass	125ml		Anions		
D						NO2/NO3		FOR LAB
E						CN		USE ONLY
F						TPH 8015		
G						TOC		

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

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WO#299

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 340358

Page 3 of 4

Project Name

Project No. 94-065

Samples Shipment Date 4/1/94

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.
40401605 A	B0BKN9 /soil	3/30/94 1100	Glass	250ml	4°C	SemiVoa	3°C BBB 4/02/94	
B			Poly			metals TA/ Hg Ti		
C			Glass	125ml		Anions		
D						NO2/NO3		
E						CN		
F						TPH 8015		
G						TOC		
40401606 A	B0BKM7 /soil	3/30/94 0920		250ml		SemiVoa		
B			Poly			metals TA/ Hg TI		
C			Glass	125ml		Anions		
D						NO2/NO3		
E						CN		
F						TPH 8015		
G						TOC		
40401607 A	B0BKP5 /soil	3/30/94 1330		250ml		Semi Voa		
B			Poly			Metals TA/ Hg TI		
C			Glass	125ml		Anions		
D						NO2/NO3		
E						CN		
F						TPH 8015		

FOR LAB USE ONLY

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#299

Reference Document No.[30] 340358

Page 4 of 4

Project Name

Project No. 94-065

Samples Shipment Date 4/1/94

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.
40401607G	BOBKP5 (soil)	3/30/94/1330	2/9SS	125ml	4°C	TOC	3°C BPB 4/02/94	
							FOR LAB USE ONLY	
	(5) 4/1/94							
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

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. *0001401*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO# 306 RL# 413

Reference Document No. 340362
Page 1 of 2

Project Name/No. 1: 94-065
Sample Team Members 2:
Profit Center No. 3: 4632
Project Manager 4: Van Petkey
Purchase Order No. 6:
Required Report Date 11:

Samples Shipment Date 7: 4/5/94
Lab Destination 8: Middlebrook
Lab Contact 9:
Project Contact/Phone 12: 395 3943 795
Carrier/Waybill No. 13:

Bill to: 5 ITAS Richland
Report to: 10 ITAS Richland

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal 22 Record No.
40406501 A	BOBNQ8 / Soil	3/31 1405	glass	250ml	4°C	Semi Voa	2°C KAL 4-6-94	
B			Poly	1		Metals TAL Hg Ti	FOR LAB USE ONLY	
C			Glass	125ml		300.0		
D						353.2		
E						CN		
F						TPH 8015	FOR LAB USE ONLY	
40406502 A	BOBNQ3 / Soil	3/31 1200		250ml		Semi Voa		
B			Poly	1		metals TAL Hg Ti		

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 ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG W0013

1. Relinquished by 28 (Signature/Affiliation) ITAS	Date: 4/5/94 Time: 1605	1. Received by 28 (Signature/Affiliation) Kenya Klemm	Date: 04-06-94 Time: 08:45
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

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

MCA 3/15/91

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COC No 1401

WO #306

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 340362

Page 2 of 2

Project Name

Project No. 94-065

Samples Shipment Date 4/5/94

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.
40406502C	BOBNQ3 / Soil	3/31 1200	glass	125ml	4°C	300.0	2°C KAK 4-6-94	
D	↓	↓	|	|	|	353.2	FOR LAB USE ONLY
E						CN	↓	
F						TPH 8015		FOR LAB USE ONLY
	4/5/94							FOR LAB USE ONLY
								FOR LAB USE ONLY
								FOR LAB USE ONLY
								FOR LAB USE ONLY
								FOR LAB USE ONLY
								FOR LAB USE ONLY

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

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WO 263

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

all category I except B09WK0 is category II ARN 25 Mar 94

Customer Code WHC	Recieved Date	Time	Screening Prep Date 32594	Time	Count Date 325	Mnts. Cntd 10	BACKGROUND Alpha 5	Beta 63	Mnts 60

Customer ID	pH <2 Rcvd/Req	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
WHC/SOIL																				
B09WK1		100.6	101	1400.0	36	2	32	0.12	2.15	1.1E+00	5.3E+00	7.1E-03	3.3E-02	1.5E-05	1.6E-05	5.1E+00	2.4E+01	Yes	2.0E+03	4.2E+03
B09WK2		79.1	79	1400.0	37	2	30	0.12	1.95	9.8E-01	4.7E+00	7.8E-03	3.7E-02	1.7E-05	8.3E-05	5.6E+00	2.7E+01	Yes	1.8E+03	3.6E+03
B09WK4		100.9	101	1550.0	38	0	8	-0.08	-0.25	-9E-01	-5E-01	-6E-03	-4E-03	-1E-05	-4E-06	-4E+00	-2E+00	Yes	-3E+03	-4E+04
B09WK5		96.9	97	1550.0	39	1	13	0.02	0.25	1.6E-01	6.1E-01	1.2E-03	4.4E-03	6.3E-06	2.2E-05	7.5E-01	2.9E+00	Yes	1.3E+04	3.5E+04
B09WK0		83.6	84	1350.0	40	4	24	0.32	1.35	3.0E+00	3.0E+00	2.2E-02	2.2E-02	2.7E-05	1.4E-05	1.6E+01	1.6E+01	No	6.2E+02	6.2E+03
B09WJ9		95.8	96	1300.0	41	0	33	-0.08	2.25	-1E+00	5.8E+00	-6E-03	3.5E-02	-1E-05	8.5E-05	-5E+00	2.7E+01	Yes	-2E+03	3.7E+03
TOTAL	uCi							-0.08	-1.05	-3E-01	-2E+00	2.6E-02	1.3E-01	ERR	ERR	ERR	ERR	No	ERR	ERR

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WO#290

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

Both "yes's" are Category I.
all "no's" are Cat. II
JKN 31 Mar 94

Customer Code	Recieved Date	Time	Screening Prep Date	Screening Prep Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	BACKGROUND Beta	BACKGROUND Mnts
WHC			33194		331	10	20	222	240

Customer ID	pH <2 Rcvd/Reiq	Pinchit 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
WHC/SOIL																						
B0BKM5		93.1	93		1300.0		35	3	49	0.22	3.96	2.0E+00	9.8E+00	1.3E-02	6.1E-02	2.0E-05	2.2E-05	9.7E+00	4.7E+01	No	1.0E+03	2.1E+03
B0BKM4		80.6	81		1150.0		36	1	44	0.02	3.48	-3E-02	8.5E+00	-2E-04	5.5E-02	-5E-06	5.5E-03	-2E-01	4.7E+01	Yes	-6E+04	2.1E+03
B0BKM6		97.5	98		1350.0		37	2	27	0.12	1.78	1.1E+00	4.4E+00	7.0E-03	2.7E-02	1.5E-05	5.2E-05	5.2E+00	2.0E+01	Yes	1.9E+03	5.0E+03
B0BKM3		83.1	83		1350.0		38	4	167	0.32	15.78	2.2E+00	3.9E+01	1.6E-02	2.8E-01	2.7E-05	8.1E-04	1.2E+01	2.1E+02	No	8.4E+02	4.8E+02
B0BKM1		68.7	69		1250.0		39	3	65	0.22	5.58	1.9E+00	1.4E+01	1.2E-02	8.6E-02	2.0E-05	1.8E-04	9.4E+00	6.9E+01	No	1.1E+03	1.4E+03
TOTAL	uCi									-0.08	-0.93	-3E-01	-2E+00	4.7E-02	5.1E-01	ERR	ERR	ERR	ERR	No	ERR	ERR

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WO#299

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

all "yes" are Category I.
B0BKP4 is Cat. III
Remaining "no" are Cat. II.

Customer Code	Recieved Date	Time	Screening Prep Date	Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	Beta	Mnts
WHC			40194		401	10	6	53	60

Customer ID	pH <2 Rcvd/Reiq	Pinchl 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
WHC/SOIL																				
B0BNQ5		89.2	89	1250.0	37	0	9	-0.10	0.02	-1E+00	1.4E-01	-6E-03	9.2E-04	-1E-05	1.9E-06	-5E+00	7.3E-01	Yes	-2E+03	1.4E+05
B0BKP5		79.1	79	1200.0	38	5	40	0.40	3.12	3.6E+00	7.2E+00	2.4E-02	5.0E-02	2.8E-05	4.0E-05	2.0E+01	4.1E+01	No	4.9E+02	2.4E+03
B0BKN9		77.6	78	1150.0	39	6	31	0.50	2.22	4.5E+00	4.9E+00	3.0E-02	3.3E-02	3.0E-05	1.8E-05	2.6E+01	2.8E+01	No	3.9E+02	3.5E+03
B0BKP4		95.9	96	1200.0	40	35	57	3.40	4.62	3.5E+01	8.6E+00	2.0E-01	4.8E-02	8.7E-05	6.3E-06	1.7E+02	4.0E+01	No	6.0E+01	2.5E+03
B0BKM7		96.3	96	1300.0	41	12	148	1.10	13.92	1.1E+01	3.4E+01	6.6E-02	2.1E-01	4.9E-05	1.2E-04	5.1E+01	1.6E+02	No	2.0E+02	6.3E+02
B0BNQ4		97.5	96	1350.0	42	1	12	0.00	0.32	-2E-02	8.0E-01	-1E-04	5.0E-03	-1E-07	2.5E-04	-6E-02	3.7E+00	Yes	-1E+05	2.7E+04
B0BKP7		90.9	91	1250.0	43	0	13	-0.10	0.42	-1E+00	1.1E+00	-6E-03	7.1E-03	-1E-05	7.3E-06	-5E+00	5.7E+00	Yes	-2E+03	1.8E+04
B0BKP8		92.1	92	1350.0	44	0	9	-0.10	0.02	-1E+00	1.5E-01	-7E-03	9.7E-04	-1E-05	3.0E-07	-5E+00	7.2E-01	Yes	-2E+03	1.4E+05
TOTAL	uCi							-0.10	-0.88	-4E-01	-2E+00	3.0E-01	3.5E-01	ERR	ERR	ERR	ERR	No	ERR	ERR

JRN 1 Apr 94

9413474.0168

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WO#306

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

Customer Code	Received Date	Time	Screening Date	Prep Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	Beta	Mnts
WHC	40594		40594		405	10	20	213	240

B0BNQ3 is Category I.
All others are Category II.
JRM 5 Apr 94

Customer ID WHC/SOIL	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 / Aliquot Alpha	Beta	uCi per Sample Alpha	Beta	2 Sigma Error uCi per Sample Alpha	Beta	pCi/(Gm or L) Alpha	Beta	Category 1 Yes/No	Aliquot to Cat 1 Gm or Ltr Alpha	Beta
✔ B0BNQ8		96.1	96	1200.0	35	4	65	0.32	5.61	3.0E+00	1.4E+01	1.7E-02	7.6E-02	2.3E-05	2.3E-05	1.4E+01	6.5E+01	No	7.1E+02	1.5E+03
✔ B0BNQ3		94.2	94	1500.0	36	2	63	0.12	5.41	9.0E-01	1.3E+01	6.5E-03	9.7E-02	1.7E-05	2.9E-05	4.3E+00	6.5E+01	Yes	2.3E+03	1.5E+03
B0BKM8		79.8	80	1350.0	37	3	76	0.22	6.71	1.7E+00	1.6E+01	1.3E-02	1.2E-01	2.2E-05	3.0E-04	9.4E+00	9.2E+01	No	1.1E+03	1.1E+03
B0BNQ6		90.9	91	1150.0	38	3	70	0.22	6.11	1.9E+00	1.5E+01	1.1E-02	8.6E-02	1.8E-05	1.8E-04	9.2E+00	7.5E+01	No	1.1E+03	1.3E+03
B0BNQ0		77.6	78	1250.0	39	2	74	0.12	6.51	7.3E-01	1.6E+01	5.3E-03	1.1E-01	1.5E-05	8.2E-04	4.2E+00	9.1E+01	No	2.4E+03	1.1E+03
B0BNQ7		85.3	85	1400.0	40	6	199	0.52	19.01	4.0E+00	4.7E+01	3.0E-02	3.5E-01	3.6E-05	6.0E-04	2.1E+01	2.5E+02	No	4.7E+02	4.0E+02
B0BNQ1		84.8	85	1350.0	41	3	27	0.22	1.81	2.0E+00	4.3E+00	1.4E-02	3.1E-02	2.2E-05	3.3E-05	1.1E+01	2.3E+01	No	9.4E+02	4.4E+03
B0BKP6		82.6	83	1200.0	42	3	33	0.22	2.41	1.9E+00	5.7E+00	1.3E-02	3.7E-02	1.9E-05	4.6E-05	1.1E+01	3.1E+01	No	9.5E+02	3.2E+03
B0BNQ2		76.3	78	1350.0	43	5	185	0.42	17.61	2.9E+00	4.3E+01	2.3E-02	3.4E-01	3.2E-05	7.8E-04	1.7E+01	2.5E+02	No	5.9E+02	4.0E+02
TOTAL	uCi							-0.08	-0.69	-3E-01	-2E+00	1.3E-01	1.3E+00	ERR	ERR	ERR	ERR	No	ERR	ERR

9616474.0169

0000089

SAMPLE STATUS REPORT FOR E 5083. E-BLANK B09WJ9 TIME: 3/22/94 7:56
DISPATCHED: 2/11/94 15:12 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/22/94 7:40

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

WO 263

SAMPLE STATUS REPORT FOR E 5085. E-BLANK B09WK1 TIME: 3/23/94 8:47
DISPATCHED: 2/11/94 15:13 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/23/94 8:11

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

WO 263

SAMPLE STATUS REPORT FOR E 5086. E-BLANK B09WK2 TIME: 3/23/94 8:47
DISPATCHED: 2/11/94 15:13 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/23/94 8:11

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

SAMPLE STATUS REPORT FOR E 5088. E-BLANK B09WK4 TIME: 3/24/94 7:55
DISPATCHED: 2/11/94 15:15 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/24/94 7:35

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

SAMPLE STATUS REPORT FOR E 5089. E-BLANK B09WK5 TIME: 3/24/94 7:55
DISPATCHED: 2/11/94 15:16 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/24/94 7:35

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

WO 263

03-24-94 08:28 ☎373 3176 2225 3B --- ENV FIELD SVC 003

BER 3-24-94

B0940K6

SAMPLE STATUS REPORT FOR E[redacted] E-BLANK [redacted] TIME: 3/24/94 7:55
DISPATCHED: 2/11/94 15:16 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/24/94 7:35

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

WO#290

SAMPLE STATUS REPORT FOR E 5868. E-BLANK BOBKM1 TIME: 3/30/94 8:41
DISPATCHED: 3/28/94 14:21 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/30/94 8: 1

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

WO#290

SAMPLE STATUS REPORT FOR E 5870. E-BLANK BOHKM3 TIME: 3/30/94 8:41
DISPATCHED: 3/28/94 14:22 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/30/94 8: 2

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

WO#290

SAMPLE STATUS REPORT FOR E 5871. E-BLANK BOBKM4 TIME: 3/30/94 8:41
DISPATCHED: 3/28/94 14:23 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/30/94 8: 2

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

WO#290

SAMPLE STATUS REPORT FOR E 5872. E-BLANK BOHKM5 TIME: 3/30/94 8:41
DISPATCHED: 3/28/94 14:23 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/30/94 8: 2

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

WO# 290

SAMPLE STATUS REPORT FOR E 5873. E-BLANK BOBKM6 TIME: 3/30/94 8:41
DISPATCHED: 3/28/94 14:25 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/30/94 8: 2

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

9613474.0481

0000101

WO #299

SAMPLE STATUS REPORT FOR E 5874. E-BLANK BOBKM7 TIME: 3/31/94 8:29
DISPATCHED: 3/28/94 14:25 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/31/94 8: 3

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

WO #277

SAMPLE STATUS REPORT FOR E 5897. E-BLANK BOBKN9 TIME: 3/31/94 8:30
DISPATCHED: 3/29/94 8:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/31/94 8: 3

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

WO#299

SAMPLE STATUS REPORT FOR E 6000. E-BLANK BOBNQ4 TIME: 3/31/94 8:30
DISPATCHED: 3/30/94 11:36 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/31/94 8: 3

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

WO #299

SAMPLE STATUS REPORT FOR E 6001. E-BLANK BOBNQ5 TIME: 3/31/94 8:30
DISPATCHED: 3/30/94 11:37 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/31/94 8: 2

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

WO #299

SAMPLE STATUS REPORT FOR E 5993. E-BLANK BOBKP5 TIME: 3/31/94 8:30
DISPATCHED: 3/30/94 11:32 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/31/94 8: 3

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

WO #299

SAMPLE STATUS REPORT FOR E 5881. E-BLANK BOBKP7 TIME: 3/31/94 8:29
DISPATCHED: 3/29/94 8: 7 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/31/94 8: 3

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

WO #299

SAMPLE STATUS REPORT FOR E 5882. E-BLANK BOBKP8 TIME: 3/31/94 8:29
DISPATCHED: 3/29/94 8: 8 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/31/94 8: 3

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

WO#306

SAMPLE STATUS REPORT FOR E 5999. E-BLANK BOBNQ3 TIME: 4/ 1/94 8:40
DISPATCHED: 3/30/94 11:35 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/ 1/94 8:20

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

WO#306

SAMPLE STATUS REPORT FOR E 6004. E-BLANK BOBNQ8 TIME: 4/ 1/94 8:41
DISPATCHED: 3/30/94 11:39 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/ 1/94 8:20

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

9613474.0490

INTERNATIONAL TECHNOLOGY CORPORATION

Analytical Data Package Prepared For

Westinghouse Hanford

Radiochemical Analysis By

IT Analytical Services
Richland Laboratory

MAY 1996
RECEIVED
SDLA

Sample Delivery Group Number: W0013

WHC IDENTIFICATION NUMBER	ITAS RICHLAND ID NUMBER
BO9WK2	40349001
BO9WK4	40349002
BO9WK5	40349003
BO9WJ9	40349004
BO9WK1	40349005
BOBKM4	40363101
BOBKM6	40363102
BOBKM1	40363103
BOBKM3	40363104
BOBKM5	40363105
BOBNQ5	40401701
BOBNQ4	40401702
BOBKP7	40401703
BOBKP8	40401704
BOBKN9	40401705
BOBKM7	40401706
BOBKP5	40401707
BOBNQ8	40406601
BOBNQ3	40406602

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INTERNATIONAL TECHNOLOGY CORPORATION

CERTIFICATE OF ANALYSIS

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

May 27, 1994

Attention: J.A.Lerch

SAF Number	:	94-065
Date SDG Closed	:	April 5, 1994
Number of Samples	:	Nineteen (19)
Sample Type	:	Soil
SDG Number	:	W0013
Data Deliverable	:	Stand Alone

I. Introduction

On March 25 and 31, 1994, and April 1 and 4, 1994, nineteen soil 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
403631-01A	B0BKM4	Soil	3/25/94
403631-02A	B0BKM6	Soil	3/25/94
403631-03A	B0BKM1	Soil	3/25/94
403631-04A	B0BKM3	Soil	3/25/94
403631-05A	B0BKM5	Soil	3/25/94
403490-01A	B09WK2	Soil	3/31/94
403490-02A	B09WK4	Soil	3/31/94
403490-03A	B09WK5	Soil	3/31/94
403490-04A	B09WJ9	Soil	3/31/94
403490-05A	B09WK1	Soil	3/31/94

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404017-01A	B0BNQ5	Soil	4/1/94
404017-02A	B0BNQ4	Soil	4/1/94
404017-03A	B0BKP7	Soil	4/1/94
404017-04A	B0BKP8	Soil	4/1/94
404017-05A	B0BKN9	Soil	4/1/94
404017-06A	B0BKM7	Soil	4/1/94
404017-07A	B0BKP5	Soil	4/1/94
404066-01A	B0BNQ8	Soil	4/5/94
404066-02A	B0BNQ3	Soil	4/5/94

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:

Alpha Spectroscopy
Americium-241, Curium-244 by method ITAS-RD-3302
Neptunium-237 by method ITAS-RD-3208
Plutonium-238, -239/40 by method ITAS-RD-3209
Uranium-234, -235, -238 by method ITAS-RD-3234
Gamma Spectroscopy
Gamma Scan by method ITAS-RD-3219
Iodine-129 by method ITAS-RD-3219
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
Selenium-79 by method ITAS-RD-3253
Technetium-99 by method ITAS-IT-RS-0001
Total Uranium
Total Uranium by method ITAS-RD-4200

III. Quality Control

The analytical results for each analysis performed under SDG W0013 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate.

Quality control sample results are reported in the same units as sample results except for gross alpha and gross beta quality control sample results which are reported in pCi/sample.

IV. Comments

The initial radioactivity screening of the samples classified them as Category I with the exception of WHC samples B0BKM1, B0BKM3, B0BKM5, B0BKN9, B0BKM7, B0BKP5, B0BNQ8, and B0BNQ3, which were classified as Category II.

Alpha Spectroscopy

Americium-241, Curium-244 by method ITAS-RD-3302
The americium/curium analysis of this SDG was performed in two sets. Both sets of analytical results indicated Am-241 contamination at a level below the contractual detection limit. One sample (B0BNQ3) which was found to have activity greater than the contractual detection limit was reanalyzed to confirm the results. The reanalysis result confirms the original result within 3 sigma and the original result is reported. The blank results for both the original analyses and the reanalysis are acceptable. The LCS results for the original analyses and the reanalysis are biased high due to the low-level contamination. The source of the contamination is being investigated and all cleaning procedures are being examined. The sample and sample duplicate results are within the 3 sigma control limit.

Neptunium-237 by method ITAS-RD-3208
Three matrix spikes were analyzed with the batch. Two matrix spikes failed due to low radiochemical recovery (less than 10%). The matrix spike used for the batch yield correction had a low recovery of 56.8%. The LCS was biased high (153.4%) after yield correction. The high bias is attributed to the difference in the matrices of the matrix spike (soil) and the LCS (water). The batch blank result is acceptable. The sample and sample duplicate results are within the 3 sigma control limit. The batch was reanalyzed in two sets. Both sets had matrix spike recoveries of less than 60%. It is the professional judgement of the Actinide Team Leader that the original analysis of the samples is acceptable and that the failure of the results to meet contract requirements is due to matrix effects.

Plutonium-238, -239/40 by method ITAS-RD-3209
The LCS, batch blank, sample and sample duplicate results are within contractual limits. Two samples (B09WJ9 and B0BKM5) were reanalyzed due to low tracer yields. The reanalysis results are acceptable. The initial reanalysis data indicated that the LCS and batch blank were switched. The results were recalculated and are reported correctly. Sample results for B0BNQ3 show Pu-238 and Pu-239 in almost equal amounts. Th-230 and Th-232 were not detected in the spectrum, therefore a contribution to the Pu-238 result from Th-228 is unlikely. The cause of the unusual results for this sample in unknown.

Uranium-234, -235, -238 by method ITAS-RD-3234
The isotopic uranium analysis of this SDG was performed in two sets. Both sets contain separate items to be addressed in this section. For simplification the sets are identified here as Set One and Set Two.

Set One

Three samples (B0BKP5, B0BNQ8, B0BNQ3) from Set One were reanalyzed due to low tracer yields. The reanalysis of the samples is acceptable and reported. The LCS analyzed in Set One had a low tracer yield (15.9%) and radiochemical recoveries outside of contractual limits for two isotopes. The LCS was recounted for an extended counting time (1000 min.). The radiochemical recoveries for the recounted LCS are within limits for all the isotopes, however, the tracer yield is low (14.3%). The original results are accepted based on the acceptable radiochemical recoveries of the recounted LCS. The recounted LCS results are not reported because of the counting time difference between the sample counting time (200 min.) and the LCS counting time (1000 min.). The original blank, reanalysis blank, reanalysis LCS, sample and sample duplicate results are within contractual requirements.

Set Two

The LCS and the batch blank results are acceptable. The sample and sample duplicate results are within the 3 sigma control limit. Four samples (B09WK2, B09WJ9, B09WK1, B0BKM4) from Set Two were reanalyzed due to low tracer yields. The reanalysis LCS had a low tracer yield (28.6%) and the radiochemical recoveries were just outside the 3 sigma control limit for U-235. The reanalysis LCS was recounted and its recount results confirm the original reanalysis results. The reanalysis batch results are accepted based on the acceptable U-234 and U-238 LCS radiochemical recoveries and the acceptable blank result.

Gamma Spectroscopy

Gamma Scan by method ITAS-RD-3219

Samples B09WK1 and B0BKM3 were recounted because the detection limits were not met for one or more isotopes. The detection limits were not met for B09WK1 because the sample had a low density and therefore less sample (by weight) was required to fill the counting container. Sample B0BKM3 did not meet the detection limits due to high Cs-137 activity interference (matrix effect). The samples were repackaged in 450 ml Marinelli beakers and recounted for 200 minutes. All of the detection limits were achieved for sample B09WK1 on the recount. The detection limit for Eu-155 was not met for sample B0BKM3, however, the result is accepted due to the acceptable blank MDAs. The LCS, batch blank, sample and sample duplicate results meet contractual requirements on both the original analysis and the reanalysis.

Iodine-129 by method ITAS-RD-3219

The effect of the high levels of Cs-137 should be considered when evaluating the result reported for sample B0BKM3. The result has been flagged with an asterisk in the result table. The sample was recounted verifying that the interference observed is a matrix effect. The LCS, batch blank, sample and sample duplicate results are acceptable.

Gas Proportional Counting

Gross Alpha by method ITAS-RD-3222

The LCS and batch blank results are acceptable. The sample and sample duplicate results are within the 3 sigma control limit.

Gross Beta by method ITAS-RD-3222
The LCS and batch blank results are acceptable. The sample and sample duplicate results are within the 3 sigma control limit.

Strontium-90 by method ITAS-RD-3204
The LCS recovery was biased high (156.7%). The high result is attributed to strontium-85 in the spike. Strontium-85 will not be used in future spikes for this analysis on WHC samples. The batch blank result is acceptable. One out of two sets of sample and sample duplicate results are not within the 3 sigma control limit. The results are accepted based on the sample and sample duplicate results which were acceptable and the possibility of non-homogeneity of the sample matrix.

Liquid Scintillation Counting

Selenium-79 by method ITAS-RD-3253
Sample B09WK2 and the sample's matrix spike were switched prior to counting. The first review of the data for the batch indicated the sample whose lab sample ID was 40349001 had activity which the gamma scan identified as Se-75 (the Se-79 analysis matrix spike material) and the sample with the lab sample ID of W0349001 (a matrix spike ID number begins with a "W") had no detectable Se-75 activity. The sample ID numbers were corrected and the sample was recounted for Se-79 and the matrix spike was recounted for Se-75. Two matrix spikes were analyzed with the set and their average radiochemical yield is used for the batch yield correction. The LCS and batch blank results are acceptable. The sample and sample duplicate results are within the 3 sigma control limit.

Technetium-99 by method ITAS-IT-RS-0001
The LCS and batch blank results are acceptable. Two matrix spikes were analyzed with the set and their average radiochemical yield is used for the batch yield correction. The sample and sample duplicate results are within the 3 sigma control limit.

Total Uranium

Total Uranium by method ITAS-RD-4200
The LCS and batch blank results are acceptable. Two matrix spikes were analyzed with the SDG and their average yield is used for yield correction of the sample results. The sample and sample duplicate results are within the 3 sigma control limit.

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

9613474.0498

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-490-01	MATRIX:	SOIL
WHC ID:	BO9WK2	DATE RECEIVED:	3/25/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	7.26E-01	1.36E-01	1.84E-01	0.575	RD3302
CM-242	-6.42E-04	1.28E-03	1.29E-03	0.575	RD3302
CM-244	5.86E-03	1.28E-02	1.28E-02	0.575	RD3302
NP-237	0.00E+00	0.00E+00	0.00E+00	0.569	RD3208
PU-238	4.26E-03	1.09E-02	1.09E-02	0.785	RD3209
PU239/40	5.31E-03	1.06E-02	1.07E-02	0.785	RD3209
U-234	2.20E+00	2.53E-01	4.00E-01	0.576	RD3234
U-235	8.56E-02	5.01E-02	5.15E-02	0.576	RD3234
U-238DA	2.08E+00	2.45E-01	3.82E-01	0.576	RD3234
K-40	1.04E+01	6.03E-01	1.20E+00	N/A	RD3219
CO-60	-8.37E-05	1.50E-02	1.50E-02	N/A	RD3219
EU-152	6.96E-02	7.05E-02	7.08E-02	N/A	RD3219
CS-137DA	5.59E-03	1.39E-02	1.40E-02	N/A	RD3219
CS-134	3.63E-03	1.33E-02	1.33E-02	N/A	RD3219
RU-106DA	5.13E-02	1.26E-01	1.26E-01	N/A	RD3219
RA-224DA	1.11E+00	4.59E-02	1.20E-01	N/A	RD3219
NA-22	4.42E-03	1.50E-02	1.50E-02	N/A	RD3219
EU-155	4.95E-02	4.02E-02	4.05E-02	N/A	RD3219
EU-154	8.82E-03	4.18E-02	4.18E-02	N/A	RD3219
RA-226DA	9.75E-01	7.12E-02	1.21E-01	N/A	RD3219
TH-234	1.20E+01	7.45E+00	7.54E+00	N/A	RD3219
U-235	1.84E-01	9.18E-02	9.36E-02	N/A	RD3219
U-238DA	9.90E-01	6.31E-02	1.17E-01	N/A	RD3219
AC-228	1.19E+00	1.24E-01	1.72E-01	N/A	RD3219
TL-208	3.93E-01	3.61E-02	5.33E-02	N/A	RD3219
BI-214	9.75E-01	7.11E-02	1.21E-01	N/A	RD3219
PB-212	1.07E+00	4.44E-02	1.16E-01	N/A	RD3219
PB-214	9.90E-01	6.31E-02	1.17E-01	N/A	RD3219
TH-232DA	1.19E+00	1.24E-01	1.72E-01	N/A	RD3219
RA-228DA	1.21E+00	1.25E-01	1.74E-01	N/A	RD3219
I-129LP	-8.11E-02	5.91E-01	5.91E-01	N/A	RD3219
ALPHA	1.46E+01	5.48E+00	5.71E+00	1	RD3222
BETA	2.19E+01	3.40E+00	3.69E+00	1	RD3222
TOTAL-SR	1.06E-02	3.67E-02	3.68E-02	0.898	RD3204
SE-79	1.66E+00	6.84E-01	2.51E+00	0.661	RD3253
TC-99	-4.90E-02	3.18E-01	1.49E+00	0.689	ITAS-IT-RS-0001
URANIUM	6.77E+00	N/A	1.02E+00	0.919	RD4200

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-490-02	MATRIX:	SOIL
WHC ID:	BO9WK4	DATE RECEIVED:	3/25/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	7.14E-01	1.55E-01	2.06E-01	0.432	RD3302
CM-242	0.00E+00	0.00E+00	3.18E-02	0.432	RD3302
CM-244	0.00E+00	0.00E+00	2.54E-02	0.432	RD3302
NP-237	5.86E-03	1.49E-02	1.50E-02	0.569	RD3208
PU-238	0.00E+00	0.00E+00	1.76E-02	0.71	RD3209
PU239/40	-1.18E-03	2.35E-03	2.36E-03	0.71	RD3209
U-234	1.01E-01	5.25E-02	5.42E-02	0.637	RD3234
U-235	3.40E-03	1.33E-02	1.34E-02	0.637	RD3234
U-238DA	8.80E-02	4.91E-02	5.05E-02	0.637	RD3234
K-40	2.37E-01	2.15E-01	2.17E-01	N/A	RD3219
CO-60	3.99E-03	7.25E-03	7.26E-03	N/A	RD3219
EU-152	-2.98E-04	3.72E-02	3.72E-02	N/A	RD3219
CS-137DA	1.94E-03	6.74E-03	6.74E-03	N/A	RD3219
CS-134	-9.29E-04	7.38E-03	7.38E-03	N/A	RD3219
RU-106DA	-9.74E-03	6.90E-02	6.90E-02	N/A	RD3219
RA-224DA	1.09E-01	2.19E-02	2.44E-02	N/A	RD3219
NA-22	-7.16E-03	8.69E-03	8.72E-03	N/A	RD3219
EU-155	7.55E-03	1.96E-02	1.96E-02	N/A	RD3219
EU-154	-1.98E-02	2.40E-02	2.41E-02	N/A	RD3219
TH-234	4.20E+00	3.35E+00	3.38E+00	N/A	RD3219
U-238DA	1.26E-01	2.86E-02	3.12E-02	N/A	RD3219
AC-228	1.91E-01	4.35E-02	4.75E-02	N/A	RD3219
PB-212	1.05E-01	2.12E-02	2.36E-02	N/A	RD3219
PB-214	1.26E-01	2.86E-02	3.12E-02	N/A	RD3219
TH-232DA	1.91E-01	4.35E-02	4.75E-02	N/A	RD3219
RA-228DA	1.93E-01	4.40E-02	4.81E-02	N/A	RD3219
I-129LP	9.72E-02	2.82E-01	2.83E-01	N/A	RD3219
ALPHA	4.52E-01	2.18E+00	2.18E+00	1	RD3222
BETA	4.45E+00	2.07E+00	2.09E+00	1	RD3222
TOTAL-SR	5.19E-03	3.49E-02	3.50E-02	0.905	RD3204
SE-79	-3.23E-01	6.63E-01	1.78E+00	0.661	RD3253
TC-99	-5.13E-01	3.12E-01	1.46E+00	0.689	ITAS-IT-RS-0001
URANIUM	1.95E-01	N/A	2.92E-02	0.919	RD4200

682A-6-93

9613474.0500

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-490-03	MATRIX:	SOIL
WHC ID:	B09WK5	DATE RECEIVED:	3/25/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	6.30E-01	1.43E-01	1.85E-01	0.449	RD3302
CM-242	-8.17E-04	1.64E-03	1.64E-03	0.449	RD3302
CM-244	-1.30E-03	1.84E-03	1.86E-03	0.449	RD3302
NP-237	7.32E-03	1.46E-02	1.47E-02	0.569	RD3208
PU-238	-2.66E-03	3.77E-03	3.79E-03	0.626	RD3209
PU239/40	0.00E+00	0.00E+00	2.00E-02	0.626	RD3209
U-234	8.66E-02	5.65E-02	5.80E-02	0.491	RD3234
U-235	-1.36E-03	1.92E-03	1.93E-03	0.491	RD3234
U-238DA	4.25E-02	3.80E-02	3.85E-02	0.491	RD3234
K-40	1.83E-01	2.11E-01	2.12E-01	N/A	RD3219
CO-60	-2.00E-02	8.98E-03	9.20E-03	N/A	RD3219
EU-152	-2.81E-02	3.98E-02	3.99E-02	N/A	RD3219
CS-137DA	-2.30E-03	7.34E-03	7.34E-03	N/A	RD3219
CS-134	5.35E-03	7.35E-03	7.36E-03	N/A	RD3219
RU-106DA	5.11E-02	6.61E-02	6.63E-02	N/A	RD3219
RA-224DA	1.21E-01	2.13E-02	2.45E-02	N/A	RD3219
NA-22	-2.43E-03	6.69E-03	6.70E-03	N/A	RD3219
EU-155	1.70E-02	1.99E-02	1.99E-02	N/A	RD3219
EU-154	-6.72E-03	1.85E-02	1.85E-02	N/A	RD3219
RA-226DA	8.33E-02	2.93E-02	3.04E-02	N/A	RD3219
U-238DA	1.19E-01	2.21E-02	2.51E-02	N/A	RD3219
AC-228	1.64E-01	4.51E-02	4.80E-02	N/A	RD3219
TL-208	4.58E-02	1.68E-02	1.74E-02	N/A	RD3219
PB-212	1.17E-01	2.06E-02	2.37E-02	N/A	RD3219
PB-214	1.19E-01	2.21E-02	2.51E-02	N/A	RD3219
TH-232DA	1.64E-01	4.51E-02	4.80E-02	N/A	RD3219
RA-228DA	1.66E-01	4.56E-02	4.86E-02	N/A	RD3219
I-129LP	-5.05E-01	3.40E-01	3.44E-01	N/A	RD3219
ALPHA	9.05E-01	1.90E+00	1.90E+00	1	RD3222
BETA	3.29E+00	1.87E+00	1.89E+00	1	RD3222
TOTAL-SR	7.12E-03	3.67E-02	3.67E-02	0.879	RD3204
SE-79	-8.13E-01	6.50E-01	1.72E+00	0.661	RD3253
TC-99	1.37E-01	3.23E-01	1.51E+00	0.689	ITAS-IT-RS-0001
URANIUM	2.22E-01	N/A	3.33E-02	0.919	RD4200

682A-6-93

9613474.0501

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-490-04	MATRIX:	SOIL
WHC ID:	BO9WJ9	DATE RECEIVED:	3/25/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	7.87E-01	1.63E-01	2.21E-01	0.433	RD3302
CM-242	1.07E-02	2.14E-02	2.15E-02	0.433	RD3302
CM-244	-6.75E-04	1.35E-03	1.36E-03	0.433	RD3302
NP-237	-1.46E-03	2.93E-03	2.94E-03	0.569	RD3208
PU-238	0.00E+00	0.00E+00	1.73E-02	0.724	RD3209
PU239/40	0.00E+00	0.00E+00	1.73E-02	0.724	RD3209
U-234	5.93E-01	1.40E-01	1.64E-01	0.509	RD3234
U-235	3.82E-02	3.66E-02	3.70E-02	0.509	RD3234
U-238DA	6.83E-01	1.50E-01	1.80E-01	0.509	RD3234
K-40	1.49E+01	6.22E-01	1.61E+00	N/A	RD3219
CO-60	-4.10E-03	1.31E-02	1.31E-02	N/A	RD3219
EU-152	1.08E-01	6.82E-02	6.90E-02	N/A	RD3219
CS-137DA	-3.79E-03	1.21E-02	1.21E-02	N/A	RD3219
CS-134	8.11E-03	1.15E-02	1.15E-02	N/A	RD3219
RU-106DA	-6.72E-02	1.12E-01	1.12E-01	N/A	RD3219
RA-224DA	8.42E-01	4.03E-02	9.33E-02	N/A	RD3219
NA-22	-4.59E-03	1.56E-02	1.56E-02	N/A	RD3219
EU-155	4.18E-02	3.36E-02	3.39E-02	N/A	RD3219
EU-154	1.39E-02	4.27E-02	4.27E-02	N/A	RD3219
RA-226DA	6.40E-01	5.49E-02	8.43E-02	N/A	RD3219
TH-234	1.05E+01	6.56E+00	6.65E+00	N/A	RD3219
U-238DA	6.62E-01	5.00E-02	8.29E-02	N/A	RD3219
AC-228	9.44E-01	1.04E-01	1.40E-01	N/A	RD3219
TL-208	3.15E-01	3.13E-02	4.44E-02	N/A	RD3219
BI-214	6.40E-01	5.49E-02	8.43E-02	N/A	RD3219
PB-212	8.12E-01	3.89E-02	9.00E-02	N/A	RD3219
PB-214	6.62E-01	5.00E-02	8.29E-02	N/A	RD3219
TH-232DA	9.44E-01	1.04E-01	1.40E-01	N/A	RD3219
RA-228DA	9.56E-01	1.05E-01	1.42E-01	N/A	RD3219
I-129LP	-7.78E-01	5.36E-01	5.42E-01	N/A	RD3219
ALPHA	6.79E+00	3.91E+00	3.97E+00	1	RD3222
BETA	2.27E+01	3.46E+00	3.77E+00	1	RD3222
TOTAL-SR	2.02E-02	4.03E-02	4.06E-02	0.795	RD3204
SE-79	5.74E-01	6.83E-01	1.87E+00	0.661	RD3253
TC-99	3.27E-01	3.26E-01	1.52E+00	0.689	ITAS-IT-RS-0001
URANIUM	2.49E+00	N/A	3.74E-01	0.919	RD4200

9613474.0502

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-490-05	MATRIX:	SOIL
WHC ID:	BO9WK1	DATE RECEIVED:	3/25/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	6.88E-01	1.62E-01	2.13E-01	0.38	RD3302
CM-242	0.00E+00	0.00E+00	3.64E-02	0.38	RD3302
CM-244	9.62E-03	1.92E-02	1.93E-02	0.38	RD3302
NP-237	-5.85E-04	1.17E-03	1.18E-03	0.569	RD3208
PU-238	9.09E-03	1.82E-02	1.82E-02	0.459	RD3209
PU239/40	1.82E-02	2.57E-02	2.59E-02	0.459	RD3209
U-234	1.25E+00	1.80E-01	2.47E-01	0.641	RD3234
U-235	4.17E-01	1.05E-01	1.19E-01	0.641	RD3234
U-238DA	8.40E-01	1.48E-01	1.87E-01	0.641	RD3234
K-40	1.58E+01	5.86E-01	1.69E+00	N/A	RD3219
CO-60	-1.31E-02	1.42E-02	1.43E-02	N/A	RD3219
EU-152	1.54E-01	6.62E-02	6.80E-02	N/A	RD3219
MN-54	3.08E-02	1.67E-02	1.70E-02	N/A	RD3219
CS-137DA	1.33E-02	1.22E-02	1.23E-02	N/A	RD3219
CS-134	8.17E-03	1.06E-02	1.06E-02	N/A	RD3219
RU-106DA	8.74E-02	1.09E-01	1.09E-01	N/A	RD3219
RA-224DA	1.54E+00	4.71E-02	1.61E-01	N/A	RD3219
NA-22	1.93E-03	1.65E-02	1.65E-02	N/A	RD3219
EU-155	1.06E-01	4.25E-02	4.38E-02	N/A	RD3219
EU-154	5.28E-03	4.51E-02	4.51E-02	N/A	RD3219
RA-226DA	1.06E+00	6.45E-02	1.24E-01	N/A	RD3219
TH-234	1.58E+01	1.09E+01	1.10E+01	N/A	RD3219
U-235	7.82E-02	8.16E-02	8.20E-02	N/A	RD3219
U-238DA	1.16E+00	5.76E-02	1.29E-01	N/A	RD3219
AC-228	1.47E+00	1.03E-01	1.79E-01	N/A	RD3219
TL-208	4.58E-01	3.23E-02	5.61E-02	N/A	RD3219
BI-214	1.06E+00	6.45E-02	1.24E-01	N/A	RD3219
PB-212	1.46E+00	4.47E-02	1.52E-01	N/A	RD3219
PB-214	1.16E+00	5.76E-02	1.29E-01	N/A	RD3219
TH-232DA	1.47E+00	1.03E-01	1.79E-01	N/A	RD3219
RA-228DA	1.49E+00	1.05E-01	1.83E-01	N/A	RD3219
I-129LP	3.35E-01	6.12E-01	6.13E-01	N/A	RD3219
ALPHA	1.73E+01	5.92E+00	6.21E+00	1	RD3222
BETA	2.91E+01	3.82E+00	4.27E+00	1	RD3222
TOTAL-SR	4.12E-03	3.69E-02	3.70E-02	0.881	RD3204
SE-79	9.41E-01	6.90E-01	1.91E+00	0.661	RD3253
TC-99	2.26E-01	3.27E-01	1.52E+00	0.689	ITAS-IT-RS-0001
URANIUM	3.58E+00	N/A	5.36E-01	0.919	RD4200

682A-6-93

9613474.0503

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-631-01	MATRIX:	SOIL
WHC ID:	BOBKM4	DATE RECEIVED:	3/31/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	7.77E-01	2.02E-01	2.70E-01	0.276	RD3302
CM-242	0.00E+00	0.00E+00	4.87E-02	0.276	RD3302
CM-244	1.32E-02	2.65E-02	2.67E-02	0.276	RD3302
NP-237	7.32E-03	1.46E-02	1.47E-02	0.569	RD3208
PU-238	-1.80E-03	3.59E-03	3.61E-03	0.464	RD3209
PU239/40	3.59E-02	3.59E-02	3.64E-02	0.464	RD3209
U-234	7.39E-01	1.31E-01	1.63E-01	0.722	RD3234
U-235	2.64E-01	7.82E-02	8.55E-02	0.722	RD3234
U-238DA	5.64E-01	1.14E-01	1.36E-01	0.722	RD3234
K-40	1.55E+01	5.22E-01	1.64E+00	N/A	RD3219
CO-60	-3.87E-03	1.29E-02	1.29E-02	N/A	RD3219
EU-152	1.18E-01	5.46E-02	5.59E-02	N/A	RD3219
CS-137DA	8.07E+00	8.91E-02	8.12E-01	N/A	RD3219
CS-134	-6.63E-04	1.35E-02	1.35E-02	N/A	RD3219
RU-106DA	1.77E-01	1.29E-01	1.30E-01	N/A	RD3219
RA-224DA	8.13E-01	4.46E-02	9.27E-02	N/A	RD3219
NA-22	-1.20E-02	1.53E-02	1.53E-02	N/A	RD3219
EU-155	8.13E-02	4.31E-02	4.38E-02	N/A	RD3219
EU-154	-3.33E-02	4.24E-02	4.25E-02	N/A	RD3219
RA-226DA	6.67E-01	6.41E-02	9.25E-02	N/A	RD3219
TH-234	1.57E+00	4.74E+00	4.74E+00	N/A	RD3219
U-238DA	7.51E-01	6.64E-02	1.00E-01	N/A	RD3219
AC-228	8.12E-01	9.12E-02	1.22E-01	N/A	RD3219
TL-208	3.18E-01	3.09E-02	4.43E-02	N/A	RD3219
BI-214	6.67E-01	6.41E-02	9.25E-02	N/A	RD3219
PB-212	7.90E-01	4.33E-02	9.00E-02	N/A	RD3219
PB-214	7.51E-01	6.64E-02	1.00E-01	N/A	RD3219
TH-232DA	8.12E-01	9.12E-02	1.22E-01	N/A	RD3219
RA-228DA	8.20E-01	9.21E-02	1.23E-01	N/A	RD3219
I-129LP	2.70E-01	7.31E-01	7.32E-01	N/A	RD3219
ALPHA	1.15E+01	4.83E+00	4.99E+00	1	RD3222
BETA	5.04E+01	4.84E+00	5.87E+00	1	RD3222
TOTAL-SR	7.37E+00	2.83E-01	1.79E+00	0.777	RD3204
SE-79	-2.14E-01	6.64E-01	1.79E+00	0.661	RD3253
TC-99	5.88E-02	3.23E-01	1.50E+00	0.689	ITAS-IT-RS-0001
URANIUM	3.02E+00	N/A	4.53E-01	0.919	RD4200

9613474.0504

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-631-02	MATRIX:	SOIL
WHC ID:	BOBKM6	DATE RECEIVED:	3/31/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	4.80E-01	1.05E-01	1.31E-01	0.634	RD3302
CM-242	1.35E-02	2.00E-02	2.01E-02	0.634	RD3302
CM-244	1.73E-02	1.99E-02	2.01E-02	0.634	RD3302
NP-237	0.00E+00	0.00E+00	0.00E+00	0.569	RD3208
PU-238	3.79E-03	9.65E-03	9.67E-03	0.881	RD3209
PU239/40	5.30E-02	3.30E-02	3.38E-02	0.881	RD3209
U-234	1.10E+00	2.46E-01	3.15E-01	0.307	RD3234
U-235	2.06E-02	3.87E-02	3.89E-02	0.307	RD3234
U-238DA	1.08E+00	2.43E-01	3.09E-01	0.307	RD3234
K-40	1.51E+01	5.59E-01	1.61E+00	N/A	RD3219
CO-60	1.06E-02	1.20E-02	1.21E-02	N/A	RD3219
EU-152	1.36E-01	5.62E-02	5.78E-02	N/A	RD3219
CS-137DA	4.04E-01	2.83E-02	4.94E-02	N/A	RD3219
CS-134	1.22E-03	1.03E-02	1.03E-02	N/A	RD3219
RU-106DA	2.46E-03	9.91E-02	9.91E-02	N/A	RD3219
RA-224DA	8.34E-01	3.53E-02	9.06E-02	N/A	RD3219
NA-22	4.99E-03	1.45E-02	1.45E-02	N/A	RD3219
EU-155	4.02E-02	3.28E-02	3.30E-02	N/A	RD3219
EU-154	1.38E-02	4.02E-02	4.02E-02	N/A	RD3219
RA-226DA	6.83E-01	5.26E-02	8.62E-02	N/A	RD3219
TH-234	4.58E+00	4.76E+00	4.78E+00	N/A	RD3219
U-238DA	6.76E-01	4.73E-02	8.25E-02	N/A	RD3219
AC-228	9.30E-01	9.55E-02	1.33E-01	N/A	RD3219
TL-208	2.83E-01	2.52E-02	3.79E-02	N/A	RD3219
BI-214	6.83E-01	5.26E-02	8.62E-02	N/A	RD3219
PB-212	8.10E-01	3.43E-02	8.79E-02	N/A	RD3219
TH-232DA	9.30E-01	9.55E-02	1.33E-01	N/A	RD3219
RA-228DA	9.39E-01	9.64E-02	1.35E-01	N/A	RD3219
I-129LP	2.91E-01	5.31E-01	5.32E-01	N/A	RD3219
ALPHA	1.27E+01	5.18E+00	5.36E+00	1	RD3222
BETA	3.21E+01	3.98E+00	4.51E+00	1	RD3222
TOTAL-SR	2.21E+00	1.64E-01	5.50E-01	0.726	RD3204
SE-79	-5.40E-01	6.54E-01	1.75E+00	0.661	RD3253
TC-99	2.32E-01	3.24E-01	1.52E+00	0.689	ITAS-IT-RS-0001
URANIUM	2.67E+00	N/A	4.01E-01	0.919	RD4200

682A-6-93

9613474.0505

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-631-03	MATRIX:	SOIL
WHC ID:	BOBKM1	DATE RECEIVED:	3/31/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	7.43E-01	1.39E-01	1.88E-01	0.562	RD3302
CM-242	0.00E+00	0.00E+00	2.39E-02	0.562	RD3302
CM-244	1.90E-02	2.25E-02	2.28E-02	0.562	RD3302
NP-237	0.00E+00	0.00E+00	0.00E+00	0.569	RD3208
PU-238	8.37E-03	1.68E-02	1.68E-02	0.498	RD3209
PU239/40	1.91E-01	8.03E-02	8.64E-02	0.498	RD3209
U-234	1.80E+00	2.91E-01	4.21E-01	0.356	RD3234
U-235	8.00E-02	6.19E-02	6.34E-02	0.356	RD3234
U-238DA	1.51E+00	2.66E-01	3.68E-01	0.356	RD3234
K-40	1.60E+01	5.94E-01	1.71E+00	N/A	RD3219
CO-60	2.75E-03	1.31E-02	1.31E-02	N/A	RD3219
EU-152	8.18E-02	6.00E-02	6.05E-02	N/A	RD3219
CS-137DA	2.92E+01	2.02E-01	2.92E+00	N/A	RD3219
CS-134	1.03E-02	1.99E-02	1.99E-02	N/A	RD3219
RU-106DA	2.92E-02	2.06E-01	2.06E-01	N/A	RD3219
RA-224DA	7.68E-01	6.49E-02	1.01E-01	N/A	RD3219
NA-22	-2.89E-03	1.59E-02	1.59E-02	N/A	RD3219
EU-155	4.41E-02	7.38E-02	7.39E-02	N/A	RD3219
EU-154	-8.02E-03	4.41E-02	4.41E-02	N/A	RD3219
RA-226DA	6.17E-01	6.71E-02	9.12E-02	N/A	RD3219
TH-234	9.74E+00	5.48E+00	5.56E+00	N/A	RD3219
U-238DA	6.52E-01	9.16E-02	1.13E-01	N/A	RD3219
AC-228	8.89E-01	8.61E-02	1.24E-01	N/A	RD3219
TL-208	2.93E-01	4.36E-02	5.25E-02	N/A	RD3219
BI-214	6.17E-01	6.71E-02	9.12E-02	N/A	RD3219
PB-212	7.45E-01	6.30E-02	9.75E-02	N/A	RD3219
PB-214	6.52E-01	9.16E-02	1.13E-01	N/A	RD3219
TH-232DA	8.89E-01	8.61E-02	1.24E-01	N/A	RD3219
RA-228DA	8.98E-01	8.69E-02	1.25E-01	N/A	RD3219
I-129LP	-3.29E+00	1.01E+00	1.07E+00	N/A	RD3219
ALPHA	1.75E+01	5.91E+00	6.20E+00	1	RD3222
BETA	9.13E+01	6.36E+00	8.76E+00	1	RD3222
TOTAL-SR	9.40E+00	3.08E-01	2.33E+00	0.844	RD3204
SE-79	-6.29E-01	6.52E-01	1.74E+00	0.661	RD3253
TC-99	1.93E+00	3.52E-01	1.66E+00	0.689	ITAS-IT-RS-0001
URANIUM	5.72E+00	N/A	8.58E-01	0.919	RD4200

682A-8-93

9613474.0506

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-03-631-04
MATRIX: SOIL
WHC ID: BOBKM3
DATE RECEIVED: 3/31/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	9.82E-01	1.83E-01	2.62E-01	0.428	RD3302
CM-242	-8.37E-04	1.67E-03	1.68E-03	0.428	RD3302
CM-244	-6.83E-04	1.37E-03	1.37E-03	0.428	RD3302
NP-237	0.00E+00	0.00E+00	0.00E+00	0.569	RD3208
PU-238	3.36E-02	2.96E-02	3.00E-02	0.694	RD3209
PU239/40	7.49E-01	1.34E-01	1.74E-01	0.694	RD3209
U-234	1.07E+00	1.80E-01	2.36E-01	0.553	RD3234
U-235	4.97E-02	4.00E-02	4.06E-02	0.553	RD3234
U-238DA	1.04E+00	1.77E-01	2.31E-01	0.553	RD3234
K-40	1.48E+01	4.48E-01	1.55E+00	N/A	RD3219
CO-60	-3.39E-03	9.43E-03	9.44E-03	N/A	RD3219
EU-152	1.24E-01	4.28E-02	4.46E-02	N/A	RD3219
CS-137DA	1.81E+02	4.67E-01	1.82E+01	N/A	RD3219
CS-134	2.30E-03	3.53E-02	3.53E-02	N/A	RD3219
RU-106DA	1.72E-01	3.64E-01	3.65E-01	N/A	RD3219
RA-224DA	7.48E-01	1.14E-01	1.36E-01	N/A	RD3219
NA-22	-6.15E-03	1.23E-02	1.23E-02	N/A	RD3219
EU-155	-1.13E-01	1.30E-01	1.30E-01	N/A	RD3219
EU-154	-1.69E-02	3.37E-02	3.38E-02	N/A	RD3219
RA-226DA	6.37E-01	1.23E-01	1.38E-01	N/A	RD3219
U-238DA	5.77E-01	1.46E-01	1.57E-01	N/A	RD3219
BI-214	6.37E-01	1.23E-01	1.38E-01	N/A	RD3219
PB-212	7.11E-01	1.09E-01	1.30E-01	N/A	RD3219
PB-214	5.77E-01	1.46E-01	1.57E-01	N/A	RD3219
TH-232DA	7.89E-01	8.49E-02	1.16E-01	N/A	RD3219
*I-129LP	-1.26E+01	1.53E+00	1.98E+00	N/A	RD3219
ALPHA	1.27E+01	4.99E+00	5.17E+00	1	RD3222
BETA	2.99E+02	1.13E+01	2.27E+01	1	RD3222
TOTAL-SR	1.96E+01	4.52E-01	4.78E+00	0.815	RD3204
SE-79	9.33E-01	6.86E-01	1.90E+00	0.661	RD3253
TC-99	2.84E+00	3.83E-01	1.74E+00	0.689	ITAS-IT-RS-0001
URANIUM	2.71E+00	N/A	4.06E-01	0.919	RD4200

* - SEE CASE NARRATIVE

682A-6-93

9613474.0507

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-631-05	MATRIX:	SOIL
WHC ID:	BOBKM5	DATE RECEIVED:	3/31/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	5.27E-01	1.11E-01	1.41E-01	0.625	RD3302
CM-242	-5.72E-04	1.14E-03	1.15E-03	0.625	RD3302
CM-244	1.03E-02	1.66E-02	1.67E-02	0.625	RD3302
NP-237	7.32E-03	1.46E-02	1.47E-02	0.569	RD3208
PU-238	4.41E-02	3.88E-02	3.95E-02	0.53	RD3209
PU239/40	1.01E+00	1.79E-01	2.43E-01	0.53	RD3209
U-234	8.10E-01	1.37E-01	1.73E-01	0.722	RD3234
U-235	1.06E-02	1.64E-02	1.64E-02	0.722	RD3234
U-238DA	9.06E-01	1.45E-01	1.87E-01	0.722	RD3234
K-40	1.55E+01	5.58E-01	1.65E+00	N/A	RD3219
CO-60	-1.13E-02	1.26E-02	1.27E-02	N/A	RD3219
EU-152	1.77E-02	6.06E-02	6.07E-02	N/A	RD3219
CS-137DA	1.89E+00	5.18E-02	1.96E-01	N/A	RD3219
CS-134	4.15E-03	1.12E-02	1.12E-02	N/A	RD3219
RU-106DA	-2.19E-02	1.08E-01	1.08E-01	N/A	RD3219
RA-224DA	7.84E-01	3.74E-02	8.68E-02	N/A	RD3219
NA-22	-3.76E-04	1.49E-02	1.49E-02	N/A	RD3219
EU-155	4.62E-02	3.71E-02	3.74E-02	N/A	RD3219
EU-154	-1.35E-02	4.13E-02	4.13E-02	N/A	RD3219
RA-226DA	6.67E-01	4.74E-02	8.18E-02	N/A	RD3219
TH-234	4.19E+00	4.95E+00	4.97E+00	N/A	RD3219
U-238DA	6.80E-01	4.60E-02	8.21E-02	N/A	RD3219
AC-228	8.02E-01	9.26E-02	1.23E-01	N/A	RD3219
TL-208	2.97E-01	2.93E-02	4.17E-02	N/A	RD3219
BI-214	6.67E-01	4.74E-02	8.18E-02	N/A	RD3219
PB-212	7.60E-01	3.62E-02	8.42E-02	N/A	RD3219
PB-214	6.80E-01	4.60E-02	8.21E-02	N/A	RD3219
TH-232DA	8.02E-01	9.26E-02	1.23E-01	N/A	RD3219
RA-228DA	8.10E-01	9.36E-02	1.24E-01	N/A	RD3219
I-129LP	5.49E-02	6.00E-01	6.00E-01	N/A	RD3219
ALPHA	1.95E+01	6.18E+00	6.52E+00	1	RD3222
BETA	4.36E+01	4.55E+00	5.38E+00	1	RD3222
TOTAL-SR	3.83E+00	2.04E-01	9.41E-01	0.767	RD3204
SE-79	1.31E+00	6.97E-01	1.95E+00	0.661	RD3253
TC-99	1.55E+00	3.45E-01	1.62E+00	0.689	ITAS-IT-RS-0001
URANIUM	2.76E+00	N/A	4.15E-01	0.919	RD4200

682A-6-93

9613474.0508

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-04-017-01	MATRIX:	SOIL
WHC ID:	BOBNQ5	DATE RECEIVED:	4/1/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	7.21E-01	1.72E-01	2.27E-01	0.357	RD3302
CM-242	0.00E+00	0.00E+00	3.75E-02	0.357	RD3302
CM-244	-8.19E-04	1.64E-03	1.65E-03	0.357	RD3302
NP-237	5.86E-03	1.49E-02	1.50E-02	0.569	RD3208
PU-238	5.75E-03	1.47E-02	1.47E-02	0.58	RD3209
PU239/40	0.00E+00	0.00E+00	2.16E-02	0.58	RD3209
U-234	2.43E-02	2.65E-02	2.67E-02	0.631	RD3234
U-235	-1.06E-03	1.50E-03	1.50E-03	0.631	RD3234
U-238DA	4.52E-02	3.50E-02	3.56E-02	0.631	RD3234
K-40	2.26E-01	2.09E-01	2.10E-01	N/A	RD3219
CO-60	3.46E-03	7.66E-03	7.67E-03	N/A	RD3219
EU-152	2.88E-02	3.52E-02	3.53E-02	N/A	RD3219
CS-137DA	7.89E-04	7.66E-03	7.66E-03	N/A	RD3219
CS-134	6.15E-03	7.13E-03	7.16E-03	N/A	RD3219
RU-106DA	-4.94E-03	6.64E-02	6.64E-02	N/A	RD3219
RA-224DA	1.36E-01	2.07E-02	2.48E-02	N/A	RD3219
NA-22	3.67E-03	7.77E-03	7.77E-03	N/A	RD3219
EU-155	2.32E-02	1.77E-02	1.78E-02	N/A	RD3219
EU-154	1.02E-02	2.15E-02	2.15E-02	N/A	RD3219
RA-226DA	8.30E-02	3.28E-02	3.38E-02	N/A	RD3219
TH-234	3.87E+00	3.24E+00	3.26E+00	N/A	RD3219
AC-228	1.82E-01	4.17E-02	4.55E-02	N/A	RD3219
TL-208	6.19E-02	1.51E-02	1.63E-02	N/A	RD3219
PB-212	1.32E-01	2.01E-02	2.40E-02	N/A	RD3219
PB-214	1.15E-01	2.28E-02	2.55E-02	N/A	RD3219
TH-232DA	1.82E-01	4.17E-02	4.55E-02	N/A	RD3219
RA-228DA	1.83E-01	4.21E-02	4.59E-02	N/A	RD3219
I-129LP	4.66E-02	3.04E-01	3.04E-01	N/A	RD3219
ALPHA	1.45E+00	2.52E+00	2.53E+00	1	RD3222
BETA	1.28E+00	1.72E+00	1.73E+00	1	RD3222
TOTAL-SR	2.91E-02	3.81E-02	3.88E-02	0.902	RD3204
SE-79	-4.39E-01	6.64E-01	1.77E+00	0.661	RD3253
TC-99	5.79E-01	3.30E-01	1.54E+00	0.689	ITAS-IT-RS-0001
URANIUM	1.42E-01	N/A	2.13E-02	0.919	RD4200

682A-6-93

9613474.0509

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-04-017-02
MATRIX: SOIL
WHC ID: BOBNQ4
DATE RECEIVED: 4/1/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	6.96E-01	1.53E-01	2.02E-01	0.437	RD3302
CM-242	-4.09E-03	5.78E-03	5.83E-03	0.437	RD3302
CM-244	0.00E+00	0.00E+00	2.51E-02	0.437	RD3302
NP-237	0.00E+00	0.00E+00	0.00E+00	0.569	RD3208
PU-238	-1.89E-03	3.78E-03	3.79E-03	0.442	RD3209
PU239/40	-7.55E-03	7.55E-03	7.67E-03	0.442	RD3209
U-234	5.32E-02	3.79E-02	3.86E-02	0.662	RD3234
U-235	-5.04E-04	1.01E-03	1.01E-03	0.662	RD3234
U-238DA	3.68E-02	3.09E-02	3.13E-02	0.662	RD3234
K-40	4.25E-01	2.39E-01	2.43E-01	N/A	RD3219
CO-60	-2.93E-03	7.34E-03	7.35E-03	N/A	RD3219
EU-152	2.06E-02	4.07E-02	4.08E-02	N/A	RD3219
CS-137DA	5.95E-03	7.60E-03	7.62E-03	N/A	RD3219
CS-134	-1.57E-03	7.74E-03	7.74E-03	N/A	RD3219
RU-106DA	-7.41E-03	7.59E-02	7.59E-02	N/A	RD3219
RA-224DA	1.43E-01	2.13E-02	2.56E-02	N/A	RD3219
NA-22	2.66E-03	8.63E-03	8.63E-03	N/A	RD3219
EU-155	7.50E-03	1.81E-02	1.82E-02	N/A	RD3219
EU-154	7.36E-03	2.39E-02	2.39E-02	N/A	RD3219
RA-226DA	1.07E-01	3.42E-02	3.58E-02	N/A	RD3219
U-235	2.52E-02	4.01E-02	4.02E-02	N/A	RD3219
U-238DA	1.07E-01	2.39E-02	2.62E-02	N/A	RD3219
AC-228	1.72E-01	5.43E-02	5.69E-02	N/A	RD3219
PB-212	1.38E-01	2.06E-02	2.48E-02	N/A	RD3219
PB-214	1.07E-01	2.39E-02	2.62E-02	N/A	RD3219
TH-232DA	1.72E-01	5.43E-02	5.69E-02	N/A	RD3219
RA-228DA	1.74E-01	5.48E-02	5.75E-02	N/A	RD3219
I-129LP	-2.20E-02	3.09E-01	3.09E-01	N/A	RD3219
ALPHA	1.99E+00	2.48E+00	2.49E+00	1	RD3222
BETA	2.68E+00	1.88E+00	1.89E+00	1	RD3222
TOTAL-SR	3.09E-02	3.79E-02	3.87E-02	0.895	RD3204
SE-79	-8.33E-01	6.48E-01	1.72E+00	0.661	RD3253
TC-99	4.45E-01	3.26E-01	1.53E+00	0.689	ITAS-IT-RS-0001
URANIUM	1.42E-01	N/A	2.12E-02	0.919	RD4200

682A-6-93

9613474.0510

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-04-017-03	MATRIX:	SOIL
WHC ID:	BOBKP7	DATE RECEIVED:	4/1/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	4.61E-01	1.27E-01	1.55E-01	0.417	RD3302
CM-242	0.00E+00	0.00E+00	3.20E-02	0.417	RD3302
CM-244	0.00E+00	0.00E+00	2.62E-02	0.417	RD3302
NP-237	-5.86E-04	1.17E-03	1.18E-03	0.569	RD3208
PU-238	0.00E+00	0.00E+00	2.73E-02	0.459	RD3209
PU239/40	9.08E-03	1.82E-02	1.82E-02	0.459	RD3209
U-234	6.36E-02	4.20E-02	4.29E-02	0.629	RD3234
U-235	1.22E-02	1.88E-02	1.89E-02	0.629	RD3234
U-238DA	1.03E-01	5.31E-02	5.49E-02	0.629	RD3234
K-40	3.49E-01	1.99E-01	2.02E-01	N/A	RD3219
CO-60	-5.55E-04	6.13E-03	6.13E-03	N/A	RD3219
EU-152	1.79E-02	2.95E-02	2.95E-02	N/A	RD3219
CS-137DA	5.04E-05	5.93E-03	5.93E-03	N/A	RD3219
CS-134	-2.89E-03	5.70E-03	5.71E-03	N/A	RD3219
RU-106DA	-1.32E-02	5.62E-02	5.62E-02	N/A	RD3219
RA-224DA	1.30E-01	1.70E-02	2.14E-02	N/A	RD3219
NA-22	9.31E-04	6.58E-03	6.58E-03	N/A	RD3219
EU-155	9.12E-03	1.40E-02	1.40E-02	N/A	RD3219
EU-154	2.57E-03	1.82E-02	1.82E-02	N/A	RD3219
RA-226DA	1.06E-01	2.47E-02	2.69E-02	N/A	RD3219
TH-234	1.50E+00	2.93E+00	2.93E+00	N/A	RD3219
U-238DA	1.20E-01	2.02E-02	2.35E-02	N/A	RD3219
AC-228	1.07E-01	4.48E-02	4.60E-02	N/A	RD3219
BI-214	1.06E-01	2.47E-02	2.69E-02	N/A	RD3219
PB-212	1.25E-01	1.64E-02	2.06E-02	N/A	RD3219
PB-214	1.20E-01	2.02E-02	2.35E-02	N/A	RD3219
TH-232DA	1.07E-01	4.48E-02	4.60E-02	N/A	RD3219
RA-228DA	1.09E-01	4.53E-02	4.66E-02	N/A	RD3219
I-129LP	-2.75E-03	2.99E-01	2.99E-01	N/A	RD3219
ALPHA	1.81E+00	2.68E+00	2.69E+00	1	RD3222
BETA	1.42E+00	1.74E+00	1.74E+00	1	RD3222
TOTAL-SR	2.66E-02	3.89E-02	3.95E-02	0.885	RD3204
SE-79	-8.54E-01	6.49E-01	1.72E+00	0.661	RD3253
TC-99	2.68E-01	3.24E-01	1.52E+00	0.689	ITAS-IT-RS-0001
URANIUM	1.61E-01	N/A	2.41E-02	0.919	RD4200

682A-6-93

9613474.0511

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-04-017-04	MATRIX:	SOIL
WHC ID:	BOBKP8	DATE RECEIVED:	4/1/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	7.91E-01	1.55E-01	2.12E-01	0.481	RD3302
CM-242	0.00E+00	0.00E+00	2.78E-02	0.481	RD3302
CM-244	0.00E+00	0.00E+00	2.27E-02	0.481	RD3302
NP-237	-5.86E-04	1.17E-03	1.18E-03	0.569	RD3208
PU-238	-4.54E-03	6.41E-03	6.47E-03	0.368	RD3209
PU239/40	0.00E+00	0.00E+00	3.40E-02	0.368	RD3209
U-234	6.56E-02	5.06E-02	5.16E-02	0.468	RD3234
U-235	1.36E-02	2.55E-02	2.55E-02	0.468	RD3234
U-238DA	4.85E-02	4.38E-02	4.45E-02	0.468	RD3234
K-40	1.90E-01	1.61E-01	1.62E-01	N/A	RD3219
CO-60	-1.51E-04	5.60E-03	5.60E-03	N/A	RD3219
EU-152	2.96E-02	2.91E-02	2.93E-02	N/A	RD3219
CS-137DA	-4.33E-03	5.93E-03	5.95E-03	N/A	RD3219
CS-134	-1.36E-03	5.22E-03	5.22E-03	N/A	RD3219
RU-106DA	2.82E-02	5.22E-02	5.23E-02	N/A	RD3219
RA-224DA	1.26E-01	1.78E-02	2.18E-02	N/A	RD3219
NA-22	-4.55E-03	6.06E-03	6.08E-03	N/A	RD3219
EU-155	4.35E-03	1.35E-02	1.35E-02	N/A	RD3219
EU-154	-1.25E-02	1.67E-02	1.68E-02	N/A	RD3219
U-238DA	1.15E-01	1.92E-02	2.24E-02	N/A	RD3219
AC-228	1.40E-01	3.96E-02	4.20E-02	N/A	RD3219
TL-208	4.14E-02	1.54E-02	1.59E-02	N/A	RD3219
PB-212	1.21E-01	1.71E-02	2.09E-02	N/A	RD3219
PB-214	1.15E-01	1.92E-02	2.24E-02	N/A	RD3219
TH-232DA	1.40E-01	3.96E-02	4.20E-02	N/A	RD3219
RA-228DA	1.42E-01	4.02E-02	4.26E-02	N/A	RD3219
I-129LP	3.27E-02	2.88E-01	2.88E-01	N/A	RD3219
ALPHA	1.63E+00	2.51E+00	2.51E+00	1	RD3222
BETA	3.20E+00	1.90E+00	1.91E+00	1	RD3222
TOTAL-SR	-8.02E-03	3.22E-02	3.23E-02	0.919	RD3204
SE-79	-1.18E+00	6.40E-01	1.68E+00	0.661	RD3253
TC-99	1.28E-01	3.21E-01	1.51E+00	0.689	ITAS-IT-RS-0001
URANIUM	1.63E-01	N/A	2.44E-02	0.919	RD4200

682A-6-93

9613474.0512

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-04-017-05
MATRIX: SOIL
WHC ID: BOBKN9
DATE RECEIVED: 4/1/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	8.09E-01	1.48E-01	2.04E-01	0.539	RD3302
CM-242	8.27E-03	1.65E-02	1.66E-02	0.539	RD3302
CM-244	6.23E-03	1.36E-02	1.36E-02	0.539	RD3302
NP-237	0.00E+00	0.00E+00	0.00E+00	0.569	RD3208
PU-238	3.11E-03	1.08E-02	1.08E-02	0.806	RD3209
PU239/40	3.87E-01	8.96E-02	1.05E-01	0.806	RD3209
U-234	9.43E-01	1.54E-01	2.00E-01	0.665	RD3234
U-235	4.29E-02	3.32E-02	3.37E-02	0.665	RD3234
U-238DA	9.28E-01	1.53E-01	1.97E-01	0.665	RD3234
K-40	1.39E+01	4.31E-01	1.45E+00	N/A	RD3219
CO-60	2.54E-02	1.06E-02	1.09E-02	N/A	RD3219
EU-152	6.17E-02	4.52E-02	4.56E-02	N/A	RD3219
CS-137DA	7.28E-01	2.81E-02	7.81E-02	N/A	RD3219
CS-134	-8.55E-03	8.64E-03	8.68E-03	N/A	RD3219
RU-106DA	1.35E-03	8.49E-02	8.49E-02	N/A	RD3219
RA-224DA	7.38E-01	2.89E-02	7.93E-02	N/A	RD3219
NA-22	6.54E-03	1.05E-02	1.05E-02	N/A	RD3219
EU-155	3.72E-02	2.60E-02	2.63E-02	N/A	RD3219
EU-154	1.80E-02	2.89E-02	2.90E-02	N/A	RD3219
RA-226DA	5.75E-01	4.29E-02	7.17E-02	N/A	RD3219
TH-234	8.33E+00	5.38E+00	5.45E+00	N/A	RD3219
U-235	1.04E-01	5.41E-02	5.51E-02	N/A	RD3219
U-238DA	6.09E-01	3.74E-02	7.15E-02	N/A	RD3219
AC-228	7.62E-01	7.49E-02	1.07E-01	N/A	RD3219
TL-208	2.41E-01	2.19E-02	3.26E-02	N/A	RD3219
BI-214	5.75E-01	4.29E-02	7.17E-02	N/A	RD3219
PB-212	7.09E-01	2.78E-02	7.61E-02	N/A	RD3219
PB-214	6.09E-01	3.74E-02	7.15E-02	N/A	RD3219
TH-232DA	7.62E-01	7.49E-02	1.07E-01	N/A	RD3219
RA-228DA	7.73E-01	7.59E-02	1.08E-01	N/A	RD3219
I-129LP	-5.58E-01	5.40E-01	5.43E-01	N/A	RD3219
ALPHA	1.45E+01	5.31E+00	5.54E+00	1	RD3222
BETA	2.52E+01	3.56E+00	3.93E+00	1	RD3222
TOTAL-SR	1.74E-01	5.88E-02	7.22E-02	0.783	RD3204
SE-79	4.38E-01	6.79E-01	1.86E+00	0.661	RD3253
TC-99	2.29E-01	3.27E-01	1.52E+00	0.689	ITAS-IT-RS-0001
URANIUM	2.87E+00	N/A	4.30E-01	0.919	RD4200

682A-6-93

9613474.0513

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-04-017-06	MATRIX:	SOIL
WHC ID:	BOBKM7	DATE RECEIVED:	4/1/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	6.19E-01	1.27E-01	1.65E-01	0.562	RD3302
CM-242	-6.34E-04	1.27E-03	1.27E-03	0.562	RD3302
CM-244	-5.20E-04	1.04E-03	1.04E-03	0.562	RD3302
NP-237	0.00E+00	0.00E+00	0.00E+00	0.569	RD3208
PU-238	5.96E-03	1.19E-02	1.19E-02	0.7	RD3209
PU239/40	2.86E-01	8.25E-02	9.26E-02	0.7	RD3209
U-234	1.29E+00	2.46E-01	3.27E-01	0.357	RD3234
U-235	7.92E-02	6.21E-02	6.35E-02	0.357	RD3234
U-238DA	1.07E+00	2.24E-01	2.86E-01	0.357	RD3234
K-40	1.44E+01	3.80E-01	1.49E+00	N/A	RD3219
CO-60	1.23E-02	8.36E-03	8.45E-03	N/A	RD3219
EU-152	8.48E-02	3.78E-02	3.88E-02	N/A	RD3219
CS-137DA	6.45E+01	1.97E-01	6.45E+00	N/A	RD3219
CS-134	-1.49E-02	1.96E-02	1.97E-02	N/A	RD3219
RU-106DA	-2.00E-01	2.02E-01	2.03E-01	N/A	RD3219
RA-224DA	7.07E-01	6.50E-02	9.61E-02	N/A	RD3219
NA-22	3.55E-03	1.00E-02	1.00E-02	N/A	RD3219
EU-155	4.16E-02	6.14E-02	6.15E-02	N/A	RD3219
EU-154	9.79E-03	2.76E-02	2.76E-02	N/A	RD3219
RA-226DA	5.49E-01	7.79E-02	9.53E-02	N/A	RD3219
TH-234	-3.12E-01	5.07E+00	5.07E+00	N/A	RD3219
U-238DA	6.45E-01	9.57E-02	1.15E-01	N/A	RD3219
AC-228	7.14E-01	6.20E-02	9.45E-02	N/A	RD3219
BI-214	5.49E-01	7.79E-02	9.53E-02	N/A	RD3219
PB-212	6.80E-01	6.24E-02	9.23E-02	N/A	RD3219
PB-214	6.45E-01	9.57E-02	1.15E-01	N/A	RD3219
RA-228DA	7.24E-01	6.28E-02	9.58E-02	N/A	RD3219
I-129LP	-4.68E+00	1.33E+00	1.41E+00	N/A	RD3219
ALPHA	1.18E+01	4.92E+00	5.09E+00	1	RD3222
BETA	1.14E+02	7.07E+00	1.03E+01	1	RD3222
TOTAL-SR	9.37E+00	3.17E-01	2.29E+00	0.798	RD3204
SE-79	1.71E+00	7.09E-01	1.99E+00	0.661	RD3253
TC-99	-1.60E-01	3.22E-01	1.49E+00	0.689	ITAS-IT-RS-0001
URANIUM	3.00E+00	N/A	4.50E-01	0.919	RD4200

682A-6-93

9613474.0514

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-04-017-07	MATRIX:	SOIL
WHC ID:	BOBKP5	DATE RECEIVED:	4/1/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	4.74E+00	3.55E-01	8.97E-01	0.546	RD3302
CM-242	-6.52E-04	1.31E-03	1.31E-03	0.546	RD3302
CM-244	5.08E-03	1.35E-02	1.35E-02	0.546	RD3302
NP-237	7.31E-03	1.46E-02	1.47E-02	0.569	RD3208
PU-238	5.24E-01	1.17E-01	1.41E-01	0.643	RD3209
PU239/40	2.22E+01	7.59E-01	3.46E+00	0.643	RD3209
U-234	8.21E-01	1.56E-01	1.94E-01	0.561	RD3234
U-235	3.47E-02	3.32E-02	3.36E-02	0.561	RD3234
U-238DA	1.03E+00	1.75E-01	2.27E-01	0.561	RD3234
K-40	1.51E+01	4.32E-01	1.57E+00	N/A	RD3219
CO-60	5.94E-03	9.66E-03	9.68E-03	N/A	RD3219
EU-152	2.23E-02	4.93E-02	4.93E-02	N/A	RD3219
CS-137DA	1.59E+01	9.43E-02	1.59E+00	N/A	RD3219
CS-134	-3.53E-03	1.30E-02	1.30E-02	N/A	RD3219
RU-106DA	7.97E-02	1.29E-01	1.30E-01	N/A	RD3219
RA-224DA	9.02E-01	4.38E-02	1.00E-01	N/A	RD3219
NA-22	-1.16E-02	1.14E-02	1.14E-02	N/A	RD3219
EU-155	7.29E-02	4.31E-02	4.37E-02	N/A	RD3219
EU-154	-3.20E-02	3.13E-02	3.15E-02	N/A	RD3219
RA-226DA	6.48E-01	6.60E-02	9.25E-02	N/A	RD3219
TH-234	7.18E+00	5.27E+00	5.32E+00	N/A	RD3219
U-238DA	7.21E-01	6.15E-02	9.47E-02	N/A	RD3219
AC-228	8.52E-01	7.32E-02	1.12E-01	N/A	RD3219
TL-208	3.07E-01	2.90E-02	4.22E-02	N/A	RD3219
BI-214	6.48E-01	6.60E-02	9.25E-02	N/A	RD3219
PB-212	8.66E-01	4.21E-02	9.63E-02	N/A	RD3219
PB-214	7.21E-01	6.15E-02	9.47E-02	N/A	RD3219
TH-232DA	8.52E-01	7.32E-02	1.12E-01	N/A	RD3219
RA-228DA	8.64E-01	7.42E-02	1.14E-01	N/A	RD3219
I-129LP	-8.94E-01	7.79E-01	7.84E-01	N/A	RD3219
ALPHA	5.31E+01	9.99E+00	1.15E+01	1	RD3222
BETA	3.68E+01	4.22E+00	4.87E+00	1	RD3222
TOTAL-SR	7.16E-01	9.70E-02	1.97E-01	0.761	RD3204
SE-79	-9.68E-01	6.45E-01	1.70E+00	0.661	RD3253
TC-99	-3.60E-02	3.23E-01	1.50E+00	0.689	ITAS-IT-RS-0001
URANIUM	3.19E+00	N/A	4.78E-01	0.919	RD4200

682A-6-93

9613474.0515

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-04-066-01
MATRIX: SOIL
WHC ID: BOBNQ8
DATE RECEIVED: 4/5/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	7.24E-01	1.37E-01	1.86E-01	0.557	RD3302
CM-242	0.00E+00	0.00E+00	2.39E-02	0.557	RD3302
CM-244	0.00E+00	0.00E+00	1.97E-02	0.557	RD3302
NP-237	1.46E-02	2.07E-02	2.09E-02	0.569	RD3208
PU-238	0.00E+00	0.00E+00	1.57E-02	0.795	RD3209
PU239/40	1.31E-01	5.24E-02	5.56E-02	0.795	RD3209
U-234	3.73E+00	2.91E-01	5.63E-01	0.735	RD3234
U-235	1.41E-01	5.66E-02	5.94E-02	0.735	RD3234
U-238DA	3.85E+00	2.95E-01	5.79E-01	0.735	RD3234
K-40	1.29E+01	3.68E-01	1.35E+00	N/A	RD3219
CO-60	5.92E-03	8.17E-03	8.19E-03	N/A	RD3219
EU-152	5.02E-02	4.00E-02	4.03E-02	N/A	RD3219
CS-137DA	1.51E+01	1.01E-01	1.51E+00	N/A	RD3219
CS-134	-1.57E-02	1.14E-02	1.15E-02	N/A	RD3219
RU-106DA	7.39E-02	1.11E-01	1.11E-01	N/A	RD3219
RA-224DA	6.95E-01	3.86E-02	7.95E-02	N/A	RD3219
NA-22	1.49E-03	9.19E-03	9.19E-03	N/A	RD3219
EU-155	3.52E-02	3.62E-02	3.64E-02	N/A	RD3219
EU-154	4.12E-03	2.53E-02	2.53E-02	N/A	RD3219
RA-226DA	6.06E-01	5.29E-02	8.04E-02	N/A	RD3219
TH-234	4.81E+00	4.48E+00	4.51E+00	N/A	RD3219
U-238DA	6.25E-01	5.98E-02	8.65E-02	N/A	RD3219
AC-228	6.93E-01	6.29E-02	9.35E-02	N/A	RD3219
TL-208	2.36E-01	2.49E-02	3.43E-02	N/A	RD3219
BI-214	6.06E-01	5.29E-02	8.04E-02	N/A	RD3219
PB-212	6.67E-01	3.71E-02	7.64E-02	N/A	RD3219
PB-214	6.25E-01	5.98E-02	8.65E-02	N/A	RD3219
TH-232DA	6.93E-01	6.29E-02	9.35E-02	N/A	RD3219
RA-228DA	7.02E-01	6.37E-02	9.48E-02	N/A	RD3219
I-129LP	4.80E-02	7.14E-01	7.14E-01	N/A	RD3219
ALPHA	1.38E+01	5.24E+00	5.44E+00	1	RD3222
BETA	4.95E+01	4.81E+00	5.81E+00	1	RD3222
TOTAL-SR	1.97E+00	1.47E-01	4.99E-01	0.807	RD3204
SE-79	-8.18E-01	6.50E-01	1.72E+00	0.661	RD3253
TC-99	1.16E+00	3.38E-01	1.59E+00	0.689	ITAS-IT-RS-0001
URANIUM	4.25E+00	N/A	6.37E-01	0.919	RD4200

682A-6-93

9613474.0516

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-04-066-02
MATRIX: SOIL
WHC ID: BOBNQ3
DATE RECEIVED: 4/5/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD NUMBER
AM-241	3.46E+00	2.75E-01	6.21E-01	0.666	RD3302
CM-242	-5.32E-04	1.06E-03	1.07E-03	0.666	RD3302
CM-244	-8.75E-04	1.24E-03	1.25E-03	0.666	RD3302
NP-237	7.32E-03	1.47E-02	1.47E-02	0.569	RD3208
PU-238	3.14E+00	2.87E-01	5.59E-01	0.638	RD3209
PU239/40	3.72E+00	3.11E-01	6.47E-01	0.638	RD3209
U-234	1.33E+00	1.86E-01	2.59E-01	0.643	RD3234
U-235	8.08E-02	4.66E-02	4.79E-02	0.643	RD3234
U-238DA	1.09E+00	1.68E-01	2.24E-01	0.643	RD3234
K-40	1.13E+01	3.23E-01	1.18E+00	N/A	RD3219
CO-60	3.00E-02	1.16E-02	1.20E-02	N/A	RD3219
EU-152	7.09E-02	3.19E-02	3.27E-02	N/A	RD3219
CS-137DA	6.71E+01	2.01E-01	6.71E+00	N/A	RD3219
CS-134	1.17E-03	1.77E-02	1.77E-02	N/A	RD3219
RU-106DA	2.74E-01	1.81E-01	1.83E-01	N/A	RD3219
RA-224DA	4.85E-01	5.61E-02	7.42E-02	N/A	RD3219
NA-22	5.25E-04	8.70E-03	8.70E-03	N/A	RD3219
EU-155	7.21E-03	5.83E-02	5.83E-02	N/A	RD3219
EU-154	1.45E-03	2.40E-02	2.40E-02	N/A	RD3219
RA-226DA	4.43E-01	6.21E-02	7.63E-02	N/A	RD3219
TH-234	5.95E+00	4.22E+00	4.26E+00	N/A	RD3219
U-238DA	4.22E-01	7.06E-02	8.22E-02	N/A	RD3219
AC-228	5.60E-01	5.45E-02	7.81E-02	N/A	RD3219
BI-214	4.43E-01	6.21E-02	7.63E-02	N/A	RD3219
PB-212	4.66E-01	5.39E-02	7.12E-02	N/A	RD3219
PB-214	4.22E-01	7.06E-02	8.22E-02	N/A	RD3219
TH-232DA	5.60E-01	5.45E-02	7.81E-02	N/A	RD3219
RA-228DA	5.68E-01	5.52E-02	7.92E-02	N/A	RD3219
I-129LP	-2.66E+00	1.25E+00	1.28E+00	N/A	RD3219
ALPHA	3.08E+01	7.72E+00	8.41E+00	1	RD3222
BETA	1.47E+02	7.99E+00	1.26E+01	1	RD3222
TOTAL-SR	8.78E-01	1.03E-01	2.37E-01	0.811	RD3204
SE-79	-3.85E-01	6.64E-01	1.77E+00	0.661	RD3253
TC-99	8.01E-01	3.36E-01	1.56E+00	0.689	ITAS-IT-RS-0001
URANIUM	1.09E+01	N/A	1.63E+00	0.919	RD4200

682A-6-93

9613474.0517

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INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94-_____ page 1 of 2

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): Roxie Ross 15-19-94

PARAMETER(S): Am/Cm

SAMPLE NUMBER(S) AFFECTED: WO# 404017 & 404066 WC013

MATRIX: soil

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3. ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☒ spike recoveries ☒ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis; no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☐ Other (specify):
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date):_____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Sanji Dainas 5/26/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

9613474.0518

IT CORPORATION

LOG #: RD-94-_____ page 2 of 2

CORRECTIVE ACTION

☒ ROOT CAUSE: INITIALS/DATE (R) 5/19/94

Low level Am-241 contamination causing low levels (below CL) to be found in the blank and all samples except 4040602 which was above CL. The spike recovery was also elevated by the apparent contamination level.

☒ CORRECTIVE ACTION: INITIALS/DATE (R) 5/19/94

The one sample showing a result above CL is being reanalyzed with a blank & spike. The source of the low level contamination is being investigated so it can be eliminated. Rerun confirmed and reported. 5/26/ nm

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE

FIRST LEVEL SUPERVISOR: M Kellogg DATE: 5-19-94

RESPONSIBLE MANAGER: W MacKellar DATE: 5/19/94

QC REVIEW

☐ NONCONFORMANCE ☐ DEFICIENCY ☒ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: [signature] DATE: 5/26/94

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: [signature] DATE: 5/26/94

0052

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

9613474.0519

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INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94-_____ page 1 of 2

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): MMM 5-26-94

PARAMETER(S): Am

SAMPLE NUMBER(S) AFFECTED: L0406625 W0013

MATRIX: Soil

AREA: ☐ SHIP/REC ☐ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3. ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis: no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☐ Other (specify): spike radiochemical yield not acceptable
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Sherry Davies 5/26/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

9613474.0520

IT CORPORATION

LOG #: RD-94-_____ page 2 of 2

CORRECTIVE ACTION

☐ ROOT CAUSE: INITIALS/DATE MMM 5-26-94

radiochemical yield out of limits but the tracer yield is at 107 %

☐ CORRECTIVE ACTION: INITIALS/DATE MMM 5-26-94

The tracer yield is at 100% the sample + blank are acceptable. The sample result is within 3σ of the original result.

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE

FIRST LEVEL SUPERVISOR: M Kellogg DATE: 5-26-94

RESPONSIBLE MANAGER: DATE:

QC REVIEW

☐ NONCONFORMANCE ☐ DEFICIENCY ☑ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO.

QC COORDINATOR: DATE: 5/26/94

CORRECTIVE ACTION VERIFICATION

☑ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: DATE: 5/26/94

0054

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☑ PROJECT FILE

9613474.0521

INTERNATIONAL TECHNOLOGY CORPORATION

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ITAS-Richland

LABORATORY NONCONFORMANCE MEMO (NCM)

0338

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): Roxie Ross / 5-18-94

PARAMETER(S): Am/Cm

SAMPLE NUMBER(S) AFFECTED: (R) ~~to~~ 403490 & 403631 W0013

MATRIX: 5/18/94 Soil

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3 ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☒ spike recoveries ☒ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis: no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☐ Other (specify):
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Suzy Davies 5/20/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

0055

9613474.0522

IT CORPORATION

LOG #: RD-94-_____ page 2 of 2

CORRECTIVE ACTION

☒ ROOT CAUSE: INITIALS/DATE (R) 5/18/94

Low level contamination of Am-241 causing low levels to be found in blank and samples and elevating the spike recovery. All samples and blank levels below CL but above RL.

☒ CORRECTIVE ACTION: INITIALS/DATE (R) 5/18/94

The source of low level Am-241 contamination is being sought so it can be corrected. All cleaning procedures for laboratory equipment is being examined.

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE _____

FIRST LEVEL SUPERVISOR: Rosie R. Rosa DATE: 5/19/94

RESPONSIBLE MANAGER: W MacKellar DATE: 5/23/94

QC REVIEW

☐ NONCONFORMANCE ☒ DEFICIENCY ☐ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO

QC COORDINATOR: DATE: 5/24/94

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: DATE: 5/24/94

0056

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

9613474.0523

0307

INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94-_____ page 1 of 2

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): MMK 5-10-94

PARAMETER(S): Pu

SAMPLE NUMBER(S) AFFECTED: 40406602 W0013

MATRIX: soil

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1. ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2. ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3. ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis; no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☐ Other (specify): sample has Pu 238 at same level as Pu 239
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til _____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Suzy Davies 5/17/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

9613474.0624

IT CORPORATION LOG #: RD-94-_____ page 2 of 2

CORRECTIVE ACTION

☐ **ROOT CAUSE:** INITIALS/DATE MUK 5-10-94

40 406602 3-10-94 has almost equal amounts of Pu 238 and Pu 239. There is no Th 230 + Th 232 in the spectrum so it is unlikely there is Th 228 which would inflate the Pu 238 result.

☐ **CORRECTIVE ACTION:** INITIALS/DATE MMM 5-10-94

Report as is.

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ **ACTIONS TO PREVENT RECURRENCE:** INITIALS/DATE _____

FIRST LEVEL SUPERVISOR: M H Ellery DATE: 5-10-94

RESPONSIBLE MANAGER: W MacKelle DATE: 5/9/94

QC REVIEW

☐ NONCONFORMANCE ☒ DEFICIENCY ☐ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: Jodie Corr DATE: 5/20/94

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: Jodie Corr DATE: 5/20/94

0058

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

9613474.0525

0140

INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94-_____ page 1 of 2

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): mmk 5-17-94

PARAMETER(S): Uran

SAMPLE NUMBER(S) AFFECTED: L0401715 W0013

MATRIX: Soil

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3 ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis; no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☐ Other (specify): spike > ± 25% recovery
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Suzy Davies 5/23/94

FURTHER ACTION REQUIRED. SEE PAGE 2 OF 2

IT CORPORATION

LOG #: RD-94-_____ page 2 of 2

CORRECTIVE ACTION

☐ ROOT CAUSE: INITIALS/DATE MMA 5/17/94

Sink recovery > ± 25%

☐ CORRECTIVE ACTION: INITIALS/DATE MMA 5/17/94

Act 1000 - second accepted.

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE _____

FIRST LEVEL SUPERVISOR: M Kelly DATE: 5-17-94

RESPONSIBLE MANAGER: W MacKillop DATE: 5/24/94

QC REVIEW

☐ NONCONFORMANCE ☐ DEFICIENCY ☑ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO

QC COORDINATOR: DATE: 5/24/94

CORRECTIVE ACTION VERIFICATION

☑ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: DATE: 5/24/94

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☑ PROJECT FILE

9613474.0527

0138

INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94-_____ page 1 of 2

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): mmk 5-17-94

PARAMETER(S): Lis.

SAMPLE NUMBER(S) AFFECTED: 40401707, 406601, 02 W003

MATRIX: soil

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3 ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ *QA/QC:*
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ *CONFIRMATION:*
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ *DILUTION:*
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ *OTHER: (see #10)*
3. ☐ Sample lost during extraction/analysis; no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☐ Other (specify): tr y d < 30%
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Susi James 5/23/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

9613474.0528

IT CORPORATION

LOG #: RD-94-_____ page 2 of 2

CORRECTIVE ACTION

☐ ROOT CAUSE: INITIALS/DATE [illegible] 5-17-94

tryd < 325

☐ CORRECTIVE ACTION: INITIALS/DATE [illegible] 5-17-94

Rerun

Rerun weight lb 5-17-94 [illegible]

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE_____

FIRST LEVEL SUPERVISOR: [illegible] DATE: 5-17-94

RESPONSIBLE MANAGER: [illegible] DATE: 5/24/94

QC REVIEW

☐ NONCONFORMANCE ☐ DEFICIENCY ☒ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: [illegible] DATE: 5/24/94

CORRECTIVE ACTION VERIFICATION

☐ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: [illegible] DATE: 5/24/94

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

9613474.0529

INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94-_____ page 1 of 2

0331

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): Roxie Rood / 5/19/94

PARAMETER(S): U Iso

SAMPLE NUMBER(S) AFFECTED: 40349001, 04, 05 40363101 W0013

MATRIX: soil

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3 ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☒ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis: no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☐ Other (specify): tracer on recount spike <30% but >25% and U-235 spike recovery on reanalysis just outside 3 sigma limit (3.27σ)
10. ☐ Comments/Explanation: Spike values for U-234 & U-238 are within limits & blank is within limit so sample data is not materially affected.

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Gary Davies 5/20/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

IT CORPORATION

LOG #: RD-84-_____ page 2 of 2

CORRECTIVE ACTION

☐ ROOT CAUSE: INITIALS/DATE_____

☐ CORRECTIVE ACTION: INITIALS/DATE_____

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE_____

FIRST LEVEL SUPERVISOR: RB DATE: 5-19-94

RESPONSIBLE MANAGER: William Mackell DATE: 5/19/94

QC REVIEW

☐ NONCONFORMANCE ☒ DEFICIENCY ☐ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: Jodie Cr DATE: 5/24/94

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: Jodie Cr DATE: 5/24/94

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

9613474.0531

0135

INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94-_____ page 1 of 2

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): mmm 5-5-94

PARAMETER(S): U,SO

SAMPLE NUMBER(S) AFFECTED: 40349001 04, 05 40363101 W0013

MATRIX: Soil

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3 ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ *QA/QC:*
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ *CONFIRMATION:*
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3 ☐ *DILUTION:*
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ *OTHER: (see #10)*
3. ☐ Sample lost during extraction/analysis: no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☐ Other (specify): tyd < 30 2
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til _____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Suzy Davies 5/20/94

0065

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

9613474.0532

IT CORPORATION

LOG #: RD-84-_____ page 2 of 2

CORRECTIVE ACTION

☐ ROOT CAUSE: INITIALS/DATE mmm 5-5-94

tr, d < 30%

☐ CORRECTIVE ACTION: INITIALS/DATE mmm 5-5-94

Rerun

Rerun data accepted.

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE

FIRST LEVEL SUPERVISOR: M Kellogg DATE: 5-19-94

RESPONSIBLE MANAGER: D MacKellar DATE: 5/19/94

QC REVIEW

☐ NONCONFORMANCE ☐ DEFICIENCY ☒ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: Jodie Carr DATE: 5/24/94

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: Jodie Carr DATE: 5/24/94

0066

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

9613474.0533

0143

INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94-_____ page 1 of 2

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): Joel T Kenyon 5-17-94

PARAMETER(S): Gamma

SAMPLE NUMBER(S) AFFECTED: 40349005, 40363104 W0013

MATRIX: Soil

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3 ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☒ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis; no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☒ Other (specify): MDA not met for 1 or more Isotopes
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til _____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Suzy Davies 5/23/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

IT CORPORATION

LOG #: RD-94-_____ page 2 of 2

CORRECTIVE ACTION

☒ ROOT CAUSE: INITIALS/DATE JK 5-17-99

40349005 - lower sample density
40363104 - high Cs137 activity

☒ CORRECTIVE ACTION: INITIALS/DATE JK 5-17-99

Repackage sample in MA (450ml marinelli geometry) & submit with QC for 2nd 200 min count.
40349005 - all MDAs met - data accepted
40363104 - Eu 155 in DA not met - ottawa sand blank meets MDA - Matrix effect

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☒ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE JK 5-19-99

using larger sample volume for samples
using Ottawa sand for blank matrix material

FIRST LEVEL SUPERVISOR: Joel Kempson DATE: 5-17-99

RESPONSIBLE MANAGER: T W McKeller DATE: 5/23/99

QC REVIEW

☐ NONCONFORMANCE ☐ DEFICIENCY ☒ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: DATE: 5/24/99

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: DATE: 5/24/99

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

9613474.0535

INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94-_____ page 1 of 2

0313

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): GB 5/13/94

PARAMETER(S): SVOT

SAMPLE NUMBER(S) AFFECTED: F0406602, F0406602.

MATRIX: SOIL W0013

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1. ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2. ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3. ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis; no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☒ Other (specify): Duplicate miss match other Dup OK
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til _____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Steve Davies 5/17/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

9613474.0536

IT CORPORATION

LOG #: RD-94-_____ page 2 of 2

CORRECTIVE ACTION

☒ ROOT CAUSE: INITIALS/DATE SE 5/13/94

soil sample inhomogeneity other
dup in batch of 403490 & F03490

☒ CORRECTIVE ACTION: INITIALS/DATE SE 5/13/94

Report

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE

FIRST LEVEL SUPERVISOR: [signature] DATE: 5/13/94

RESPONSIBLE MANAGER: [signature] DATE: 5/16/94

QC REVIEW

☐ NONCONFORMANCE ☒ DEFICIENCY ☐ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: [signature] DATE: 5/20/94

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

0070

NCM CLOSURE

QC COORDINATOR: [signature] DATE: 5/20/94

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

9613474.0537

INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94- 0143 page 1 of 2

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): SEL 5/13/94

PARAMETER(S): Sr 90

SAMPLE NUMBER(S) AFFECTED: L0406615

MATRIX: Soil W0013

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3 ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis; no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☒ Other (specify): High spike
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process as is ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Suzy Daines 5/17/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

IT CORPORATION

LOG #: RD-94-0143 page 2 of 2

CORRECTIVE ACTION

☒ ROOT CAUSE: INITIALS/DATE SE 5/13/94

SvSS in spike used Give higher counts ~8dpm with EQGI

☒ CORRECTIVE ACTION: INITIALS/DATE SE 5/13/94

Report

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☒ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE SE 5/13/94

problem corrected for future batches

FIRST LEVEL SUPERVISOR: Steve E. Whitland DATE: 5/13/94

RESPONSIBLE MANAGER: W. McKell DATE: 5/16/94

QC REVIEW

☒ NONCONFORMANCE ☐ DEFICIENCY ☐ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: Jodie Cox DATE: 5/20/94

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: Jodie Cox DATE: 5/20/94

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

9613474.0539

INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94- 0141 page 1 of 2

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC
NCM INITIATED BY (Name/Date): Marshall Lane 5/19/94
PARAMETER(S): Se-79
SAMPLE NUMBER(S) AFFECTED: 40349001, W0349001
MATRIX: Soil

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY
☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1. ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2. ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3. ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☒ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis: no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☒ Other (specify): Sample matrix spike and corresponding sample were switched prior to counting
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Suzy Haines 5/19/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

IT CORPORATION

LOG #: RD-94-0141 page 2 of 2

CORRECTIVE ACTION

☒ ROOT CAUSE: INITIALS/DATE nd 5/19/94

Sample labelled "40349001" had Activity which gamma identified as Se-75, sample labelled "W0349001" had No detectable Se-75 Activity.

☒ CORRECTIVE ACTION: INITIALS/DATE nd 5/19/94

Correct paperwork to the sample ID's. Re-count 40349001 for Se-79 and W0349001 for Se-75

☒ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO: nd

☒ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE nd 5/19/94

Asked lab personnel to be more careful with samples / matrix spike samples.

FIRST LEVEL SUPERVISOR: [signature] DATE: 5/19/94

RESPONSIBLE MANAGER: [signature] DATE: 5/19/94

QC REVIEW

☒ NONCONFORMANCE ☐ DEFICIENCY ☐ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: Jodie Carr DATE: 5/19/94

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: Jodie Carr DATE: 5/19/94

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

9613474.0541

Contractor: WESTINGHOUSE HANFORD	OFF-SITE PROPERTY CONTROL	CONTROL NO. (To be obtained from PROPERTY MANAGEMENT) W94-0-0369-48

PART I - TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Processing & Analytical Lab	Analytical Chemistry	Sampling & Mobile Lab

The following items are to be shipped from: [X] Contractor [ ] Vendor

Routing: GOVERNMENT VEHICLE [ ] Prepaid [ ] Collect

Shipped to
Company: IT ANALYTICAL
Address: 2800 George Washington Way
City: Richland State: WA Zip Code: 99352
Country:

Off-site Custodian: Tami Heidelberg
On-site Custodian:
Payroll No.:

Qty.	Property No.	Description (include Manufacture Name, Model, Serial No.)	Acquisition Cost
3		POLYCOOLER. SAMPLES PACKED IN PLASTIC BAGS AND STORED ON WET ICE	
		WEIGHT 59 lbs COOLER # GW5009 ← BOBNA7, BOBNA2, BOBNA3	
		WEIGHT 55 lbs COOLER # GW5026 BOBKM8, BOBNA8, BOBKP6	
		WEIGHT 50 lbs COOLER # GW5120 ← BOBNA0, BOBNA6, BOBNA1	

[ ] Classified [X] Unclassified [ ] Shipped Under DOE Contract [ ] Shipped Under Contractor's Use Permit Contract

(Necessary for the off-site use of this property)
[X] Required for Project Work - List Project No.: SAF #94-065 COC #006265 SAMPLE # BOBNQ7 ✓
[ ] Business Trip
[ ] Off-site Assignment
[ ] Shipment to Subcontractor - List Subcontract No.:
[ ] Other (Please specify)

006267	BOBNQ8
006264	BOBNQ6 ✓
006261	BOBNQ3 ✓
006260	BOBNQ2 ✓
006259	BOBNQ1 ✓
006258	BOBNQ0 ✓
006266	BOBKP6
006455	BOBKM8 ✓

Samples require analysis that are not presently available at this site.

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]	SC-167659	4/25/94

Location of and Contact for Property (Name/Phone No./Bldg./Area)
200 WEST/202-S C. D. Hayes / 373-7074 / 6269 / 600

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
04/05/94	PT2WA/Org Code: 12910	N/A

Officer(s) Relinquished by:	Date & time	Authorized By	Date
D. L. Edwards		Jeannette E. Hyatt	4 Apr 94

Property Management Approval: [signature] Date: 4/5/94

PART II - TO BE COMPLETED BY SHIPPING

Authorized Shipping Signature: Date:

0134

DISTRIBUTION (AFTER FINAL SIGNATURES)

White - Property Management; Yellow - Shipping; Green - Accounts Payable; Pink - Originator; Goldenrod - Property Management

[illegible] TAS 4-5-94

9400000479 (06/93)

9613474.0542

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-5-94 10:30 Client Name WHC

Project/Client # 94-065 Batch or Case # na

Cooler ID (if noted on the outside of cooler) ~~SGWS 120~~ 4/5/94 GWS 120

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: ____ 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 6°

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) 6259, 6264, 6258
    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 Heidelberg Date/Time 4/5/1030

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

9613474.0543

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4/5 1030 Client Name WHC

Project/Client # 94-065 Batch or Case # na

Cooler ID (if noted on the outside of cooler) GWS020

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: ____ 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 6°

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) 6455, 6267, 6266
    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 JHindeberg Date/Time 4/5/1030

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

9613474.0544

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4/5 1030 Client Name WHC

Project/Client # 94-065 Batch or Case # na

Cooler ID (if noted on the outside of cooler) GWS 009

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 ☒ HH 4/5/94 No ☐
7. Number of sample containers in cooler: ~~21~~ 22
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) 6261, 6260, 6265
    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 Hiedelberg Date/Time 4/5 1030

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

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

B0BNQ3 is Category I.
All others are Category II.
JKM 5 Apr 94

Customer Code	Recieved Date	Time	Screening Prep Date	Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	Beta	Mnts
WHC	40594		40594		405	10	20	213	240

Customer ID WHC/SOIL	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
✓ B0BNQ8		96.1	96	1200.0	35	4	65	0.32	5.61	3.0E+00	1.4E+01	1.7E-02	7.8E-02	2.3E-05	2.3E-05	1.4E+01	6.5E+01	No	7.1E+02	1.5E+03
✓ B0BNQ3		94.2	94	1500.0	36	2	63	0.12	5.41	9.0E-01	1.3E+01	6.5E-03	9.7E-02	1.7E-05	2.9E-05	4.3E+00	6.5E+01	Yes	2.3E+03	1.5E+03
B0BKM8		79.8	80	1350.0	37	3	76	0.22	6.71	1.7E+00	1.6E+01	1.3E-02	1.2E-01	2.2E-05	3.0E-04	9.4E+00	9.2E+01	No	1.1E+03	1.1E+03
B0BNQ6		90.9	91	1150.0	38	3	70	0.22	6.11	1.9E+00	1.5E+01	1.1E-02	8.6E-02	1.8E-05	1.8E-04	9.2E+00	7.5E+01	No	1.1E+03	1.3E+03
B0BNQ0		77.8	78	1250.0	39	2	74	0.12	6.51	7.3E-01	1.6E+01	5.3E-03	1.1E-01	1.5E-05	6.2E-04	4.2E+00	9.1E+01	No	2.4E+03	1.1E+03
B0BNQ7		85.3	85	1400.0	40	6	199	0.52	19.01	4.0E+00	4.7E+01	3.0E-02	3.5E-01	3.6E-05	6.0E-04	2.1E+01	2.5E+02	No	4.7E+02	4.0E+02
B0BNQ1		84.8	85	1350.0	41	3	27	0.22	1.81	2.0E+00	4.3E+00	1.4E-02	3.1E-02	2.2E-05	3.3E-05	1.1E+01	2.3E+01	No	9.4E+02	4.4E+03
B0BKP6		82.6	83	1200.0	42	3	33	0.22	2.41	1.9E+00	5.7E+00	1.3E-02	3.7E-02	1.9E-05	4.8E-05	1.1E+01	3.1E+01	No	9.5E+02	3.2E+03
B0BNQ2		76.3	76	1350.0	43	5	185	0.42	17.61	2.9E+00	4.3E+01	2.3E-02	3.4E-01	3.2E-05	7.8E-04	1.7E+01	2.5E+02	No	5.9E+02	4.0E+02
TOTAL	uCi							-0.08	-0.89	-3E-01	-2E+00	1.3E-01	1.3E+00	ERR	ERR	ERR	ERR	No	ERR	ERR

9413744.0515

0138

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006449

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No.
Bill of Lading/Airbill No. N/A
Offsite Property No.
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS

0139

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
01A	BOBKM2	S	3-29-94	0900	(1) 250ml aG	Semi-VOA CLP	
B	BOBKM2	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKM2	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKM2	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKM2	S			(1) 125ml G	Cyanide CPL	
F	BOBKM2	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKM2	S			(1) 125ml aGs	TOC 9060	
404184 01	BOBKM2	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

404183

9150.14.3196

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. SICKLE	4/11/94	0800	D.L. Edwards
D.L. Edwards	4/11/94	1140	J.G. Hogan JG HOGAN
J.G. Hogan JG HOGAN	4/11/94	1418	ITAS Tom Gilmore

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

SAMPLE STATUS REPORT FOR E 5869. E-BLANK BOBKM2 TIME: 4/ 5/94 10:24
DISPATCHED: 3/28/94 14:21 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/30/94 8: 2

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
1210	TB MISC	5.16000E 02 pCi/G		N	Y	VOGEL
1211	AT MISC	4.94000E 00 pCi/G		N	Y	VOGEL
2183	GEA-MISC	6.22000E 04 pCi/G	Cs-137	N	Y	VOGEL
4271	TOT-ACT	1.19000E 02 pCi/G		N	Y	VOGEL

END OF REPORT

2125 ml x 1.6 = 3400 Grams total

Sr-90

516 pCi/g x 3400g = 1754400 pCi

$A_2 = .4$ $A_2/1000 = .0004$ Ci = 400000000 pCi

$\frac{1754400}{400000000} = .0044$

Alpha

4.94 pCi/g x 3400g = 16796 pCi

$A_2 = .002$ Ci Ltd. Qty = $A_2/1000 = .00002$ Ci = 2000000 pCi

$\frac{16796}{2000000} = .0084$

Cs-137

62200 pCi/g x 3400g = 211480000 pCi

$A_2 = 10$ $A_2/1000 = .01$ Ci = 10000000000 pCi

$\frac{211480000}{10000000000} = .0211$

Unity = .0044 + .0084 + .0211 = .0339 Meets Ltd. Qty. !

EMERGENCY CONTACT (509) 373-[illegible] ERG #61 Attached

OFFSITE RADIOACTIVE SHIPMENT RECORD

– EXTERIOR INSPECTION PERMITTED –

19742

SHIPPING INST.

SHIP TO:
Company: ET Analytical
Address: [illegible]
City, State, Zip: [illegible] 99352
Attention: [illegible]

Contractor: ☐ PNL ☐ KEH ☒ WHC

Site Carrier: Sly Hogan

PR No. 577483 Veh. No. 592430

Ship: ☐ Prepaid ☐ Collect Via: ☐ Motor-Rail ☐ Excl. Use ☐ DOE Veh. ☐ UPS Sur. ☐ Air Psgr. ☐ Air Cargo ☐ Mail ☒ Government Vehicle

SHIPMENT DESCRIPTION AND CERTIFICATION

Proper Shipping Name — UN Number

Radioactive Material, [illegible]

1. Empty Packages ☐ UN 2908
2. Low Specific Activity, n.o.s ☐ UN 2912
3. Limited quantity, n.o.s. ☐ UN 2910
4. N.O.S. ☐ UN 2982
5. Fissile n.o.s. ☐ UN 2918
6. Special Form, n.o.s. ☐ UN 2974
7. Instruments & Articles ☐ UN 2911
8. [illegible] ☒ UN [illegible]

Material Form: ☐ Special (A1) ☒ Normal (A2)

Labels Applied: ☐ Empty ☐ Radioactive LSA ☐ White I ☐ Yellow II ☐ Yellow III ☒ None ☐ Danger (Air Cargo) ☐ Secondary ____

Material Category: ☐ Empty ☐ Low Specific Act. (LSA) ☒ Limited Quantity ☐ Type A Quantity ☐ Type B Quantity ☐ Highway Route Controlled Quantity

For Normal Form Identify:
Physical Form: ☒ Solid ☐ Liquid ☐ Gas
Chemical Form: ☐ Metal ☐ Oxide ☒ Elemental ☐ Nitrate
Other ____

TYPE PACKAGE: ☐ Strong Tight ☐ Type A ☐ Type B ☐ Type B (U) ☐ Type B (M)

CONSTRUCTION: ☐ Box, FB ☐ Wood ☐ Steel ☐ Drum ☐ Cask ☒ Other [illegible]

FISSILE CLASS: ☒ Non Fissile ☐ Fissile Exempt ☐ Fissile I ☐ Fissile II ☐ Fissile III
Grams Fissile ____

SNM: ☒ No ☐ Yes ☐ <1 gr ☐ Category I ☐ Category II ☐ Category III

ACCOUNTABILITY/SECURITY CONTROL: ☐ Classified ☒ Unclassified
Consignee authorized to receive this qty ☒
Sig. Security Svc. Req. ☐ NA ☒
Pu, EU > 1 g ☐ N/A NU, DU > 1 Kg ☐ N/A
Security Escorts Req. ☐ Not. Req. ☒
External Cask Temperature (Max. 122°F LTL, 180°F Ex. Use) N/A ☒ °F

Packaging conforms to appropriate packaging procedure ☐ N/A ☒ Yes
Complies with D. O. T packaging marking and labeling requirements ☐ N/A ☒ Yes
Container acceptability documented (incl. 7A cert.) ☒ N/A ☐ Yes

Container examined: No evidence of deterioration or damage ☒ Yes
QA Inspection Current ☐ Yes ☒ N/A Seals required ☒ No ☐ Yes
Shipping Doc. 90C275401 Authorization No. N/A

No. Pkgs.	Model Package	COC/Spec. No.	Serial No.	Seal No.	Isotopes	Curies/Pkg	T. I.	Gr. Wt.
1	[illegible] (Strong Tight)	N/A	31-100	[illegible]	[illegible]	2779 mci	N/A	50 LBS
						/	/	/
	[illegible]	[illegible]	[illegible]			/	/	/
	[illegible]	[illegible]	16447	16257	Sealer container	/	/	/
	(2) [illegible]	(2) [illegible]	[illegible]	(2) 100 CM	Only			
(Shipper may describe package in detail on one of unused lines above)					TOTAL	2779 mci	N/A	50 LBS

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable federal, state, local and international regulations for the transportation of hazardous materials.

Certifier's Signature: [signature] Date: 4-11-94 Organization: ET ANALYTICAL SERVICES Complete Cost Code (inc. end function): 129011

AREA MONITOR

Surface Dose Rate of Package: ☒ ≤0.5 or ____ mrem/hr (N + βγ)
Dose Rate at 1 Meter from Surface of Package: ☒ ≤0.5 or ____ mrem/hr (N + βγ)
Smears of Outer Container: ☒ ≤22 dpm βγ/cm² ☒ ≤2.2 dpm α/cm²

TRUCK LOAD OR EXCLUSIVE USE
Surface: ☒ ≤ 200 mrem/hr (N + βγ)
@6 feet: ☒ ≤10 mrem/hr (N + βγ)
@Cab or Sleeper: ☒ ≤2.0 mrem/hr (N + βγ)

Additional Data and Instructions (inc. Readings on Internal Packaging)

Signature - Radiation Monitoring: [signature] Bldg. 202 S Survey No. 16716-9 Date 4/11/94

AUTHORIZATION FOR SHIPMENT

APPROVAL

AIR TRANSPORT CERTIFICATION ▶ Cargo Only: ☐ Danger Labels Applied
Passenger: ☐ 1 Ltd. Qty. ☐ 2. ≤3 T.I ☐ 3. Research or Medical Diagnosis ☐ 4. Human Medical Research
Pkg. Dimensions: N/A

Traffic has inspected and verified preshipment compliance to DOT regulations.

Authorized Signature ▶ [signature] Printed Name ▶ M. A. SAMS Date ▶ 4-11-94

APPROVED FOR OFFSITE SHIPMENT

TRAFFIC

B. L. No. [illegible] 2581 Date Shipped 4-11-94 E. T. A. 4-11-94 Routing WHC VEHICLE ☐ N/A
Placards ☐ Yes ☒ No
Surveyed By ____ Date ____ Approved for Shipment Westinghouse Hanford Company [signature] Date 4-11-94
Route Plan ☐ Yes ☒ No

*U.S. GPO: 1992-791-064/80001 54-6000-088 (10/88)

Received [signature] ITAS 4/11/94 1418

0141

9613474.0549

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1330 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(Per Shipping Container)

Date/Time Received 4/11/94 1415 Client Name WHC

Project/Client # 94-005 Batch or Case # N/A

Cooler ID (if noted on the outside of cooler) BT-1100

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: 16
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 6°C

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

Chain of Custody #(s) 006257, 006449

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 Tom Gilmore [signature] Date/Time 4/11/94 1418

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

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

B0BKM2 is Category III.
B0BNP9 is Cat. II.
JRN 11 April 1994

Customer Code	Recieved Date	Time	Screening Prep Date	Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	Beta	Mnts
WHC			41194		411	10	23	236	240

Customer ID WHC/SOIL	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
B0BKM2		84.6	85		1250.0		49	23	612	2.20	60.22	1.8E+01	1.5E+02	1.2E-01	9.8E-01	7.2E-05	1.1E-04	9.6E+01	7.8E+02	No	1.0E+02	1.3E+02
B0BNP9		81.1	81		1350.0		50	3	109	0.20	9.92	1.4E+00	2.4E+01	1.0E-02	1.8E-01	2.1E-05	4.2E-05	7.8E+00	1.3E+02	No	1.3E+03	7.4E+02
TOTAL	uCi									-0.10	-0.98	-3E-01	-2E+00	1.3E-01	1.2E+00	ERR	ERR	ERR	ERR	No	ERR	ERR

9613974.0530

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of ~~12~~ 1 RAA 006439

0144

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. ~~93-263~~ (Veg) 94-065 DRE 3/22/94
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No.
Bill of Lading/Airbill No. NA
Offsite Property No. NA
Method of Shipment
Field Logbook No.
Shipped to ~~TMA~~ IT DRE 3/22/94
Possible Sample Hazards/Remarks Unknown
Special Handling and/or Storage Keep Cool
SPECIAL INSTRUCTIONS

3/29/94

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
4035 4101 BOBFMO	Veg.	03-07-94	1015	500ml Poly	Metals -CLP TAL Titanium Mercury CPL	
4035 4201 BOBFMO	Veg.	03-07-94	1015	Plastic bags	Gross Alpha/Beta EP-10; Gamma Spec. Cs-134/137, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 RC-30; Total Uranium EA-01C; U-235/234/238 EP-70, 71, 5; Np-237 RC-101A, 622, EP-5; Pu-238/239/240 EP-80, 81, 5; I-129 RC-25, 603; Sr-90 RC-306, 303, 309, 304; Tc-99 RC-24, 604; Am-241, Cm-244 EP-80, 91, 92, 93, 5; Se-79 Lab Specific	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	3-15-94	1000	D.L. Edwards
D.L. Edwards	3-24-94	0900	Karen Hollenbeck TMA 3-24-94 11:00

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

800 CPM
RAA
3-24-94

1990 WAS 96

9613474.0552

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3-24-94 11:00 Client Name WHC

Project/Client # SAF - 94-065 Batch or Case #

Cooler ID (if noted on the outside of cooler) SMC 572

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 N/A Wet ☐ Dry ☐
6. Each sample is in a plastic bag? Yes ☑ No ☐
7. Number of sample containers in cooler: 2
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 9°C

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

Chain of Custody #'(s)

Request for analysis #(s)

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 Karen Fahrenburg Date/Time 3-24-94 11:00

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

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006440

0146

Collector R.T. Sickle
SAF No. ~~93-263~~ (Veg) 94-065
Ice Chest No. 125
Method of Shipment EMERY
Shipped to ~~NTMA~~ IT
Possible Sample Hazards/Remarks Unknown
Special Handling and/or Storage Keep Cool

Company Contact C.A. Rowley
Project Designation 216-U-8 Vitrified Clay Pipeline
Bill of Lading/Airbill No. NA

Telephone 372-3293
Sampling Locations 216-U-8 Crib
Offsite Property No. NA
Field Logbook No.

SPECIAL INSTRUCTIONS

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
4035 4102 BOBFM1	Veg.	03-07-94	1015	500ml Poly	Metals -CLP TAL Titanium Mercury CPL	
4035 4202 BOBFM1	Veg.	03-07-94	1015	Plastic bags	Gross Alpha/Beta EP-10; Gamma Spec. Cs-134/137, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 RC-30; Total Uranium EA-01C; U-235/234/238 EP-70, 71, 5; Np-237 RC-101A, 622, EP-5; Pu-238/239/240 EP-80, 81, 5; I-129 RC-25, 603; Sr-90 RC-306, 303, 309, 304; Tc-99 RC-24, 604; Am-241, Cm-244 EP-80, 91, 92, 93, 5; Se-79 Lab Specific	

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
Ray T Sickle	3-15-94	1000	D L Edwards
D L Edwards	3-24-94	0900	Karen Hatherington IT 3-24-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

450 count CPM
KA
3-24-94

9513.14.1196

9613474.0554

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3-24-94 11:00 Client Name WHC

Project/Client # SAF 94-065 Batch or Case #

Cooler ID (if noted on the outside of cooler) SML-213

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: N/A Wet ☐ Dry ☐
6. Each sample is in a plastic bag? Yes ☑ No ☐
7. Number of sample containers in cooler: 2
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 8°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) ___
    Request for analysis #(s) ___
    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 Karen Gottenberg Date/Time 3-24-94 11:00

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

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006441

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. ~~93-263~~ (Veg) DRE 3/22/94 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. 80 JEM
Bill of Lading/Airbill No. NA
Offsite Property No. NA
Method of Shipment EMERY
Field Logbook No.
Shipped to ~~TMA~~ IT PJE 3/22/94
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks Unknown
Special Handling and/or Storage Keep Cool

0148

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
4035 4103	BOBFM2	Veg.	03-07-94	1030	500ml Poly	Metals -CLP TAL Titanium Mercury CPL	
4035 4203	BOBFM2	Veg.	03-07-94	1030	Plastic bags	Gross Alpha/Beta EP-10; Gamma Spec. Cs-134/137, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 RC-30; Total Uranium EA-01C; U-235/234/238 EP-70, 71, 5; Np-237 RC-101A, 622, EP-5; Pu-238/239/240 EP-80, 81, 5; I-129 RC-25, 603; Sr-90 RC-306, 303, 309, 304; Tc-99 RC-24, 604; Am-241, Cm-244 EP-80, 91, 92, 93, 5; Se-79 Lab Specific	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	3-15-94	1000	N.L. Edwards
N.L. Edwards	3-24-94	0900	Karen Hettinley FTAS 3-24-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

KRH 3-24-94 <100 cpm
RKH 3-24-94

9413196.0656

9613474.0556

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
1300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3-24-94 11:00 Client Name WHC

Project/Client # SAF-94-065 Batch or Case # 006441

Cooler ID (if noted on the outside of cooler) SML-556

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: N/A Wet ☐ Dry ☐
6. Each sample is in a plastic bag? Yes ☑ No ☐ ~~KKA~~ 3-24-94
7. Number of sample containers in cooler: ~~SML-556 3~~ 2
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 13 °C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) 006441
    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 Kettenburg Date/Time 3-24-94 11:00

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

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

006442

0150

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293

SAF No. ~~93-263~~ (Veg) DLC 3/22/94 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib

Ice Chest No. GWS 009
Bill of Lading/Airbill No. NA
Offsite Property No. NA

Method of Shipment Emery
Field Logbook No.

Shipped to ~~Weston~~ IT DLC 3/22/94
SPECIAL INSTRUCTIONS

Possible Sample Hazards/Remarks Unknown
Special Handling and/or Storage Keep Cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
4035 4104 BOBFM3	Veg.	03-07-94	1030	500ml Poly	Metals -CLP TAL Titanium Mercury CPL	
4035 4204 BOBFM3	Veg.	03-07-94	1030	Plastic bags	Gross Alpha/Beta EP-10; Gamma Spec. Cs-134/137, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 RC-30; Total Uranium EA-01C; U-235/234/238 EP-70, 71, 5; Np-237 RC-101A, 622, EP-5; Pu-238/239/240 EP-80, 81, 5; I-129 RC-25, 603; Sr-90 RC-306, 303, 309, 304; Tc-99 RC-24, 604; Am-241, Cm-244 EP-80, 91, 92, 93, 5; Se-79 Lab Specific	

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By
R.T. Sickle R.T. Sickle	3-15-94	1000	D.L. Edwards
D.L. Edwards	3-24-94	0900	Karen Stattenburg KAS 3-24-94 11:00

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

Less than 100 cpm
KAS
3-24-94

9413974.0150

9613474.0558

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2380 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3-24-94 11:00 Client Name WHC

Project/Client # SAF-94-065 Batch or Case # 006442

Cooler ID (if noted on the outside of cooler) SML 575

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: N/A Wet ☐ Dry ☐
6. Each sample is in a plastic bag? Yes ☑ No ☐
7. Number of sample containers in cooler: 2
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) ____
    Request for analysis #(s) ____
    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 Karen Ashbaugh Date/Time 3/24/94 11:00

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

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006492

Collector R.T. Sickle
SAF No. ~~93-263~~ (Veg) 94-065
Ice Chest No.
Method of Shipment
Shipped to ~~IMA~~ IT
Possible Sample Hazards/Remarks Unknown
Special Handling and/or Storage Keep Cool

Company Contact C.A. Rowley
Project Designation 216-U-8 Vitrified Clay Pipeline
Bill of Lading/Airbill No. NA

Telephone 372-3293
Sampling Locations 216-U-8 Crib
Offsite Property No. NA
Field Logbook No.

SPECIAL INSTRUCTIONS

0152

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
4035 4105	BOBFL8	Veg.	03-07-94	0945	500ml Poly	Metals -CLP TAL Titanium Mercury CPL	
4035 4205	BOBFL8	Veg.	03-07-94	0945	Plastic bags	Gross Alpha/Beta EP-10; Gamma Spec. Cs-134/137, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 RC-30; Total Uranium EA-01C; U-235/234/238 EP-70, 71, 5; Np-237 RC-101A, 622, EP-5; Pu-238/239/240 EP-80, 81, 5; I-129 RC-25, 603; Sr-90 RC-306, 303, 309, 304; Tc-99 RC-24, 604; Am-241, Cm-244 EP-80, 91, 92, 93, 5; Se-79 Lab Specific	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	3-15-94	1000	D L Edwards
D L Edwards	3-24-94	0900	Karen Ashtenling IMS 3-24-94 11:00

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

3-24-94 100 CPM 3-24-94

9413974.1659

9613474.0560

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
3300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3-24-94 11:00 Client Name WHC

Project/Client # SAF-94-065 Batch or Case # 006492

Cooler ID (if noted on the outside of cooler) SML-555

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: N/A Wet ☐ Dry ☐
6. Each sample is in a plastic bag? Yes ☑ No ☐
7. Number of sample containers in cooler: 2
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 12°C

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) 006492
    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 Kohtenberg Date/Time 3-24-94 11:00

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

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006495

0154

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293

SAF No. ~~93-263~~ (Veg) DLE 3/22/94 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib

Ice Chest No.
Bill of Lading/Airbill No. NA
Offsite Property No. NA

Method of Shipment
Field Logbook No.

Shipped to ~~NETMA~~ IT DLE 3/22/94
Possible Sample Hazards/Remarks Unknown
Special Handling and/or Storage Keep Cool

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
4035 4106	BOBFL9	Veg.	03-07-94	1000	500ml Poly	Metals -CLP TAL Titanium Mercury CPL	
4635 4206	BOBFL9	Veg.	03-07-94	1000	Plastic bags	Gross Alpha/Beta EP-10; Gamma Spec. Cs-134/137, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 RC-30; Total Uranium EA-01C; U-235/234/238 EP-70, 71, 5; Np-237 RC-101A, 622, EP-5; Pu-238/239/240 EP-80, 81, 5; I-129 RC-25, 603; Sr-90 RC-306, 303, 309, 304; Tc-99 RC-24, 604; Am-241, Cm-244 EP-80, 91, 92, 93, 5; Se-79 Lab Specific	

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By
R.T. Sickle	3-15-94	1000	DL Edwards
DL Edwards	3-24-94	0900	Karen Lokstanberg IT DLE 3-24-94 11:00

*Matrix

A = Air
DL = Drum Liquids
DS = Drum Solids
L = Liquid
O = Oil
S = Soil
SE = Sediment
SL = Sludge
SO = Solid
T = Tissue
W = Water
WI = Wipe
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

1300 counts
KLL
3-24-94
11:00

9413196

9613474.0562

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3-24-94 11:00 Client Name WHC

Project/Client # SAF-065 Batch or Case # 006495

Cooler ID (if noted on the outside of cooler) SML-190

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: N/A Wet ☐ Dry ☐
6. Each sample is in a plastic bag? Yes ☑ No ☐ 3-24-94 KAA
7. Number of sample containers in cooler: ~~SML-190 - 3~~ 2
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 12°C

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

Chain of Custody #'(s) N/A

Request for analysis #(s) 006495

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 Aeschlimann Date/Time 3-24-94 11:00

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

SAMPLE STATUS REPORT FOR E 5442. E-BLANK BOBFL9 TIME: 3/ 9/94 14:29
DISPATCHED: 3/ 3/94 14: 4 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/ 8/94 8: 8

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
2172	GEA-SOIL	< 2.71000E 01 pCi/gWETwt Cs-137	N	Y	VOGEL
4271	TOT-ACT	3.73000E 02 pCi/G	N	Y	VOGEL

END OF REPORT

1300 cpm

SAMPLE STATUS REPORT FOR E 5443. E-BLANK BOBFMO TIME: 3/ 9/94 14:29
DISPATCHED: 3/ 3/94 14: 5 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/ 8/94 8: 8

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
2172	GEA-SOIL	< 6.41000E 01 pCi/gWETwt Cs-137	N	Y	VOGEL
4271	TOT-ACT	4.57000E 02 pCi/G	N	Y	VOGEL

END OF REPORT

800cpm

SAMPLE STATUS REPORT FOR E 5444. E-BLANK B0BFM1 TIME: 3/18/94 10:57
DISPATCHED: 3/ 3/94 14: 5 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/ 8/94 8: 8

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
2182	GEA-V&A	4.27000E-06 pCi/G	Cs-137	N	Y	VOGEL
4271	TOT-ACT	< 5.00000E 01 pCi/G		N	Y	VOGEL

END OF REPORT

450 cpm

SAMPLE STATUS REPORT FOR E 5446. E-BLANK BOBFM3 TIME: 3/18/94 10:57
DISPATCHED: 3/ 3/94 14: 6 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/ 8/94 8: 9

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
2182	GEA-V&A	< 3.11000E 00 pCi/G	Cs-137	N	Y	VOGEL
4271	TOT-ACT	< 5.00000E 01 pCi/G		N	Y	VOGEL

END OF REPORT

SAMPLE STATUS REPORT FOR E 5441. E-BLANK BOBFL8 TIME: 3/ 9/94 14:29
DISPATCHED: 3/ 3/94 14: 4 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/ 8/94 8: 8

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
2172	GEA-SOIL	< 2.38000E 01 pCi/gWETwt Cs-137	N	Y	VOGEL
4271	TOT-ACT	4.32000E 02 pCi/G	N	Y	VOGEL

END OF REPORT

SAMPLE STATUS REPORT FOR E 5445. E-BLANK BOBFM2 TIME: 3/18/94 10:57
DISPATCHED: 3/ 3/94 14: 5 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/ 8/94 8: 8

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
2182	GEA-V&A	< 4.25000E-06 pCi/G	Cs-137	N	Y	VOGEL
4271	TOT-ACT	< 5.00000E 01 pCi/G		N	Y	VOGEL

END OF REPORT

SCREENING RESULTS for WHC samples.

Sample ID:

BOBFM0, BOBFM1, BOBFM2, BOBFM3, BOBFM8 and BOBFM9.

The results are <0.1 uCi beta and <0.01 uCi alpha. These samples are all Category I.

The screening results are based on Cs-137 and Th-234 (for U-238) using gamma spectrometry. The aliquants of each sample counted were equivalent in size to the quantity shipped.

Matt Lardy

Matt Lardy

March 29, 1994

Received 3/29/94 1235

EEG#61 ATTACHED EMERGO PHONE (509) 373-3800

OFFSITE RADIOACTIVE SHIPMENT RECORD

– EXTERIOR INSPECTION PERMITTED –

19746

SHIPPING INST.

SHIP TO:

Company: IT [illegible]

Address: [illegible]

City, State, Zip: [illegible] 99352

Attention: [illegible]

Contractor: ☐ PNL ☐ KEH ☒ WHC

Site Carrier: DL [illegible]

PR No.: [illegible] Veh. No.: [illegible]

Ship: ☐ Prepaid ☐ Collect Via:

☐ Motor-Rail ☐ Air Psgr.
☐ Excl. Use ☐ Air Cargo
☒ DOE Veh. ☐ Mail
☐ UPS Sur. ☐ _____

SHIPMENT DESCRIPTION AND CERTIFICATION

Proper Shipping Name (Radioactive Material,)	UN Number
1. Empty Packages	☐ UN 2908
2. Low Specific Activity, n.o.s	☐ UN 2912
3. Limited quantity, n.o.s.	☐ UN 2910
4. N.O.S.	☐ UN 2982
5. Fissile n.o.s.	☐ UN 2918
6. Special Form, n.o.s.	☐ UN 2974
7. Instruments & Articles	☐ UN 2911
8. _____	☒ UN [illegible]

Material Form: ☐ Special (A1) ☒ Normal (A2)

Labels Applied: ☐ Empty ☐ Radioactive LSA ☐ White I ☐ Yellow II ☐ Yellow III ☒ None ☐ Danger (Air Cargo) ☐ Secondary _____

Material Category: ☐ Empty ☐ Low Specific Act. (LSA) ☒ Limited Quantity ☐ Type A Quantity ☐ Type B Quantity ☐ Highway Route Controlled Quantity

For Normal Form Identify:

Physical Form: ☒ Solid ☐ Liquid ☐ Gas

Chemical Form: ☐ Metal ☐ Oxide ☒ Elemental ☐ Nitrate

Other _____

TYPE PACKAGE: ☐ Strong Tight ☐ Type A ☐ Type B ☐ Type B (U) ☐ Type B (M)

CONSTRUCTION: ☐ Box, FB ☐ Wood ☐ Steel ☐ Drum ☐ Cask ☒ Other [illegible]

FISSILE CLASS: ☒ Non Fissile ☐ Fissile Exempt ☐ Fissile I ☐ Fissile II ☐ Fissile III

Grams Fissile _____

SNM: ☒ No ☐ Yes ☐ < 1 gr ☐ Category I ☐ Category II ☐ Category III

ACCOUNTABILITY/SECURITY CONTROL: ☐ Classified ☒ Unclassified

Consignee authorized to receive this qty ☒

Sig. Security Svc. Req. ☐ NA ☒

Pu, EU > 1 g ☐ N/A NU, DU > 1 Kg ☐ N/A

Security Escorts Req. ☐ Not. Req. ☒

External Cask Temperature N/A ☒

(Max. 122° F LTL, 180° F Ex. Use) _____ °F

Packaging conforms to appropriate packaging procedure ☐ N/A ☒ Yes

Complies with D. O. T. packaging marking and labeling requirements ☐ N/A ☒ Yes

Container acceptability documented (incl 7A cert.) ☒ N/A ☐ Yes

Container examined: No evidence of deterioration or damage ☒ Yes

QA Inspection Current ☐ Yes ☒ N/A Seals required ☒ No ☐ Yes

Shipping Doc. [illegible] Authorization No. N/A

No. Pkgs.	Model Package	COC/Spec. No.	Serial No.	Seal No.	Isotopes	Curies/Pkg	T. I.	Gr. Wt.
6	[illegible]	NA		Tape applied	Cs-137	<1.5 μCi	NA	35 lb/pkg
	Strong Tight	[illegible]	SML-556, SML-315, SML-575					
			SML-555, SML-[illegible], SML-572					
	[illegible]	[illegible]	[illegible]	[illegible]	SF 74-065			
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
(Shipper may describe package in detail on one of unused lines above)					TOTAL	<9 μCi	NA	150 lbs

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable federal, state, local and international regulations for the transportation of hazardous materials.

Certifier's Signature: [illegible] Date: [illegible] Organization: [illegible] Complete Cost Code (inc. end function): [illegible]

AREA MONITOR

Surface Dose Rate of Package: ☒ ≤0.5 or ___ mrem/hr (N + βγ)

Dose Rate at 1 Meter from Surface of Package: ☐ ≤0.5 or ___ mrem/hr (N + βγ)

Smears of Outer Container: ☒ ≤22 dpm βγ/cm² ☒ ≤2.2 dpm α/cm²

TRUCK LOAD OR EXCLUSIVE USE: Surface: ☐ ≤ 200 mrem/hr (N + βγ) @6 feet: ☐ ≤10 mrem/hr (N + βγ) @Cab or Sleeper ☐ ≤2.0 mrem/hr (N + βγ)

Additional Data and Instructions (inc. Readings on Internal Packaging)

Signature - Radiation Monitoring: _____ Bldg.: _____ Survey No.: 61 Date: [illegible]-1-94

AUTHORIZATION FOR SHIPMENT

APPROVAL

AIR TRANSPORT CERTIFICATION ▶ Cargo Only: ☐ Danger Labels Applied

Passenger: ☐ 1. Ltd. Qty. ☐ 2. ≤3 T.I ☐ 3. Research or Medical Diagnosis ☐ 4. Human Medical Research

Pkg. Dimensions: NA

Traffic has inspected and verified preshipment compliance to DOT regulations.

Authorized Signature ▶ M. A. James Printed Name ▶ M. A. JAMS Date ▶ 3-24-94

APPROVED FOR OFFSITE SHIPMENT

TRAFFIC

B. L. No.: [illegible] 3547 Date Shipped: 3-24-94 E. T. A.: 3-24-94 Routing: WHC VEHICLE ☐ N/A

Placards: ☐ Yes ☒ No

Surveyed By: _____ Date: _____ Approved for Shipment: Westinghouse Hanford Company M. A. James Date: 3-24-94

Route Plan: ☐ Yes ☐ No

0163

*U.S. GPO: 1992-791-064/80001

54-6000-088 (10/88)

[illegible] 3-24-94 [illegible]

9613474.0571

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5-10-94

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Am/Cm

NAME/DATE (R3), 5/19/94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX soil

BATCH NUMBER 4-066

ITAS ID	CUSTOMER ID	COMMENTS
1) 40406602	ESJ10533	
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

(R3) 5/19/94

REFERENCED QC

ITAS ID - BLANK ESJ10532 L0406608 2B

ITAS ID - SPIKE IQO 022 L0406625

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/20/94

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB RD3221 5/20/94 5/25/94 JP

COUNTING/MEASUREMENT AS. 5/25/94

DATA REVIEWED 5-16-94

ANALYTICAL PREP STORED 5-26-94

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

oxalate 5-24-94 AB

5-25-94

RC-048 12/92 REV 2

9613474.0572

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5/10

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Pu / Am

NAME/DATE mmk / 5-12-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX soil

BATCH NUMBER

	ITAS ID	CUSTOMER ID	COMMENTS
1)	41036310 5	ESH1612 ESS 10479	
2)	3491 C 4	ESH 1610 ESJ 10478	
3)			
4)			
5)			
6)			
7)			
8)			
9)			
10)			

REANALYSIS

REFERENCED QC

ESH 1610 & ESJ 10477

ITAS ID - BLANK L034902B

IQ HI 059 & IQ0 021

ITAS ID - SPIKE L034902-S

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/13/94 Bm

SAMPLE REMAINDER RETURNED TO SCG ☐ Bm (CHECK ONE)

NO SAMPLE REMAINING ☐

203221 5/13/94 Bm

SEPARATION LAB 5/16/94 CO

COUNTING/MEASUREMENT 5/19/94

DATA REVIEWED mmk 6-19-94

ANALYTICAL PREP STORED mmk 6-19-94

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

Do not use this data mmk 5-19-94

copy 5.19.94

0171

RC-048 12/92 REV 2

9613474.0573

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE _____

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Np

NAME/DATE mmm 5-19-94

CUSTOMER WHC W0013-

SAMPLE DELIVERY GROUP W0013

MATRIX _____

BATCH NUMBER _____

ITAS ID	CUSTOMER ID	COMMENTS
1) 4D349001 ✓		
2) 02 ✓		
3) 03 ✓		
4) 04 ✓		
5) F 04 ✓		
6) 05 ✓		
7) 363101 ✓		
8) 02 ✓		
9) 03 ✓		
10) 04 ✓		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK L0349000D

ITAS ID - SPIKE L0349000S

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/20/94 Bm

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

RD3221 5/20/94 Bm

SEPARATION LAB 5/20/94 DRM

COUNTING/MEASUREMENT S/K FOR AS 5-26-94 RCVD ON 5-23-94

DATA REVIEWED mmm 5-26-94

ANALYTICAL PREP STORED mmm 5-26-94

RECOUNT

ACTIONS (Initial & Date) SK 5-26

COUNTING/MEASUREMENT ~~AS 5-23-~~

DATA REVIEWED _____

ANALYTICAL PREP STORED _____

ADDITIONAL COMMENTS:

copy 5-12-94 Bm

Do not need this data 5-25-94 mmm

RC-048 12/92 REV 2

9613474.0574

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5-10

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS No

NAME/DATE MMK / 5-19-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP L0013

MATRIX soil

BATCH NUMBER

ITAS ID	CUSTOMER ID	COMMENTS
1) 40363105 J		
2) 401701		
3) 02		
4) 03		
5) 04		
6) 05		
7) 06		
8) 07		
9) 40406601		
10) 02		
11. F0406602		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK L036310B J

ITAS ID - SPIKE L036310S

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/20/94 BM

SAMPLE REMAINDER RETURNED TO SCG ✓ ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB RD 3221 5/20/94 BM 5/20/94 CPM

COUNTING/MEASUREMENT AS 5-23-94

DATA REVIEWED MMK 5-26-94

ANALYTICAL PREP STORED MMK 5-26-94

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

Coopt 5/22/94 BM

RC-048 12/92 REV 2

9613474.0575

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE ASAP

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Uiso

NAME/DATE mmk / 5-17-94

CUSTOMER WVC

SAMPLE DELIVERY GROUP W0013

MATRIX soil

BATCH NUMBER

ITAS ID	CUSTOMER ID	COMMENTS
1) L0401715		rect 1000
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK

ITAS ID - SPIKE

CLIENT CODE

ACTIONS (Initial & Date)

PREP LAB RECEIVED

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT AS 5-18-94

DATA REVIEWED MMM 5-23-94

ANALYTICAL PREP STORED MMM 5-23-94

ADDITIONAL COMMENTS:

RC-048 12/92 REV 2

9613474.0576

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5-10

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS U150

NAME/DATE mmm / 5-5-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX Soil

BATCH NUMBER

ITAS ID	CUSTOMER ID	COMMENTS
1) 4034900 1	ESI 15596	Tracyd < 30%
2) 04	15597	
3) 05	15598	
4) 4036310 1	15599	
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK ESI15595 L034902B

ITAS ID - SPIKE EQIE041 L034902S

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/5/94 Bm

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB RD3221 5/6/94 Bm 5/9/94 Ew

COUNTING/MEASUREMENT AS 5/13/94

DATA REVIEWED R3 5-19-94

ANALYTICAL PREP STORED

RECOUNT

SCG 5/20/94

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT AS 5/16/

DATA REVIEWED R3 5-19-94

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

Ext 5-10 Bm

Ext 5-11 Bm

BD 5-12 Bm

Recount spike 5-17-94 CS R3

RC-048 12/92 REV 2

9613474.0577

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5-10

REANALYSIS / RECOUNT

CHAIN-OF-~~CUSTODY~~ BATCH ANALYSIS RECORD

ANALYSIS U150

NAME/DATE mmm / 5-9-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX Soil

BATCH NUMBER

	ITAS ID	CUSTOMER ID	COMMENTS
1)	40401707	EST 15615	Cat II
2)	406601	15616	Cat II
3)	6602	15617	
4)			
5)			
6)			
7)			
8)			
9)			
10)			

REANALYSIS

REFERENCED QC

ITAS ID - BLANK EST 15614 L040172B

ITAS ID - SPIKE EQIFE048 L040172S

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/10/94 Bm

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

R03221 5/10/94

SEPARATION LAB 5-11-94 Eve

COUNTING/MEASUREMENT AS 5-16-94

DATA REVIEWED mmm 5-17-94

ANALYTICAL PREP STORED mmm 5-17-94

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

EXT 5-12-94

UXT 5-13-94

ED 5-16-94

RC-048 12/92 REV 2

9613474.0578

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE _____

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ~~ANALYSIS~~ RECORD

ANALYSIS U ISO

NAME/DATE R3 / 5-17-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX Soil

BATCH NUMBER 3490

ITAS ID	CUSTOMER ID	COMMENTS
1) L0349025		Recount 200mi
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK _____

ITAS ID - SPIKE _____

CLIENT CODE _____

ACTIONS (Initial & Date)

5-17-94 CO

PREP LAB RECEIVED _____

SAMPLE REMAINDER RETURNED TO SCG _____ ☐ (CHECK ONE)

NO SAMPLE REMAINING _____ ☐

SEPARATION LAB _____

COUNTING/MEASUREMENT _____

DATA REVIEWED _____

ANALYTICAL PREP STORED _____

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT AB 5-18-94

DATA REVIEWED R3 5-19-94

ANALYTICAL PREP STORED _____

ADDITIONAL COMMENTS:

RC-048 12/92 REV 2

9613474.0579

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5/19/94

REANALYSIS / RECOUNT
CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Gamma

NAME/DATE MK / 5-17-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP WOD13

MATRIX Soil

BATCH NUMBER

ITAS ID	CUSTOMER ID	COMMENTS
1) 40363104 ✓		200mm
2) 40349005 ✓		"
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC L034902B

ITAS ID - BLANK ~~L034902B~~ ✓ MK 5-17-94

ITAS ID - SPIKE L0349025 ✓

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/17/94

SAMPLE REMAINDER RETURNED TO SCG ☒ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB N/A

COUNTING/MEASUREMENT SK 5-17-94

DATA REVIEWED MK

ANALYTICAL PREP STORED -

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

① 450 ml Marinelli

② use ottawa sand for blank

RC-048 12/92 REV 2

9613474.0580

INTERNATIONAL TECHNOLOGY CORPORATION

LSC

DUE DATE 20 May 94

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS ^{79}Se

NAME/DATE JRN / 17 May 94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX 341

BATCH NUMBER 3-490

ITAS ID	CUSTOMER ID	COMMENTS
1) L0344903N		
2) W0349001		was mislabeled as W0349001
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK _____

ITAS ID - SPIKE _____

CLIENT CODE _____

ACTIONS (Initial & Date)

PREP LAB RECEIVED _____

SAMPLE REMAINDER
RETURNED TO SCG _____ ☐ (CHECK ONE)
NO SAMPLE REMAINING _____ ☐

SEPARATION LAB _____

COUNTING/MEASUREMENT _____

DATA REVIEWED _____

ANALYTICAL PREP STORED _____

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT JRN 5/17/94

DATA REVIEWED nd 5/19/94

ANALYTICAL PREP STORED _____

ADDITIONAL COMMENTS:

Calculation sheet says "LSC4" Samples were actually counted on LSC3.

0221

RC-048 12/92 REV 2

9613474.0581

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 20 May 94

REANALYSIS / RECOUNT

γ spec

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS ^{75}Se

CUSTOMER WHC

MATRIX 341

NAME/DATE JRH / 17 May 94

SAMPLE DELIVERY GROUP W0013

BATCH NUMBER 3-490

ITAS ID	CUSTOMER ID	COMMENTS
1) W0349001	GER1	was mislabeled as W0349001
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK _____

ITAS ID - SPIKE _____

CLIENT CODE _____

ACTIONS (Initial & Date)

PREP LAB RECEIVED _____

SAMPLE REMAINDER RETURNED TO SCG _____ ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB _____

COUNTING/MEASUREMENT _____

DATA REVIEWED _____

ANALYTICAL PREP STORED _____

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT JRH 5/18/94

DATA REVIEWED A. 5/19/94

ANALYTICAL PREP STORED _____

ADDITIONAL COMMENTS:

0222

RC-048 12/92 REV 2

9613474.0582

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5/10

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Pu / Am

NAME/DATE mmk / 5-12-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX soil

BATCH NUMBER

	ITAS ID	CUSTOMER ID	COMMENTS
1)	4036310 5	ESH 1612 ESS 10479	
2)	349A C4	ESH 1610 ESJ 10478	
3)			
4)			
5)			
6)			
7)			
8)			
9)			
10)			

REANALYSIS

REFERENCED QC

ESH 1612 & ESJ 10477

ITAS ID - BLANK L034902B

IQ HI 059 & IQ0 021

ITAS ID - SPIKE L034902-S

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/13/94 Bm

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

203221 5/13/94 Bm

SEPARATION LAB 5/16/94 CD

COUNTING/MEASUREMENT 5/19/94

DATA REVIEWED mmk 5-19-94

ANALYTICAL PREP STORED mmk 5-19-94

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

Do not use this data 5-19-94 mmk

copy 5.19.94

0243

RC-048 12/92 REV 2

9613474.0583

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5-10-94

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Am/Cm

NAME/DATE (R3), 5/19/94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX soil

BATCH NUMBER 4-0666

ITAS ID	CUSTOMER ID	COMMENTS
1) 40406602	ESJ10533	
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

(R3) 5/19/94

REFERENCED QC

ITAS ID - BLANK ESJ10532 L0406608

ITAS ID - SPIKE FRO 022 L0406625

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/20/94

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB RD3221 5/20/94 5/25/94 JP

COUNTING/MEASUREMENT AB 5/25/94

DATA REVIEWED 5-26-94

ANALYTICAL PREP STORED 5-26-94

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

oxalate 5-24-94 AB

5-25-94

RC-048 12/92 REV 2

0244

9613474.0584

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE _____

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Np

NAME/DATE mmm 15-19-94

CUSTOMER WHC W0013-

SAMPLE DELIVERY GROUP W0013

MATRIX _____

BATCH NUMBER _____

ITAS ID	CUSTOMER ID	COMMENTS
1) 40349001 ✓		
2) 02 ✓		
3) 03 ✓		
4) 04 ✓		
5) F 04 ✓		
6) 05 ✓		
7) 363101 ✓		
8) 02 ✓		
9) 03 ✓		
10) 04 ✓		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK L0349000B

ITAS ID - SPIKE L0349000S

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/20/94 Bm

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE) Bm

NO SAMPLE REMAINING ☐

RD3221 5/20/94 Bm

SEPARATION LAB 5/20/94 DRM

COUNTING/MEASUREMENT S/K FOR AS 5-26-94 RCVD ON 5-23-94

DATA REVIEWED mmm 5-26-94

ANALYTICAL PREP STORED mmm 5-26-94

RECOUNT

ACTIONS (Initial & Date) SK 5-30-

COUNTING/MEASUREMENT ~~AS 5-23-~~

DATA REVIEWED _____

ANALYTICAL PREP STORED _____

ADDITIONAL COMMENTS:

Copy 5-12-94 Bm

Do not need this data 5-25-94 mmm

RC-048 12/92 REV 2

9613474.0585

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5-10

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Np

NAME/DATE MMK / 5-19-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX soil

BATCH NUMBER

ITAS ID	CUSTOMER ID	COMMENTS
1) 40363105 ✓		
2) 401701		
3) 02		
4) 03		
5) 04		
6) 05		
7) 06		
8) 07		
9) 40406601		
10) 02		
11. F0406602		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK L036310B ✓

ITAS ID - SPIKE L036310S

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/20/94 BM

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

RD 3221 5/20/94 BM

SEPARATION LAB 5/20/94 CPM

COUNTING/MEASUREMENT AS 5-23-94

DATA REVIEWED MMK 5-26-94

ANALYTICAL PREP STORED MMK 5-26-94

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

Coop 5/22/94 BM

RC-048 12/92 REV 2

9613474.0586

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5/10

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Pu/Am

NAME/DATE mmk / 5-12-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX soil

BATCH NUMBER

	ITAS ID	CUSTOMER ID	COMMENTS
1)	410863105	ESH 1612 ESS 10479	
2)	349104	ESH 1610 1 ESJ 10478	
3)			
4)			
5)			
6)			
7)			
8)			
9)			
10)			

REANALYSIS

REFERENCED QC

ESH 1610 & ESJ 10477

ITAS ID - BLANK L034902-B ✓

~~IQ~~ HI 059 & IQ 021

ITAS ID - SPIKE L034902-S ✓

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/13/94 Bm

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

RO 3221 5/13/94 Bm

SEPARATION LAB

COUNTING/MEASUREMENT xm 5/19/94 FOR OD 5/15/94

DATA REVIEWED

ANALYTICAL PREP STORED

RECOUNT

SCG 5/20/94

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT ~~OD 5/11/94~~ xm 5/19/94

DATA REVIEWED

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

ED 5.18.94 Bm

RC-048 12/92 REV 2

1125

9613474.0587

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5-10

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS U150

NAME/DATE mm / 5-9-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX Soil

BATCH NUMBER

	ITAS ID	CUSTOMER ID	COMMENTS
1)	40401707	ESI 15615	Cat II
2)	406601	15616	Cat II
3)	6602	15617	
4)			
5)			
6)			
7)			
8)			
9)			
10)			

REANALYSIS

REFERENCED QC

ITAS ID - BLANK ESI 15614 L040172B

ITAS ID - SPIKE EQIFE048 L040172S

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/10/94 Bm

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

R03221 5/10/94

SEPARATION LAB 5-11-94 Ene

COUNTING/MEASUREMENT AS 5-16-94

DATA REVIEWED mm 5-17-94

ANALYTICAL PREP STORED mm 5-17-94

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

Ext 5-12-94

Ext 5-13-94

ED 5-16-94

RC-048 12/92 REV 2

1517

9613474.0588

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE ASAP

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Uiso

NAME/DATE mmk / 5-17-94

CUSTOMER WVC

SAMPLE DELIVERY GROUP W0013

MATRIX Soil

BATCH NUMBER

ITAS ID	CUSTOMER ID	COMMENTS
1) L0401715		rect 1000
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK

ITAS ID - SPIKE

CLIENT CODE

ACTIONS (Initial & Date)

PREP LAB RECEIVED

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT AS 5-18-94

DATA REVIEWED MMM 5-23-94

ANALYTICAL PREP STORED MMM 5-23-94

ADDITIONAL COMMENTS:

RC-048 12/92 REV 2

9613474.0589

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE _____

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ~~ANALYSIS~~ RECORD

ANALYSIS Uiso

NAME/DATE R3 / 5-17-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX Soil

BATCH NUMBER 3-490

ITAS ID	CUSTOMER ID	COMMENTS
1) L0349025		Element 200 mi
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK _____

ITAS ID - SPIKE _____

CLIENT CODE _____

ACTIONS (Initial & Date)

5-17-94 D

PREP LAB RECEIVED _____

SAMPLE REMAINDER RETURNED TO SCG _____ ☐ (CHECK ONE)

NO SAMPLE REMAINING _____ ☐

SEPARATION LAB _____

COUNTING/MEASUREMENT _____

DATA REVIEWED _____

ANALYTICAL PREP STORED _____

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT AB 5-18-94

DATA REVIEWED R3 5-19-94

ANALYTICAL PREP STORED _____

ADDITIONAL COMMENTS:

RC-048 12/92 REV 2

9613474.0590

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5-10

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS U150 NAME/DATE mm 5-5-94

CUSTOMER WHC - SAMPLE DELIVERY GROUP W003

MATRIX Soil BATCH NUMBER

ITAS ID	CUSTOMER ID	COMMENTS
1) 40349001	ESI15596	Fwd < 302
2) 04	15597	
3) 05	15598	
4) 40367101	15599	
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK ESI15595 L0349028

ITAS ID - SPIKE EQIE041 L0349025

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/5/94 Km

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB RD3221 5/6/94 Km 5/9/94 Ew

COUNTING/MEASUREMENT AS 5/13/94

DATA REVIEWED R3 5-19-94

ANALYTICAL PREP STORED

RECOUNT

SCG 5/20/94

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT ~~AS~~ 5/16/94 5/16/94

DATA REVIEWED R3 5-19-94

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

Grt 5-10 Km
Lrt 5-11 Km
BD 5-12 Km

Recount spike 5-17-94 Cs/R3

RC-048 12/92 REV 2

9613474.0591

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5/19/94

REANALYSIS / RECOUNT
CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Gamma

NAME/DATE MK / 5-17-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W003

MATRIX Soil

BATCH NUMBER

ITAS ID	CUSTOMER ID	COMMENTS
1) 40363104 ✓		200mm
2) 40349005 ✓		"
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC L034902B

ITAS ID - BLANK ~~L034902B~~ ✓ MK 5-17-94

ITAS ID - SPIKE L0349025 ✓

CLIENT CODE WHC

ACTIONS (Initial & Date)

PREP LAB RECEIVED 5/17/94

SAMPLE REMAINDER RETURNED TO SCG ☒ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB N/A

COUNTING/MEASUREMENT SK 5-17-94

DATA REVIEWED MK

ANALYTICAL PREP STORED -

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

① 450 ml Marinelli

② use ottawa sand for blank

RC-048 12/92 REV 2

2017

9613474.0592

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 5/10/94

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS I129

NAME/DATE JK / 5-9-94

CUSTOMER WHC

SAMPLE DELIVERY GROUP

MATRIX Soil

BATCH NUMBER

ITAS ID	CUSTOMER ID	COMMENTS
1) 40363104		200 min
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK

ITAS ID - SPIKE

CLIENT CODE

ACTIONS (Initial & Date)

PREP LAB RECEIVED

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT cd 5/9/94

DATA REVIEWED JK 5-10-94

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

NCM Cs_{137} interferences

RC-048 12/92 REV 2

9613474.0593

INTERNATIONAL TECHNOLOGY CORPORATION

LSC

DUE DATE 20 May 94

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS ^{79}Se

NAME/DATE JBN / 17 May 94

CUSTOMER WHC

SAMPLE DELIVERY GROUP W0013

MATRIX 341

BATCH NUMBER 3-490

ITAS ID	CUSTOMER ID	COMMENTS
1) L034903N		
2) 40349001		was mislabeled as W0349001
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK _____

ITAS ID - SPIKE _____

CLIENT CODE _____

ACTIONS (Initial & Date)

PREP LAB RECEIVED _____

SAMPLE REMAINDER
RETURNED TO SCG _____ ☐ (CHECK ONE)
NO SAMPLE REMAINING _____ ☐

SEPARATION LAB _____

COUNTING/MEASUREMENT _____

DATA REVIEWED _____

ANALYTICAL PREP STORED _____

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT JBN 5/17/94

DATA REVIEWED nd 5/19/94

ANALYTICAL PREP STORED _____

ADDITIONAL COMMENTS:

Calculation sheet says "LSC4" Samples were actually counted on LSC3.

RC-048 12/92 REV. 2

9613474.0594

INTERNATIONAL TECHNOLOGY CORPORATION

DUE DATE 20 May 94

REANALYSIS / RECOUNT (γ spec)

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS ^{75}Se

CUSTOMER WAC

MATRIX 341

NAME/DATE JRh / 12 May 94

SAMPLE DELIVERY GROUP W0013

BATCH NUMBER 3-490

ITAS ID	CUSTOMER ID	COMMENTS
1) W0349001	GER1	was mislabeled as 40349001
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ITAS ID - BLANK _____

ITAS ID - SPIKE _____

CLIENT CODE _____

ACTIONS (Initial & Date)

PREP LAB RECEIVED _____

SAMPLE REMAINDER RETURNED TO SCG _____ ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB _____

COUNTING/MEASUREMENT _____

DATA REVIEWED _____

ANALYTICAL PREP STORED _____

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT JRh 5/18/94

DATA REVIEWED [illegible] 5/19/94

ANALYTICAL PREP STORED _____

ADDITIONAL COMMENTS:

RC-048 12/92 REV 2

9613474.0595

JUN 1994 RECEIVED TQO

MEMORANDUM

TO: 200-UP-2 Project QA Record

June 11, 1994

FR: Christina Jensen, Golder Associates Inc.

RE: VOLATILES DATA VALIDATION SUMMARY FOR DATA PACKAGE: W0013-ITC-029 (923-E418 W0013V.UP2)

INTRODUCTION

This memorandum presents the results of data validation on data package W0013-ITC-029 prepared by International Technology Corporation (IT) 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	ANALYSIS
B09WJ9	03/21/94	SOIL	SEE NOTE 1
B09WK1	03/22/94	SOIL	
B09WK2	03/22/94	SOIL	
B09WK4	03/23/94	SOIL	
B09WK5	03/23/94	SOIL	
B09WK6	03/24/94	SOIL	
TRIP BLANK 1	03/25/94	SOIL	
TRIP BLANK 2	03/25/94	SOIL	

Notes: 1. The samples were analyzed for target compound list (TCL) volatile organics.

RECEIVED JUN 16 1994 VALIDATION DOCUMENTATION SDLA

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

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

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of eight samples were validated in this data package with a total of 264 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets the normal work plan objectives of 90 percent.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data.

Laboratory Blanks

- Acetone, methylene chloride and 4-methyl-2-pentanone were detected the laboratory blanks. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

TENTATIVELY IDENTIFIED COMPOUND EVALUATION

Tentatively identified compounds (TICs) reported by the laboratory were evaluated during validation and qualified as follows:

- TICs were detected in the sample(s) and associated laboratory blank and have been qualified due to associated blank contamination and have been determined to be presumptive and valid (UJN).

- TICs were detected in the sample(s) and determined to be valid, resulting in qualification of the results as presumptive and valid (JN).

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

9613474.0598

Attachment 1

Glossary of Data Reporting Qualifiers

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

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.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

Attachment 2

Summary of Data Qualifications

WHC-SD-EN-SPP-002. Rev. 2

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: NA	VALIDATOR: C. Jensen	DATE: 06/11/94	PAGE 1 OF 1
COMMENTS: W0013-ITC-029			
PARAMETER	QUALIFIER	SAMPLES AFFECTED	REASON
ACETONE	U	B09WJ9, B09WK1, B09WK2, B09WK4, B09WK5, B09WK6, TRIP BLANK 1, TRIP BLANK 2	BLANK CONTAMINATION
METHYLENE CHLORIDE	U	B09WJ9, B09WK1, B09WK2, B09WK4, B09WK5, B09WK6	BLANK CONTAMINATION
4-METHYL-2-PENATNONE	U	B09WK4	BLANK CONTAMINATION
2-BUTANONE	U	B09WK2	BLANK CONTAMINATION

9613474.0602

Attachment 3

Qualified Data Summary and Annotated Laboratory Reports

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B09WJ9		B09WK1		B09WK2		B09WK4		B09WK5		B09WK6	
	Date	3-21-94		3-22-94		3-22-94		3-23-94		3-23-94		3-24-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
CHLOROMETHANE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
BROMOMETHANE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
VINYL CHLORIDE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
CHLOROETHANE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
METHYLENE CHLORIDE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
ACETONE	UG/KG	13.000	U	12.000	U	12.000	U	10.000	U	10.000	U	12.000	U
CARBON DISULFIDE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
1,1-DICHLOROETHENE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
1,1-DICHLOROETHANE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
CHLOROFORM	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
1,2-DICHLOROETHANE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
2-BUTANONE	UG/KG	12.000	U	12.000	U	12.000	U	48.000		10.000	U	10.000	U
1,1,1-TRICHLOROETHANE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
CARBON TETRACHLORIDE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
BROMODICHLOROMETHANE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
1,2-DICHLOROPROPANE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
CIS-1,3-DICHLOROPROPENE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
TRICHLOROETHENE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
DIBROMOCHLOROMETHANE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
1,1,2-TRICHLOROETHANE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
BENZENE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
TRANS-1,3-DICHLOROPROPENE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
BROMOFORM	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
4-METHYL-2-PENTANONE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
2-HEXANONE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
TETRACHLOROETHENE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
1,1,2,2-TETRACHLOROETHANE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
TOLUENE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
CHLOROBENZENE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
ETHYLBENZENE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
STYRENE	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U
XYLENES (TOTAL)	UG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U	10.000	U

Original Signed

9619742.0006

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	TRIPBLANK1		TRIPBLANK2	
	Date	3-25-94		3-25-94	
	Location	---		---	
	Depth	---		---	
	Type	TRIP BLANK		TRIP BLANK	
	Comments	---		---	
Parameter	Units	Result	Q	Result	Q
CHLOROMETHANE	UG/L	10.000	U	10.000	U
BROMOMETHANE	UG/L	10.000	U	10.000	U
VINYL CHLORIDE	UG/L	10.000	U	10.000	U
CHLOROETHANE	UG/L	10.000	U	10.000	U
METHYLENE CHLORIDE	UG/L	10.000	U	10.000	U
ACETONE	UG/L	10.000	U	10.000	U
CARBON DISULFIDE	UG/L	10.000	U	10.000	U
1,1-DICHLOROETHENE	UG/L	10.000	U	10.000	U
1,1-DICHLOROETHANE	UG/L	10.000	U	10.000	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	10.000	U	10.000	U
CHLOROFORM	UG/L	10.000	U	10.000	U
1,2-DICHLOROETHANE	UG/L	10.000	U	10.000	U
2-BUTANONE	UG/L	10.000	U	10.000	U
1,1,1-TRICHLOROETHANE	UG/L	10.000	U	10.000	U
CARBON TETRACHLORIDE	UG/L	10.000	U	10.000	U
BROMODICHLOROMETHANE	UG/L	10.000	U	10.000	U
1,2-DICHLOROPROPANE	UG/L	10.000	U	10.000	U
CIS-1,3-DICHLOROPROPENE	UG/L	10.000	U	10.000	U
TRICHLOROETHENE	UG/L	10.000	U	10.000	U
DIBROMOCHLOROMETHANE	UG/L	10.000	U	10.000	U
1,1,2-TRICHLOROETHANE	UG/L	10.000	U	10.000	U
BENZENE	UG/L	10.000	U	10.000	U
TRANS-1,3-DICHLOROPROPENE	UG/L	10.000	U	10.000	U
BROMOFORM	UG/L	10.000	U	10.000	U
4-METHYL-2-PENTANONE	UG/L	10.000	U	10.000	U
2-HEXANONE	UG/L	10.000	U	10.000	U
TETRACHLOROETHENE	UG/L	10.000	U	10.000	U
1,1,2,2-TETRACHLOROETHANE	UG/L	10.000	U	10.000	U
TOLUENE	UG/L	10.000	U	10.000	U
CHLOROBENZENE	UG/L	10.000	U	10.000	U
ETHYLBENZENE	UG/L	10.000	U	10.000	U
STYRENE	UG/L	10.000	U	10.000	U
XYLENES (TOTAL)	UG/L	10.000	U	10.000	U

Verified 5/16/94

010

96134740004

9613474.0605

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4617

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4617R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 19 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q	
74-87-3	Chloromethane	12	U	
74-83-9	Bromomethane	12	U	
75-01-4	Vinyl Chloride	12	U	
75-00-3	Chloroethane	12	U	
75-09-2	Methylene Chloride	12 ~~6~~	~~BJ~~	U
67-64-1	Acetone	13	~~B~~	U
75-15-0	Carbon Disulfide	12	U	
75-35-4	1,1-Dichloroethene	12	U	
75-34-3	1,1-Dichloroethane	12	U	
540-59-0	1,2-Dichloroethene (total)	12	U	
67-66-3	Chloroform	12	U	
107-06-2	1,2-Dichloroethane	12	U	
78-93-3	2-Butanone	12	U	
71-55-6	1,1,1-Trichloroethane	12	U	
56-23-5	Carbon Tetrachloride	12	U	
75-27-4	Bromodichloromethane	12	U	
78-87-5	1,2-Dichloropropane	12	U	
10061-01-5	cis-1,3-Dichloropropene	12	U	
79-01-6	Trichloroethene	12	U	
124-48-1	Dibromochloromethane	12	U	
79-00-5	1,1,2-Trichloroethane	12	U	
71-43-2	Benzene	12 ~~12~~	~~U~~	U
10061-02-6	trans-1,3-Dichloropropene	12	U	
75-25-2	Bromoform	12	U	
108-10-1	4-Methyl-2-Pentanone	12	U	
591-78-6	2-Hexanone	12	U	
127-18-4	Tetrachloroethene	12	U	
79-34-5	1,1,2,2-Tetrachloroethane	12	U	
108-88-3	Toluene	12	U	
108-90-7	Chlorobenzene	12	U	
100-41-4	Ethylbenzene	12 ~~12~~	U	~~J~~ U
100-42-5	Styrene	12	U	
1330-20-7	Xylene (total)	12 ~~12~~	~~U~~	~~J~~ U

FORM I VOA 3/90

no qualification was made to Benzene, Ethylbenzene and Xylene.

Verified 5/6/94

011

9613424.0606

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WJ9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4617

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4617R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 19 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.00	30	~~BJ~~ UJN

FORM I VOA-TIC 3/90

Verified 9/6/1994

9613474.0607

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4625

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4625R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 16 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12 ~~4~~	~~BJ~~ : U
67-64-1	Acetone	12 ~~9~~	~~BJ~~ U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

Q

FORM I VOA 3/90

Verified 5 01/11/94

9613474.0608

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WK1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4625

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4625R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 16 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.00	24	~~BJ~~ UJN

FORM I VOA-TIC

Verified 5/6/1994

3/90

014

9613474.0609

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK2

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4590

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4590

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 15 Date Analyzed: 03/28/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	12	U	
74-83-9	Bromomethane	12	U	
75-01-4	Vinyl Chloride	12	U	
75-00-3	Chloroethane	12	U	
75-09-2	Methylene Chloride	12 ~~6~~	~~J~~	U
67-64-1	Acetone	12 ~~7~~	~~BJ~~	U
75-15-0	Carbon Disulfide	12	U	
75-35-4	1,1-Dichloroethene	12	U	
75-34-3	1,1-Dichloroethane	12	U	
540-59-0	1,2-Dichloroethene (total)	12	U	
67-66-3	Chloroform	12	U	
107-06-2	1,2-Dichloroethane	12	U	
78-93-3	2-Butanone	12 ~~4~~	~~J~~	U
71-55-6	1,1,1-Trichloroethane	12	U	
56-23-5	Carbon Tetrachloride	12	U	
75-27-4	Bromodichloromethane	12	U	
78-87-5	1,2-Dichloropropane	12	U	
10061-01-5	cis-1,3-Dichloropropene	12	U	
79-01-6	Trichloroethene	12	U	
124-48-1	Dibromochloromethane	12	U	
79-00-5	1,1,2-Trichloroethane	12	U	
71-43-2	Benzene	12	U	
10061-02-6	trans-1,3-Dichloropropene	12	U	
75-25-2	Bromoform	12	U	
108-10-1	4-Methyl-2-Pentanone	12	U	
591-78-6	2-Hexanone	12	U	
127-18-4	Tetrachloroethene	12	U	
79-34-5	1,1,2,2-Tetrachloroethane	12	U	
108-88-3	Toluene	12	U	
108-90-7	Chlorobenzene	12	U	
100-41-4	Ethylbenzene	12	U	
100-42-5	Styrene	12	U	
1330-20-7	Xylene (total)	12	U	

FORM I VOA 3/90

Verified 9/28/94

9613474.0610

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WK2

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4590

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4590

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 15 Date Analyzed: 03/28/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.03	20	~~BJ~~ UJN

FORM I VOA-TIC 3/90

Verified 5/6/94

016

9613474.0611

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WK4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4600

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4600

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/28/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~3~~	~~J~~	U
67-64-1	Acetone	10 ~~4~~	~~BJ~~	U
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	48		
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10 ~~1~~	~~J~~	U
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

FORM I VOA 3/90

Verified Sielulay

017

9613474.0612

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WK4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4600

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4600

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/28/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.07	89	~~BJ~~ UJN

FORM I VOA-TIC 3/90

Verified 3/31/94

018

9613474.0613

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4608

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4608R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10 ~~3~~	~~BJ~~ U
67-64-1	Acetone	10 ~~8~~	~~BJ~~ U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

Q

FORM I VOA 3/90

Verified 5/11/94

9613474.0614

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WK5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4608

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4608R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.00	19	~~BJ~~ UJN

FORM I VOA-TIC

Verified 5/6/1994

3/90

020

9613474.0615

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK6

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4615

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4615R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~3~~	~~BJ~~	U
67-64-1	Acetone	12	~~B~~	U
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10 ~~10~~	~~U~~	~~J~~ U
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10 ~~10~~	~~U~~	~~J~~ U

FORM I VOA 3/90

no qualification was made to ebenz, and xylene. Verified 3/31/94

021

9613474.0616

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WK6

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4615

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4615R

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. 0 Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.00	5	~~BJ~~ UJN
2.	UNKNOWN	15.80	5	~~J~~ JN

FORM I VOA-TIC

verified 6/11/94

3/90

022

9613474.0617

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK 1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) WATER Lab Sample ID: AA4633

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC911

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. ____ Date Analyzed: 03/29/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10 ~~8~~	~~BJ~~ U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

FORM I VOA 3/90

Verified 5/6/1994

9613474.0610

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIPBLANK

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) WATER Lab Sample ID: AA4633

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC911

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. ____ Date Analyzed: 03/29/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Q

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC 3/90

Verified
5/11/94

024

9613474.0619

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK 2

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) WATER Lab Sample ID: AA4634

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC912

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. ____ Date Analyzed: 03/29/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10 ~~9~~	~~BJ~~ U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

FORM I VOA 3/90

Verified 5/6/94

9613474.0620

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIPBLANK

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) WATER Lab Sample ID: AA4634

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC912

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: not dec. ____ Date Analyzed: 03/29/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Q

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC 3/90

Verified
gj 6/4/94

9613474.0621

Attachment 4

Laboratory Narrative and Chain-of-Custody Documentation

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

RECORD COPY

May 17, 1994

Job Number: 263; 290; 299; 306

This is the Certificate of Analysis for the following samples:

SDG:	W0013
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	March 26, 1994; April 1, 1994; April 4, 1994, April 6, 1994
Number of Samples:	Twenty-two (22)
Sample Type:	Soil

I. Introduction

On March 26, April 1, April 4 and April 6, 1994, twenty-two (22) soil samples arrived at the 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. Soil results are reported on a dry weight basis.

The samples were analyzed for Target Compound List (TCL) volatiles and semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

MAY 1994
RECEIVED
SDLA

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

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.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for total organic carbon (TOC) based on EPA method 9060.

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

III. Quality Control

The volatiles analyses were performed by purge and trap with a J & W DB-624 capillary column on a Hewlett-Packard 5970 GC/MS/DS and a Finnigan INCOS 500 GC/MS/DS. All QC results were within method specified limits.

The semivolatiles analyses were performed by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL GC/MS/DS. All QC results were within method specified limits. The matrix spike and matrix spike duplicate for sample BOBNQ5 showed high recoveries for one matrix spike compound, phenol.

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III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WK2 with acceptable recoveries. One laboratory control sample was analyzed and reported with acceptable recoveries. GPC check sample did not meet criteria when compared against the initial calibration. However, when compared against a GPC solution that was not subjected to GPC clean-up, the GPC sample passed all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples for work order #263 were digested on April 11, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA arsenic, lead, selenium and thallium were performed from April 11 through April 27, 1994; the remaining metals were analyzed by ICP on April 13, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number BO9WK2. Spike recovery (accuracy) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for antimony and manganese by ICP analysis. Poor spike recovery for antimony appears to be attributable to matrix interferences. Poor spike recovery for manganese is

III. Quality Control (Continued)

attributable to sample nonhomogeneity. As the titanium concentration is greater than four times (4X) the spike added, spiking criteria do not apply for this analyte. A post digestion spike was performed for antimony and manganese as required by CLP protocol. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for aluminum and chromium by ICP analysis. These two analytes were slightly outside acceptance limits due to probable sample nonhomogeneity.

The samples for work order #290 were digested on April 12, 4994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14 and April 15, 1994. All run QC was acceptable

The samples for work order #299 were digested on April 12, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14, 1994. All run QC was acceptable. In sample BOBKM7, the titanium concentration exceeded the linear range by 0.6%, which is less than the 5% acceptance range. During the cyanide analysis, the continuing calibration verification #2 was below the acceptable lower limit of 80%. All sample concentrations were nondetects. The samples were reanalyzed with acceptable limits.

The samples for work order #306 were digested on April 15, 1994 for ICP and April 12, 1994 for GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 12 through April 19, 1994; the remaining metals were analyzed by ICP on April 20, 1994. All run QC was acceptable.

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.

"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.

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III. Quality Control (Continued)

"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 total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike duplicate analyses were performed using sample numbers BOBNQ5 and B09WK2 with acceptable results.

On April 15, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WK2. All QC results were acceptable.

The samples were analyzed for anions on April 20, April 22 and April 28, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for total organic carbon by an O.I. TOC 700. Matrix spike/matrix spike duplicate analyses were performed using sample BOBNQ5.

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4589	403489-01 (A-H)	B09WK2	SOIL	METALS
AA4590	"	"	"	VOC
AA4591	"	"	"	SVOC
AA4592	"	"	"	ANIONS
AA4593	"	"	"	NO3NO2
AA4594	"	"	"	PEST/PCB
AA4595	"	"	"	CN
AA4596	"	"	"	TPH
AA4599	403489-02 (A-H)	B09WK4	"	METALS
AA4600	"	"	"	VOC
AA4601	"	"	"	SVOC
AA4602	"	"	"	ANIONS
AA4603	"	"	"	NO3NO2
AA4604	"	"	"	PEST/PCB
AA4605	"	"	"	CN
AA4606	"	"	"	TPH
AA4607	403489-03 (A-H)	B09WK5	"	METALS
AA4608	"	"	"	VOC
AA4609	"	"	"	SVOC
AA4610	"	"	"	ANIONS
AA4611	"	"	"	NO3NO2
AA4612	"	"	"	PEST/PCB
AA4613	"	"	"	CN
AA4614	"	"	"	TPH

IT Corporation
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IT ANALYTICAL SERVICES
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KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4615	403489-04 (A)	B09WK6	SOIL	VOC
AA4616	403489-05 (A-H)	B09WJ9	"	METALS
AA4617	"	"	"	VOC
AA4618	"	"	"	SVOC
AA4619	"	"	"	ANIONS
AA4620	"	"	"	NO3NO2
AA4621	"	"	"	PEST/PCB
AA4622	"	"	"	CN
AA4623	"	"	"	TPH
AA4624	403489-06 (A-H)	B09WK1	"	METALS
AA4625	"	"	"	VOC
AA4626	"	"	"	SVOC
AA4627	"	"	"	ANIONS
AA4628	"	"	"	NO3NO3
AA4629	"	"	"	PEST/PCB
AA4630	"	"	"	CN
AA4631	"	"	"	TPH
AA4633	403489-07 (A,B)	Trip Blank	"	VOC
AA4634	403489-08 (A,B)	"	"	VOC
AA5075	40363001 (A-G)	BOBKM4	"	SVOC
AA5076	"	"	"	METALS
AA5077	"	"	"	ANIONS
AA5078	"	"	"	NO3NO2
AA5079	"	"	"	CN
AA5080	"	"	"	TPH
AA5081	"	"	"	TOC

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5082	40363002 (A-G)	BOBKM6	SOIL	SVOC
AA5083	"	"	"	METALS
AA5084	"	"	"	ANIONS
AA5085	"	"	"	NO3NO2
AA5086	"	"	"	CN
AA5087	"	"	"	TPH
AA5088	"	"	"	TOC
AA5089	40363003 (A-G)	BOBKM1	"	SVOC
AA5090	"	"	"	METALS
AA5091	"	"	"	ANIONS
AA5092	"	"	"	NO3NO2
AA5093	"	"	"	CN
AA5094	"	"	"	TPH
AA5095	"	"	"	TOC
AA5096	40363004 (A-G)	BOBKM3	"	SVOC
AA5097	"	"	"	METALS
AA5098	"	"	"	ANIONS
AA5099	"	"	"	NO3NO2
AA5100	"	"	"	CN
AA5101	"	"	"	TPH
AA5102	"	"	"	TOC
AA5103	40363005 (A-G)	BOBKM5	"	SVOC
AA5104	"	"	"	METALS
AA5105	"	"	"	ANIONS
AA5106	"	"	"	NO3NO2
AA5107	"	"	"	CN
AA5108	"	"	"	TPH
AA5109	"	"	"	TOC

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5189	404016-01 (A-G)	BOBNQ5	SOIL	SVOC
AA5190	"	"	"	METALS
AA5191	"	"	"	ANIONS
AA5192	"	"	"	NO3NO2
AA5193	"	"	"	CN
AA5194	"	"	"	TPH
AA5195	"	"	"	TOC
AA5196	404016-02 (A-G)	BOBNQ4	"	SVOC
AA5197	"	"	"	METALS
AA5198	"	"	"	ANIONS
AA5199	"	"	"	NO3NO2
AA5200	"	"	"	CN
AA5201	"	"	"	TPH
AA5202	"	"	"	TOC
AA5203	404016-03 (A-G)	BOBKP7	"	SVOC
AA5204	"	"	"	METALS
AA5205	"	"	"	ANIONS
AA5206	"	"	"	NO3NO2
AA5207	"	"	"	CN
AA5208	"	"	"	TPH
AA5209	"	"	"	TOC
AA5210	404016-04 (A-G)	BOBKP8	"	SVOC
AA5211	"	"	"	METALS
AA5212	"	"	"	ANIONS
AA5213	"	"	"	NO3NO2
AA5214	"	"	"	CN
AA5215	"	"	"	TPH
AA5216	"	"	"	TOC

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5217	404016-05 (A-G)	BOBKN9	SOIL	SVOC
AA5218	"	"	"	METALS
AA5219	"	"	"	ANIONS
AA5220	"	"	"	NO3NO2
AA5221	"	"	"	CN
AA5222	"	"	"	TPH
AA5223	"	"	"	TOC
AA5224	404016-06 (A-G)	BOBKM7	"	SVOC
AA5225	"	"	"	METALS
AA5226	"	"	"	ANIONS
AA5227	"	"	"	NO3NO2
AA5228	"	"	"	CN
AA5229	"	"	"	TPH
AA5230	"	"	"	TOC
AA5231	404016-07 (A-G)	BOBKP5	"	SVOC
AA5232	"	"	"	METALS
AA5233	"	"	"	ANIONS
AA5234	"	"	"	NO3NO2
AA5235	"	"	"	CN
AA5236	"	"	"	TPH
AA5237	"	"	"	TOC
AA5423	404065-01	BOBNQ8	"	SVOC
AA5424	"	"	"	METALS
AA5425	"	"	"	ANIONS
AA5426	"	"	"	NO3NO2
AA5427	"	"	"	CN
AA5428	"	"	"	TPH

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5435	404065-02	BOBNQ3	SOIL	SVOC
AA5436	"	"	"	METALS
AA5437	"	"	"	ANIONS
AA5438	"	"	"	NO3NO2
AA5439	"	"	"	CN
AA5440	"	"	"	TPH

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

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
Project Manager

WO # 263

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 340344

Project Name SAF# 94-065 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.
403489-05D	B09WJ9 /Soil	3/21/94 1240	Glass	125ml	4°C	Anions F Cl SO4		
E						Anions NO2 NO3	FOR LAB USE ONLY	
F				250ml		PCB/Pest		
G				125ml		CN		
H						kerosene		
403489-06A	B09WK1 /Soil	3/22/94 1225		250ml		Metals TAL Na Ti		
B						Voa clp	FOR LAB USE ONLY	
C						Semi Voa clp		
D				125ml		Anions F Cl SO4		
E						Anions NO2 NO3		
F				250ml		PCB/Pest		
G				125ml		CN	FOR LAB USE ONLY	
H						kerosene		
403489-07A	Trip Blank / H2O	3/25/94		40ml		Voa		
B							FOR LAB USE ONLY	
403489-08A								
B							FOR LAB USE ONLY	
		(F) 3/25/94						

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

96 1374 1063

000076

040

9613474.0635

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

403489 01 — Sample Identification

1) B09WK2

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

3-22-94

[] Field Transfer of Custody — Chain of Possession: Less than 100 CHMS (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 1310	ITAS 1100	3/25/94 1100
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0636

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-23-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 40348902 B09WK4

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349002

2) 40348903 B09WK5

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349003

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 Karen L. Rogers 1310	ITAS Karen Hollitzlup 10 00 am	3-25-94 10 00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0637

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-24-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: 3-24-94 — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 403489 BO9WK6

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~

.04A 1,250ml Gs:VOA CLP

~~1,250ml aG:Semi-VOA CLP~~

~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~ LEA 3-24-94

~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~

~~1,250ml aGs:PCB/Pest (8080)~~

~~1,125ml G:Cyanide CLP~~

~~1,125ml Gw:Kerosene (8015M)~~

~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

2)

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~

1,250ml Gs:VOA CLP

1,250ml aG:Semi-VOA CLP

1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

1,125ml P/G:Anions NO2,NO3 (EPA 353.2) LEA 3-24-94

1,250ml aGs:PCB/Pest (8080)

1,125ml G:Cyanide CLP

1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 1310 Leon E. Rogers 3-24-94	Received by: Kenneth Stirling ITAS	Date/Time: 3-25-94 10:00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0638

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-21-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 403489 B09W39

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
05 C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
H 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900 4

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-21-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 Jason E. Rogers 1310	ITAS Karen Fottinelly	3-25-94 10:00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0639

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WK0

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2) B09WK1

403489 06

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349005

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 3-24-94 1310	Received by:	Date/Time: 3-25-94 10:00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0640

Attachment 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200 WP2	DATA PACKAGE: W0013-ITC-029	
VALIDATOR: C Jensen	LAB: ITC	DATE: 6/11/94
CASE:	SDG:	

ANALYSES PERFORMED

☒ CLP Volatiles	☐ SW-846 8240 (cap column)	☐ SW-846 8260 (packed column)	☐ CLP Semivolatiles	☐ SW-846 8270 (cap column)	☐ SW-846 (packed column)
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX Soil

B09WJ9	B09WK6
B09WK1	trip blank 1
B09WK2	trip blank 2
B09WK4	
B09WK5	

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: verification performed by WHC

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments: The chain of custody for the "trip blank" samples was not provided, however, the laboratory analysis record (provided in Attachment 4) was used to evaluate holding times.

047

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. INSTRUMENT TUNING AND CALIBRATION

Is the GC/MS tuning/performance check acceptable? . . . . . Yes No N/A

Are initial calibrations acceptable? . . . . . Yes No N/A

Are continuing calibrations acceptable? . . . . . Yes No N/A

Comments:

4. BLANKS

Were laboratory blanks analyzed? . . . . . Yes No N/A

Are laboratory blank results acceptable? . . . . . ① . Yes No N/A

Were field/trip blanks analyzed? . . . . . Yes No N/A 6/11/94

Are field/trip blank results acceptable? . . . . . Yes No N/A

Comments: ① The laboratory provided spectra but did not report 2 butanone for VBLKAA4675W which qualifies assoc result for BTGWK2K4 also MeCl2 (however, a spectra was not provided) and 4 Methyl pentanone. See attached Blank forms which provide all details in blanks. Two trip blanks were analyzed. See Form 1s for results.

5. ACCURACY

Were surrogates/System Monitoring Compounds analyzed? . . . . . Yes No N/A

Are surrogate/System Monitoring Compound recoveries acceptable? Yes No N/A

Were MS/MSD samples analyzed? . . . . . Yes No N/A

Are MS/MSD results acceptable? . . . . . Yes No N/A

Comments:

048

GC/MS ORGANIC DATA VALIDATION CHECKLIST

6. PRECISION

Are MS/MSD RPD 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)

Comments:

7. SYSTEM PERFORMANCE

Were internal standards analyzed? . . . . . (Yes) No N/A

Are internal standard areas acceptable? . . . . . (Yes) No N/A

Are internal standard retention times acceptable? . . . . . (Yes) No N/A

Comments:

8. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . (Yes) No N/A

Is compound quantitation acceptable? . . . . . (Yes) No N/A

Comments:

9. REPORTED RESULTS AND QUANTITATION LIMITS

Are results reported for all requested analyses? . . . . . (Yes) No N/A

Are all results supported in the raw data? . . . . . (Yes) No N/A

Do results meet the CRQLs? . . . . . (Yes) No N/A

Has the laboratory properly identified and coded all TIC? . . . (Yes) No N/A

Comments: TICs were compared with samples against associated blanks and qualified according to the DV procedures.

045

HOLDING TIME SUMMARY

SDG:	VALIDATOR: CJensen	DATE: 6/11/94	PAGE 1 OF 1
COMMENTS: VOA W0013-ITC-029			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WJ9	VOA	3/21/94		3/31/94		10	none
B09WK1		3/22/94		3/31/94		9	
B09WK2		3/22/94		3/28/94		9	
B09WK4		3/23/94		3/28/94		5	
B09WK5		3/23/94		3/31/94		8	
B09WK6		3/24/94	5 6/11/94	3/31/94	5 6/11/94	7	
Trip blank 1		3/25/94		3/29/94		4	
Trip blank 2		3/25/94		3/29/94		4	

9613474.0645

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKAA4934W

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4934

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4934

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	1	J	X10 = 10
67-64-1	Acetone	5	J	X10 = 50
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	3	J	X10 = 30
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	X5 = 10
591-78-6	2-Hexanone	2	J	X10 = 20
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	1	J	X5 = 5

FORM I VOA 3/90

associated with:
B09WJ9, B09WK1, B09WK5, B09WK6

gu 11/1/94

9613474.0646

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKAA4934W

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4934

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4934

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 03/31/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.00	18	J

FORM I VOA-TIC 3/90

Gjelli/94

052

9613474.0647

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKAA4725W

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4725

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4725

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 03/29/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	3	J
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

FORM I VOA 3/90

associated with
BOQWK2 MS

GJ 6/11/94

9613474.0648

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKAA4725W

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4725

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4725

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 03/29/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.00	11	~~J~~ JN

FORM I VOA-TIC 3/90

Gb 6/11/94

9613474.0649

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKAA4753P

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) WATER Lab Sample ID: AA4753

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC909

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 03/29/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	2	J x10=20
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

FORM I VOA 3/90

associated with:
Trip blank 1
Trip blank 2

cj 6/14/94

9613474.0650

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKAA4753P

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) WATER Lab Sample ID: AA4753

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC909

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 03/29/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC 3/90

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKAA4675W

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4675

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4675

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 03/28/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	.9 ~~10~~	~~U~~ J x 10 = 9
67-64-1	Acetone	5	J X10 = 50
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	1 ~~10~~	~~U~~ J x10 = 10
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	1.1 ~~10~~	~~U~~ J X10 = 11
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

FORM I VOA 3/90

associated with
B09WK2, MSD
B09WK4

SJ 4/11/94

9613474.0652

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKAA4675W

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4675

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4675

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 03/28/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.07	20	~~I~~ JN

FORM I VOA-TIC 3/90

058

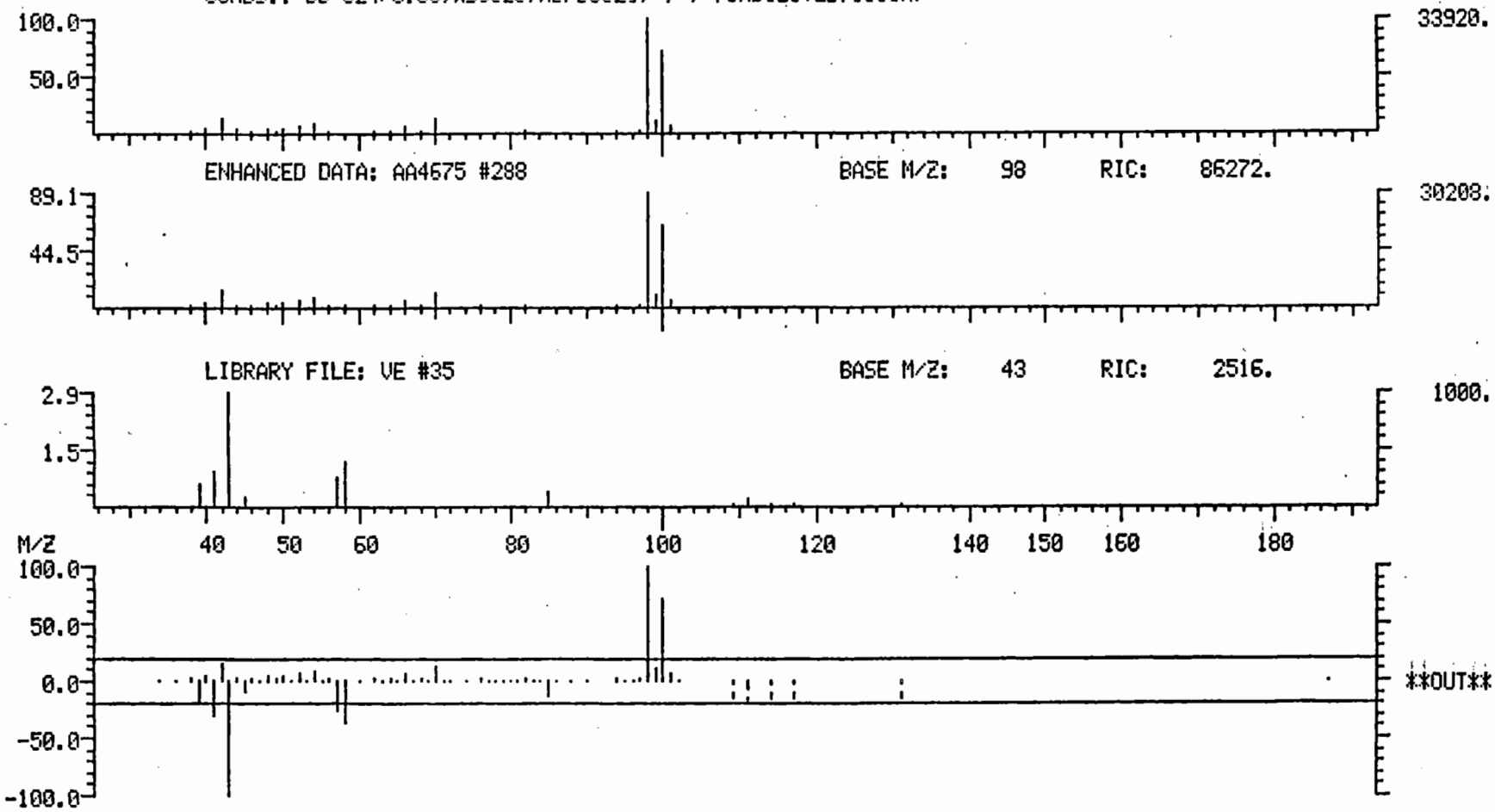
5/6/1994

VBLKAA4675W

TARGET COMPOUND COMPARISON

COMPOUND: C205 4-METHYL-2-PENTANONE

RAW DATA: AA4675 #288 BASE M/Z: 98 RIC: 96384.
03/28/94 14:37
SAMPLE: CLP, , ,VBLKAA4675W,LOW,SOIL,AA4675,VOA,BLANK,
CONDS.: DB-624/0.53,WS0328,WBFB0328, , , ,UNDILUTED,I500A,



9613474.0655

050

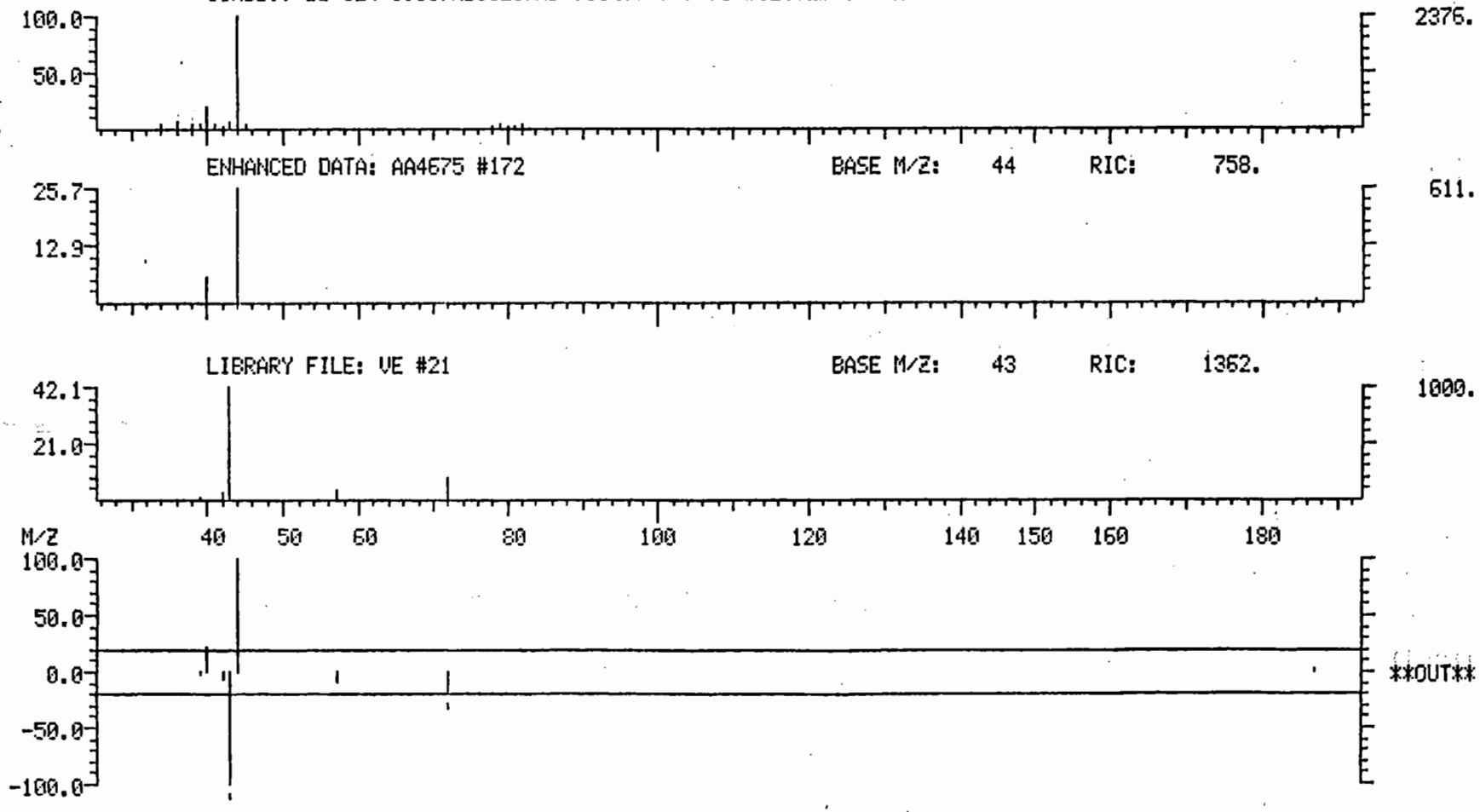
Initials

VBLKAA4675W

TARGET COMPOUND COMPARISON

COMPOUND: C110 2-BUTANONE

RAW DATA: AA4675 #172 BASE M/Z: 44 RIC: 4136.
03/28/94 14:37
SAMPLE: CLP, , ,VBLKAA4675W,LOW,SOIL,AA4675,VOA,BLANK,
CONDS.: DB-624/0.53,WS0328,WBFB0328, , , ,UNDILUTED,I500A,



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MEMORANDUM

JUN 1994 RECEIVED TQO

TO: 200-UP-2 Project QA Record June 14, 1994

FR: Susan Winter, Golder Associates Inc.

RE: GENERAL CHEMISTRY DATA VALIDATION SUMMARY FOR DATA PACKAGE: W0013-ITC-029 (923-E418, Filename W0013W.UP2)

INTRODUCTION

This memo presents the results of data validation on data package W0013-ITC-029 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	ANALYSIS
B09WJ9	03/21/94	SOIL	SEE NOTE 1
B09WK1	03/22/94	SOIL	
B09WK2	03/22/94	SOIL	
B09WK4	03/23/94	SOIL	
B09WK5	03/23/94	SOIL	
B0BKM1*	03/29/94	SOIL	
B0BKM3*	03/29/94	SOIL	
B0BKM4*	03/29/94	SOIL	
B0BKM5*	03/29/94	SOIL	
B0BKM6*	03/29/94	SOIL	
B0BKM7*	03/30/94	SOIL	
B0BKN9*	03/30/94	SOIL	
B0BKP5*	03/30/94	SOIL	
B0BKP7*	03/30/94	SOIL	
B0BKP8*	03/30/94	SOIL	
B0BNQ3	03/31/94	SOIL	
B0BNQ4*	03/30/94	SOIL	
B0BNQ5*	03/30/94	SOIL	
B0BNQ8	03/31/94	SOIL	

RECEIVED JUN 16 1994 VALIDATION DOCUMENTATION SDLA

Note 1. All samples were analyzed for anions (chloride, fluoride, and sulfate) and nitrate+nitrite-N.
* The identified samples were also analyzed for total organic carbon (TOC).

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

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

001

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of nineteen samples were validated in this data package with a total of 88 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data as estimated.

Holding Times

- The required holding time for total organic carbon was exceeded. Attachments 2 and 5 provide a summary of the affected samples, qualifications applied and supporting documentation.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

9613474.0657

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF INORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected. The concentration reported is less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample detection limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration may not accurately reflect the sample detection limit. The associated data have been qualified as estimated but should be considered usable for decision making purposes.

BJ - Indicates the constituent was analyzed for and detected at a concentration less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

UR - Indicates the constituent was analyzed for and not detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

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ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

SDG: W0013-ITC-029	VALIDATOR: DATE: June 14, 1994	PAGE 1 OF 1	
COMMENTS: GENERAL CHEMISTRY			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
TOTAL ORGANIC CARBON	J - DETECTS UJ - NONDETECTS	B0BKM1 B0BKM3 B0BKM4 B0BKM5 B0BKM6 B0BKM7 B0BKN9 B0BKP5 B0BKP7 B0BKP8 B0BNQ4 B0BNQ5	ANALYZED OUT OF REQUIRED HOLDING TIME

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ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B09WJ9		B09WK1		B09WK2		B09WK4		B09WK5		B0BKM1	
	Date	3-21-94		3-22-94		3-22-94		3-23-94		3-23-94		3-29-94	
	Location	---		---		---		---		---		216-U-8	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
CHLORIDE	MG/KG	0.400		0.400	U	0.400	U	4.100		2.900		3.000	
FLUORIDE	MG/KG	0.400	U	0.400	U	0.400	U	0.700		0.400	U	0.400	U
SULFATE	MG/KG	2.200		2.500		3.300		1.700		1.800		6.600	
NITRATE+NITRITE	MG-N/KG	2.500	U	2.500	U	2.500	U	2.500	U	2.500	U	28.000	
TOTAL ORGANIC CARBON	MG/KG	---		---		---		---		---		2000.000	J

Verified
6/15/94

9513974.1862

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	BOBKM3		BOBKM4		BOBKM5		BOBKM6		BOBKM7		BOBKN9	
	Date	3-29-94		3-29-94		3-29-94		3-29-94		3-30-94		3-30-94	
	Location	216-U-8		216-U-8		216-U-8		216-U-8		U1/U2 TILE FIELD		U14 DITCH	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
CHLORIDE	MG/KG	4.700		7.700		3.000		0.400	U	16.000		1.200	
FLUORIDE	MG/KG	0.400	U	0.400	U	0.700		0.400	U	0.500		0.400	U
SULFATE	MG/KG	9.400		11.000		7.100		1.500	U	14.000		4.800	
NITRATE+NITRITE	MG-N/KG	22.000		12.000		18.000		2.600		13.000		7.200	
TOTAL ORGANIC CARBON	MG/KG	3600.000	J	1800.000	J	2500.000	J	1900.000	J	2200.000	J	1000.000	J

Verified
[illegible] 6/15/94

9613741.0663

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B0BKP5		B0BKP7		B0BKP8		B0BNQ3		B0BNQ4		B0BNQ5	
	Date	3-30-94		3-30-94		3-30-94		3-31-94		3-30-94		3-30-94	
	Location	Z DITCH		U1/U2-TILE FIELD		U1/U2-TILE FIELD		216-U-10		216-U-10		216-U-10	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
CHLORIDE	MG/KG	9.400		2.700		3.200		0.400	U	2.900		2.600	
FLUORIDE	MG/KG	0.400	U	0.400	U	0.680		0.400	U	0.400	U	0.400	U
SULFATE	MG/KG	7.800		1.600		1.800		37.000	U	2.000		1.600	
NITRATE+NITRITE	MG-N/KG	10.000		2.500	U	2.500	U	2.500	U	2.500	U	2.500	U
TOTAL ORGANIC CARBON	MG/KG	1200.000	J	100.000	UJ	100.000	UJ	---		100.000	UJ	100.000	UJ

Verified
[illegible] 6/15/94

9615474.0664

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Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B0BNQ8	
	Date	3-31-94	
	Location	216-U-11	
	Depth	---	
	Type	SOIL	
	Comments	---	
Parameter	Units	Result	Q
CHLORIDE	MG/KG	0.900	
FLUORIDE	MG/KG	0.400	U
SULFATE	MG/KG	19.000	
NITRATE+NITRITE	MG-N/KG	23.000	
TOTAL ORGANIC CARBON	MG/KG	---	

Verified

6/15/94

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011

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WJ9	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4619	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.40	+	0.4
fluoride	0.4	U	0.4
sulfate	2.2	+	1.5

Verified
6/14/94

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK1	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4627	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.4	U	0.4
fluoride	0.4	U	0.4
sulfate	2.5	+	1.5

Verified 6/14/94

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

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ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK2	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4592	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.4	U	0.4
fluoride	0.4	U	0.4
sulfate	3.3	+	1.5

Verified
6/14/94

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK4	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4602	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	4.1	+	0.4
fluoride	0.7	+	0.4
sulfate	1.7	+	1.5

+ - Positive result.

Verified
[illegible] 6/14/94

9613474.0670

~~QC00548~~

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK5	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA4610	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	2.9	+	0.4
fluoride	0.4	U	0.4
sulfate	1.8	+	1.5

\+ - Positive result.

Verified

6/14/94

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM1	Analysis Date:	04/28/94
Lab Sample ID:	AA5091	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	3.0	+	0.4
fluoride	0.4	U	0.4
sulfate	6.6	+	1.5

Verified
[illegible] 6/14/94

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM3	Analysis Date:	04/20/94
Lab Sample ID:	AA5098	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	4.7	+	0.4
fluoride	0.4	U	0.4
sulfate	9.4	+	1.5

Verified
[illegible] 6/14/94

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM4	Analysis Date:	04/20/94 & 04/22/94
Lab Sample ID:	AA5077	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	7.7	+	0.4
fluoride	0.4	U	0.4
sulfate	11	+	1.5

Verified
6/14/94

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM5	Analysis Date:	04/20/94
Lab Sample ID:	AA5105	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	3	+	0.4
fluoride	0.7	+	0.4
sulfate	7.1	+	1.5

Verified
[illegible] 6/14/94

+ - Positive result.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM6	Analysis Date:	04/20/94
Lab Sample ID:	AA5084	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.4	U	0.4
fluoride	0.4	U	0.4
sulfate	1.5	U	1.5

Verified
[illegible] 6/14/94

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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKM7	Analysis Date:	04/22/94
Lab Sample ID:	AA5226	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	16	+	0.4
fluoride	0.5	+	0.4
sulfate	14	+	1.5

Verified
[illegible] 6/14/94

+ - Positive result.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKN9	Analysis Date:	04/22/94
Lab Sample ID:	AA5219	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	1.2	+	0.4
fluoride	0.4	U	0.4
sulfate	4.8	+	1.5

Verified
[illegible] 6/14/94

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP5	Analysis Date:	04/22/94
Lab Sample ID:	AA5233	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	9.4	+	0.4
fluoride	0.4	U	0.4
sulfate	7.8	+	1.5

Verified
[illegible] 6/14/94

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP7	Analysis Date:	04/22/94
Lab Sample ID:	AA5205	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	2.7	+	0.4
fluoride	0.4	U	0.4
sulfate	1.6	+	1.5

Verified
[illegible] 6/14/94

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP8	Analysis Date:	04/22/94
Lab Sample ID:	AA5212	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	3.2	+	0.4
fluoride	0.68	+	0.4
sulfate	1.8	+	1.5

Verified
6/14/94

+ - Positive result.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	306
Client Sample ID:	BOBNQ3	Analysis Date:	~~04/22/94~~ 04/28/94
Lab Sample ID:	AA5437	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.4	U	0.4
fluoride	0.4	U	0.4
sulfate	37	U	1.5

Verified
6/14/94

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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ4	Analysis Date:	04/22/94
Lab Sample ID:	AA5198	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	2.9	+	0.4
fluoride	0.4	U	0.4
sulfate	2	+	1.5

Verified
6/14/94

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ5	Analysis Date:	04/22/94
Lab Sample ID:	AA5191	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	2.6	+	0.4
fluoride	0.4	U	0.4
sulfate	1.6	+	1.5

Verified

6/14/94

+ - 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:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	306
Client Sample ID:	BOBNQ8	Analysis Date:	04/22/94
Lab Sample ID:	AA5425	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg

Compound	Result	Qualifier	Detection Limit
chloride	0.9	+	0.4
fluoride	0.4	U	0.4
sulfate	19	+	1.5

Verified

6/14/94

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

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg	Analysis Date:	04/15/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6096	2.5	U
B09WJ9	AA4620	2.5	U
B09WK1	AA4628	2.5	U
B09WK2	AA4593	2.5	U
B09WK4	AA4603	2.5	U
B09WK5	AA4611	2.5	U

Verified
6/14/94

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

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg	Analysis Date:	04/15/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6096	2.5	U
B0BKM1	AA5092	28	+
BOBKM3	AA5099	22	+
BOBKM4	AA5078	12	+
BOBKM5	AA5106	18	+
BOBKM6	AA5085	2.6	+

Verified
[illegible] 6/14/94

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

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg	Analysis Date:	04/15/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6096	2.5	U
BOBKP8	AA5213	2.5	U
BOBKM7	AA5227	13	+
BOBKP7	AA5206	2.5	U
BOBKN9	AA5220	7.2	+
BOBNQ4	AA5199	2.5	U
BOBKP5	AA5234	10	+
BOBNQ5	AA5192	2.5	U

Verified
6/14/94

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

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	306
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg	Analysis Date:	05/06/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6153	2.5	U
BOBNQ3	AA5438	2.5	U
BOBNQ8	AA5426	23	+

Verified
6/14/94

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM1	Analysis Date:	05/13/94
Lab Sample ID:	AA5095	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Q	Detection Limit
total organic carbon	2000	—	S	100

Verified
[illegible] 6/14/94

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM3	Analysis Date:	05/13/94
Lab Sample ID:	AA5102	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Q	Detection Limit
total organic carbon ✓	3600	—	J	100

Verified
[illegible] 6/14/94

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM4	Analysis Date:	05/13/94
Lab Sample ID:	AA5081	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Q	Detection Limit
total organic carbon	1800	—	J	100

Verified
[illegible] 6/14/94

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM5	Analysis Date:	05/13/94
Lab Sample ID:	AA5109	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Q	Detection Limit
total organic carbon	2500	—	J	100

Verified
[illegible] 6/14/94

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM6	Analysis Date:	05/13/94
Lab Sample ID:	AA5088	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Q	Detection Limit
total organic carbon	1900	—	J	100

Verified
[illegible] 6/14/94

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKM7	Analysis Date:	05/13/94
Lab Sample ID:	AA5230	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Q	Detection Limit
total organic carbon	2200	—	J	100

Verified
6/14/94

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKN9	Analysis Date:	05/13/94
Lab Sample ID:	AA5223	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Q	Detection Limit
total organic carbon	1000	—	J	100

Verified
[illegible] 6/14/94

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP5	Analysis Date:	05/13/94
Lab Sample ID:	AA5237	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier		Detection Limit
total organic carbon	1200	—	J	100

Verified
6/14/94

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP7	Analysis Date:	05/13/94
Lab Sample ID:	AA5209	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Q	Detection Limit
total organic carbon	100	~~U~~	UCS	100

Verified
6/14/94

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP8	Analysis Date:	05/13/94
Lab Sample ID:	AA5216	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Q	Detection Limit
total organic carbon	100	~~U~~	U	100

Verified
[illegible] 6/14/94

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ4	Analysis Date:	05/13/94
Lab Sample ID:	AA5202	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Q	Detection Limit
total organic carbon	100	~~U~~	US	100

Verified
[illegible] 6/14/94

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

TOTAL ORGANIC CARBON ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ5	Analysis Date:	05/13/94
Lab Sample ID:	AA5195	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Q	Detection Limit
total organic carbon	100	~~U~~	US	100

Verified
6/14/94

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

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

9613474.0702

0000001

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

RECORD COPY

May 17, 1994

Job Number: 263; 290; 299; 306

This is the Certificate of Analysis for the following samples:

SDG:	W0013
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	March 26, 1994; April 1, 1994; April 4, 1994, April 6, 1994
Number of Samples:	Twenty-two (22)
Sample Type:	Soil

I. Introduction

On March 26, April 1, April 4 and April 6, 1994, twenty-two (22) soil samples arrived at the 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. Soil results are reported on a dry weight basis.

The samples were analyzed for Target Compound List (TCL) volatiles and semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

MAY 1994
RECEIVED
SDLA

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

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.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for total organic carbon (TOC) based on EPA method 9060.

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

III. Quality Control

The volatiles analyses were performed by purge and trap with a J & W DB-624 capillary column on a Hewlett-Packard 5970 GC/MS/DS and a Finnigan INCOS 500 GC/MS/DS. All QC results were within method specified limits.

The semivolatiles analyses were performed by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL GC/MS/DS. All QC results were within method specified limits. The matrix spike and matrix spike duplicate for sample BOBNQ5 showed high recoveries for one matrix spike compound, phenol.

III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WK2 with acceptable recoveries. One laboratory control sample was analyzed and reported with acceptable recoveries. GPC check sample did not meet criteria when compared against the initial calibration. However, when compared against a GPC solution that was not subjected to GPC clean-up, the GPC sample passed all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples for work order #263 were digested on April 11, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA arsenic, lead, selenium and thallium were performed from April 11 through April 27, 1994; the remaining metals were analyzed by ICP on April 13, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number BO9WK2. Spike recovery (accuracy) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for antimony and manganese by ICP analysis. Poor spike recovery for antimony appears to be attributable to matrix interferences. Poor spike recovery for manganese is

III. Quality Control (Continued)

attributable to sample nonhomogeneity. As the titanium concentration is greater than four times (4X) the spike added, spiking criteria do not apply for this analyte. A post digestion spike was performed for antimony and manganese as required by CLP protocol. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for aluminum and chromium by ICP analysis. These two analytes were slightly outside acceptance limits due to probable sample nonhomogeneity.

The samples for work order #290 were digested on April 12, 4994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14 and April 15, 1994. All run QC was acceptable

The samples for work order #299 were digested on April 12, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14, 1994. All run QC was acceptable. In sample BOBKM7, the titanium concentration exceeded the linear range by 0.6%, which is less than the 5% acceptance range. During the cyanide analysis, the continuing calibration verification #2 was below the acceptable lower limit of 80%. All sample concentrations were nondetects. The samples were reanalyzed with acceptable limits.

The samples for work order #306 were digested on April 15, 1994 for ICP and April 12, 1994 for GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 12 through April 19, 1994; the remaining metals were analyzed by ICP on April 20, 1994. All run QC was acceptable.

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.

"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.

051

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

"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 total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike duplicate analyses were performed using sample numbers BOBNQ5 and B09WK2 with acceptable results.

On April 15, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WK2. All QC results were acceptable.

The samples were analyzed for anions on April 20, April 22 and April 28, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for total organic carbon by an O.I. TOC 700. Matrix spike/matrix spike duplicate analyses were performed using sample BOBNQ5.

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4589	403489-01 (A-H)	B09WK2	SOIL	METALS
AA4590	"	"	"	VOC
AA4591	"	"	"	SVOC
AA4592	"	"	"	ANIONS
AA4593	"	"	"	NO3NO2
AA4594	"	"	"	PEST/PCB
AA4595	"	"	"	CN
AA4596	"	"	"	TPH
AA4599	403489-02 (A-H)	B09WK4	"	METALS
AA4600	"	"	"	VOC
AA4601	"	"	"	SVOC
AA4602	"	"	"	ANIONS
AA4603	"	"	"	NO3NO2
AA4604	"	"	"	PEST/PCB
AA4605	"	"	"	CN
AA4606	"	"	"	TPH
AA4607	403489-03 (A-H)	B09WK5	"	METALS
AA4608	"	"	"	VOC
AA4609	"	"	"	SVOC
AA4610	"	"	"	ANIONS
AA4611	"	"	"	NO3NO2
AA4612	"	"	"	PEST/PCB
AA4613	"	"	"	CN
AA4614	"	"	"	TPH

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4615	403489-04 (A)	B09WK6	SOIL	VOC
AA4616	403489-05 (A-H)	B09WJ9	"	METALS
AA4617	"	"	"	VOC
AA4618	"	"	"	SVOC
AA4619	"	"	"	ANIONS
AA4620	"	"	"	NO3NO2
AA4621	"	"	"	PEST/PCB
AA4622	"	"	"	CN
AA4623	"	"	"	TPH
AA4624	403489-06 (A-H)	B09WK1	"	METALS
AA4625	"	"	"	VOC
AA4626	"	"	"	SVOC
AA4627	"	"	"	ANIONS
AA4628	"	"	"	NO3NO3
AA4629	"	"	"	PEST/PCB
AA4630	"	"	"	CN
AA4631	"	"	"	TPH
AA4633	403489-07 (A,B)	Trip Blank	"	VOC
AA4634	403489-08 (A,B)	"	"	VOC
AA5075	40363001 (A-G)	BOBKM4	"	SVOC
AA5076	"	"	"	METALS
AA5077	"	"	"	ANIONS
AA5078	"	"	"	NO3NO2
AA5079	"	"	"	CN
AA5080	"	"	"	TPH
AA5081	"	"	"	TOC

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5082	40363002 (A-G)	BOBKM6	SOIL	SVOC
AA5083	"	"	"	METALS
AA5084	"	"	"	ANIONS
AA5085	"	"	"	NO3NO2
AA5086	"	"	"	CN
AA5087	"	"	"	TPH
AA5088	"	"	"	TOC
AA5089	40363003 (A-G)	BOBKM1	"	SVOC
AA5090	"	"	"	METALS
AA5091	"	"	"	ANIONS
AA5092	"	"	"	NO3NO2
AA5093	"	"	"	CN
AA5094	"	"	"	TPH
AA5095	"	"	"	TOC
AA5096	40363004 (A-G)	BOBKM3	"	SVOC
AA5097	"	"	"	METALS
AA5098	"	"	"	ANIONS
AA5099	"	"	"	NO3NO2
AA5100	"	"	"	CN
AA5101	"	"	"	TPH
AA5102	"	"	"	TOC
AA5103	40363005 (A-G)	BOBKM5	"	SVOC
AA5104	"	"	"	METALS
AA5105	"	"	"	ANIONS
AA5106	"	"	"	NO3NO2
AA5107	"	"	"	CN
AA5108	"	"	"	TPH
AA5109	"	"	"	TOC

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5189	404016-01 (A-G)	BOBNQ5	SOIL	SVOC
AA5190	"	"	"	METALS
AA5191	"	"	"	ANIONS
AA5192	"	"	"	NO3NO2
AA5193	"	"	"	CN
AA5194	"	"	"	TPH
AA5195	"	"	"	TOC
AA5196	404016-02 (A-G)	BOBNQ4	"	SVOC
AA5197	"	"	"	METALS
AA5198	"	"	"	ANIONS
AA5199	"	"	"	NO3NO2
AA5200	"	"	"	CN
AA5201	"	"	"	TPH
AA5202	"	"	"	TOC
AA5203	404016-03 (A-G)	BOBKP7	"	SVOC
AA5204	"	"	"	METALS
AA5205	"	"	"	ANIONS
AA5206	"	"	"	NO3NO2
AA5207	"	"	"	CN
AA5208	"	"	"	TPH
AA5209	"	"	"	TOC
AA5210	404016-04 (A-G)	BOBKP8	"	SVOC
AA5211	"	"	"	METALS
AA5212	"	"	"	ANIONS
AA5213	"	"	"	NO3NO2
AA5214	"	"	"	CN
AA5215	"	"	"	TPH
AA5216	"	"	"	TOC

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5217	404016-05 (A-G)	BOBKN9	SOIL	SVOC
AA5218	"	"	"	METALS
AA5219	"	"	"	ANIONS
AA5220	"	"	"	NO3NO2
AA5221	"	"	"	CN
AA5222	"	"	"	TPH
AA5223	"	"	"	TOC
AA5224	404016-06 (A-G)	BOBKM7	"	SVOC
AA5225	"	"	"	METALS
AA5226	"	"	"	ANIONS
AA5227	"	"	"	NO3NO2
AA5228	"	"	"	CN
AA5229	"	"	"	TPH
AA5230	"	"	"	TOC
AA5231	404016-07 (A-G)	BOBKP5	"	SVOC
AA5232	"	"	"	METALS
AA5233	"	"	"	ANIONS
AA5234	"	"	"	NO3NO2
AA5235	"	"	"	CN
AA5236	"	"	"	TPH
AA5237	"	"	"	TOC
AA5423	404065-01	BOBNQ8	"	SVOC
AA5424	"	"	"	METALS
AA5425	"	"	"	ANIONS
AA5426	"	"	"	NO3NO2
AA5427	"	"	"	CN
AA5428	"	"	"	TPH

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5435	404065-02	BOBNQ3	SOIL	SVOC
AA5436	"	"	"	METALS
AA5437	"	"	"	ANIONS
AA5438	"	"	"	NO3NO2
AA5439	"	"	"	CN
AA5440	"	"	"	TPH

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

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
Project Manager

059

9613474.0714

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-21-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 403489 B09W39

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
05 C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
H 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900 4

~~2)~~
~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-21-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 Jason E. Rogers 1310	ITAS Karen Fortenberry	3-25-94 10:00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0715

~~0000055~~

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WK0

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2) B09WK1

403489 06

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349005

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 3-24-94 1310	Received by: ITA	Date/Time: 3-25-94 10 00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0716

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

403489 01 — Sample Identification

1) B09WK2

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

LER 3-22-94

[] Field Transfer of Custody — Chain of Possession (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 1310	ITAS 1100	3/25/94 1100
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

062

9613474.0717

~~0000049~~

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-23-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 40348902 B09WK4

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349002

2) 40348903 B09WK5

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349003

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Karen L. Rogers 3-24-94 1310	[illegible] 10 00 am	3-25-94 10 00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO# 290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006448

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SML 457
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
03680								
03 A	BOBKM1	S	3-29-94	0850	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM1	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM1	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM1	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM1	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM1	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM1	S			(1) 125ml aGs	TOC	9060	
03631 03	BOBKM1	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
[illegible]	3-31-94	0815	D.P. Edwards
D.P. Edwards	3-31-94	0815	R.M. Arnold
R.M. Arnold	3-31-94	1055	E. Boyd 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

064

9413744.0718

0000057

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006450

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. 5414459
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
03630 04 A	BOBKM3	S	3-29-94	0944	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM3	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM3	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM3	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM3	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM3	S			(1) 125ml aGs	TOC	9060	
03631 04	BOBKM3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
RT Sickle RT Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	[illegible]
[illegible]	3-31-94	1055	R. Boud 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

065

9413471.0719

0000058

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006451

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. GWL 459
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 216-U-8 Vitrified Clay Pipeline
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations 216-U-8 Crib
Offsite Property No. W94-0-0369 #46
Field Logbook No. RWH 3-31-94

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
103	BOBKM4	S	3-29-94	0950	(1) 250ml aG	Semi-VOA	CLP	
030 01A	BOBKM4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
B	BOBKM4	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
C	BOBKM4	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
B	BOBKM4	S			(1) 125ml G	Cyanide	CPL	
E	BOBKM4	S			(1) 125ml G	TPH Diesel Range	8015m	
F	BOBKM4	S			(1) 125ml Gs	TOC	9060	
G	BOBKM4	S			(1) 125ml aGs	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		
0363 01	BOBKM4	S			(1) 1000ml Poly			

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle R.T. Sickle	3-31-94	0815	Daniel L. Edwards
Daniel L. Edwards	3-31-94	0815	R.W. Arnold R.W. Arnold
R.W. Arnold R.W. Arnold	3-31-94	1055	R. Boyd IT 3-31-94 1160

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

990

9615974.0720

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006452

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. 526 Seal
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
03630 05 A	BOBKM5	S	3-29-94	1030	(1) 250ml aG	Semi-VOA CLP	
B	BOBKM5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKM5	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKM5	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKM5	S			(1) 125ml G	Cyanide CPL	
F	BOBKM5	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKM5	S			(1) 125ml aGs	TOC 9060	
03631 05	BOBKM5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	[illegible]
[illegible]	3-31-94	1055	[illegible] 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

067

9413174.0721

0000060

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006453

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SML 526
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
0830 02A	BOBKM6	S	3-29-94	1058	(1) 250ml aG	Semi-VOA CLP	
B	BOBKM6	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKM6	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKM6	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKM6	S			(1) 125ml G	Cyanide CPL	
F	BOBKM6	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKM6	S			(1) 125ml aGs	TOC 9060	
1030 02	BOBKM6	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	[illegible]
[illegible]	~~1055~~ 3-31-94	1033	[illegible] 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

0680

9513741.0722

0000061

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1 006454

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SML 906
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation ~~216-U-8 Vitrified Clay Pipeline~~ 200 W 1/2 3-30-94
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations ~~216~~-U-8 Crib W 1/2 Tile Field 3-30-94
Offsite Property No. W94-0-0369#47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104046 06A	BOBKM7	S	3-30-94	1730	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM7	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM7	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM7	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM7	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM7	S			(1) 125ml aGs	TOC	9060	
104017 06	BOBKM7	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-1-94	1000	Ray Arnold
Ray Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

069

9413474.1123

0006454

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006466

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SML 906
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation ~~216-U-8 Vitrified Clay~~ Pipeline 200 [illegible] 3 30 94
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations ~~216-U-8 Crib~~ [illegible] 3 30 94
Offsite Property No. W94-0-0367 #47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
404016 35 A	BOBKN9	S	3 30 94	1100	(1) 250ml aG	Semi-VOA CLP	
B	BOBKN9	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKN9	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKN9	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKN9	S			(1) 125ml G	Cyanide CPL	
F	BOBKN9	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKN9	S			(1) 125ml aGs	TOC 9060	
404017 05	BOBKN9	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	R.M. Arnold R.M. Arnold
R.M. Arnold R.M. Arnold	4-1-94	1210	Tom Gilmore, ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

070

9513974.0724

0000066

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006469

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SWL 413
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations Z Ditch
Offsite Property No. W94-0-0567 #47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
04016 37 A	BOBKP5	S	3-30-94	1330	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKP5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKP5	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKP5	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKP5	S			(1) 125ml G	Cyanide	CPL	
F	BOBKP5	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKP5	S			(1) 125ml aGs	TOC	9060	
404019 07	BOBKP5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle	4-1-94	1000	RM Arnold
RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

071

9413174.1425

0006469

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006473

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SIYL 906
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations U1/U2 Tile Field
Offsite Property No. W94-0-0369#47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
104016 03 A	BOBKP7	S	3-30-94	0940	(1) 250ml aG	Semi-VOA CLP	
B	BOBKP7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKP7	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKP7	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKP7	S			(1) 125ml G	Cyanide CPL	
F	BOBKP7	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKP7	S			(1) 125ml aGs	TOC 9060	
104017 03	BOBKP7	S	3-30-94	0940	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

072

9613474.0726

0000664

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
	WO#299	006474

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations U1/U2 Tile Field
Ice Chest No. SNL 906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104016 04 A	BOBKP8	S	3-30-94	0900	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKP8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKP8	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKP8	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKP8	S			(1) 125ml G	Cyanide	CPL	
F	BOBKP8	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKP8	S			(1) 125ml aGs	TOC	9060	
104017 04	BOBKP8	S	3-30-94	0900	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
[signature] RT Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	[signature] ITAS Tom Gilmore

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

073

9619474.0227

0000065

WO #3016

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006261

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-10 Pond
Ice Chest No. GW5009
Bill of Lading/Airbill No. N/A
Offsite Property No.
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS
Analyze per SAF 94-065.

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
A	BOBNQ3	S	3-31-94	1200	(1) 250ml aG	Semi-VOA	CLP	
B	BOBNQ3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBNQ3	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBNQ3	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBNQ3	S			(1) 125ml G	Cyanide	CPL	
F	BOBNQ3	S			(1) 125ml Gs	TPH Diesel Range	8015m	
	~~BOBNQ3~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ RTS 3-31-94	9060	
	BOBNQ3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

4040602 Rcvd

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-4-94	0830	Daniel L. Edwards
Daniel L. Edwards	4-5-94	0815	Heidelberg OT
			4/5 1030

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

074

9413174.0728

0000069

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006262

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-10 Pond
Ice Chest No. SWL 413
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0367 #47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
104016 02 A BOBNQ4	S	3-30-94	1330	(1) 250ml aG	Semi-VOA CLP	
B BOBNQ4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBNQ4	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBNQ4	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBNQ4	S			(1) 125ml G	Cyanide CPL	
F BOBNQ4	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBNQ4	S			(1) 125ml aGs	TOC 9060	
104017 02 BOBNQ4	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	Ray Arnold Ray Arnold
Ray Arnold Ray Arnold	4-1-94	1210	Tom Gilmore Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

075

9615744.0729

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Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006263

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SWL413
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations 216-U-10 Pond
Offsite Property No. LK94-C 0367-#47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
04016 01 A	BOBNQ5	S	3-30-94	1345	(1) 250ml aG	Semi-VOA	CLP	
B	BOBNQ5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBNQ5	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBNQ5	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBNQ5	S			(1) 125ml G	Cyanide	CPL	
F	BOBNQ5	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBNQ5	S			(1) 125ml aGs	TOC	9060	
04017 01	BOBNQ5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-1-94	1000	RM Arnold
RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

076

9413974.0730

0000008

WO#306

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006267

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-11 Trench
Ice Chest No. GWJ 620
Bill of Lading/Airbill No. N/A
Offsite Property No.
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
A	BOBNQ8	S	3-31-94	1405	(1) 250ml aG	Semi-VOA	CLP	
B	BOBNQ8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBNQ8	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBNQ8	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBNQ8	S			(1) 125ml G	Cyanide	CPL	
F	BOBNQ8	S			(1) 125ml Gs	TPH Diesel Range	8015m	
	~~BOBNQ8~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ RL 3-31-94	9060	
	BOBNQ8	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

404065 01
404066 01

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-4-94	0830	Daniel L. Edwards
Daniel L. Edwards	4-5-94	0815	[illegible]

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

077

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ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	(E)

PROJECT: 200-UP-2		DATA PACKAGE: W0013-ITC-029
VALIDATOR: [illegible]	LAB: ITC	DATE: 06/14/94
CASE:		SDG: W0013-ITC-029

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	☐	☐
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX Soils

B09WJ9	B0BKM1	B0BKM7	B0BNQ3
B09WK1	B0BKM3	B0BKN9	B0BNQ4
B09WK2	B0BKM4	B0BKP5	B0BNQ5
B09WK4	B0BKM5	B0BKP7	B0BNQ8
B09WK5	B0BKM6	B0BKP8	

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: The TOC analysis was performed out of holding time. Therefore, all TOC results have been qualified as estimated (J/UJ).

079

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: Sample locations are currently not available. Field QC will be evaluated in the final summary report

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? . . . . . Yes No (N/A)

Are field split RPD values acceptable? . . . . . Yes No (N/A)

080

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

Comments: The lab duplicates were performed as matrix spike duplicates. All RPDs are acceptable. No qualification is required.

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: TOC analysis was not requested

6/14/91 See the following samples: B09WJ9, B09WK0, B09WK2, B09WK4, B09WK5, B0BNQ3 and B1BNQ8.

HOLDING TIME SUMMARY

W0013-ITC-029

SDG:	VALIDATOR:	DATE: 6/14/94	PAGE 1 OF 4
COMMENTS: General Chemistry			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WJ9	NO2/NO3	3/21/94	NA	04/15/94	NA	25	None
B09WK1		3/22/94		04/15/94		24	
B09WK2		3/22/94		04/15/94		24	
B09WK4		3/23/94		04/15/94		23	
B09WK5		3/23/94		04/15/94		23	
B0BKM1		3/29/94		04/15/94		17	
B0BKM3		3/29/94		04/15/94		17	
B0BKM4		3/29/94		04/15/94		17	
B0BKM5		3/29/94		04/15/94		17	
B0BKM6		3/29/94		04/15/94		17	
B0BKP8		3/30/94		04/15/94		16	
B0BKM7		3/30/94		04/15/94		16	
B0BKP7		3/30/94		04/15/94		16	
B0BKN9		3/30/94		04/15/94		16	
B0BNQ4		3/30/94		04/15/94		16	
B0BKP5		3/30/94		04/15/94		16	
B0BNQ5		3/30/94		04/15/94		16	

HOLDING TIME SUMMARY

W0013-ITC-029

SDG:	VALIDATOR:	DATE: 6/14/94	PAGE 2 OF 4
COMMENTS: General Chemistry			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B0BNQ3	NO2/NO3	3/31/94	04/22/94	05/04/94	20	16	None
B0BNQ8	↓	3/31/94	↓	05/06/94	20	16	↓
~~B09WF9~~	~~TOC~~	~~3/22/94~~	~~NA~~	~~5/13/94~~	~~NA~~	~~53~~ 6/14/94	
~~B09WF1~~		~~3/22/94~~				~~52~~ 6/14/94	
~~B09WF2~~		~~3/22/94~~				~~52~~ 6/14/94	
~~B09WF4~~		~~3/23/94~~				~~51~~ 6/14/94	
~~B09WF5~~		~~3/23/94~~				~~51~~ 6/14/94	
B0BFM1		3/29/94				45	J
B0BFM3		3/29/94				45	J
B0BFM4		3/29/94				45	J
B0BFM5		3/29/94				45	J
B0BFM6		3/29/94				45	J
B0BFP8		3/30/94				44	UJ
B0BFM7		3/30/94				44	J
B0BFP7		3/30/94				44	UJ
B0BFN9		3/30/94				44	J
B0BNQ4	↓	3/30/94	↓	↓	↓	44	UJ

6/14/94 6/14/94 6/14/94 6/14/94 6/14/94

B-1

083

HOLDING TIME SUMMARY

W0013-ITC-029

SDG:	VALIDATOR:	DATE: 6/14/94	PAGE 3 OF 4

COMMENTS:

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B0BKP5	TOC	3/30/94	NA	5/13/94	NA	44	6/14/94 J
B0BNQ5		3/30/94				44	UJ
6/14/94 B0BNQ3		3/31/94			6/14/94	43	
6/14/94 B0BNW8		3/31/94			6/14/94	43	
B09WJ9	Anions	3/21/94	4/15/94	4/20/94	25	5	None
B09WK1		3/22/94		4/20/94	24	5	
B09WK2		3/22/94		4/22/94	24	7	
B09WK4		3/23/94		4/20/94	23	5	
B09WK5		3/23/94		4/20/94	23	5	
B0BKM1		3/29/94		4/28/94	4/14/94 ~~17~~ 17	13	
B0BKM3		3/29/94		4/20/94	17	5	
B0BKM4		3/29/94		6/14/94 4/20/94	4/20/94 17	5-7	
B0BKM5		3/29/94		4/20/94	17	5	
B0BKM6		3/29/94		4/20/94	17	5	
B0BKM7		3/30/94		4/22/94	16	7	
B0BKN9		3/30/94		4/22/94	16	6/14/94 ~~5~~ 7	
B0BKP5		3/30/94		4/22/94	16	7	

HOLDING TIME SUMMARY

WQ013-ITC-029

SDG:	VALIDATOR:	DATE: 6/14/94	PAGE 4 OF 4
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B0BKP7	Anions	3/30/94	4/15/94	4/22/94	16	7	None
B0BKP8		3/30/94		4/22/94	16	7	
B0BNQ3		3/31/94		4/28/94	15	13	
B0BNQ4		3/30/94		4/22/94	16	7	
B0BNQ5		3/30/94		4/22/94	16	7	
B0BNQ8		3/31/94		4/22/94	15	7	

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MEMORANDUM

JUN 1994 RECEIVED TQO

TO: 200-UP-2 Project QA Record June 12, 1994

FR: Christina Jensen, Golder Associates Inc

RE: SEMIVOLATILES DATA VALIDATION SUMMARY FOR DATA PACKAGE: W0013-ITC-029 (923-E418 W0013B.UP2)

INTRODUCTION

This memorandum presents the results of data validation on data package W0013-ITC-029 prepared by International Technology Corporation (IT) 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	ANALYSIS
B09WJ9	03/21/94	SOIL	SEE NOTE 1
B09WK1	03/22/94	SOIL	
B09WK2	03/22/94	SOIL	
B09WK4	03/23/94	SOIL	
B09WK5	03/23/94	SOIL	
B0BKM1	03/29/94	SOIL	
B0BKM3	03/29/94	SOIL	
B0BKM4	03/29/94	SOIL	
B0BKM5	03/29/94	SOIL	
B0BKM6	03/29/94	SOIL	
B0BKM7	03/30/94	SOIL	
B0BKN9	03/30/94	SOIL	
B0BKP5	03/30/94	SOIL	
B0BKP7	03/30/94	SOIL	
B0BKP8	03/30/94	SOIL	
B0BNQ4	03/30/94	SOIL	
B0BNQ5	03/30/94	SOIL	
B0BNQ3	03/31/94	SOIL	
B0BNQ8	03/31/94	SOIL	

RECEIVED JUN 16 1994 VALIDATION DOCUMENTATION SDLA

Notes: 1. The samples were analyzed for target compound list (TCL) semivolatile organics.

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

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

01

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of nineteen samples were validated in this data package with a total of 1216 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets the normal work plan objectives of 90 percent.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data.

Calibration

- Initial calibrations were not performed for 3-nitroaniline, however, the compound was calibrated for in the continuing calibrations. All sample results for 3-nitroaniline have been qualified as estimated (UJ) due to this calibration inconsistency. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

- Initial calibration relative response factors for fluorene, benzo(k)fluoranthene and benzo(a)anthracene were unacceptable. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

- Continuing calibration percent differences for benzo(k)fluoranthene was unacceptable. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

Laboratory Blanks

- Bis(2-Ethylhexyl)Pthalate was detected the laboratory blanks at concentrations that are generally lower than the reporting concentration of 1 ug/mL. The blank results have been reported on the blank results forms and used to qualify associated sample results as undetected (U). Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

TENTATIVELY IDENTIFIED COMPOUND EVALUATION

Tentatively identified compounds (TICs) reported by the laboratory were evaluated during validation and qualified as follows:

- TICs were detected in the sample(s) and associated laboratory blank and were common laboratory contaminants, resulting in qualification of the TICs as unusable (UR) as shown in Attachment 3.
- TICs were detected in the sample(s) and associated laboratory blank and have been qualified due to associated blank contamination and have been determined to be presumptive and valid (UJN).
- TICs were detected in the sample(s) and identified as common laboratory contaminants, resulting in qualification of the results as unusable (R) as shown in Attachment 3.
- TICs were detected in the sample(s) and determined to be valid, resulting in qualification of the results as presumptive and valid (JN).
- TICs reported by the laboratory as "unknown" have been corrected to reflect the type of contaminant shown following review of the spectra and qualified as unusable (R).

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

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Attachment 1

Glossary of Data Reporting Qualifiers

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

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.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

Attachment 2

Summary of Data Qualifications

WHC-SD-EN-SPP-002. Rev. 2

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: NA	VALIDATOR: C. Jensen	DATE: 06/12/94	PAGE 1 OF 1
COMMENTS: SEMIVOLATILES W0013-ITC-029			
PARAMETER	QUALIFIER	SAMPLES AFFECTED	REASON
FLUORENE	UJ	B0BKM1, B0BKM3, B0BKM4, B0BKM5, B0BKM6, B09WK2, B09WK4, B09WK5, B09WJ9, B09WK1	INITIAL CALIBRATION RRF
BENZO(K)FLUORANTHENE	UJ	B0BKM1, B0BKM3, B0BKM4, B0BKM5, B0BKM6, B09WK2, B09WK4, B09WK5, B09WJ9, B09WK1	INITIAL CALIBRATION RRF
BENZO(A)ANTHRACENE	UJ	B0BKP8, B0BKM7, B0BKP7, B0BKN9, B0BNQ4, B0BKP5, B0BNQ5	INITIAL CALIBRATION RRF
3-NITROANILINE	UJ	ALL	NOT INITIALLY CALIBRATED FOR
BENZO(K)FLUORANTHENE	UJ	B09WK2, B09WK4, B09WK5, B09WJ9, B09WK1	CONTINUING CALIBRATION %D
BENZO(K)FLUORANTHENE	UJ	B0BKM1, B0BKM3, B0BKM4, B0BKM5, B0BKM6,	CONTINUING CALIBRATION %D
BIS(2ETHYLHEXYL) PHTHALATE	U	B09WK4, B09WK5, B0BKM1, B0BKM3, B0BKM5, B0BNQ4	BLANK CONTAMINATION

9613474.0747

Attachment 3

Qualified Data Summary and Annotated Laboratory Reports

0-08

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B09WJ9		B09WK1		B09WK2		B09WK4		B09WK5		B0BKM1	
	Date	3-21-94		3-22-94		3-22-94		3-23-94		3-23-94		3-29-94	
	Location	---		---		---		---		---		216-U-8	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PHENOL	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2-CHLOROPHENOL	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
1,3-DICHLOROBENZENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
1,4-DICHLOROBENZENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
1,2-DICHLOROBENZENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2-METHYLPHENOL	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
4-METHYLPHENOL	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
HEXACHLOROETHANE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
NITROBENZENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
ISOPHORONE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2-NITROPHENOL	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2,4-DIMETHYLPHENOL	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2,4-DICHLOROPHENOL	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
1,2,4-TRICHLOROBENZENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
NAPHTHALENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
4-CHLOROANILINE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
HEXACHLOROBUTADIENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
4-CHLORO-3-METHYLPHENOL	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2-METHYLNAPHTHALENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2,4,6-TRICHLOROPHENOL	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2,4,5-TRICHLOROPHENOL	UG/KG	990.000	U	940.000	U	930.000	U	790.000	U	800.000	U	820.000	U
2-CHLORONAPHTHALENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2-NITROANILINE	UG/KG	990.000	U	940.000	U	930.000	U	790.000	U	800.000	U	820.000	U
DIMETHYLPHTHALATE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
ACENAPHTHYLENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2,6-DINITROTOLUENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
3-NITROANILINE	UG/KG	990.000	UJ	940.000	UJ	930.000	UJ	790.000	UJ	800.000	UJ	820.000	UJ
ACENAPHTHENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2,4-DINITROPHENOL	UG/KG	990.000	U	940.000	U	930.000	U	790.000	U	800.000	U	820.000	U
4-NITROPHENOL	UG/KG	990.000	U	940.000	U	930.000	U	790.000	U	800.000	U	820.000	U
DIBENZOFURAN	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
2,4-DINITROTOLUENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
DIETHYLPHTHALATE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U

9612474.0748

Verified 6/15/94

60-05

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B09WJ9		B09WK1		B09WK2		B09WK4		B09WK5		B0BKM1	
	Date	3-21-94		3-22-94		3-22-94		3-23-94		3-23-94		3-29-94	
	Location	---		---		---		---		---		216-U-8	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
4-CHLOROPHENYL-PHENYLETHER	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
FLUORENE	UG/KG	410.000	UJ	390.000	UJ	390.000	UJ	330.000	UJ	330.000	UJ	340.000	UJ
4-NITROANILINE	UG/KG	990.000	U	940.000	U	930.000	U	790.000	U	800.000	U	820.000	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	990.000	U	940.000	U	930.000	U	790.000	U	800.000	U	820.000	U
N-NITROSODIPHENYLAMINE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
HEXACHLOROBENZENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
PENTACHLOROPHENOL	UG/KG	990.000	U	940.000	U	930.000	U	790.000	U	800.000	U	820.000	U
PHENANTHRENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
ANTHRACENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
CARBAZOLE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
DI-N-BUTYLPHTHALATE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
FLUORANTHENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
PYRENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
BUTYLBENZYLPHTHALATE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
3,3'-DICHLOROBENZIDINE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
BENZO(A)ANTHRACENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
CHRYSENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
DI-N-OCTYLPHTHALATE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
BENZO(B)FLUORANTHENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
BENZO(K)FLUORANTHENE	UG/KG	410.000	UJ	390.000	UJ	390.000	UJ	330.000	UJ	330.000	UJ	340.000	UJ
BENZO(A)PYRENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
INDENO(1,2,3-CD)PYRENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
DIBENZ(A,H)ANTHRACENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U
BENZO(G,H,I)PERYLENE	UG/KG	410.000	U	390.000	U	390.000	U	330.000	U	330.000	U	340.000	U

Verified 6/10/94

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B0BKM3		B0BKM4		B0BKM5		B0BKM6		B0BKM7		B0BKN9	
	Date	3-29-94		3-29-94		3-29-94		3-29-94		3-30-94		3-30-94	
	Location	216-U-8		216-U-8		216-U-8		216-U-8		U1/U2 TILE		U14 DITCH	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PHENOL	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2-CHLOROPHENOL	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
1,3-DICHLOROBENZENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
1,4-DICHLOROBENZENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
1,2-DICHLOROBENZENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2-METHYLPHENOL	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
4-METHYLPHENOL	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
HEXACHLOROETHANE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
NITROBENZENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
ISOPHORONE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2-NITROPHENOL	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2,4-DIMETHYLPHENOL	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2,4-DICHLOROPHENOL	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
1,2,4-TRICHLOROBENZENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
NAPHTHALENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
4-CHLOROANILINE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
HEXACHLOROBUTADIENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
4-CHLORO-3-METHYLPHENOL	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2-METHYLNAPHTHALENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2,4,6-TRICHLOROPHENOL	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2,4,5-TRICHLOROPHENOL	UG/KG	810.000	U	840.000	U	800.000	U	820.000	U	820.000	U	810.000	U
2-CHLORONAPHTHALENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2-NITROANILINE	UG/KG	810.000	U	840.000	U	800.000	U	820.000	U	820.000	U	810.000	U
DIMETHYLPHTHALATE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
ACENAPHTHYLENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2,6-DINITROTOLUENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
3-NITROANILINE	UG/KG	810.000	UJ	840.000	UJ	800.000	UJ	820.000	UJ	820.000	UJ	810.000	UJ
ACENAPHTHENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2,4-DINITROPHENOL	UG/KG	810.000	U	840.000	U	800.000	U	820.000	U	820.000	U	810.000	U
4-NITROPHENOL	UG/KG	810.000	U	840.000	U	800.000	U	820.000	U	820.000	U	810.000	U
DIBENZOFURAN	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
2,4-DINITROTOLUENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
DIETHYLPHTHALATE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U

Verified 5/11/94

9409140250

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	BOBKM3		BOBKM4		BOBKM5		BOBKM6		BOBKM7		BOBKN9	
	Date	3-29-94		3-29-94		3-29-94		3-29-94		3-30-94		3-30-94	
	Location	216-U-8		216-U-8		216-U-8		216-U-8		U1/U2 TILE		U14 DITCH	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
4-CHLOROPHENYL-PHENYLETHER	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
FLUORENE	UG/KG	340.000	UJ	350.000	UJ	330.000	UJ	340.000	UJ	340.000	U	330.000	U
4-NITROANILINE	UG/KG	810.000	U	840.000	U	800.000	U	820.000	U	820.000	U	810.000	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	810.000	U	840.000	U	800.000	U	820.000	U	820.000	U	810.000	U
N-NITROSODIPHENYLAMINE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
HEXACHLOROBENZENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
PENTACHLOROPHENOL	UG/KG	810.000	U	840.000	U	800.000	U	820.000	U	820.000	U	810.000	U
PHENANTHRENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
ANTHRACENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
CARBAZOLE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
DI-N-BUTYLPHTHALATE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
FLUORANTHENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
PYRENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
BUTYLBENZYLPHTHALATE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
3,3'-DICHLOROBENZIDINE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
BENZO(A)ANTHRACENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	UJ	330.000	UJ
CHRYSENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
DI-N-OCTYLPHTHALATE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
BENZO(B)FLUORANTHENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
BENZO(K)FLUORANTHENE	UG/KG	340.000	UJ	350.000	UJ	330.000	UJ	340.000	UJ	340.000	U	330.000	U
BENZO(A)PYRENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
INDENO(1,2,3-CD)PYRENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
DIBENZ(A,H)ANTHRACENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U
BENZO(G,H,I)PERYLENE	UG/KG	340.000	U	350.000	U	330.000	U	340.000	U	340.000	U	330.000	U

9413147.0251

Vinod Gupta 5/17/94

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B0BKP5		B0BKP7		B0BKP8		B0BNQ3		B0BNQ4		B0BNQ5	
	Date	3-30-94		3-30-94		3-30-94		3-31-94		3-30-94		3-30-94	
	Location	Z DITCH		U1/U2-TILE		U1/U2-TILE		216-U-10		216-U-10		216-U-10	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PHENOL	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2-CHLOROPHENOL	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
1,3-DICHLOROBENZENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
1,4-DICHLOROBENZENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
1,2-DICHLOROBENZENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2-METHYLPHENOL	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
4-METHYLPHENOL	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
HEXACHLOROETHANE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
NITROBENZENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
ISOPHORONE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2-NITROPHENOL	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2,4-DIMETHYLPHENOL	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2,4-DICHLOROPHENOL	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
1,2,4-TRICHLOROBENZENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
NAPHTHALENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
4-CHLOROANILINE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
HEXACHLOROBUTADIENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
4-CHLORO-3-METHYLPHENOL	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2-METHYLNAPHTHALENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2,4,6-TRICHLOROPHENOL	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2,4,5-TRICHLOROPHENOL	UG/KG	820.000	U	810.000	U	810.000	U	810.000	U	810.000	U	810.000	U
2-CHLORONAPHTHALENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2-NITROANILINE	UG/KG	820.000	U	810.000	U	810.000	U	810.000	U	810.000	U	810.000	U
DIMETHYLPHTHALATE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
ACENAPHTHYLENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2,6-DINITROTOLUENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
3-NITROANILINE	UG/KG	820.000	UJ	810.000	UJ	810.000	UJ	810.000	UJ	810.000	UJ	810.000	UJ
ACENAPHTHENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2,4-DINITROPHENOL	UG/KG	820.000	U	810.000	U	810.000	U	810.000	U	810.000	U	810.000	U
4-NITROPHENOL	UG/KG	820.000	U	810.000	U	810.000	U	810.000	U	810.000	U	810.000	U
DIBENZOFURAN	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
2,4-DINITROTOLUENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
DIETHYLPHTHALATE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U

Verified by 4/11/94

12

9413141.0752

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B0BKP5		B0BKP7		B0BKP8		B0BNQ3		B0BNQ4		B0BNQ5	
	Date	3-30-94		3-30-94		3-30-94		3-31-94		3-30-94		3-30-94	
	Location	Z DITCH		U1/U2-TILE		U1/U2-TILE		216-U-10		216-U-10		216-U-10	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
4-CHLOROPHENYL-PHENYLETHER	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
FLUORENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
4-NITROANILINE	UG/KG	820.000	U	810.000	U	810.000	U	810.000	U	810.000	U	810.000	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	820.000	U	810.000	U	810.000	U	810.000	U	810.000	U	810.000	U
N-NITROSODIPHENYLAMINE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
HEXACHLOROBENZENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
PENTACHLOROPHENOL	UG/KG	820.000	U	810.000	U	810.000	U	810.000	U	810.000	U	810.000	U
PHENANTHRENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
ANTHRACENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
CARBAZOLE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
DI-N-BUTYLPHTHALATE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
FLUORANTHENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
PYRENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
BUTYLBENZYLPHTHALATE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
3,3'-DICHLOROBENZIDINE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
BENZO(A)ANTHRACENE	UG/KG	340.000	UJ	330.000	UJ	330.000	UJ	340.000	U	330.000	UJ	330.000	UJ
CHRYSENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
DI-N-OCTYLPHTHALATE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
BENZO(B)FLUORANTHENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
BENZO(K)FLUORANTHENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
BENZO(A)PYRENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
INDENO(1,2,3-CD)PYRENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
DIBENZ(A,H)ANTHRACENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U
BENZO(G,H,I)PERYLENE	UG/KG	340.000	U	330.000	U	330.000	U	340.000	U	330.000	U	330.000	U

9615744.0759

Validated Data Summary

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	BOBNQ8	
	Date	3-31-94	
	Location	216-U-11	
	Depth	---	
	Type	SOIL	
	Comments	---	
Parameter	Units	Result	Q
PHENOL	UG/KG	340.000	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	340.000	U
2-CHLOROPHENOL	UG/KG	340.000	U
1,3-DICHLOROBENZENE	UG/KG	340.000	U
1,4-DICHLOROBENZENE	UG/KG	340.000	U
1,2-DICHLOROBENZENE	UG/KG	340.000	U
2-METHYLPHENOL	UG/KG	340.000	U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	340.000	U
4-METHYLPHENOL	UG/KG	340.000	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	340.000	U
HEXACHLOROETHANE	UG/KG	340.000	U
NITROBENZENE	UG/KG	340.000	U
ISOPHORONE	UG/KG	340.000	U
2-NITROPHENOL	UG/KG	340.000	U
2,4-DIMETHYLPHENOL	UG/KG	340.000	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	340.000	U
2,4-DICHLOROPHENOL	UG/KG	340.000	U
1,2,4-TRICHLOROBENZENE	UG/KG	340.000	U
NAPHTHALENE	UG/KG	340.000	U
4-CHLOROANILINE	UG/KG	340.000	U
HEXACHLOROBUTADIENE	UG/KG	340.000	U
4-CHLORO-3-METHYLPHENOL	UG/KG	340.000	U
2-METHYLNAPHTHALENE	UG/KG	340.000	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	340.000	U
2,4,6-TRICHLOROPHENOL	UG/KG	340.000	U
2,4,5-TRICHLOROPHENOL	UG/KG	820.000	U
2-CHLORONAPHTHALENE	UG/KG	340.000	U
2-NITROANILINE	UG/KG	820.000	U
DIMETHYLPHTHALATE	UG/KG	340.000	U
ACENAPHTHYLENE	UG/KG	340.000	U
2,6-DINITROTOLUENE	UG/KG	340.000	U
3-NITROANILINE	UG/KG	820.000	UJ
ACENAPHTHENE	UG/KG	340.000	U
2,4-DINITROPHENOL	UG/KG	820.000	U
4-NITROPHENOL	UG/KG	820.000	U
DIBENZOFURAN	UG/KG	340.000	U
2,4-DINITROTOLUENE	UG/KG	340.000	U
DIETHYLPHTHALATE	UG/KG	340.000	U

Verified 3/31/94

9613474.0764

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B0BNQ8	
	Date	3-31-94	
	Location	216-U-11	
	Depth	---	
	Type	SOIL	
	Comments	---	
Parameter	Units	Result	Q
4-CHLOROPHENYL-PHENYLETHER	UG/KG	340.000	U
FLUORENE	UG/KG	340.000	U
4-NITROANILINE	UG/KG	820.000	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	820.000	U
N-NITROSODIPHENYLAMINE	UG/KG	340.000	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	340.000	U
HEXACHLOROBENZENE	UG/KG	340.000	U
PENTACHLOROPHENOL	UG/KG	820.000	U
PHENANTHRENE	UG/KG	340.000	U
ANTHRACENE	UG/KG	340.000	U
CARBAZOLE	UG/KG	340.000	U
DI-N-BUTYLPHTHALATE	UG/KG	340.000	U
FLUORANTHENE	UG/KG	340.000	U
PYRENE	UG/KG	340.000	U
BUTYLBENZYLPHTHALATE	UG/KG	340.000	U
3,3'-DICHLOROBENZIDINE	UG/KG	340.000	U
BENZO(A)ANTHRACENE	UG/KG	340.000	U
CHRYSENE	UG/KG	340.000	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	340.000	U
DI-N-OCTYLPHTHALATE	UG/KG	340.000	U
BENZO(B)FLUORANTHENE	UG/KG	340.000	U
BENZO(K)FLUORANTHENE	UG/KG	340.000	U
BENZO(A)PYRENE	UG/KG	340.000	U
INDENO(1,2,3-CD)PYRENE	UG/KG	340.000	U
DIBENZ(A,H)ANTHRACENE	UG/KG	340.000	U
BENZO(G,H,I)PERYLENE	UG/KG	340.000	U

9513474.0755

9613474.0756

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4618

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA4618

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 19 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-Propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)Methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-Methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	990	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	990	U
131-11-3	Dimethylphthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	990	~~U~~ UJ
83-32-9	Acenaphthene	410	U

FORM I SV-1 3/90

Verified 07/12/94

9613474.0757

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4618

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA4618

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 19 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
51-28-5	2,4-Dinitrophenol	990	U	
100-02-7	4-Nitrophenol	990	U	
132-64-9	Dibenzofuran	410	U	
121-14-2	2,4-Dinitrotoluene	410	U	
84-66-2	Diethylphthalate	410	U	
7005-72-3	4-Chlorophenyl-phenylether	410	U	
86-73-7	Fluorene	410	~~U~~	UJ
100-01-6	4-Nitroaniline	990	U	
534-52-1	4,6-Dinitro-2-Methylphenol	990	U	
86-30-6	N-Nitrosodiphenylamine (1)	410	U	
101-55-3	4-Bromophenyl-phenylether	410	U	
118-74-1	Hexachlorobenzene	410	U	
87-86-5	Pentachlorophenol	990	U	
85-01-8	Phenanthrene	410	U	
120-12-7	Anthracene	410	U	
86-74-8	Carbazole	410	U	
84-74-2	Di-n-Butylphthalate	410	U	
206-44-0	Fluoranthene	410	U	
129-00-0	Pyrene	410	U	
85-68-7	Butylbenzylphthalate	410	U	
91-94-1	3,3'-Dichlorobenzidine	410	U	
56-55-3	Benzo(a)Anthracene	410	U	
218-01-9	Chrysene	410	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	410	U	
117-84-0	Di-n-Octyl Phthalate	410	U	
205-99-2	Benzo(b)Fluoranthene	410	U	
207-08-9	Benzo(k)Fluoranthene	410	~~U~~	UJ
50-32-8	Benzo(a)Pyrene	410	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	410	U	
53-70-3	Dibenz(a,h)Anthracene	410	U	
191-24-2	Benzo(g,h,i)Perylene	410	U	

(1) - Cannot be separated from Diphenylamine

17

Verified 5/6/12/94

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WJ9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4618

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA4618

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 19 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.58	140	~~AJ~~ R
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.82	7400	AJN ~~AJN~~ R
3.	UNKNOWN PHTHALATE	16.20	200	~~J~~ R

Verified 6/12/94

9613474.0759

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4626

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4626

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 16 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	940	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	940	~~U~~ UJ
83-32-9	Acenaphthene	390	U

FORM I SV-1 3/90

Verified 5/6/12/94

9613474.0760

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4626

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4626

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 16 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	940	U
100-02-7	4-Nitrophenol	940	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	~~U~~ UJ
100-01-6	4-Nitroaniline	940	U
534-52-1	4,6-Dinitro-2-Methylphenol	940	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	390	U
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	~~U~~ UJ
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

Verified 05/12/94

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4626

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4626

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 16 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	4.57	170	~~AJ~~	R
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.83	8300	~~AJN~~	R
3.	UNKNOWN PHTHALATE	16.22	90	~~J~~	R
4.	UNKNOWN	23.53	260	~~J~~	JN

Verified 05/01/94

9613474.0762

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WK2

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4591

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4591

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	930	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	930	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	930	~~U~~ UJ
83-32-9	Acenaphthene	390	U

Verified 05/04/94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK2

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4591

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4591

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	930	U
100-02-7	4-Nitrophenol	930	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	~~U~~ UJ
100-01-6	4-Nitroaniline	930	U
534-52-1	4,6-Dinitro-2-Methylphenol	930	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	930	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	390	U
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	~~U~~ UJ
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

Verified 05/06/2004

9613474.0764

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WK2

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4591

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4591

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.57	140	~~AJ~~
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.87	6300	A~~JN~~
3.	UNKNOWN PHTHALATE	16.22	200	~~J~~
4.	UNKNOWN	20.37	80	~~J~~

Q
R
R
JN

Verified 5/6/1/94

24

9613474.0765

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4601

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4601

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	790	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	790	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	790	~~U~~ UJ
83-32-9	Acenaphthene	330	U

FORM I SV-1 3/90

Verified 5/6/12/94

9613474.0766

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4601

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4601

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	790	U	
100-02-7	4-Nitrophenol	790	U	
132-64-9	Dibenzofuran	330	U	
121-14-2	2,4-Dinitrotoluene	330	U	
84-66-2	Diethylphthalate	330	U	
7005-72-3	4-Chlorophenyl-phenylether	330	U	
86-73-7	Fluorene	330	~~U~~	UJ
100-01-6	4-Nitroaniline	790	U	
534-52-1	4,6-Dinitro-2-Methylphenol	790	U	
86-30-6	N-Nitrosodiphenylamine (1)	330	U	
101-55-3	4-Bromophenyl-phenylether	330	U	
118-74-1	Hexachlorobenzene	330	U	
87-86-5	Pentachlorophenol	790	U	
85-01-8	Phenanthrene	330	U	
120-12-7	Anthracene	330	U	
86-74-8	Carbazole	330	U	
84-74-2	Di-n-Butylphthalate	330	U	
206-44-0	Fluoranthene	330	U	
129-00-0	Pyrene	330	U	
85-68-7	Butylbenzylphthalate	330	U	
91-94-1	3,3'-Dichlorobenzidine	330	U	
56-55-3	Benzo(a)Anthracene	330	U	
218-01-9	Chrysene	330	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	330 ~~38~~	~~J~~	U
117-84-0	Di-n-Octyl Phthalate	330	U	
205-99-2	Benzo(b)Fluoranthene	330	U	
207-08-9	Benzo(k)Fluoranthene	330	~~U~~	UJ
50-32-8	Benzo(a)Pyrene	330	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U	
53-70-3	Dibenz(a,h)Anthracene	330	U	
191-24-2	Benzo(g,h,i)Perylene	330	U	

(1) - Cannot be separated from Diphenylamine

0026

Verified 5/6/1994

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WK4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4601

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4601

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.58	110	~~AJ~~ R
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.80	5500	~~AJN~~ R
3.	UNKNOWN PHTHALATE	16.20	82	~~J~~ R
4.	UNKNOWN	19.42	1900	~~J~~ JN

Q

Verified CS 6/12/94

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WK5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4609

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA4609

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	~~U~~ UJ
83-32-9	Acenaphthene	330	U

Verified 5/6/94

9613474.0769

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WK5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4609

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA4609

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	800	U	
100-02-7	4-Nitrophenol	800	U	
132-64-9	Dibenzofuran	330	U	
121-14-2	2,4-Dinitrotoluene	330	U	
84-66-2	Diethylphthalate	330	U	
7005-72-3	4-Chlorophenyl-phenylether	330	U	
86-73-7	Fluorene	330	~~U~~	UJ
100-01-6	4-Nitroaniline	800	U	
534-52-1	4,6-Dinitro-2-Methylphenol	800	U	
86-30-6	N-Nitrosodiphenylamine (1)	330	U	
101-55-3	4-Bromophenyl-phenylether	330	U	
118-74-1	Hexachlorobenzene	330	U	
87-86-5	Pentachlorophenol	800	U	
85-01-8	Phenanthrene	330	U	
120-12-7	Anthracene	330	U	
86-74-8	Carbazole	330	U	
84-74-2	Di-n-Butylphthalate	330	U	
206-44-0	Fluoranthene	330	U	
129-00-0	Pyrene	330	U	
85-68-7	Butylbenzylphthalate	330	U	
91-94-1	3,3'-Dichlorobenzidine	330	U	
56-55-3	Benzo(a)Anthracene	330	U	
218-01-9	Chrysene	330	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	330 ~~37~~	~~J~~	U
117-84-0	Di-n-Octyl Phthalate	330	U	
205-99-2	Benzo(b)Fluoranthene	330	U	
207-08-9	Benzo(k)Fluoranthene	330	~~U~~	UJ
50-32-8	Benzo(a)Pyrene	330	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U	
53-70-3	Dibenz(a,h)Anthracene	330	U	
191-24-2	Benzo(g,h,i)Perylene	330	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

verified 3/6/2004

9613474.0770

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WK5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4609

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA4609

Level: (low/med) LOW Date Received: 03/26/94

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/18/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.57	130	~~AJ~~
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.82	6900	~~AJN~~
3.	UNKNOWN	6.30	1600	~~J~~

Q
1
R
R
JN

Verified 5/6/1994

6-30

9613474.0771

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
216-U-10 Pond
BOBNQ3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5435

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5435A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	810	~~U~~ UJ
83-32-9	Acenaphthene	340	U

L-31

Verified
5/6/94

9613474.0772

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
216-U-10 Pond

BOBNQ3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5435

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5435A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

Verified 5/6/2/94

32

9613474.0773

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
216-U-10 Pond
BOBNQ3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5435

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5435A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	2.37	210	~~BAJ~~	UR
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.18	6800	~~BAJN~~	UR
3.	UNKNOWN	16.68	110	~~BJ~~	UJN
4.	UNKNOWN	20.85	130	~~BJ~~	UJN

FORM I SV-TIC 3/90

Verified 5/6/1994

9613474.0774

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
216-U-11 Trench
BOBNQ8

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5423

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5423A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	~~U~~ UJ
83-32-9	Acenaphthene	340	U

FORM I SV-1 3/90

Verified 6/12/94

34

9613474.0775

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
Zile-U-11 Trench
BOBNQ8

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: WO013

Matrix: (soil/water) SOIL Lab Sample ID: AA5423

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5423A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

Verified 05/12/94

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
216-U-11 Trench
BOBNQ8

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5423

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5423A

Level: (low/med) LOW Date Received: 04/06/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	2.02	75	~~BJ~~	UR
2.	UNKNOWN	2.35	230	~~BAJ~~	UR
3. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.17	6600	~~BAJN~~	UR
4.	UNKNOWN	16.67	99	~~BJ~~	UJN
5.	UNKNOWN	20.83	120	~~BJ~~	UJN
6.	UNKNOWN	22.17	78	~~J~~	JN
7.	UNKNOWN	23.42	190	~~J~~	JN
8.	UNKNOWN	24.63	85	~~J~~	JN

Verified
G 6/12/94

9613474.0777

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
2/16-U-8 Crib
BOBKM1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5089

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5089

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	~~U~~ UJ
83-32-9	Acenaphthene	340	U

Verified 6137
06/13/94

9613474.0778

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
216-U-8 Crit

BOBKM1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5089

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5089

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
				Q
51-28-5	2,4-Dinitrophenol	820	U	
100-02-7	4-Nitrophenol	820	U	
132-64-9	Dibenzofuran	340	U	
121-14-2	2,4-Dinitrotoluene	340	U	
84-66-2	Diethylphthalate	340	U	
7005-72-3	4-Chlorophenyl-phenylether	340	U	
86-73-7	Fluorene	340	~~U~~	UJ
100-01-6	4-Nitroaniline	820	U	
534-52-1	4,6-Dinitro-2-Methylphenol	820	U	
86-30-6	N-Nitrosodiphenylamine (1)	340	U	
101-55-3	4-Bromophenyl-phenylether	340	U	
118-74-1	Hexachlorobenzene	340	U	
87-86-5	Pentachlorophenol	820	U	
85-01-8	Phenanthrene	340	U	
120-12-7	Anthracene	340	U	
86-74-8	Carbazole	340	U	
84-74-2	Di-n-Butylphthalate	340	U	
206-44-0	Fluoranthene	340	U	
129-00-0	Pyrene	340	U	
85-68-7	Butylbenzylphthalate	340	U	
91-94-1	3,3'-Dichlorobenzidine	340	U	
56-55-3	Benzo(a)Anthracene	340	U	
218-01-9	Chrysene	340	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	340 ~~42~~	~~J~~	U
117-84-0	Di-n-Octyl Phthalate	340	U	
205-99-2	Benzo(b)Fluoranthene	340	U	
207-08-9	Benzo(k)Fluoranthene	340	~~U~~	UJ
50-32-8	Benzo(a)Pyrene	340	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U	
53-70-3	Dibenz(a,h)Anthracene	340	U	
191-24-2	Benzo(g,h,i)Perylene	340	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

Verified 5/6/12/94

9613474.0779

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
216-U-8 Cub
BOBKM1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5089

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5089

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	UNKNOWN Aldol reaction product	4.57	1100	~~BAJ~~	UR
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.92	8000	B~~AJN~~	UR
3.	UNKNOWN	5.67	500	~~AJ~~	R
4.	UNKNOWN	6.00	84	~~AJ~~	R
5.	UNKNOWN	6.42	240	~~AJ~~	R
6.	UNKNOWN	20.37	8600	~~J~~	JN
7.	UNKNOWN	22.05	160	~~J~~	JN
8.	UNKNOWN	23.52	550	~~J~~	JN
9.	UNKNOWN	25.55	280	~~J~~	JN
10.	UNKNOWN	26.42	110	~~J~~	JN

FORM I SV-TIC 3/90

Verified
5/12/94

9613474.0780

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
216-U-8 Crib

BOBKM3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5096

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA5096

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	810	~~U~~ UJ
83-32-9	Acenaphthene	340	U

verified 5/6/12/94

40

9613474.0781

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
216-U-8 Cub
BOBKM3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5096

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA5096

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
51-28-5	2,4-Dinitrophenol	810	U	
100-02-7	4-Nitrophenol	810	U	
132-64-9	Dibenzofuran	340	U	
121-14-2	2,4-Dinitrotoluene	340	U	
84-66-2	Diethylphthalate	340	U	
7005-72-3	4-Chlorophenyl-phenylether	340	U	
86-73-7	Fluorene	340	~~U~~	UJ
100-01-6	4-Nitroaniline	810	U	
534-52-1	4,6-Dinitro-2-Methylphenol	810	U	
86-30-6	N-Nitrosodiphenylamine (1)	340	U	
101-55-3	4-Bromophenyl-phenylether	340	U	
118-74-1	Hexachlorobenzene	340	U	
87-86-5	Pentachlorophenol	810	U	
85-01-8	Phenanthrene	340	U	
120-12-7	Anthracene	340	U	
86-74-8	Carbazole	340	U	
84-74-2	Di-n-Butylphthalate	340	U	
206-44-0	Fluoranthene	340	U	
129-00-0	Pyrene	340	U	
85-68-7	Butylbenzylphthalate	340	U	
91-94-1	3,3'-Dichlorobenzidine	340	U	
56-55-3	Benzo(a)Anthracene	340	U	
218-01-9	Chrysene	340	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	340 ~~43~~	~~J U~~	U
117-84-0	Di-n-Octyl Phthalate	340	U	
205-99-2	Benzo(b)Fluoranthene	340	U	
207-08-9	Benzo(k)Fluoranthene	340	~~U~~	UJ
50-32-8	Benzo(a)Pyrene	340	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U	
53-70-3	Dibenz(a,h)Anthracene	340	U	
191-24-2	Benzo(g,h,i)Perylene	340	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

Verified 5/6/1994

41

9613474.0782

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
2116-U-8 Air
BOBKM3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5096

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA5096

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

Number TICs found: 22

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	4.57	910	~~BAJ~~	UR
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.92	6200	~~BAJN~~	UR
3.	UNKNOWN	5.67	450	~~AJ~~	R
4.	UNKNOWN	5.98	77	~~AJ~~	R
5.	UNKNOWN	6.42	240	~~AJ~~	R
6.	UNKNOWN PHTHALATE	16.20	130	~~J~~	R
7.	UNKNOWN	18.87	78	~~J~~	JN
8.	UNKNOWN	20.35	1600	~~J~~	JN
9.	UNKNOWN	20.87	130	~~J~~	JN
10.	UNKNOWN	22.05	300	~~J~~	JN
11.	UNKNOWN	22.73	86	~~J~~	JN
12.	UNKNOWN	22.83	270	~~J~~	JN
13.	UNKNOWN	23.12	83	~~J~~	JN
14.	UNKNOWN	23.22	77	~~J~~	JN
15.	UNKNOWN	23.32	77	~~J~~	JN
16.	UNKNOWN	23.52	790	~~J~~	JN
17.	UNKNOWN	23.98	76	~~J~~	JN
18.	UNKNOWN	24.67	76	~~J~~	JN
19.	UNKNOWN	25.53	390	~~J~~	JN
20.	UNKNOWN	26.10	100	~~J~~	JN
21.	UNKNOWN	26.42	130	~~J~~	JN
22.	UNKNOWN	27.68	130	~~J~~	JN

Verified 5/6/1994

9613474.0783

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
216-U-8 Cut

BOBKM4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5075

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5075

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	840	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	840	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	840	~~U~~ UJ
83-32-9	Acenaphthene	350	U

FORM I SV-1 3/90

verified 6/12/94

43

9613474.0784

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
216-U-8 Cut

BOBKM4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5075

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5075

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	840	U	
100-02-7	4-Nitrophenol	840	U	
132-64-9	Dibenzofuran	350	U	
121-14-2	2,4-Dinitrotoluene	350	U	
84-66-2	Diethylphthalate	350	U	
7005-72-3	4-Chlorophenyl-phenylether	350	U	
86-73-7	Fluorene	350	~~U~~	UJ
100-01-6	4-Nitroaniline	840	U	
534-52-1	4,6-Dinitro-2-Methylphenol	840	U	
86-30-6	N-Nitrosodiphenylamine (1)	350	U	
101-55-3	4-Bromophenyl-phenylether	350	U	
118-74-1	Hexachlorobenzene	350	U	
87-86-5	Pentachlorophenol	840	U	
85-01-8	Phenanthrene	350	U	
120-12-7	Anthracene	350	U	
86-74-8	Carbazole	350	U	
84-74-2	Di-n-Butylphthalate	350	U	
206-44-0	Fluoranthene	350	U	
129-00-0	Pyrene	350	U	
85-68-7	Butylbenzylphthalate	350	U	
91-94-1	3,3'-Dichlorobenzidine	350	U	
56-55-3	Benzo(a)Anthracene	350	U	
218-01-9	Chrysene	350	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U	
117-84-0	Di-n-Octyl Phthalate	350	U	
205-99-2	Benzo(b)Fluoranthene	350	U	
207-08-9	Benzo(k)Fluoranthene	350	~~U~~	UJ
50-32-8	Benzo(a)Pyrene	350	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U	
53-70-3	Dibenz(a,h)Anthracene	350	U	
191-24-2	Benzo(g,h,i)Perylene	350	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

3/90

verified 5/6/2/94

9613474.0785

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
216-U-8 Cib
BOBKM4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5075

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5075

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	4.57	1100	~~BAJ~~	UR
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.92	7900	~~BAJN~~	UR
3.	UNKNOWN	5.67	550	~~AJ~~	R
4.	UNKNOWN	6.40	190	~~AJ~~	R
5.	~~UNKNOWN~~ ~~Siloxane~~ unknown	18.73	120	~~J~~	~~R~~ JN
6.	UNKNOWN	20.35	9600	~~J~~	JN
7.	UNKNOWN	23.50	140	~~J~~	JN

Verified 5/6/2/94

9613474.0786

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
Zile-U-8 Cub
BOBKM5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5103

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5103

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	~~U~~ UJ
83-32-9	Acenaphthene	330	U

Verified 5/6/94

46

9613474.0787

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
2-16-4-8 Crit
BOBKM5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5103

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5103

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	800	U	
100-02-7	4-Nitrophenol	800	U	
132-64-9	Dibenzofuran	330	U	
121-14-2	2,4-Dinitrotoluene	330	U	
84-66-2	Diethylphthalate	330	U	
7005-72-3	4-Chlorophenyl-phenylether	330	U	
86-73-7	Fluorene	330	~~U~~	UJ
100-01-6	4-Nitroaniline	800	U	
534-52-1	4,6-Dinitro-2-Methylphenol	800	U	
86-30-6	N-Nitrosodiphenylamine (1)	330	U	
101-55-3	4-Bromophenyl-phenylether	330	U	
118-74-1	Hexachlorobenzene	330	U	
87-86-5	Pentachlorophenol	800	U	
85-01-8	Phenanthrene	330	U	
120-12-7	Anthracene	330	U	
86-74-8	Carbazole	330	U	
84-74-2	Di-n-Butylphthalate	330	U	
206-44-0	Fluoranthene	330	U	
129-00-0	Pyrene	330	U	
85-68-7	Butylbenzylphthalate	330	U	
91-94-1	3,3'-Dichlorobenzidine	330	U	
56-55-3	Benzo(a)Anthracene	330	U	
218-01-9	Chrysene	330	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	330 ~~34~~	~~J~~	U
117-84-0	Di-n-Octyl Phthalate	330	U	
205-99-2	Benzo(b)Fluoranthene	330	U	
207-08-9	Benzo(k)Fluoranthene	330	~~U~~	UJ
50-32-8	Benzo(a)Pyrene	330	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U	
53-70-3	Dibenz(a,h)Anthracene	330	U	
191-24-2	Benzo(g,h,i)Perylene	330	U	

(1) - Cannot be separated from Diphenylamine

Verified 5/02/94

9613474.0788

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
216-U-8 Cub

BOBKM5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5103

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA5103

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	4.62	1200	~~BAJ~~	UR
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.97	8100	BA~~JN~~	UR
3.	UNKNOWN	5.70	810	~~AJ~~	R
4.	UNKNOWN	6.33	1400	~~J~~	JN
5.	UNKNOWN	6.43	400	~~AJ~~	R
6.	UNKNOWN PHTHALATE	16.22	68	~~J~~	R
7.	UNKNOWN	20.38	8000	~~J~~	JN
8.	UNKNOWN	21.88	88	~~J~~	JN
9.	UNKNOWN	22.07	110	~~J~~	JN
10.	UNKNOWN	23.53	370	~~J~~	JN
11.	UNKNOWN	25.55	350	~~J~~	JN

verified 5/6/12/94

9613474.0789

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
2-116-U-8 Cont
BOBKM6

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5082

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5082

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	~~U~~ UJ
83-32-9	Acenaphthene	340	U

Verified 5/12/94

49

9613474.0790

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
216-U-8 Crib

BOBKM6

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5082

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5082

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	820	U	
100-02-7	4-Nitrophenol	820	U	
132-64-9	Dibenzofuran	340	U	
121-14-2	2,4-Dinitrotoluene	340	U	
84-66-2	Diethylphthalate	340	U	
7005-72-3	4-Chlorophenyl-phenylether	340	U	
86-73-7	Fluorene	340	~~U~~	UJ
100-01-6	4-Nitroaniline	820	U	
534-52-1	4,6-Dinitro-2-Methylphenol	820	U	
86-30-6	N-Nitrosodiphenylamine (1)	340	U	
101-55-3	4-Bromophenyl-phenylether	340	U	
118-74-1	Hexachlorobenzene	340	U	
87-86-5	Pentachlorophenol	820	U	
85-01-8	Phenanthrene	340	U	
120-12-7	Anthracene	340	U	
86-74-8	Carbazole	340	U	
84-74-2	Di-n-Butylphthalate	340	U	
206-44-0	Fluoranthene	340	U	
129-00-0	Pyrene	340	U	
85-68-7	Butylbenzylphthalate	340	U	
91-94-1	3,3'-Dichlorobenzidine	340	U	
56-55-3	Benzo(a)Anthracene	340	U	
218-01-9	Chrysene	340	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U	
117-84-0	Di-n-Octyl Phthalate	340	U	
205-99-2	Benzo(b)Fluoranthene	340	U	
207-08-9	Benzo(k)Fluoranthene	340	~~U~~	UJ
50-32-8	Benzo(a)Pyrene	340	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U	
53-70-3	Dibenz(a,h)Anthracene	340	U	
191-24-2	Benzo(g,h,i)Perylene	340	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

Verified 5/6/1994

9613474.0791

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
216-U-8 Cub-
BOBKM6

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5082

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5082

Level: (low/med) LOW Date Received: 04/01/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	4.58	1100	BAJ	UR
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.93	7600	BAJN	UR
3.	UNKNOWN	5.67	680	~~AJ~~	R
4.	UNKNOWN	6.42	230	~~AJ~~	R
5.	UNKNOWN	16.20	300	~~J~~	JN
6.	UNKNOWN	20.35	170	~~J~~	JN
7.	UNKNOWN	23.50	140	~~J~~	JN
8.	UNKNOWN	25.52	80	~~J~~	JN

verified
5/12/94

9613474.0792

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
U1/U2 Tile Field
BOBKM7

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5224

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5224

Level: (low/med) LOW Date Received: 04/02/94

Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	~~U~~ UJ
83-32-9	Acenaphthene	340	U

FORM I SV-1 3/90

Verified 5/6/1994

52

9613474.0793

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
U1/U2 Tile Field
BOBKM7

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5224

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5224

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	~~U~~ UJ
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

Verified
05/02/94

9613474.0794

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
U1/U2 Tile Field
BOBKM7

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5224

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5224

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.45	11000	~~BAJN~~	UR
2.	UNKNOWN	16.70	70	~~J~~	JN
3.	UNKNOWN	22.03	1000	~~J~~	JN
4.	UNKNOWN	22.37	84	~~J~~	JN
5.	UNKNOWN	22.63	190	~~J~~	JN
6.	UNKNOWN	24.38	90	~~J~~	JN

Verified 5/12/94

9613474.0795

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
u 14 Siteu

BOBKN9

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5217

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5217

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 7.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	810	~~U~~ UJ
83-32-9	Acenaphthene	330	U

FORM I SV-1 3/90

Verified
S 6/12/94

L-55

9613474.0796

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

U 14 Ditch

BOBKN9

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5217

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5217

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 7.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	~~U~~ UJ
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

Verified 5/6/2/94

9613474.0797

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
u 14 Dilution
BOBKN9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5217

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5217

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.43	12000	~~BAJN~~	UR
2.	UNKNOWN	5.88	1100	~~J~~	JN
3.	UNKNOWN	6.30	690	~~J~~	JN
4.	UNKNOWN	22.62	69	~~J~~	JN

FORM I SV-TIC 3/90

verified 5/6/12/94

9613474.0798

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
E Ditch
BOBKP5

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5231

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5231

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	~~U~~ UJ
83-32-9	Acenaphthene	340	U

FORM I SV-1 3/90

verified
5/11/94

6-58

9613474.0799

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
Z Ditch
BOBKP5

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5231

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5231

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	~~U~~ UJ
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

59

Verified
cj 6/12/94

9613474.0800

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
Z Ditch
BOBKP5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5231

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5231

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

①

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.42	16000	~~BAJN~~	UR
2.	UNKNOWN	6.28	930	~~J~~	JN
3.	UNKNOWN	22.62	120	~~J~~	JN

FORM I SV-TIC 3/90

Verified 5/12/94

9613474.0801

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
UU/UZ Tile Field
BOBKP7

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5203

ample wt/vol: 30.1 (g/mL) G Lab File ID: AA5203

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	810	~~U~~ UJ
83-32-9	Acenaphthene	330	U

FORM I SV-1 3/90

Verified 5/12/94

9613474.0802

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
W/UZ Tile Field
BOBKP7

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5203

ample wt/vol: 30.1 (g/mL) G Lab File ID: AA5203

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	~~U~~ UJ
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

Verified
5/6/94

L-62

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
U1/U2 Tile Field
BOBKP7

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5203

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA5203

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.42	10000	~~BAJN~~	UR
2.	UNKNOWN	6.28	620	~~J~~	JN

Verified
4/6/2/94

U-63

9613474.0804

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
W1/W2 Title Field
BOBKP8

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5210

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5210

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	810	~~U~~ UJ
83-32-9	Acenaphthene	330	U

FORM I SV-1 3/90

Verified 05/12/94

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
W/U2 Tile Field
BOBKP8

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5210

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5210

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	~~U~~ UJ
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

VEM 05/12/94

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
u/u2 Tic Field
BOBKP8

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5210

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5210

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.43	10000	~~BAJN~~ UR

Q

verified 5/6/2/94

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
Zile-4-10 Pond

BOBNQ4

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5196

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5196

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	810	~~U~~ UJ
83-32-9	Acenaphthene	330	U

Verified
5/6/1994

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
316-1X-10 Pond
BOBNQ4

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5196

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5196

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 9.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	~~U~~ UJ
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330 ~~36~~	~~J~~ L
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

Verified 5/12/94

9613474.0809

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
216-U-10 Pond
BOBNQ4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5196

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5196

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.47	16000	~~BAJN~~ UR

Q

FORM I SV-TIC 3/90

Verified 5/6/92/94

9613474.0810

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
Zile-11-10 Rond
BOBNQ5

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5189

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5189

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	810	~~U~~ UJ
83-32-9	Acenaphthene	330	U

FORM I SV-1 3/90

verified 5/12/94

1-70

9613474.0811

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
Zle-U-10 Pond
BOBNQ5

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5189

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5189

evel: (low/med) LOW Date Received: 04/02/94

Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-Methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	~~U~~ UJ
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

Verified
JS 6/12/94

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
216-U-10 Pond
BOBNQ5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5189

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5189

Level: (low/med) LOW Date Received: 04/02/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.45	19000	~~BAJN~~ UR
2.	UNKNOWN	6.30	1000	~~J~~ JN

Verified 10/17/94

9613474.0813

0045190
Sec 2 of 2

Attachment 4

Laboratory Narrative and Chain-of-Custody Documentation

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

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.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for total organic carbon (TOC) based on EPA method 9060.

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

III. Quality Control

The volatiles analyses were performed by purge and trap with a J & W DB-624 capillary column on a Hewlett-Packard 5970 GC/MS/DS and a Finnigan INCOS 500 GC/MS/DS. All QC results were within method specified limits.

The semivolatiles analyses were performed by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL GC/MS/DS. All QC results were within method specified limits. The matrix spike and matrix spike duplicate for sample BOBNQ5 showed high recoveries for one matrix spike compound, phenol.

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III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WK2 with acceptable recoveries. One laboratory control sample was analyzed and reported with acceptable recoveries. GPC check sample did not meet criteria when compared against the initial calibration. However, when compared against a GPC solution that was not subjected to GPC clean-up, the GPC sample passed all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples for work order #263 were digested on April 11, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA arsenic, lead, selenium and thallium were performed from April 11 through April 27, 1994; the remaining metals were analyzed by ICP on April 13, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number BO9WK2. Spike recovery (accuracy) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for antimony and manganese by ICP analysis. Poor spike recovery for antimony appears to be attributable to matrix interferences. Poor spike recovery for manganese is

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Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

attributable to sample nonhomogeneity. As the titanium concentration is greater than four times (4X) the spike added, spiking criteria do not apply for this analyte. A post digestion spike was performed for antimony and manganese as required by CLP protocol. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for aluminum and chromium by ICP analysis. These two analytes were slightly outside acceptance limits due to probable sample nonhomogeneity.

The samples for work order #290 were digested on April 12, 4994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14 and April 15, 1994. All run QC was acceptable

The samples for work order #299 were digested on April 12, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14, 1994. All run QC was acceptable. In sample BOBKM7, the titanium concentration exceeded the linear range by 0.6%, which is less than the 5% acceptance range. During the cyanide analysis, the continuing calibration verification #2 was below the acceptable lower limit of 80%. All sample concentrations were nondetects. The samples were reanalyzed with acceptable limits.

The samples for work order #306 were digested on April 15, 1994 for ICP and April 12, 1994 for GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 12 through April 19, 1994; the remaining metals were analyzed by ICP on April 20, 1994. All run QC was acceptable.

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.

"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.

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III. Quality Control (Continued)

"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 total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike duplicate analyses were performed using sample numbers BOBNQ5 and B09WK2 with acceptable results.

On April 15, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WK2. All QC results were acceptable.

The samples were analyzed for anions on April 20, April 22 and April 28, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for total organic carbon by an O.I. TOC 700. Matrix spike/matrix spike duplicate analyses were performed using sample BOBNQ5.

0000006
IT ANALYTICAL SERVICES
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KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4589	403489-01 (A-H)	B09WK2	SOIL	METALS
AA4590	"	"	"	VOC
AA4591	"	"	"	SVOC
AA4592	"	"	"	ANIONS
AA4593	"	"	"	NO3NO2
AA4594	"	"	"	PEST/PCB
AA4595	"	"	"	CN
AA4596	"	"	"	TPH
AA4599	403489-02 (A-H)	B09WK4	"	METALS
AA4600	"	"	"	VOC
AA4601	"	"	"	SVOC
AA4602	"	"	"	ANIONS
AA4603	"	"	"	NO3NO2
AA4604	"	"	"	PEST/PCB
AA4605	"	"	"	CN
AA4606	"	"	"	TPH
AA4607	403489-03 (A-H)	B09WK5	"	METALS
AA4608	"	"	"	VOC
AA4609	"	"	"	SVOC
AA4610	"	"	"	ANIONS
AA4611	"	"	"	NO3NO2
AA4612	"	"	"	PEST/PCB
AA4613	"	"	"	CN
AA4614	"	"	"	TPH

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Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4615	403489-04 (A)	B09WK6	SOIL	VOC
AA4616	403489-05 (A-H)	B09WJ9	"	METALS
AA4617	"	"	"	VOC
AA4618	"	"	"	SVOC
AA4619	"	"	"	ANIONS
AA4620	"	"	"	NO3NO2
AA4621	"	"	"	PEST/PCB
AA4622	"	"	"	CN
AA4623	"	"	"	TPH
AA4624	403489-06 (A-H)	B09WK1	"	METALS
AA4625	"	"	"	VOC
AA4626	"	"	"	SVOC
AA4627	"	"	"	ANIONS
AA4628	"	"	"	NO3NO3
AA4629	"	"	"	PEST/PCB
AA4630	"	"	"	CN
AA4631	"	"	"	TPH
AA4633	403489-07 (A,B)	Trip Blank	"	VOC
AA4634	403489-08 (A,B)	"	"	VOC
AA5075	40363001 (A-G)	BOBKM4	"	SVOC
AA5076	"	"	"	METALS
AA5077	"	"	"	ANIONS
AA5078	"	"	"	NO3NO2
AA5079	"	"	"	CN
AA5080	"	"	"	TPH
AA5081	"	"	"	TOC

IT Corporation
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IT ANALYTICAL SERVICES
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KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

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III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5082	40363002 (A-G)	BOBKM6	SOIL	SVOC
AA5083	"	"	"	METALS
AA5084	"	"	"	ANIONS
AA5085	"	"	"	NO3NO2
AA5086	"	"	"	CN
AA5087	"	"	"	TPH
AA5088	"	"	"	TOC
AA5089	40363003 (A-G)	BOBKM1	"	SVOC
AA5090	"	"	"	METALS
AA5091	"	"	"	ANIONS
AA5092	"	"	"	NO3NO2
AA5093	"	"	"	CN
AA5094	"	"	"	TPH
AA5095	"	"	"	TOC
AA5096	40363004 (A-G)	BOBKM3	"	SVOC
AA5097	"	"	"	METALS
AA5098	"	"	"	ANIONS
AA5099	"	"	"	NO3NO2
AA5100	"	"	"	CN
AA5101	"	"	"	TPH
AA5102	"	"	"	TOC
AA5103	40363005 (A-G)	BOBKM5	"	SVOC
AA5104	"	"	"	METALS
AA5105	"	"	"	ANIONS
AA5106	"	"	"	NO3NO2
AA5107	"	"	"	CN
AA5108	"	"	"	TPH
AA5109	"	"	"	TOC

0000009
IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5189	404016-01 (A-G)	BOBNQ5	SOIL	SVOC
AA5190	"	"	"	METALS
AA5191	"	"	"	ANIONS
AA5192	"	"	"	NO3NO2
AA5193	"	"	"	CN
AA5194	"	"	"	TPH
AA5195	"	"	"	TOC
AA5196	404016-02 (A-G)	BOBNQ4	"	SVOC
AA5197	"	"	"	METALS
AA5198	"	"	"	ANIONS
AA5199	"	"	"	NO3NO2
AA5200	"	"	"	CN
AA5201	"	"	"	TPH
AA5202	"	"	"	TOC
AA5203	404016-03 (A-G)	BOBKP7	"	SVOC
AA5204	"	"	"	METALS
AA5205	"	"	"	ANIONS
AA5206	"	"	"	NO3NO2
AA5207	"	"	"	CN
AA5208	"	"	"	TPH
AA5209	"	"	"	TOC
AA5210	404016-04 (A-G)	BOBKP8	"	SVOC
AA5211	"	"	"	METALS
AA5212	"	"	"	ANIONS
AA5213	"	"	"	NO3NO2
AA5214	"	"	"	CN
AA5215	"	"	"	TPH
AA5216	"	"	"	TOC

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5217	404016-05 (A-G)	BOBKN9	SOIL	SVOC
AA5218	"	"	"	METALS
AA5219	"	"	"	ANIONS
AA5220	"	"	"	NO3NO2
AA5221	"	"	"	CN
AA5222	"	"	"	TPH
AA5223	"	"	"	TOC
AA5224	404016-06 (A-G)	BOBKM7	"	SVOC
AA5225	"	"	"	METALS
AA5226	"	"	"	ANIONS
AA5227	"	"	"	NO3NO2
AA5228	"	"	"	CN
AA5229	"	"	"	TPH
AA5230	"	"	"	TOC
AA5231	404016-07 (A-G)	BOBKP5	"	SVOC
AA5232	"	"	"	METALS
AA5233	"	"	"	ANIONS
AA5234	"	"	"	NO3NO2
AA5235	"	"	"	CN
AA5236	"	"	"	TPH
AA5237	"	"	"	TOC
AA5423	404065-01	BOBNQ8	"	SVOC
AA5424	"	"	"	METALS
AA5425	"	"	"	ANIONS
AA5426	"	"	"	NO3NO2
AA5427	"	"	"	CN
AA5428	"	"	"	TPH

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5435	404065-02	BOBNQ3	SOIL	SVOC
AA5436	"	"	"	METALS
AA5437	"	"	"	ANIONS
AA5438	"	"	"	NO3NO2
AA5439	"	"	"	CN
AA5440	"	"	"	TPH

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

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
Project Manager

9613474.0825 0000047

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

403489 01 — Sample Identification

1) B09WK2

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

LER 3-22-94

[] Field Transfer of Custody — Chain of Possession Less than 100 cm (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 1310	ITAS 1100	3/25/94 1100
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0826

0000049

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-23-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 40348902 B09WK4

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349002

2) 40348903 B09WK5

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349003

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Karen L. Rogers 3-24-94 1310	Karen Hutchins 10:00 am	3-25-94 10:00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0827

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-21-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 403489 B09W39

05

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
H 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900 4

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-21-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 Jason E. Rogers 1310	ITAS Karen Fortenberry	3-25-94 10:00 AM
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

U-88

9613474.0828

0000055

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WK0

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2) B09WK1

403489 A 1,250ml P:CLP;TAL Metals,Hg,Ti
06 B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349005

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 1310	ITAS	3-25-94 10 00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO# 290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006448

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SIML 457
Bill of Lading/Airbill No. N/A
Offsite Property No. WT4-0-0367 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
03630 03 A BOBKM1	S	3-29-94	0850	(1) 250ml aG	Semi-VOA CLP	
B BOBKM1	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBKM1	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBKM1	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBKM1	S			(1) 125ml G	Cyanide CPL	
F BOBKM1	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBKM1	S			(1) 125ml aGs	TOC 9060	
03631 03 BOBKM1	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
[illegible]	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	[illegible]
[illegible]	3-31-94	1055	[illegible] 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9613474.0829

90

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006450

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SWL459
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
03630 04 A	BOBKM3	S	3-29-94	0944	(1) 250ml aG	Semi-VOA CLP	
B	BOBKM3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKM3	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKM3	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKM3	S			(1) 125ml G	Cyanide CPL	
F	BOBKM3	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKM3	S			(1) 125ml aGs	TOC 9060	
03631 04	BOBKM3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
RT Sickle RT Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	RM Arnold RM Arnold
RM Arnold RM Arnold	3-31-94	1055	R. Boud 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9613474.0830

0000058

U-91

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006451

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. TWL 459
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0569 #46
Method of Shipment Government truck
Field Logbook No. W RMH 3-31-94
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
103 030 01A	BOBKM4	S	3-29-94	0950	(1) 250ml aG	Semi-VOA CLP	
B	BOBKM4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKM4	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
B	BOBKM4	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKM4	S			(1) 125ml G	Cyanide CPL	
F	BOBKM4	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKM4	S			(1) 125ml aGs	TOC 9060	
03 01	BOBKM4	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	3-31-94	0815	Daniel L. Edwards
Daniel L. Edwards	3-31-94	1815	R.W. Arnold R.W. Arnold
R.W. Arnold R.W. Arnold	3-31-94	1055	R. Boyd IT 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9613474.0831

0000059

C-92

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006452

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. 526
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 216-U-8 Vitrified Clay Pipeline
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations 216-U-8 Crib
Offsite Property No. W94-0-0369#46
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
03630 05 A	BOBKM5	S	3-29-94	1030	(1) 250ml aG	Semi-VOA CLP	
B	BOBKM5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKM5	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKM5	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKM5	S			(1) 125ml G	Cyanide CPL	
F	BOBKM5	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKM5	S			(1) 125ml aGs	TOC 9060	
03631 05	BOBKM5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	[illegible]
[illegible]	3-31-94	1055	[illegible] 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9613474.0832

0000060

C-93

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006453

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SML 526
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
8630 02A	BOBKM6	S	3-29-94	1058	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM6	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM6	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM6	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM6	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM6	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM6	S			(1) 125ml aGs	TOC	9060	
103631 02	BOBKM6	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	[illegible]
[illegible]	~~0855~~ 3-31-94	1053	[illegible] 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

96136174.0853

0000061

U-94

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006454

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SNL 906
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation ~~216-U-8 Vitrified Clay Pipeline~~ 200 UP 2 3-30-94
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations ~~216~~-U-8 Crib w/u2 Tile field 3-30-94
Offsite Property No. W94-0-0369#47
Field Logbook No.

SPECIAL INSTRUCTIONS

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
404006 A	BOBKM7	S	3-30-94	1730	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM7	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM7	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM7	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM7	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM7	S			(1) 125ml aGs	TOC	9060	
404017 06	BOBKM7	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	Ray Arnold Ray Arnold
Ray Arnold Ray Arnold	4-1-94	1210	Tom Gilmore Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.0864

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006469

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SIL 413
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations Z Ditch
Offsite Property No. W94-0-0567 #47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
04016 07 A	BOBKP5	S	3-30-94	1330	(1) 250ml aG	Semi-VOA CLP	
B	BOBKP5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKP5	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKP5	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKP5	S			(1) 125ml G	Cyanide CPL	
F	BOBKP5	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKP5	S			(1) 125ml aGs	TOC 9060	
04017 07	BOBKP5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RW Arnold RW Arnold
RW Arnold RW Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413474.1053

0000063

C-96

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006473

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SIGL 906
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations U1/U2 Tile Field
Offsite Property No. W94-0-0367#47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104016								
03 A	BOBKP7	S	3-30-94	0940	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKP7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKP7	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKP7	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKP7	S			(1) 125ml G	Cyanide	CPL	
F	BOBKP7	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKP7	S			(1) 125ml aGs	TOC	9060	
104017 03	BOBKP7	S	3-30-94	0940	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST W1#299	Page 1 of 1
		006474

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations U1/U2 Tile Field
Ice Chest No. 5142 906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104016 04 A	BOBKP8	S	3-30-94	0900	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKP8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKP8	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKP8	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKP8	S			(1) 125ml G	Cyanide	CPL	
F	BOBKP8	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKP8	S			(1) 125ml aGs	TOC	9060	
104017 04	BOBKP8	S	3-30-94	0900	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
[illegible] ITAS [illegible]	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	[illegible] ITAS Tom Gilmore

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9613174.0037

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Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006466

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation ~~216-U-8 Vitrified Clay~~ ~~Pipeline~~ 200 [illegible] 3-30-94
Sampling Locations ~~216-U-8 Crib~~ 4 14 [illegible] 3-30-94
Ice Chest No. SML 906
Bill of Lading/Airbill No. N/A
Offsite Property No. WM94-0-0367 #497
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
404016 05 A	BOBKN9	S	3 30 94	1100	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKN9	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKN9	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKN9	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKN9	S			(1) 125ml G	Cyanide	CPL	
F	BOBKN9	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKN9	S			(1) 125ml aGs	TOC	9060	
404017 05	BOBKN9	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	[illegible] Tom Gilmore IT&S

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.0038

0000066

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Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006262

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SZYL 415
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations 216-U-10 Pond
Offsite Property No. W94 0-0069 #47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
104016 02 A	BOBNQ4	S	3-30-94	1330	(1) 250ml aG	Semi-VOA CLP	
B	BOBNQ4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBNQ4	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBNQ4	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBNQ4	S			(1) 125ml G	Cyanide CPL	
F	BOBNQ4	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBNQ4	S			(1) 125ml aGs	TOC 9060	
104017 02	BOBNQ4	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.0069

0000067

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Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1 006263

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-10 Pond
Ice Chest No. SWL413
Bill of Lading/Airbill No. N/A
Offsite Property No. 6K94-0 0369-#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
04016 01 A	BOBNQ5	S	3-30-94	1345	(1) 250ml aG	Semi-VOA CLP	
B	BOBNQ5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBNQ5	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBNQ5	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBNQ5	S			(1) 125ml G	Cyanide CPL	
F	BOBNQ5	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBNQ5	S			(1) 125ml aGs	TOC 9060	
04017 01	BOBNQ5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-1-94	1000	RM Arnold
RM Arnold	4-1-94	1210	Tom Gibson ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413274.0840

0000068

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WO #306

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006261

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-10 Pond
Ice Chest No. GW5009
Bill of Lading/Airbill No. N/A
Offsite Property No.
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS
Analyze per SAF 94-065.

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
A	BOBNQ3	S	3-31-94	1200	(1) 250ml aG	Semi-VOA	CLP	
B	BOBNQ3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBNQ3	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBNQ3	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBNQ3	S			(1) 125ml G	Cyanide	CPL	
F	BOBNQ3	S			(1) 125ml Gs	TPH Diesel Range	8015m	
	~~BOBNQ3~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ RTS 3-31-94	9060	
	BOBNQ3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

4040602 A-F
4040602 Rcvd

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-4-94	0830	[signature]
[signature]	4-5-94	0815	Heidelberg OI
			4/5 1030

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9616474.1041

6900069

102

WO#306

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006267

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-11 Trench
Ice Chest No. GW3 020
Bill of Lading/Airbill No. N/A
Offsite Property No.
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
A	BOBNQ8	S	3-31-94	1405	(1) 250ml aG	Semi-VOA	CLP	
B	BOBNQ8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBNQ8	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBNQ8	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBNQ8	S			(1) 125ml G	Cyanide	CPL	
F	BOBNQ8	S			(1) 125ml Gs	TPH Diesel Range	8015m	
	~~BOBNQ8~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ 3-31-94	9060	
	BOBNQ8	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

404065 01 A–F
404066 01

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-4-94	0830	Daniel L. Edwards
Daniel L. Edwards	4-5-94	0815	[illegible] 4-5-94 10:30

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413474.0042

0000070

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9613474.0843

Attachment 5

Data Validation Supporting Documentation

9613474.0844

WHC-SD-EN-SPP-002, Rev. 2

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200 UP7	DATA PACKAGE: W003-ITC-029	
VALIDATOR: C Jensen	LAB: ITC	DATE: 10/12/94
CASE:	SDG:	

ANALYSES PERFORMED

☐ CLP Volatiles	☐ SW-846 8240 (cap column)	☐ SW-846 8260 (packed column)	☒ CLP Semivolatiles	☐ SW-846 8270 (cap column)	☐ SW-846 (packed column)
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX Soils

B09WJ9	B0BKM1	B0BKM7	B0BNQ4
B09WK1	B0BKM3	B0BKN9	B0BNQ5
B09WK2	B0BKM4	B0BKP5	B0BNQ3
B09WK4	B0BKM5	B0BKP7	B0BNQ8
B09WK5	B0BKM6	B0BKP8	

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: Verification performed by WHC

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments:

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GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. INSTRUMENT TUNING AND CALIBRATION

Is the GC/MS tuning/performance check acceptable? . . . . . Yes No N/A

Are initial calibrations acceptable? . . . . . Yes No N/A

Are continuing calibrations acceptable? . . See comment page 1 . . . . . Yes No N/A

Comments: The ICAL 4/18/94: fluorene and benzo(k)fluoranthene are outside limits, associated results qualified UJ
ICAL 4/26: benzo(a) anthracene RRF out, results qualified UJ.
The laboratory did not run an initial cal. for 3-Nitroaniline which is an erratic compound. Assoc. results qualified UJ.

RRF

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: BEHP was detected at 6.3J in SBLK4733A, associated result in sample B09WK4 qualified U, also B09WK5. BEHP was detected in SBLK 5252A at 74 ug/kg, assoc. samples results qualified U: B0BKW1, B0BKW3, B0BKW5. BEHP was detected in SBLK5364 at 13.2 ug/kg, assoc. results qualified U: B0BND4

5. ACCURACY

Were surrogates/System Monitoring Compounds analyzed? . . . . . Yes No N/A

Are surrogate/System Monitoring Compound recoveries acceptable? Yes No N/A

Were MS/MSD samples analyzed? . . . . . Yes No N/A

Are MS/MSD results acceptable? . . . . . Yes No N/A

Comments: phenol %R was slightly above the limit of 26-90 (91 and 102%), no qualification of the data was made, all results are non-detects and all surrogate %R are acceptable.

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GC/MS ORGANIC DATA VALIDATION CHECKLIST

6. PRECISION

Are MS/MSD RPD 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

Comments:

7. SYSTEM PERFORMANCE

Were internal standards analyzed? . . . . . Yes No N/A

Are internal standard areas acceptable? . . . . . Yes No N/A

Are internal standard retention times acceptable? . . . . . Yes No N/A

Comments:

8. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . Yes No N/A

Is compound quantitation acceptable? . . . . . Yes No N/A

Comments:

9. REPORTED RESULTS AND QUANTITATION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A

Are all results supported in the raw data? . . . . . Yes No N/A

Do results meet the CRQLs? . . . . . Yes No N/A

Has the laboratory properly identified and coded all TIC? . . . Yes No N/A

Comments: Aldol products, hexane were detected in the SBLK samples and reported as "unknown" with a J qualifier. Upon review, a few of these compounds have been qualified R, all TICs in blank were compared to associated samples and qualified according to the DV procedures.

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GC/MS ORGANIC DATA VALIDATION CHECKLIST

Comments (attach additional sheets as necessary):

① CCAL %D for benzo(k)fluoranthene was 29.4 %

HOLDING TIME SUMMARY

SDG: | VALIDATOR: C Jensen | DATE: 6/17/94 | PAGE 1 OF 1

COMMENTS: W0013-IIC-029

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WJ9	SVOA	3/21/94	3/29/94	4/19/94	8	21	none
B09WK1		3/22/94			7	20	
B09WK2		3/22/94	3/29/94	4/18/94	7	20	
B09WK4		3/23/94			6	20	
B09WK5		3/23/94			6	20	
B0BKM1		3/29/94	4/4/94	4/19/94	6	15	
B0BKM3		3/29/94			6	15	
B0BKM4		3/29/94			6	15	
B0BKM5		3/29/94			6	15	
B0BKM6		3/29/94			6	15	
B0BKM7		3/30/94	4/6/94	4/28/94	7	22	
B0BKN9		3/30/94			7	22	
B0BKP5		3/30/94			7	22	
B0BKP7		3/30/94			7	22	
B0BKP8		3/30/94			7	22	
B0BNQ4		3/30/94			7	22	
B0BNQ5		3/30/94			7	22	
B0BNQ3		3/31/94	4/7/94	4/28/94	7	21	
B0BNQ8		3/31/94	4/7/94	4/28/94	7	21	

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Instrument ID: FINN Calibration Date(s): 04/18/94 04/18/94

Calibration Times: 1049 1531

LAB FILE ID: RRF20 = IC04181 RRF50 = IC04182
RRF80 = IC04183 RRF120= IC04184 RRF160= IC04185

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
4-Chlorophenyl-phenylether *	0.574	0.592	0.503	0.471	0.443	0.517	12.5*
Fluorene *	1.267	1.120	0.945	0.836	0.820	0.998	19.3*
4-Nitroaniline		0.177	0.153	0.145	0.151	0.156	9.0
4,6-Dinitro-2-Methylphenol		0.122	0.109	0.124	0.128	0.121	6.8
N-Nitrosodiphenylamine (1)	0.690	0.594	0.494	0.419	0.400	0.519	23.5
4-Bromophenyl-phenylether *	0.211	0.230	0.201	0.197	0.186	0.205	8.1*
Hexachlorobenzene *	0.220	0.237	0.214	0.207	0.201	0.216	6.4*
Pentachlorophenol *		0.100	0.088	0.102	0.114	0.101	10.5*
Phenanthrene *	1.190	1.099	0.945	0.800	0.796	0.966	18.3*
Anthracene *	1.209	1.128	0.936	0.838	0.768	0.976	19.3*
Carbazole	0.991	0.972	0.817	0.721	0.732	0.847	15.2
Di-n-Butylphthalate	1.591	1.674	1.446	1.280	1.269	1.452	12.5
Fluoranthene *	1.102	1.198	1.015	0.884	0.845	1.009	14.6*
Pyrene *	1.559	1.576	1.300	1.106	1.139	1.336	16.8*
Butylbenzylphthalate	1.016	1.023	0.882	0.725	0.802	0.890	14.7
3,3'-Dichlorobenzidine	0.406	0.429	0.385	0.335	0.323	0.376	12.1
Benzo(a)Anthracene *	1.211	1.204	0.990	0.878	0.910	1.039	15.4*
Chrysene *	1.171	1.065	0.940	0.815	0.770	0.952	17.6*
bis(2-Ethylhexyl)Phthalate	1.465	1.336	1.134	1.071	1.107	1.223	13.9
Di-n-Octyl Phthalate	2.247	2.062	1.551	1.360	1.523	1.749	21.9
Benzo(b)Fluoranthene *	1.062	1.157	1.038	0.827	1.088	1.034	12.0*
Benzo(k)Fluoranthene *	1.291	0.945	0.982	0.886	0.641	0.949	24.5*
Benzo(a)Pyrene *	1.017	1.024	0.931	0.822	0.828	0.924	10.6*
Indeno(1,2,3-cd)Pyrene *	1.033	1.122	1.060	0.978	1.005	1.040	5.3*
Dibenz(a,h)Anthracene *	0.856	0.910	0.873	0.857	0.898	0.879	2.8*
Benzo(g,h,i)Perylene *	0.834	0.928	0.925	0.809	0.937	0.887	6.8*
Nitrobenzene-d5 *	0.487	0.480	0.477	0.488	0.514	0.489	3.0*
2-Fluorobiphenyl *	1.516	1.161	1.015	0.903	0.866	1.092	24.1*
Terphenyl-d14 *	1.008	0.935	0.794	0.699	0.758	0.839	15.3*
Phenol-d5 *	1.909	2.181	2.148	2.251	2.807	2.259	14.7*
2-Fluorophenol *	1.246	1.919	1.859	2.119	2.712	1.971	26.8*
2,4,6-Tribromophenol	0.100	0.105	0.101	0.107	0.103	0.103	2.8
2-Chlorophenol-d4 *	1.575	1.600	1.462	1.438	1.379	1.491	6.3*
1,2-Dichlorobenzene-d4 *	0.893	0.837	0.801	0.765	0.855	0.830	5.9*

(1) Cannot be separated from Diphenylamine
* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

Associated with samples.
BOBKM1, BOBKM3, BOBKM4
BOBKM5, BOBKM6

FORM VI SV-2 3/90

5/12/94

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Instrument ID: FINN Calibration Date(s): 04/18/94 04/18/94

Calibration Times: 1049 1531

LAB FILE ID: RRF20 = IC04181 RRF50 = IC04182
RRF80 = IC04183 RRF120= IC04184 RRF160= IC04185

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
4-Chlorophenyl-phenylether *	0.574	0.592	0.503	0.471	0.443	0.517	12.5*
Fluorene *	1.267	1.120	0.945	0.836	0.820	0.998	19.3*
4-Nitroaniline		0.177	0.153	0.145	0.151	0.156	9.0
4,6-Dinitro-2-Methylphenol		0.122	0.109	0.124	0.128	0.121	6.8
N-Nitrosodiphenylamine (1)	0.690	0.594	0.494	0.419	0.400	0.519	23.5
4-Bromophenyl-phenylether *	0.211	0.230	0.201	0.197	0.186	0.205	8.1*
Hexachlorobenzene *	0.220	0.237	0.214	0.207	0.201	0.216	6.4*
Pentachlorophenol *		0.100	0.088	0.102	0.114	0.101	10.5*
Phenanthrene *	1.190	1.099	0.945	0.800	0.796	0.966	18.3*
Anthracene *	1.209	1.128	0.936	0.838	0.768	0.976	19.3*
Carbazole	0.991	0.972	0.817	0.721	0.732	0.847	15.2
Di-n-Butylphthalate	1.591	1.674	1.446	1.280	1.269	1.452	12.5
Fluoranthene *	1.102	1.198	1.015	0.884	0.845	1.009	14.6*
Pyrene *	1.559	1.576	1.300	1.106	1.139	1.336	16.8*
Butylbenzylphthalate	1.016	1.023	0.882	0.725	0.802	0.890	14.7
3,3'-Dichlorobenzidine	0.406	0.429	0.385	0.335	0.323	0.376	12.1
Benzo(a)Anthracene *	1.211	1.204	0.990	0.878	0.910	1.039	15.4*
Chrysene *	1.171	1.065	0.940	0.815	0.770	0.952	17.6*
bis(2-Ethylhexyl)Phthalate	1.465	1.336	1.134	1.071	1.107	1.223	13.9
Di-n-Octyl Phthalate	2.247	2.062	1.551	1.360	1.523	1.749	21.9
Benzo(b)Fluoranthene *	1.062	1.157	1.038	0.827	1.088	1.034	12.0*
Benzo(k)Fluoranthene *	1.291	0.945	0.982	0.886	0.641	0.949	24.5*
Benzo(a)Pyrene *	1.017	1.024	0.931	0.822	0.828	0.924	10.6*
Indeno(1,2,3-cd)Pyrene *	1.033	1.122	1.060	0.978	1.005	1.040	5.3*
Dibenz(a,h)Anthracene *	0.856	0.910	0.873	0.857	0.898	0.879	2.8*
Benzo(g,h,i)Perylene *	0.834	0.928	0.925	0.809	0.937	0.887	6.8*
Nitrobenzene-d5 *	0.487	0.480	0.477	0.488	0.514	0.489	3.0*
2-Fluorobiphenyl *	1.516	1.161	1.015	0.903	0.866	1.092	24.1*
Terphenyl-d14 *	1.008	0.935	0.794	0.699	0.758	0.839	15.3*
Phenol-d5 *	1.909	2.181	2.148	2.251	2.807	2.259	14.7*
2-Fluorophenol *	1.246	1.919	1.859	2.119	2.712	1.971	26.8*
2,4,6-Tribromophenol	0.100	0.105	0.101	0.107	0.103	0.103	2.8
2-Chlorophenol-d4 *	1.575	1.600	1.462	1.438	1.379	1.491	6.3*
1,2-Dichlorobenzene-d4 *	0.893	0.837	0.801	0.765	0.855	0.830	5.9*

(1) Cannot be separated from Diphenylamine
* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

Associated with
B09WK2, WK2 MS/MSD
B09WK4, B09WK5, B09WJ9, B09WK1 — 6/12/94

FORM VI SV-2 3/90

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

nstrument ID: FINN Calibration Date(s): 04/26/94 04/26/94

Calibration Times: 1608 1831

LAB FILE ID: RRF20 = IC04261 RRF50 = IC04262
RRF80 = IC04263 RRF120= IC04264 RRF160= IC04265

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
4-Chlorophenyl-phenylether *	0.605	0.752	0.834	0.872	0.869	0.786	14.3*
Fluorene *	1.038	1.277	1.374	1.460	1.494	1.329	13.8*
4-Nitroaniline		0.124	0.131	0.118	0.122	0.124	4.4
4,6-Dinitro-2-Methylphenol		0.105	0.119	0.133	0.166	0.131	20.0
N-Nitrosodiphenylamine (1)	0.490	0.500	0.492	0.527	0.612	0.524	9.8
4-Bromophenyl-phenylether *	0.246	0.291	0.301	0.324	0.354	0.303	13.2*
Hexachlorobenzene *	0.268	0.312	0.318	0.337	0.373	0.322	11.9*
Pentachlorophenol *		0.123	0.144	0.153	0.186	0.152	17.2*
Phenanthrene *	0.974	1.140	1.145	1.166	1.204	1.126	7.9*
Anthracene *	0.920	1.065	1.088	1.106	1.204	1.077	9.5*
Carbazole	0.662	0.702	0.668	0.575	0.604	0.642	8.0
Di-n-Butylphthalate	1.143	1.353	1.446	1.471	1.662	1.415	13.4
Fluoranthene *	1.008	1.225	1.274	1.227	1.376	1.222	11.0*
Pyrene *	1.173	1.300	1.226	1.055	1.095	1.170	8.4*
Butylbenzylphthalate	0.553	0.687	0.702	0.643	0.681	0.653	9.2
3,3'-Dichlorobenzidine	0.390	0.444	0.428	0.374	0.385	0.404	7.5
Benzo(a)Anthracene *	1.221	1.231	1.084	0.856	0.796	1.038	19.5*
Chrysene *	1.045	1.020	0.872	0.795	0.830	0.912	12.4*
bis(2-Ethylhexyl)Phthalate	0.963	1.260	1.236	1.073	1.103	1.127	10.9
Di-n-Octyl Phthalate	1.310	1.399	1.339	1.335	1.360	1.349	2.5
Benzo(b)Fluoranthene *	0.950	1.126	1.083	1.121	1.228	1.102	9.1*
Benzo(k)Fluoranthene *	1.460	1.432	1.287	1.079	1.026	1.257	15.8*
Benzo(a)Pyrene *	0.948	1.037	0.979	0.924	0.958	0.969	4.4*
Indeno(1,2,3-cd)Pyrene *	0.760	0.994	1.016	1.013	1.075	0.972	12.6*
Dibenz(a,h)Anthracene *	0.617	0.816	0.827	0.824	0.880	0.793	12.8*
Benzo(g,h,i)Perylene *	0.629	0.768	0.794	0.793	0.842	0.765	10.6*
Nitrobenzene-d5 *	0.446	0.452	0.496	0.554	0.577	0.505	11.7*
2-Fluorobiphenyl *	1.344	1.464	1.502	1.501	1.498	1.462	4.6*
Terphenyl-d14 *	0.980	0.915	0.851	0.760	0.769	0.855	11.0*
Phenol-d5 *	1.525	1.696	1.773	1.906	1.933	1.767	9.4*
2-Fluorophenol *	0.896	1.130	1.255	1.344	1.545	1.234	19.6*
2,4,6-Tribromophenol	0.123	0.135	0.141	0.150	0.173	0.144	13.0
2-Chlorophenol-d4 *	1.344	1.334	1.332	1.378	1.246	1.327	3.7*
1,2-Dichlorobenzene-d4 *	0.833	0.869	0.887	0.912	0.912	0.883	3.8*

1) Cannot be separated from Diphenylamine
Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

associated with
BOBKP8, BOBKM7, BOBKP7
BOBKN9, BOBNQ4, BOBKP5
BOBNQ5

FORM VI SV-2 3/90

min RRF = .8 5/6/12/94

112

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Instrument ID: FINN Calibration date: 04/18/94 Time: 1713

Lab File ID: CC0418 Init. Calib. Date(s): 04/18/94 04/18/94

Init. Calib. Times: 1049 1531

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.243	1.379		-10.9	
4-Chlorophenyl-phenylether	0.517	0.556	0.400	-7.5	25.0
Fluorene	0.998	1.091	0.900	-9.3	25.0
4-Nitroaniline	0.156	0.184		-18.0	
4,6-Dinitro-2-Methylphenol	0.121	0.126		-4.1	
N-Nitrosodiphenylamine (1)	0.519	0.593		-14.3	
4-Bromophenyl-phenylether	0.205	0.224	0.100	-9.3	25.0
Hexachlorobenzene	0.216	0.228	0.100	-5.6	25.0
Pentachlorophenol	0.101	0.103	0.050	-2.0	25.0
Phenanthrene	0.966	1.099	0.700	-13.8	25.0
Anthracene	0.976	1.130	0.700	-15.8	25.0
Carbazole	0.847	0.945		-11.6	
Di-n-Butylphthalate	1.452	1.667		-14.8	
Fluoranthene	1.009	1.156	0.600	-14.6	25.0
Pyrene	1.336	1.519	0.600	-13.7	25.0
Butylbenzylphthalate	0.890	1.064		-19.6	
3,3'-Dichlorobenzidine	0.376	0.448		-19.2	
Benzo(a)Anthracene	1.039	1.216	0.800	-17.0	25.0
Chrysene	0.952	1.107	0.700	-16.3	25.0
bis(2-Ethylhexyl)Phthalate	1.223	1.391		-13.7	
Di-n-Octyl Phthalate	1.749	1.967		-12.5	
Benzo(b)Fluoranthene	1.034	1.110	0.700	-7.4	25.0
Benzo(k)Fluoranthene	0.949	1.228	0.700	-29.4	25.0
Benzo(a)Pyrene	0.924	1.053	0.700	-14.0	25.0
Indeno(1,2,3-cd)Pyrene	1.040	1.135	0.500	-9.1	25.0
Dibenz(a,h)Anthracene	0.879	0.912	0.400	-3.8	25.0
Benzo(g,h,i)Perylene	0.887	0.937	0.500	-5.6	25.0
Nitrobenzene-d5	0.489	0.502	0.200	-2.7	25.0
2-Fluorobiphenyl	1.092	1.172	0.700	-7.3	25.0
Terphenyl-d14	0.839	0.913	0.500	-8.8	25.0
Phenol-d5	2.259	2.124	0.800	6.0	25.0
2-Fluorophenol	1.971	1.909	0.600	3.1	25.0
2,4,6-Tribromophenol	0.103	0.104		-1.0	
2-Chlorophenol-d4	1.491	1.580	0.800	-6.0	25.0
1,2-Dichlorobenzene-d4	0.830	0.833	0.400	-0.4	25.0

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

associated with
B09WK2, 2 MS/MSD
B09WK4, B09WK5, B09WJ9
B09WK1

FORM VII SV-2 3/90

6/11/94

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Instrument ID: FINN Calibration date: 04/18/94 Time: 1713

Lab File ID: CC0418 Init. Calib. Date(s): 04/18/94 04/18/94

Init. Calib. Times: 1049 1531

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.243	1.379		-10.9	
4-Chlorophenyl-phenylether	0.517	0.556	0.400	-7.5	25.0
Fluorene	0.998	1.091	0.900	-9.3	25.0
4-Nitroaniline	0.156	0.184		-18.0	
4,6-Dinitro-2-Methylphenol	0.121	0.126		-4.1	
N-Nitrosodiphenylamine (1)	0.519	0.593		-14.3	
4-Bromophenyl-phenylether	0.205	0.224	0.100	-9.3	25.0
Hexachlorobenzene	0.216	0.228	0.100	-5.6	25.0
Pentachlorophenol	0.101	0.103	0.050	-2.0	25.0
Phenanthrene	0.966	1.099	0.700	-13.8	25.0
Anthracene	0.976	1.130	0.700	-15.8	25.0
Carbazole	0.847	0.945		-11.6	
Di-n-Butylphthalate	1.452	1.667		-14.8	
Fluoranthene	1.009	1.156	0.600	-14.6	25.0
Pyrene	1.336	1.519	0.600	-13.7	25.0
Butylbenzylphthalate	0.890	1.064		-19.6	
3,3'-Dichlorobenzidine	0.376	0.448		-19.2	
Benzo(a)Anthracene	1.039	1.216	0.800	-17.0	25.0
Chrysene	0.952	1.107	0.700	-16.3	25.0
bis(2-Ethylhexyl)Phthalate	1.223	1.391		-13.7	
Di-n-Octyl Phthalate	1.749	1.967		-12.5	
Benzo(b)Fluoranthene	1.034	1.110	0.700	-7.4	25.0
Benzo(k)Fluoranthene	0.949	1.228	0.700	-29.4	25.0
Benzo(a)Pyrene	0.924	1.053	0.700	-14.0	25.0
Indeno(1,2,3-cd)Pyrene	1.040	1.135	0.500	-9.1	25.0
Dibenz(a,h)Anthracene	0.879	0.912	0.400	-3.8	25.0
Benzo(g,h,i)Perylene	0.887	0.937	0.500	-5.6	25.0
Nitrobenzene-d5	0.489	0.502	0.200	-2.7	25.0
2-Fluorobiphenyl	1.092	1.172	0.700	-7.3	25.0
Terphenyl-d14	0.839	0.913	0.500	-8.8	25.0
Phenol-d5	2.259	2.124	0.800	6.0	25.0
2-Fluorophenol	1.971	1.909	0.600	3.1	25.0
2,4,6-Tribromophenol	0.103	0.104		-1.0	
2-Chlorophenol-d4	1.491	1.580	0.800	-6.0	25.0
1,2-Dichlorobenzene-d4	0.830	0.833	0.400	-0.4	25.0

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

associated with
BOBKM4, BOBKM6,
BOBKM1, BOBKM3, BOBKM5

FORM VII SV-2 3/90

6/12/94

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKAA5252A

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5252

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5252

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	~~U~~ UJ
83-32-9	Acenaphthene	330	U

Verified 5/6/1994

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKAA5252A

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5252

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5252

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	800	U	
100-02-7	4-Nitrophenol	800	U	
132-64-9	Dibenzofuran	330	U	
121-14-2	2,4-Dinitrotoluene	330	U	
84-66-2	Diethylphthalate	330	U	
7005-72-3	4-Chlorophenyl-phenylether	330	U	
86-73-7	Fluorene	330	~~U~~	UJ
100-01-6	4-Nitroaniline	800	U	
534-52-1	4,6-Dinitro-2-Methylphenol	800	U	
86-30-6	N-Nitrosodiphenylamine (1)	330	U	
101-55-3	4-Bromophenyl-phenylether	330	U	
118-74-1	Hexachlorobenzene	330	U	
87-86-5	Pentachlorophenol	800	U	
85-01-8	Phenanthrene	330	U	
120-12-7	Anthracene	330	U	
86-74-8	Carbazole	330	U	
84-74-2	Di-n-Butylphthalate	330	U	
206-44-0	Fluoranthene	330	U	
129-00-0	Pyrene	330	U	
85-68-7	Butylbenzylphthalate	330	U	
91-94-1	3,3'-Dichlorobenzidine	330	U	
56-55-3	Benzo(a)Anthracene	330	U	
218-01-9	Chrysene	330	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	~~74.7 330~~	~~U~~ J x 10 = 747	
117-84-0	Di-n-Octyl Phthalate	330	U	
205-99-2	Benzo(b)Fluoranthene	330	U	
207-08-9	Benzo(k)Fluoranthene	330	~~U~~	UJ
50-32-8	Benzo(a)Pyrene	330	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U	
53-70-3	Dibenz(a,h)Anthracene	330	U	
191-24-2	Benzo(g,h,i)Perylene	330	U	

(1) - Cannot be separated from Diphenylamine

Verified 06/12/94

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKAA5252A

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 290 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5252

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5252

Level: (low/med) LOW Date Received: 04/01/94 MM 6/13/94

% Moisture: _____ decanted: (Y/N) N Date Extracted: 04/04/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/19/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN Aldol reaction product	4.55	110	AJ	R
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.83	6100	AJN	R
3. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.90	6900	AJN	R

verified
5/6/94

SBLK 5252A

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot
61	NOT FOUND								
62	NOT FOUND								
63	NOT FOUND								
64	NOT FOUND								
65	149	1035	17:15	4	1.094	A BB	476.	0.092 UG/ML	0.02
66	NOT FOUND								
67	NOT FOUND								
68	149	1222	20:22	5	0.949	A BB	46.	0.017 UG/ML	0.00
69	NOT FOUND								
70	NOT FOUND								
71	149	1280	21:20	5	0.994	A BB	788.	0.224 UG/ML	0.05
72	NOT FOUND								
73	149	1354	22:34	6	0.904	A BB	320.	0.065 UG/ML	0.01
74	NOT FOUND								
75	NOT FOUND								
76	NOT FOUND								
77	NOT FOUND								
78	NOT FOUND								
79	NOT FOUND								
80	NOT FOUND								
81	NOT FOUND								
82	NOT FOUND								
83	NOT FOUND								

bis(2ethylhexyl)phthalate

$$\frac{788 \times 40 \times 500}{50445 \times .1391 \times 30} = 74.7$$

No	Ret(L)	Ratio	RRT(L)	Ratio	Amnt	Amnt(L)	R.Fac	R.Fac(L)	Ratio
51	12:36		1.036						
52	12:40		1.041						
53	11:45		0.966						
54	13:10		1.082						
55	13:22		1.099						
56	13:25		1.103						
57	13:35		1.116						
58	13:39		0.867						
59	13:40		0.868						
60	14:34		0.925						
61	14:59		0.951						
62	15:26		0.980						
63	15:49		1.004						
64	15:56		1.012						
65	17:14	1.00	1.094	1.00	0.09	25.00	0.006	1.667	0.00
66	18:43		1.188						
67	19:11		0.894						
68	20:20	1.00	0.948	1.00	0.02	25.00	0.001	1.064	0.00
69	21:21		0.995						
70	21:25		0.998						
71	21:19	1.00	0.994	1.00	0.22	25.00	0.012	1.391	0.01
72	21:30		1.002						
73	22:31	1.00	0.903	1.00	0.07	25.00	0.005	1.967	0.00
74	23:51		0.957						
75	23:54		0.959						
76	24:46		0.993						
77	28:49		1.156						
78	28:48		1.155						
79	29:59		1.203						
80	13:45		1.130						
81	5:07		0.734						

Verified 5/8/12/04

9613474.0858

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKAA5614B

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5614

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5614A

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-Methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	37	J x10 = 370
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

6/12/94 -115

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKAA5614B

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 306 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5614

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5614A

Level: (low/med) LOW Date Received: 04/06/94 pm 6/3/94

% Moisture: _____ decanted: (Y/N) N Date Extracted: 04/07/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	①
1.	~~UNKNOWN~~ Benzene Aldol reaction product	1.98	80	~~J~~	R
2.	UNKNOWN 4methyl 3pentene 2-one	2.32	220	~~J~~	R
3. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.13	7000	~~J~~	R
4.	UNKNOWN	16.63	110	~~J~~	JN
5.	UNKNOWN	18.50	110	~~J~~	JN
6.	UNKNOWN	19.35	93	~~J~~	JN
7.	UNKNOWN HEXANE	20.02	80	~~J~~	R
8.	UNKNOWN	20.80	120	~~J~~	JN

Verified 5/6/1/94

9613474.0860

0001200

SBLK 5614B

ND	M/E	SCAN	TIME	REF	RRT	METH	AREA(HGHT)	AMOUNT	%TOT
17	146			1					
18	108			1					
19	146			1					
20	108			1					
21	45			1					
22	108			1					
23	70			1					
24	117			1					
25	77			2					
26	82			2					
27	139			2					
28	107			2					
29	122			2					
30	93			2					
31	162			2					
32	180			2					
33	128			2					
34	127			2					
35	225			2					
36	107			2					
37	142			2					
38	237			3					
39	196			3					
40	196			3					
41	162			3					
42	65			3					
43	163			3					
44	152			3					
45	138			3					
46	153			3					
47	184			3					
48	109			3					
49	168			3					
50	165			3					
51	165			3					
52	149			3					
53	204			3					
54	166			3					
55	138			3					
56	198			4					
57	169			4					
58	248			4					
59	284			4					
60	266			4					
61	178			4					
62	178			4					
63	149			4					
64	202			4					
65	202			5					
66	149			5					
67	252			5					
68	228			5					
69	149	1277	21:17	5	1.002	A BB	771.	1.114 UG/ML	0.24
70	228			5					
71	149			6					
72	252			6					

bis(2 Ethylhexyl) phthalate

$$\frac{771 \times 40 \times 500}{1778 \times .779 \times 30} = 37J$$

6/12/94

9613474.0861

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKAA5364A

ab Name: ITAS-KNOXVILLE Contract: HANFORD

ab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

atrix: (soil/water) SOIL Lab Sample ID: AA5364

ample wt/vol: 30.0 (g/mL) G Lab File ID: AA5364

evel: (low/med) LOW Date Received: _____

Moisture: _____ decanted: (Y/N) N Date Extracted: 04/06/94

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/07/94

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-Methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	13.2 ~~330~~	~~U~~ J x 10 = 132
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

Verified 9/6/12/94

FORM I SV-2 3/90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKAA5364A

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 299 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA5364

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA5364

Level: (low/med) LOW Date Received: 04/02/94 6/13/94

% Moisture: _____ decanted: (Y/N) N Date Extracted: 04/06/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/07/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.95	4700	~~AJN~~ R
2.	UNKNOWN	20.48	8000	J JN

Q

FORM I SV-TIC

Verified 6/12/94

3/90

9613474.0863

0001172

SBLK 5364

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot
61	NOT FOUND								
62	NOT FOUND								
63	NOT FOUND								
64	NOT FOUND								
65	149	1044	17:24	4	1.092	A BB	572.	0.124 UG/ML	0.03
66	NOT FOUND								
67	202	1160	19:20	5	0.896	A BB	64.	0.020 UG/ML	0.00
68	NOT FOUND								
69	NOT FOUND								
70	NOT FOUND								
71	149	1286	21:26	5	0.993	A BB	1172.	0.397 UG/ML	0.09
72	NOT FOUND								
73	NOT FOUND								
74	NOT FOUND								
75	NOT FOUND								
76	NOT FOUND								
77	NOT FOUND								
78	NOT FOUND								
79	NOT FOUND								
80	NOT FOUND								
81	NOT FOUND								
82	NOT FOUND								
83	NOT FOUND								

Bis(2-Ethylhexyl)phthalate

$$\frac{1172 \times 500 \times 40}{45193 \times 1.307 \times 30} = 13.7$$

No	Ret(L)	Ratio	RRT(L)	Ratio	Amnt	Amnt(L)	R.Fac	R.Fac(L)	Ratio
51	12:49		1.035						
52	12:51		1.038						
53	11:56		0.964						
54	13:22	1.00	1.079	1.00	0.04	25.00	0.002	1.558	0.00
55	13:35		1.097						
56	13:38		1.101						
57	13:44		1.109						
58	13:50		0.866						
59	13:53		0.870						
60	14:46		0.925						
61	15:12		0.952						
62	15:38		0.979						
63	16:02		1.004						
64	16:09		1.011						
65	17:26	1.00	1.092	1.00	0.12	25.00	0.005	1.672	0.00
66	18:53		1.183						
67	19:22	1.00	0.896	1.00	0.02	25.00	0.001	1.445	0.00
68	20:29		0.948						
69	21:30		0.995						
70	21:35		0.998						
71	21:28	1.00	0.993	1.00	0.40	25.00	0.021	1.307	0.02
72	21:40		1.002						
73	22:41		0.901						
74	24:04		0.956						
75	24:08		0.958						
76	25:01		0.993						
77	29:09		1.158						
78	29:08		1.157						
79	30:21		1.205						
80	13:58		1.128						
81	5:07		0.734						

6/12/94

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKAA4733A

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 263 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4733

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA4733

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 03/29/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	800	U	
100-02-7	4-Nitrophenol	800	U	
132-64-9	Dibenzofuran	330	U	
121-14-2	2,4-Dinitrotoluene	330	U	
84-66-2	Diethylphthalate	330	U	
7005-72-3	4-Chlorophenyl-phenylether	330	U	
86-73-7	Fluorene	330	~~U~~	~~UJ~~ U
100-01-6	4-Nitroaniline	800	U	
534-52-1	4,6-Dinitro-2-Methylphenol	800	U	
86-30-6	N-Nitrosodiphenylamine (1)	330	U	
101-55-3	4-Bromophenyl-phenylether	330	U	
118-74-1	Hexachlorobenzene	330	U	
87-86-5	Pentachlorophenol	800	U	
85-01-8	Phenanthrene	330	U	
120-12-7	Anthracene	330	U	
86-74-8	Carbazole	330	U	
84-74-2	Di-n-Butylphthalate	330	U	
206-44-0	Fluoranthene	330	U	
129-00-0	Pyrene	330	U	
85-68-7	Butylbenzylphthalate	330	U	
91-94-1	3,3'-Dichlorobenzidine	330	U	
56-55-3	Benzo(a)Anthracene	330	U	
218-01-9	Chrysene	330	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	6.3 ~~330~~	~~U~~	J x10 = 63
117-84-0	Di-n-Octyl Phthalate	330	U	
205-99-2	Benzo(b)Fluoranthene	330	U	
207-08-9	Benzo(k)Fluoranthene	330	~~U~~	~~UJ~~ U
50-32-8	Benzo(a)Pyrene	330	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U	
53-70-3	Dibenz(a,h)Anthracene	330	U	
191-24-2	Benzo(g,h,i)Perylene	330	U	

(1) - Cannot be separated from Diphenylamine

GJ 6/12/94

GJ 6/12/94

Verified GJ 6/12/94

9613474.0865

0001158

SBLC433A

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot
61	NOT FOUND								
62	NOT FOUND								
63	NOT FOUND								
64	NOT FOUND								
65	NOT FOUND								
66	NOT FOUND								
67	NOT FOUND								
68	NOT FOUND								
69	NOT FOUND								
70	NOT FOUND								
71	149	1288	21:28	5	0.993	A BB	402.	0.191 UG/ML	0.04
72	NOT FOUND								
73	NOT FOUND								
74	NOT FOUND								
75	NOT FOUND								
76	NOT FOUND								
77	NOT FOUND								
78	NOT FOUND								
79	NOT FOUND								
80	NOT FOUND								
81	NOT FOUND								
82	NOT FOUND								
83	NOT FOUND								

Bis(2 Ethylhexyl) phthalate

$$\frac{402 \times 40 \times 500}{37684 \times 1.116 \times 30} = 6.3\ J$$

No	Ret(L)	Ratio	RRT(L)	Ratio	Amnt	Amnt(L)	R.Fac	R.Fac(L)	Ratio
51	12:50		1.034						
52	12:52		1.036						
53	11:58		0.964						
54	13:24		1.079						
55	13:36		1.095						
56	13:40		1.101						
57	13:46		1.109						
58	13:51		0.866						
59	13:54		0.869						
60	14:48		0.925						
61	15:13		0.951						
62	15:39		0.978						
63	16:04		1.004						
64	16:10		1.010						
65	17:28		1.092						
66	18:55		1.182						
67	19:23		0.896						
68	20:30		0.948						
69	21:31		0.995						
70	21:36		0.998						
71	21:29	1.00	0.993	1.00	0.19	25.00	0.009	1.116	0.01
72	21:42		1.003						
73	22:43		0.901						
74	24:06		0.956						
75	24:09		0.958						
76	25:03		0.993						
77	29:11		1.157						
78	29:11		1.157						
79	30:24		1.206						
80	14:00		1.128						
81	5:07		0.734						

5/6/12/94

9613474.0866

MEMORANDUM

JUN 1994 RECEIVED TQO

TO: 200-UP-2 Project QA Record June 15, 1994

FR: Susan Winter, Golder Associates Inc.

RE: METALS DATA VALIDATION SUMMARY FOR DATA PACKAGE: W0013-ITC-029 (923-E418, Filename W0013M.UP2)

INTRODUCTION

This memo presents the results of data validation on data package W0013-ITC-029 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	ANALYSIS
B09WJ9	03/21/94	SOIL	SEE NOTE 1
B09WK1	03/22/94	SOIL	
B09WK2	03/22/94	SOIL	
B09WK4	03/23/94	SOIL	
B09WK5	03/23/94	SOIL	
B0BKM1	03/29/94	SOIL	
B0BKM3	03/29/94	SOIL	
B0BKM4	03/29/94	SOIL	
B0BKM5	03/29/94	SOIL	
B0BKM6	03/29/94	SOIL	
B0BKM7	03/30/94	SOIL	
B0BKN9	03/30/94	SOIL	
B0BKP5	03/30/94	SOIL	
B0BKP7	03/30/94	SOIL	
B0BKP8	03/30/94	SOIL	
B0BNQ3	03/31/94	SOIL	
B0BNQ4	03/30/94	SOIL	
B0BNQ5	03/30/94	SOIL	
B0BNQ8	03/31/94	SOIL	

RECEIVED JUN 16 1994 VALIDATION DOCUMENTATION SDLA

Note 1. All samples were analyzed for CLP TAL metals, cyanide, and titanium.

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

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

01

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met with the exception of the deficiencies identified below.

Sample Result Verification. All sample results were supported in the raw data with the exception of the iron result for sample B0BKM5. The result was corrected based on the results of calculation checks.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of nineteen samples were validated in this data package with a total of 475 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data as estimated.

Holding Times

- The required holding time for cyanide was exceeded. Attachments 2 and 5 provide a summary of the affected samples, qualifications applied and supporting documentation.

Laboratory Blanks

- Aluminum, calcium, iron, magnesium, sodium, and zinc were detected in the associated calibration and/or preparation blanks. Attachments 2 and 5 provide a summary of the affected samples, qualifications applied and supporting documentation.

Matrix Spikes

- Matrix spike percent recoveries for antimony, arsenic, and manganese were unacceptable. Attachments 2 and 5 provide a summary of the affected samples, qualifications applied and supporting documentation.

GFAA Analytical Spikes

- GFAA analytical spike recoveries for selenium and thallium were unacceptable. Attachments 2 and 5 provide a summary of the data qualifications applied and supporting documentation.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

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ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF INORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected. The concentration reported is less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample detection limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration may not accurately reflect the sample detection limit. The associated data have been qualified as estimated but should be considered usable for decision making purposes.

BJ - Indicates the constituent was analyzed for and detected at a concentration less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

UR - Indicates the constituent was analyzed for and not detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

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ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

SDG: W0013-ITC-029	VALIDATOR:	DATE: June 13, 1994	PAGE 1 OF 2
COMMENTS: METALS			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
ALUMINUM	U	B09WK4 B09WK5	PRESENT IN PREP. BLANK AT A POSITIVE CONCENTRATION
CALCIUM	U	B09WK4 B09WK5 B0BKP7 B0BKP8 B0BNQ4 B0BNQ5	PRESENT IN PREP. BLANK AT A POSITIVE CONCENTRATION
MAGNESIUM	U	B09WK4	PRESENT IN PREP. BLANK AT A POSITIVE CONCENTRATION
SODIUM	U	B09WK4 B09WK5 B0BKP7 B0BKP8 B0BNQ4 B0BNQ5 B0BKM1 B0BKM6	PRESENT IN PREP. BLANK AT A POSITIVE CONCENTRATION
ZINC	U	B09WK4 B0BKP7 B0BKP8 B0BNQ5	PRESENT IN PREP. BLANK AT A POSITIVE CONCENTRATION
IRON	U	B09WK5	PRESENT IN PREP. BLANK AT A POSITIVE CONCENTRATION
ANTIMONY	UJ	B09WJ9 B09WK1 B09WK4 B09WK5 B0BNQ3 B0BNQ8	MS %R < 75% BUT > 30%
ANTIMONY	BJ	B09WK2	MS %R < 75% BUT > 30%
MANGANESE	J	B09WJ9 B09WK1 B09WK2	MS %R > 125%
MANGANESE	BJ	B09WK4 B09WK5	MS %R > 125%
CYANIDE	UJ	B0BKM1 B0BKM3 B0BKM4 B0BKM5 B0BKM6	ANALYZED OUT OF REQUIRED HOLDING TIME
SELENIUM	UJ	B0BKP8	GFAA ANALYTICAL SPIKE %R > 115%

DATA QUALIFICATION SUMMARY

SDG: W0013-ITC-029	VALIDATOR:	DATE: June 13, 1994	PAGE 2 OF 2
COMMENTS: METALS			

COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
THALLIUM	UJ	B0BKM4 B0BKM5 B0BKP7 B0BKP8 B0BKN9 B0BKM7 B0BKP5	GFAA ANALYTICAL SPIKE %R < 85% BUT > 40%
ARSENIC	J - DETECTS UJ - NONDETECTS	B0BKM1 B0BKM3 B0BKM4 B0BKM5 B0BKM6 B0BKM7 B0BKN9 B0BKP5 B0BKP7 B0BKP8 B0BNQ4 B0BNQ5	MS %R < 75% BUT > 30%
MAGNESIUM	U	B0BKP7 B0BKP8 B0BNQ4 B0BNQ5	PRESENT IN ICB AND PREP. BLANK AT POSITIVE CONCENTRATIONS
THALLIUM	UJ	B0BNQ3 B0BNQ8	MS %R < 75% BUT > 30%

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ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B09WJ9		B09WK1		B09WK2		B09WK4		B09WK5		B0BKM1	
	Date	3-21-94		3-22-94		3-22-94		3-23-94		3-23-94		3-29-94	
	Location	---		---		---		---		---		216-U-8	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ALUMINUM	MG/KG	12900.000		8290.000		7920.000		98.900	U	74.900	U	5590.000	
ANTIMONY	MG/KG	11.700	UJ	11.100	UJ	13.000	BJ	9.500	UJ	9.600	UJ	9.800	U
ARSENIC	MG/KG	3.700		3.500		4.300		0.400	U	0.370	U	3.000	J
BARIUM	MG/KG	146.000		93.000		107.000		0.390	B	0.380	U	73.900	
BERYLLIUM	MG/KG	1.000	B	0.510	B	0.620	B	0.190	U	0.190	U	0.500	B
CADMIUM	MG/KG	1.200	U	1.100	U	1.200	U	0.950	U	0.960	U	0.980	U
CALCIUM	MG/KG	14100.000		20900.000		70900.000		44.300	U	27.600	U	7980.000	
CHROMIUM	MG/KG	16.100		16.600		13.600		1.900	U	1.900	U	7.200	
COBALT	MG/KG	20.900		10.600	B	12.500		1.900	U	1.900	U	12.000	
COPPER	MG/KG	18.900		14.700		14.200		1.900	U	1.900	U	11.800	
IRON	MG/KG	38000.000		18100.000		19900.000		218.000		171.000	U	21100.000	
LEAD	MG/KG	8.800		5.700		4.500		0.400	U	0.370	U	7.800	
MAGNESIUM	MG/KG	7920.000		7480.000		6950.000		11.800	U	5.800	U	4970.000	
MANGANESE	MG/KG	519.000	J	342.000	J	439.000	J	0.560	BJ	0.560	BJ	335.000	
MERCURY	MG/KG	0.120	U	0.110	U	0.110	U	0.100	U	0.090	U	0.100	U
NICKEL	MG/KG	16.200		15.600		15.400		3.800	U	3.800	U	8.600	
POTASSIUM	MG/KG	2180.000		1660.000		1390.000		191.000	U	192.000	U	1790.000	
SELENIUM	MG/KG	0.470	U	0.470	U	0.470	U	0.400	U	0.370	U	0.390	U
SILVER	MG/KG	2.000	B	1.100	U	2.200	B	0.950	U	0.960	U	1.400	B
SODIUM	MG/KG	269.000	B	174.000	B	226.000	B	33.300	U	38.700	U	116.000	U
THALLIUM	MG/KG	0.470	U	0.470	U	0.470	U	0.400	U	0.370	U	0.390	U
VANADIUM	MG/KG	74.000		32.600		52.700		1.900	U	1.900	U	42.600	
ZINC	MG/KG	51.500		32.100		30.000		9.600	U	0.960	U	38.300	
TITANIUM	MG/KG	2130.000		833.000		1390.000		3.800		3.100		1420.000	
CYANIDE	MG/KG	1.200	U	3.000		1.200	U	1.000	U	1.000	U	1.000	UJ

Verified
[illegible] 6/13/94

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10

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	BOBKM3		BOBKM4		BOBKM5		BOBKM6		BOBKM7		BOBKN9	
	Date	3-29-94		3-29-94		3-29-94		3-29-94		3-30-94		3-30-94	
	Location	216-U-8		216-U-8		216-U-8		216-U-8		U1/U2 TILE FIELD		U14 DITCH	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ALUMINUM	MG/KG	7290.000		6310.000		6420.000		6310.000		7940.000		6500.000	
ANTIMONY	MG/KG	11.200	B	9.900	U	9.600	U	9.700	U	9.700	U	12.400	
ARSENIC	MG/KG	3.400	J	4.400	J	2.200	J	2.900	J	2.900	J	2.300	J
BARIUM	MG/KG	90.500		94.400		73.000		82.300		85.100		79.900	
BERYLLIUM	MG/KG	0.700	B	0.690	B	0.500	B	0.500	B	0.740	B	0.550	B
CADMIUM	MG/KG	0.970	U	0.990	U	0.960	U	0.970	U	0.970	U	0.990	U
CALCIUM	MG/KG	7800.000		11000.000		3970.000		3660.000		12400.000		5720.000	
CHROMIUM	MG/KG	9.400		8.500		7.900		8.700		10.100		9.000	
COBALT	MG/KG	15.300		13.700		11.800		13.500		14.700		13.100	
COPPER	MG/KG	13.000		13.400		9.900		11.900		12.400		12.300	
IRON	MG/KG	25900.000		21400.000		22600.000		21800.000		25800.000		22800.000	
LEAD	MG/KG	10.900		7.200		5.700		6.300		8.500		5.400	
MAGNESIUM	MG/KG	5810.000		5880.000		4750.000		4710.000		4960.000		4330.000	
MANGANESE	MG/KG	379.000		389.000		355.000		362.000		360.000		340.000	
MERCURY	MG/KG	0.090	U	0.080	U	0.100	U	0.100	U	0.080	U	0.100	U
NICKEL	MG/KG	10.700		11.400		9.000		9.200		10.000		10.100	
POTASSIUM	MG/KG	2150.000		2100.000		1990.000		1540.000		2400.000		1370.000	
SELENIUM	MG/KG	0.400	U	0.400	U	0.390	U	0.380	U	0.380	U	0.390	U
SILVER	MG/KG	1.800	B	1.400	B	1.100	B	1.500	B	1.500	B	1.700	B
SODIUM	MG/KG	199.000	B	127.000	B	169.000	B	107.000	U	224.000	B	165.000	B
THALLIUM	MG/KG	0.400	U	0.400	UJ	0.390	UJ	0.380	U	0.380	UJ	0.390	UJ
VANADIUM	MG/KG	59.400		47.900		48.600		43.700		64.300		56.600	
ZINC	MG/KG	42.100		38.200		36.500		35.600		42.100		34.700	
TITANIUM	MG/KG	1910.000		1660.000		1610.000		1550.000		1940.000		1610.000	
CYANIDE	MG/KG	1.000	UJ	1.100	UJ	1.000	UJ	1.000	UJ	1.000	U	1.000	U

Verified

6/13/94

9413944.0876

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	BOBKP5		BOBKP7		BOBKP8		BOBNQ3		BOBNQ4		BOBNQ5	
	Date	3-30-94		3-30-94		3-30-94		3-31-94		3-30-94		3-30-94	
	Location	Z DITCH		U1/U2-TILE FIELD		U1/U2-TILE FIELD		216-U-10		216-U-10		216-U-10	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ALUMINUM	MG/KG	8440.000		117.000		146.000		5760.000		72.100		81.300	
ANTIMONY	MG/KG	9.600	U	9.300	U	9.500	U	9.900	UJ	10.000	U	9.600	U
ARSENIC	MG/KG	2.600	J	0.370	UJ	0.400	UJ	2.100		0.370	UJ	0.380	UJ
BARIUM	MG/KG	86.200		0.470	B	0.690	B	85.500		0.470	B	0.520	B
BERYLLIUM	MG/KG	0.710	B	0.190	U	0.190	U	0.600	B	0.200	U	0.190	U
CADMIUM	MG/KG	0.960	U	0.930	U	0.950	U	0.990	U	1.000	U	0.960	U
CALCIUM	MG/KG	6340.000		31.000	U	32.900	U	8430.000		40.400	U	36.300	U
CHROMIUM	MG/KG	11.300		1.900	U	1.900	U	8.700		2.000	U	1.900	U
COBALT	MG/KG	14.300		1.900	U	1.900	U	14.200		2.000	U	1.900	U
COPPER	MG/KG	13.000		1.900	U	1.900	U	17.600		2.000	U	1.900	U
IRON	MG/KG	25100.000		172.000		173.000		24200.000		133.000		148.000	
LEAD	MG/KG	5.600		0.370	U	0.400	U	3.700		0.450	B	0.380	U
MAGNESIUM	MG/KG	5150.000		10.300	U	17.600	U	4290.000		12.700	U	14.600	U
MANGANESE	MG/KG	377.000		4.200		0.940	B	337.000		1.200	B	0.850	B
MERCURY	MG/KG	0.090	U	0.100	U	0.100	U	0.100	U	0.090	U	0.100	U
NICKEL	MG/KG	11.500		3.700	U	3.800	U	8.400		4.000	U	3.800	U
POTASSIUM	MG/KG	2110.000		187.000	U	191.000	U	1180.000		200.000	U	192.000	U
SELENIUM	MG/KG	0.390	U	0.370	U	0.400	UJ	0.390	U	0.370	U	0.380	U
SILVER	MG/KG	1.200	B	0.930	U	0.950	U	1.200	B	1.000	U	0.960	U
SODIUM	MG/KG	202.000	B	28.300	U	36.000	U	285.000	B	36.400	U	32.800	U
THALLIUM	MG/KG	0.390	UJ	0.370	UJ	0.400	UJ	0.390	UJ	0.370	U	0.380	U
VANADIUM	MG/KG	59.200		1.900	U	1.900	U	67.200		2.000	U	1.900	U
ZINC	MG/KG	38.400		1.000	U	1.000	U	40.300		1.000	U	1.900	U
TITANIUM	MG/KG	1760.000		4.800		5.300		2140.000		4.000		3.800	
CYANIDE	MG/KG	1.000	U	1.000	U	1.000	U	1.000	U	1.000	U	1.000	U

Verified

6/13/94

9613974.0027

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B0BNQ8	
	Date	3-31-94	
	Location	216-U-11	
	Depth	---	
	Type	SOIL	
	Comments	---	
Parameter	Units	Result	Q
ALUMINUM	MG/KG	6380.000	
ANTIMONY	MG/KG	9.900	UJ
ARSENIC	MG/KG	2.500	
BARIUM	MG/KG	89.400	
BERYLLIUM	MG/KG	0.550	B
CADMIUM	MG/KG	0.990	U
CALCIUM	MG/KG	5930.000	
CHROMIUM	MG/KG	9.300	
COBALT	MG/KG	11.700	
COPPER	MG/KG	11.000	
IRON	MG/KG	19000.000	
LEAD	MG/KG	4.500	
MAGNESIUM	MG/KG	4350.000	
MANGANESE	MG/KG	345.000	
MERCURY	MG/KG	0.100	U
NICKEL	MG/KG	10.800	
POTASSIUM	MG/KG	1470.000	
SELENIUM	MG/KG	0.380	U
SILVER	MG/KG	1.100	B
SODIUM	MG/KG	128.000	B
THALLIUM	MG/KG	0.380	UJ
VANADIUM	MG/KG	44.200	
ZINC	MG/KG	33.000	
TITANIUM	MG/KG	1380.000	
CYANIDE	MG/KG	1.000	U

Verified

6/13/94

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJ9

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0263 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA4616
Level (low/med): LOW Date Received: 03/26/94
% Solids: 80.9

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	12900		*	P	
7440-36-0	Antimony	11.7	~~U~~	N	P	US
7440-38-2	Arsenic	3.7			F	
7440-39-3	Barium	146			P	
7440-41-7	Beryllium	1.00	B		P	
7440-43-9	Cadmium	1.2	U		P	
7440-70-2	Calcium	14100			P	
7440-47-3	Chromium	16.1		*	P	
7440-48-4	Cobalt	20.9			P	
7440-50-8	Copper	18.9			P	
7439-89-6	Iron	38000			P	
7439-92-1	Lead	8.8		S	F	
7439-95-4	Magnesium	7920			P	
7439-96-5	Manganese	519		N	P	J
7439-97-6	Mercury	0.12	U		CV	
7440-02-0	Nickel	16.2			P	
7440-09-7	Potassium	2180			P	
7782-49-2	Selenium	0.47	U		F	
7440-22-4	Silver	2.0	B		P	
7440-23-5	Sodium	269	B		P	
7440-28-0	Thallium	0.47	U		F	
7440-62-2	Vanadium	74.0			P	
7440-66-6	Zinc	51.5			P	
	Titanium	2130			P	
5955-70-0	Cyanide				NR	

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

Comments:
COMPLETE_CLIENT_I.D.: 403489-05(A-H)

FORM I - IN Verified ILM02.1

6/10/94

9613474.0880

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BO9WJ9

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0263 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA4622
Level (low/med): LOW Date Received: 03/26/94
% Solids: 80.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.2	U		AS

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

Comments:
COMPLETE CLIENT I.D.: 403489-05(A-H)

FORM I - IN ILM02.1

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6/10/94

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS_KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0263 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA4624
Level (low/med): LOW Date Received: 03/26/94
% Solids: 83.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8290		*	P
7440-36-0	Antimony	11.1	U	N	P
7440-38-2	Arsenic	3.5		S	F
7440-39-3	Barium	93.0			P
7440-41-7	Beryllium	0.51	B		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	20900			P
7440-47-3	Chromium	16.6		*	P
7440-48-4	Cobalt	10.6	B		P
7440-50-8	Copper	14.7			P
7439-89-6	Iron	18100			P
7439-92-1	Lead	5.7			F
7439-95-4	Magnesium	7480			P
7439-96-5	Manganese	342		N	P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	15.6			P
7440-09-7	Potassium	1660			P
7782-49-2	Selenium	0.47	U		F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	174	B		P
7440-28-0	Thallium	0.47	U		F
7440-62-2	Vanadium	32.6			P
7440-66-6	Zinc	32.1			P
	Titanium	833			P
5955-70-0	Cyanide				NR

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

Comments:
COMPLETE_CLIENT_I.D.: 403489-06(A-H)

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6/10/94

9613474.0882

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4630

Level (low/med): LOW Date Received: 03/26/94

% Solids: 83.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	3.0			AS

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE CLIENT I.D.: 403489-06(A-H)

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6/10/94

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BO9WK2

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4589

Level (low/med): LOW Date Received: 03/26/94

% Solids: 84.7

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	7920		*	P	
7440-36-0	Antimony	13.0	B	N	P	BJ
7440-38-2	Arsenic	4.3		S	F	
7440-39-3	Barium	107			P	
7440-41-7	Beryllium	0.62	B		P	
7440-43-9	Cadmium	1.2	U		P	
7440-70-2	Calcium	70900			P	
7440-47-3	Chromium	13.6		*	P	
7440-48-4	Cobalt	12.5			P	
7440-50-8	Copper	14.2			P	
7439-89-6	Iron	19900			P	
7439-92-1	Lead	4.5			F	
7439-95-4	Magnesium	6950			P	
7439-96-5	Manganese	439		N	P	J
7439-97-6	Mercury	0.11	U		CV	
7440-02-0	Nickel	15.4			P	
7440-09-7	Potassium	1390			P	
7782-49-2	Selenium	0.47	U		F	
7440-22-4	Silver	2.2	B		P	
7440-23-5	Sodium	226	B		P	
7440-28-0	Thallium	0.47	U		F	
7440-62-2	Vanadium	52.7			P	
7440-66-6	Zinc	30.0			P	
	Titanium	1390			P	
5955-70-0	Cyanide				NR	

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 403489-01(A-H)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BO9WK2

Lab Name: ITAS_KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4595

Level (low/med): LOW Date Received: 03/26/94

% Solids: 84.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.2	U		AS

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 403489-01(A-H)

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8/10/94

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WK4

Lab Name: ITAS_KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4599

Level (low/med): LOW Date Received: 03/26/94

% Solids: 99.8

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	98.9		*	P	u
7440-36-0	Antimony	9.5	U	N	P	UJ
7440-38-2	Arsenic	0.40	U		F	
7440-39-3	Barium	0.39	B		P	
7440-41-7	Beryllium	0.19	U		P	
7440-43-9	Cadmium	0.95	U		P	
7440-70-2	Calcium	44.3	B		P	u
7440-47-3	Chromium	1.9	U	*	P	
7440-48-4	Cobalt	1.9	U		P	
7440-50-8	Copper	1.9	U		P	
7439-89-6	Iron	218			P	
7439-92-1	Lead	0.40	U		F	
7439-95-4	Magnesium	11.8	B		P	u
7439-96-5	Manganese	0.56	B	N	P	BJ
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	3.8	U		P	
7440-09-7	Potassium	191	U		P	
7782-49-2	Selenium	0.40	U		F	
7440-22-4	Silver	0.95	U		P	
7440-23-5	Sodium	33.3	B		P	u
7440-28-0	Thallium	0.40	U		F	
7440-62-2	Vanadium	1.9	U		P	
7440-66-6	Zinc	9.6			P	u
	Titanium	3.8			P	
5955-70-0	Cyanide				NR	

Color Before: WHITE Clarity Before: Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 403489-02(A-H)

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6/10/94

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WK4

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4605

Level (low/med): LOW Date Received: 03/26/94

% Solids: 99.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: WHITE Clarity Before: Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 403489-02(A-H)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WK5

Lab Name: ITAS_KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4607

Level (low/med): LOW Date Received: 03/26/94

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	74.9		*	P	u
7440-36-0	Antimony	9.6	~~U~~	N	P	uJ
7440-38-2	Arsenic	0.37	U		F	
7440-39-3	Barium	0.38	U		P	
7440-41-7	Beryllium	0.19	U		P	
7440-43-9	Cadmium	0.96	U		P	
7440-70-2	Calcium	27.6	~~B~~		P	u
7440-47-3	Chromium	1.9	U	*	P	
7440-48-4	Cobalt	1.9	U		P	
7440-50-8	Copper	1.9	U		P	
7439-89-6	Iron	171			P	u
7439-92-1	Lead	0.37	U		F	
7439-95-4	Magnesium	5.8	U		P	
7439-96-5	Manganese	0.56	~~B~~	N	P	BJ
7439-97-6	Mercury	0.09	U		CV	
7440-02-0	Nickel	3.8	U		P	
7440-09-7	Potassium	192	U		P	
7782-49-2	Selenium	0.37	U		F	
7440-22-4	Silver	0.96	U		P	
7440-23-5	Sodium	38.7	~~B~~		P	u
7440-28-0	Thallium	0.37	U		F	
7440-62-2	Vanadium	1.9	U		P	
7440-66-6	Zinc	0.96	U		P	
	Titanium	3.1			P	
5955-70-0	Cyanide				NR	

Color Before: WHITE Clarity Before: Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 403489-03(A-H)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WK5

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0263 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA4613

Level (low/med): LOW Date Received: 03/26/94

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: WHITE Clarity Before: Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE CLIENT I.D.: 403489-03(A-H)

FORM I - IN

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6/10/94

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM1

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA
Lab Code: ITSTU Case No.: WO290 SAS No.: _____ SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5090
Level (low/med): LOW Date Received: 04/01/94
% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	5590			P	
7440-36-0	Antimony	9.8	U		P	
7440-38-2	Arsenic	3.0		N	F	S
7440-39-3	Barium	73.9			P	
7440-41-7	Beryllium	0.50	B		P	
7440-43-9	Cadmium	0.98	U		P	
7440-70-2	Calcium	7980			P	
7440-47-3	Chromium	7.2		*	P	
7440-48-4	Cobalt	12.0			P	
7440-50-8	Copper	11.8			P	
7439-89-6	Iron	21100			P	
7439-92-1	Lead	7.8		S	F	
7439-95-4	Magnesium	4970			P	
7439-96-5	Manganese	335			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	8.6			P	
7440-09-7	Potassium	1790			P	
7782-49-2	Selenium	0.39	U		F	
7440-22-4	Silver	1.4	B		P	
7440-23-5	Sodium	116 ~~B~~			P	U
7440-28-0	Thallium	0.39	U		F	
7440-62-2	Vanadium	42.6			P	
7440-66-6	Zinc	38.3			P	
	Titanium	1420			P	
5955-70-0	Cyanide				NR	

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

Comments:
Lead 1/2 dilution

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FORM I - IN

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM1

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA

Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5093

Level (low/med): LOW Date Received: 04/01/94

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.0	~~U~~		AS	WS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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5/12/94

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM3

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA

Lab Code: ITSTU Case No.: W0290 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5097

Level (low/med): LOW Date Received: 04/01/94

% Solids: 97.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	7290			P	
7440-36-0	Antimony	11.2	B		P	
7440-38-2	Arsenic	3.4		N	F	J
7440-39-3	Barium	90.5			P	
7440-41-7	Beryllium	0.70	B		P	
7440-43-9	Cadmium	0.97	U		P	
7440-70-2	Calcium	7800			P	
7440-47-3	Chromium	9.4		*	P	
7440-48-4	Cobalt	15.3			P	
7440-50-8	Copper	13.0			P	
7439-89-6	Iron	25900			P	
7439-92-1	Lead	10.9		S	F	
7439-95-4	Magnesium	5810			P	
7439-96-5	Manganese	379			P	
7439-97-6	Mercury	0.09	U		CV	
7440-02-0	Nickel	10.7			P	
7440-09-7	Potassium	2150			P	
7782-49-2	Selenium	0.40	U		F	
7440-22-4	Silver	1.8	B		P	
7440-23-5	Sodium	199	B		P	
7440-28-0	Thallium	0.40	U		F	
7440-62-2	Vanadium	59.4			P	
7440-66-6	Zinc	42.1			P	
	Titanium	1910			P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Lead 1/2 dilution

Verified

6/10/94

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM3

Lab Name: ITAS_KNOXVILLE_____ Contract: WESTING/HA
Lab Code: ITSTU_ Case No.: W0290 SAS No.: _____ SDG No.: W0013_
Matrix (soil/water): SOIL_ Lab Sample ID: AA5100
Level (low/med): LOW_ Date Received: 04/01/94
% Solids: _97.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.0	~~U~~		AS	US

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

Comments:
CYANIDE_ONLY. Verified 6/10/94

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM4

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA
Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5076
Level (low/med): LOW Date Received: 04/01/94
% Solids: 95.2

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	6310			P	
7440-36-0	Antimony	9.9	U		P	
7440-38-2	Arsenic	4.4		N	F	J
7440-39-3	Barium	94.4			P	
7440-41-7	Beryllium	0.69	B		P	
7440-43-9	Cadmium	0.99	U		P	
7440-70-2	Calcium	11000			P	
7440-47-3	Chromium	8.5		*	P	
7440-48-4	Cobalt	13.7			P	
7440-50-8	Copper	13.4			P	
7439-89-6	Iron	21400			P	
7439-92-1	Lead	7.2		S	F	
7439-95-4	Magnesium	5880			P	
7439-96-5	Manganese	389			P	
7439-97-6	Mercury	0.08	U		CV	
7440-02-0	Nickel	11.4			P	
7440-09-7	Potassium	2100			P	
7782-49-2	Selenium	0.40	U		F	
7440-22-4	Silver	1.4	B		P	
7440-23-5	Sodium	127	B		P	
7440-28-0	Thallium	0.40	~~U~~	W	F	US
7440-62-2	Vanadium	47.9			P	
7440-66-6	Zinc	38.2			P	
	Titanium	1660			P	
5955-70-0	Cyanide				NR	

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

Comments:
Lead 1/2 dilution

Verified
[illegible] 6/10/94

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM4

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA
Lab Code: ITSTU Case No.: W0290 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5079
Level (low/med): LOW Date Received: 04/01/94
% Solids: 95.2

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.1	~~U~~		AS	US

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
CYANIDE ONLY. Verified 6/10/94

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM5

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA

Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5104

Level (low/med): LOW Date Received: 04/01/94

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6420			P
7440-36-0	Antimony	9.6	U		P
7440-38-2	Arsenic	2.2		N	F
7440-39-3	Barium	73.0			P
7440-41-7	Beryllium	0.50	B		P
7440-43-9	Cadmium	0.96	U		P
7440-70-2	Calcium	3970			P
7440-47-3	Chromium	7.9		*	P
7440-48-4	Cobalt	11.8			P
7440-50-8	Copper	9.9			P
7439-89-6	Iron	22600 ~~21300~~			P
7439-92-1	Lead	5.7		S	F
7439-95-4	Magnesium	4750			P
7439-96-5	Manganese	355			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	9.0			P
7440-09-7	Potassium	1990			P
7782-49-2	Selenium	0.39	U		F
7440-22-4	Silver	1.1	B		P
7440-23-5	Sodium	169	B		P
7440-28-0	Thallium	0.39	~~U~~	W	F
7440-62-2	Vanadium	48.6			P
7440-66-6	Zinc	36.5			P
	Titanium	1610			P
5955-70-0	Cyanide				NR

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Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Lead 1/2 dilution

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM5

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA

Lab Code: ITSTU Case No.: W0290 SAS No.: _____ SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5107

Level (low/med): LOW Date Received: 04/01/94

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	~~U~~		AS

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Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

CYANIDE ONLY. Verified [illegible] to 6/10/94

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM6

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA
Lab Code: ITSTU Case No.: WO290 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5083
Level (low/med): LOW Date Received: 04/01/94
% Solids: 97.4

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	6310			P	
7440-36-0	Antimony	9.7	U		P	
7440-38-2	Arsenic	2.9		N	F	S
7440-39-3	Barium	82.3			P	
7440-41-7	Beryllium	0.50	B		P	
7440-43-9	Cadmium	0.97	U		P	
7440-70-2	Calcium	3660			P	
7440-47-3	Chromium	8.7		*	P	
7440-48-4	Cobalt	13.5			P	
7440-50-8	Copper	11.9			P	
7439-89-6	Iron	21800			P	
7439-92-1	Lead	6.3		S	F	
7439-95-4	Magnesium	4710			P	
7439-96-5	Manganese	362			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	9.2			P	
7440-09-7	Potassium	1540			P	
7782-49-2	Selenium	0.38	U		F	
7440-22-4	Silver	1.5	B		P	
7440-23-5	Sodium	107	~~B~~		P	U
7440-28-0	Thallium	0.38	U		F	
7440-62-2	Vanadium	43.7			P	
7440-66-6	Zinc	35.6			P	
	Titanium	1550			P	
5955-70-0	Cyanide				NR	

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

Comments:
Lead 1/2 dilution

Verified
Date 6/10/94

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM6

Lab Name: ITAS KNOXVILLE Contract: WESTING/HA
Lab Code: ITSTU Case No.: W0290 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5086
Level (low/med): LOW Date Received: 04/01/94
% Solids: 97.4

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.0	~~U~~		AS	US

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
CYANIDE ONLY. Verified 6/10/94

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM7

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: _____ SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5225

Level (low/med): LOW Date Received: 09/12/93

% Solids: 97.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7940			P
7440-36-0	Antimony	9.7	U		P
7440-38-2	Arsenic	2.9		N	F
7440-39-3	Barium	85.1			P
7440-41-7	Beryllium	0.74	B		P
7440-43-9	Cadmium	0.97	U		P
7440-70-2	Calcium	12400			P
7440-47-3	Chromium	10.1		*	P
7440-48-4	Cobalt	14.7			P
7440-50-8	Copper	12.4			P
7439-89-6	Iron	25800			P
7439-92-1	Lead	8.5		S	F
7439-95-4	Magnesium	4960			P
7439-96-5	Manganese	360			P
7439-97-6	Mercury	0.08	U		CV
7440-02-0	Nickel	10.0			P
7440-09-7	Potassium	2400			P
7782-49-2	Selenium	0.38	U		F
7440-22-4	Silver	1.5	B		P
7440-23-5	Sodium	224	B		P
7440-28-0	Thallium	0.38	U	W	F
7440-62-2	Vanadium	64.3			P
7440-66-6	Zinc	42.1			P
	Titanium	1940			P
5955-70-0	Cyanide				NR

Q

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

Titanium is right at upper linear range of 10 mg/L. Exceeded linear range by 0.6%, which did not exceed 5% acceptance range.

Lead 1/2 dilution.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKM7

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE
Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5228
Level (low/med): LOW Date Received: 09/12/93
% Solids: 97.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
CYANIDE ONLY. Verified to 6/11/94

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKN9

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE

Lab Code: ITSTU_ Case No.: WO299 SAS No.: _____ SDG No.: W0013_

Matrix (soil/water): SOIL_ Lab Sample ID: AA5218

Level (low/med): LOW__ Date Received: 09/12/93

% Solids: _98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6500			P
7440-36-0	Antimony	12.4			P
7440-38-2	Arsenic	2.3		N	F
7440-39-3	Barium	79.9			P
7440-41-7	Beryllium	0.55	B		P
7440-43-9	Cadmium	0.99	U		P
7440-70-2	Calcium	5720			P
7440-47-3	Chromium	9.0		*	P
7440-48-4	Cobalt	13.1			P
7440-50-8	Copper	12.3			P
7439-89-6	Iron	22800			P
7439-92-1	Lead	5.4		S	F
7439-95-4	Magnesium	4330			P
7439-96-5	Manganese	340			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	10.1			P
7440-09-7	Potassium	1370			P
7782-49-2	Selenium	0.39	U		F
7440-22-4	Silver	1.7	B		P
7440-23-5	Sodium	165	B		P
7440-28-0	Thallium	0.39	U	W	F
7440-62-2	Vanadium	56.6			P
7440-66-6	Zinc	34.7			P
	Titanium	1610			P
5955-70-0	Cyanide				NR

Q

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKN9

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5221

Level (low/med): LOW Date Received: 09/12/93

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY. Verified 6/11/94

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKP5

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: W0299 SAS No.: _____ SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5232

Level (low/med): LOW Date Received: 09/12/93

% Solids: 98.4

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	8440			P	
7440-36-0	Antimony	9.6	U		P	
7440-38-2	Arsenic	2.6		N	F	S
7440-39-3	Barium	86.2			P	
7440-41-7	Beryllium	0.71	B		P	
7440-43-9	Cadmium	0.96	U		P	
7440-70-2	Calcium	6340			P	
7440-47-3	Chromium	11.3		*	P	
7440-48-4	Cobalt	14.3			P	
7440-50-8	Copper	13.0			P	
7439-89-6	Iron	25100			P	
7439-92-1	Lead	5.6		S	F	
7439-95-4	Magnesium	5150			P	
7439-96-5	Manganese	377			P	
7439-97-6	Mercury	0.09	U		CV	
7440-02-0	Nickel	11.5			P	
7440-09-7	Potassium	2110			P	
7782-49-2	Selenium	0.39	U		F	
7440-22-4	Silver	1.2	B		P	
7440-23-5	Sodium	202	B		P	
7440-28-0	Thallium	0.39	U	W	F	WS
7440-62-2	Vanadium	59.2			P	
7440-66-6	Zinc	38.4			P	
	Titanium	1760			P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKP5

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5235

Level (low/med): LOW Date Received: 09/12/93

% Solids: 98.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKP7

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: _____ SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5204

Level (low/med): LOW Date Received: 09/12/93

% Solids: 99.1

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	117			P	
7440-36-0	Antimony	9.3	U		P	
7440-38-2	Arsenic	0.37	~~U~~	N	F	UJ
7440-39-3	Barium	0.47	B		P	
7440-41-7	Beryllium	0.19	U		P	
7440-43-9	Cadmium	0.93	U		P	
7440-70-2	Calcium	31.0	~~B~~		P	U
7440-47-3	Chromium	1.9	U	*	P	
7440-48-4	Cobalt	1.9	U		P	
7440-50-8	Copper	1.9	U		P	
7439-89-6	Iron	172			P	
7439-92-1	Lead	0.37	U		F	
7439-95-4	Magnesium	10.3	~~B~~		P	U
7439-96-5	Manganese	4.2			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	3.7	U		P	
7440-09-7	Potassium	187	U		P	
7782-49-2	Selenium	0.37	U		F	
7440-22-4	Silver	0.93	U		P	
7440-23-5	Sodium	28.3	~~B~~		P	U
7440-28-0	Thallium	0.37	~~U~~	W	F	UJ
7440-62-2	Vanadium	1.9	U		P	
7440-66-6	Zinc	1.0	~~B~~		P	U
	Titanium	4.8			P	
5955-70-0	Cyanide				NR	

Color Before: WHITE Clarity Before: N/A Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKP7

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE
Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5207
Level (low/med): LOW Date Received: 09/12/93
% Solids: 99.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBKP8

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: _____ SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5211

Level (low/med): LOW Date Received: 09/12/93

% Solids: 99.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	146			P	
7440-36-0	Antimony	9.5	U		P	
7440-38-2	Arsenic	0.40	~~U~~	N	F	u
7440-39-3	Barium	0.69	B		P	
7440-41-7	Beryllium	0.19	U		P	
7440-43-9	Cadmium	0.95	U		P	
7440-70-2	Calcium	32.9	~~B~~		P	u
7440-47-3	Chromium	1.9	U	*	P	
7440-48-4	Cobalt	1.9	U		P	
7440-50-8	Copper	1.9	U		P	
7439-89-6	Iron	173			P	
7439-92-1	Lead	0.40	U		F	
7439-95-4	Magnesium	17.6	~~B~~		P	u
7439-96-5	Manganese	0.94	B		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	3.8	U		P	
7440-09-7	Potassium	191	U		P	
7782-49-2	Selenium	0.40	~~U~~	W	F	u
7440-22-4	Silver	0.95	U		P	
7440-23-5	Sodium	36.0	~~B~~		P	u
7440-28-0	Thallium	0.40	~~U~~	W	F	u
7440-62-2	Vanadium	1.9	U		P	
7440-66-6	Zinc	1.0	~~B~~		P	u
	Titanium	5.3			P	
5955-70-0	Cyanide				NR	

Color Before: WHITE Clarity Before: N/A Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

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EPA SAMPLE NO.

BOBKP8

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE
Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5214
Level (low/med): LOW Date Received: 09/12/93
% Solids: 99.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ3

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO306 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5436

Level (low/med): LOW Date Received: 04/06/94

% Solids: 97.6

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	5760			P	
7440-36-0	Antimony	9.9	U	N	P	
7440-38-2	Arsenic	2.1			F	
7440-39-3	Barium	85.5			P	
7440-41-7	Beryllium	0.60	B		P	
7440-43-9	Cadmium	0.99	U		P	
7440-70-2	Calcium	8430			P	
7440-47-3	Chromium	8.7			P	
7440-48-4	Cobalt	14.2			P	
7440-50-8	Copper	17.6			P	
7439-89-6	Iron	24200			P	
7439-92-1	Lead	3.7			F	
7439-95-4	Magnesium	4290			P	
7439-96-5	Manganese	337			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	8.4			P	
7440-09-7	Potassium	1180			P	
7782-49-2	Selenium	0.39	U		F	
7440-22-4	Silver	1.2	B		P	
7440-23-5	Sodium	285	B		P	
7440-28-0	Thallium	0.39	U	WN	F	
7440-62-2	Vanadium	67.2			P	
7440-66-6	Zinc	40.3			P	
	Titanium	2140			P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 404065-02

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ3

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO306 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5439

Level (low/med): LOW Date Received: 04/06/94

% Solids: 97.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: Clarity After: Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 404065-02 Verified

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ4

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE

Lab Code: ITSTU_ Case No.: WO299 SAS No.: _____ SDG No.: W0013_

Matrix (soil/water): SOIL_ Lab Sample ID: AA5197

Level (low/med): LOW__ Date Received: 09/12/93

% Solids: _99.1

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	72.1			P	
7440-36-0	Antimony	10	U		P	
7440-38-2	Arsenic	0.37	~~U~~	N	F	us
7440-39-3	Barium	0.47	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.00	U		P	
7440-70-2	Calcium	40.4	~~B~~		P	u
7440-47-3	Chromium	2.0	U	*	P	
7440-48-4	Cobalt	2.0	U		P	
7440-50-8	Copper	2.0	U		P	
7439-89-6	Iron	133			P	
7439-92-1	Lead	0.45	B		F	
7439-95-4	Magnesium	12.7	~~B~~		P	u
7439-96-5	Manganese	1.2	B		P	
7439-97-6	Mercury	0.09	U		CV	
7440-02-0	Nickel	4.0	U		P	
7440-09-7	Potassium	200	U		P	
7782-49-2	Selenium	0.37	U		F	
7440-22-4	Silver	1.00	U		P	
7440-23-5	Sodium	36.4	~~B~~		P	u
7440-28-0	Thallium	0.37	U		F	
7440-62-2	Vanadium	2.0	U		P	
7440-66-6	Zinc	1.00	U		P	
	Titanium	4.0			P	
5955-70-0	Cyanide				NR	

Color Before: WHITE Clarity Before: N/A Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ4

Lab Name: ITAS_KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: W0299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5200

Level (low/med): LOW Date Received: 09/12/93

% Solids: 99.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE_ONLY. Verified 6/11/94

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ5

Lab Name: ITAS KNOXVILLE Contract: HANFORD/WE

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5190

Level (low/med): LOW Date Received: 09/12/93

% Solids: 99.2

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	81.3			P	
7440-36-0	Antimony	9.6	U		P	
7440-38-2	Arsenic	0.38	~~U~~	N	F	UJ
7440-39-3	Barium	0.52	B		P	
7440-41-7	Beryllium	0.19	U		P	
7440-43-9	Cadmium	0.96	U		P	
7440-70-2	Calcium	36.3	~~B~~		P	U
7440-47-3	Chromium	1.9	U	*	P	
7440-48-4	Cobalt	1.9	U		P	
7440-50-8	Copper	1.9	U		P	
7439-89-6	Iron	148			P	
7439-92-1	Lead	0.38	U		F	
7439-95-4	Magnesium	14.6	~~B~~		P	U
7439-96-5	Manganese	0.85	B		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	3.8	U		P	
7440-09-7	Potassium	192	U		P	
7782-49-2	Selenium	0.38	U		F	
7440-22-4	Silver	0.96	U		P	
7440-23-5	Sodium	32.8	~~B~~		P	U
7440-28-0	Thallium	0.38	U		F	
7440-62-2	Vanadium	1.9	U		P	
7440-66-6	Zinc	1.9	~~B~~		P	U
	Titanium	3.8			P	
5955-70-0	Cyanide				NR	

Color Before: WHITE Clarity Before: N/A Texture: COARSE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ5

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE
Lab Code: ITSTU_ Case No.: WO299 SAS No.: _____ SDG No.: W0013_
Matrix (soil/water): SOIL_ Lab Sample ID: AA5193
Level (low/med): LOW__ Date Received: 09/12/93
% Solids: _99.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.00	U		AS

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

Comments:
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ8

Lab Name: ITAS_KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0306 SAS No.: SDG No.: W0013
Matrix (soil/water): SOIL Lab Sample ID: AA5424
Level (low/med): LOW Date Received: 04/06/94
% Solids: 97.3

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	6380			P	
7440-36-0	Antimony	9.9	~~U~~	N	P	US
7440-38-2	Arsenic	2.5			F	
7440-39-3	Barium	89.4			P	
7440-41-7	Beryllium	0.55	B		P	
7440-43-9	Cadmium	0.99	U		P	
7440-70-2	Calcium	5930			P	
7440-47-3	Chromium	9.3			P	
7440-48-4	Cobalt	11.7			P	
7440-50-8	Copper	11.0			P	
7439-89-6	Iron	19000			P	
7439-92-1	Lead	4.5			F	
7439-95-4	Magnesium	4350			P	
7439-96-5	Manganese	345			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	10.8			P	
7440-09-7	Potassium	1470			P	
7782-49-2	Selenium	0.38	U		F	
7440-22-4	Silver	1.1	B		P	
7440-23-5	Sodium	128	B		P	
7440-28-0	Thallium	0.38	~~U~~	WN	F	US
7440-62-2	Vanadium	44.2			P	
7440-66-6	Zinc	33.0			P	
	Titanium	1380			P	
5955-70-0	Cyanide				NR	

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

Comments:
COMPLETE_CLIENT_I.D.: 404065-01 Verified
[illegible] 6/12/94

FORM I - IN

ILM02.1
8
5/12/94

1150

9613474.0916

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOBNQ8

Lab Name: ITAS_KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: WO306 SAS No.: SDG No.: W0013

Matrix (soil/water): SOIL Lab Sample ID: AA5427

Level (low/med): LOW Date Received: 04/06/94

% Solids: 97.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U		AS

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: Clarity After: Artifacts:

Comments:

COMPLETE_CLIENT_I.D.: 404065-01 verified

4/12/94

FORM I - IN

ILM02.1

5/14/94

L051

9613474.0917

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

INTERNATIONAL
TECHNOLOGY
CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

inghouse Hanford Company
Box 1970
'and, WA 99352
J.A. Lerch

May 17, 1994

Iumber: 263; 290; 299; 306

is the Certificate of Analysis for the following samples:

SDG:	W0013
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	March 26, 1994; April 1, 1994; April 4, 1994, April 6, 1994
Number of Samples:	Twenty-two (22)
Sample Type:	Soil

ıtroduction

Iarch 26, April 1, April 4 and April 6, 1994, twenty-two (22) soil samples arrived at the ITAS-'and, Washington and were transferred to ITAS-Knoxville for chemical analysis. The list of 'tical tests performed, as well as date of receipt and analysis, can be found in the attached report.

nalytical Results/Methodology

analytical results for this report are presented by analytical test. Each set of data will include 'le identification information and the analytical results. Soil results are reported on a dry weight .

samples were analyzed for Target Compound List (TCL) volatiles and semivolatiles by gas natography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

ewed and Approved:

ee' A. Schneider
ect 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

ghouse Hanford Job Number: 263; 290; 299; 306

ethodology (Continued)

ed for Target Compound List (TCL) pesticides and PCBs by gas
capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement

ed for Target Analyte List (TAL) metals by cold vapor atomic absorption
aphite furnace atomic absorption spectroscopy (GFAA), and inductively
opy (ICP) in accordance with the EPA CLP ILM03 Statement of Work.

ed for total cyanide in accordance with the EPA CLP ILM03 Statement of

ed for total high boiling petroleum hydrocarbons as diesel range organics
pike by gas chromatography/flame ionization detection (GC/FID) based on

ed for nitrate-nitrite based on EPA method 353.2.

ed for total organic carbon (TOC) based on EPA method 9060.

ed for anions by ion chromatography using EPA method 300.0.

ere performed by purge and trap with a J & W DB-624 capillary column on a
C/MS/DS and a Finnigan INCOS 500 GC/MS/DS. All QC results were within

es were performed by direct injection of sample extract on a Restek XTI-5
innigan INCOS XL GC/MS/DS. All QC results were within method specified
and matrix spike duplicate for sample BOBNQ5 showed high recoveries for
und, phenol.

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May 17, 1994

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III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WK2 with acceptable recoveries. One laboratory control sample was analyzed and reported with acceptable recoveries. GPC check sample did not meet criteria when compared against the initial calibration. However, when compared against a GPC solution that was not subjected to GPC clean-up, the GPC sample passed all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples for work order #263 were digested on April 11, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA arsenic, lead, selenium and thallium were performed from April 11 through April 27, 1994; the remaining metals were analyzed by ICP on April 13, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number BO9WK2. Spike recovery (accuracy) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for antimony and manganese by ICP analysis. Poor spike recovery for antimony appears to be attributable to matrix interferences. Poor spike recovery for manganese is

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Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

attributable to sample nonhomogeneity. As the titanium concentration is greater than four times (4X) the spike added, spiking criteria do not apply for this analyte. A post digestion spike was performed for antimony and manganese as required by CLP protocol. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for aluminum and chromium by ICP analysis. These two analytes were slightly outside acceptance limits due to probable sample nonhomogeneity.

The samples for work order #290 were digested on April 12, 4994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14 and April 15, 1994. All run QC was acceptable

The samples for work order #299 were digested on April 12, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14, 1994. All run QC was acceptable. In sample BOBKM7, the titanium concentration exceeded the linear range by 0.6%, which is less than the 5% acceptance range. During the cyanide analysis, the continuing calibration verification #2 was below the acceptable lower limit of 80%. All sample concentrations were nondetects. The samples were reanalyzed with acceptable limits.

The samples for work order #306 were digested on April 15, 1994 for ICP and April 12, 1994 for GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 12 through April 19, 1994; the remaining metals were analyzed by ICP on April 20, 1994. All run QC was acceptable.

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.

"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.

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III. Quality Control (Continued)

"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 total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike duplicate analyses were performed using sample numbers BOBNQ5 and B09WK2 with acceptable results.

On April 15, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WK2. All QC results were acceptable.

The samples were analyzed for anions on April 20, April 22 and April 28, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for total organic carbon by an O.I. TOC 700. Matrix spike/matrix spike duplicate analyses were performed using sample BOBNQ5.

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Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4589	403489-01 (A-H)	B09WK2	SOIL	METALS
AA4590	"	"	"	VOC
AA4591	"	"	"	SVOC
AA4592	"	"	"	ANIONS
AA4593	"	"	"	NO3NO2
AA4594	"	"	"	PEST/PCB
AA4595	"	"	"	CN
AA4596	"	"	"	TPH
AA4599	403489-02 (A-H)	B09WK4	"	METALS
AA4600	"	"	"	VOC
AA4601	"	"	"	SVOC
AA4602	"	"	"	ANIONS
AA4603	"	"	"	NO3NO2
AA4604	"	"	"	PEST/PCB
AA4605	"	"	"	CN
AA4606	"	"	"	TPH
AA4607	403489-03 (A-H)	B09WK5	"	METALS
AA4608	"	"	"	VOC
AA4609	"	"	"	SVOC
AA4610	"	"	"	ANIONS
AA4611	"	"	"	NO3NO2
AA4612	"	"	"	PEST/PCB
AA4613	"	"	"	CN
AA4614	"	"	"	TPH

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KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

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III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4615	403489-04 (A)	B09WK6	SOIL	VOC
AA4616	403489-05 (A-H)	B09WJ9	"	METALS
AA4617	"	"	"	VOC
AA4618	"	"	"	SVOC
AA4619	"	"	"	ANIONS
AA4620	"	"	"	NO3NO2
AA4621	"	"	"	PEST/PCB
AA4622	"	"	"	CN
AA4623	"	"	"	TPH
AA4624	403489-06 (A-H)	B09WK1	"	METALS
AA4625	"	"	"	VOC
AA4626	"	"	"	SVOC
AA4627	"	"	"	ANIONS
AA4628	"	"	"	NO3NO3
AA4629	"	"	"	PEST/PCB
AA4630	"	"	"	CN
AA4631	"	"	"	TPH
AA4633	403489-07 (A,B)	Trip Blank	"	VOC
AA4634	403489-08 (A,B)	"	"	VOC
AA5075	40363001 (A-G)	BOBKM4	"	SVOC
AA5076	"	"	"	METALS
AA5077	"	"	"	ANIONS
AA5078	"	"	"	NO3NO2
AA5079	"	"	"	CN
AA5080	"	"	"	TPH
AA5081	"	"	"	TOC

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Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5082	40363002 (A-G)	BOBKM6	SOIL	SVOC
AA5083	"	"	"	METALS
AA5084	"	"	"	ANIONS
AA5085	"	"	"	NO3NO2
AA5086	"	"	"	CN
AA5087	"	"	"	TPH
AA5088	"	"	"	TOC
AA5089	40363003 (A-G)	BOBKM1	"	SVOC
AA5090	"	"	"	METALS
AA5091	"	"	"	ANIONS
AA5092	"	"	"	NO3NO2
AA5093	"	"	"	CN
AA5094	"	"	"	TPH
AA5095	"	"	"	TOC
AA5096	40363004 (A-G)	BOBKM3	"	SVOC
AA5097	"	"	"	METALS
AA5098	"	"	"	ANIONS
AA5099	"	"	"	NO3NO2
AA5100	"	"	"	CN
AA5101	"	"	"	TPH
AA5102	"	"	"	TOC
AA5103	40363005 (A-G)	BOBKM5	"	SVOC
AA5104	"	"	"	METALS
AA5105	"	"	"	ANIONS
AA5106	"	"	"	NO3NO2
AA5107	"	"	"	CN
AA5108	"	"	"	TPH
AA5109	"	"	"	TOC

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IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5189	404016-01 (A-G)	BOBNQ5	SOIL	SVOC
AA5190	"	"	"	METALS
AA5191	"	"	"	ANIONS
AA5192	"	"	"	NO3NO2
AA5193	"	"	"	CN
AA5194	"	"	"	TPH
AA5195	"	"	"	TOC
AA5196	404016-02 (A-G)	BOBNQ4	"	SVOC
AA5197	"	"	"	METALS
AA5198	"	"	"	ANIONS
AA5199	"	"	"	NO3NO2
AA5200	"	"	"	CN
AA5201	"	"	"	TPH
AA5202	"	"	"	TOC
AA5203	404016-03 (A-G)	BOBKP7	"	SVOC
AA5204	"	"	"	METALS
AA5205	"	"	"	ANIONS
AA5206	"	"	"	NO3NO2
AA5207	"	"	"	CN
AA5208	"	"	"	TPH
AA5209	"	"	"	TOC
AA5210	404016-04 (A-G)	BOBKP8	"	SVOC
AA5211	"	"	"	METALS
AA5212	"	"	"	ANIONS
AA5213	"	"	"	NO3NO2
AA5214	"	"	"	CN
AA5215	"	"	"	TPH
AA5216	"	"	"	TOC

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5217	404016-05 (A-G)	BOBKN9	SOIL	SVOC
AA5218	"	"	"	METALS
AA5219	"	"	"	ANIONS
AA5220	"	"	"	NO3NO2
AA5221	"	"	"	CN
AA5222	"	"	"	TPH
AA5223	"	"	"	TOC
AA5224	404016-06 (A-G)	BOBKM7	"	SVOC
AA5225	"	"	"	METALS
AA5226	"	"	"	ANIONS
AA5227	"	"	"	NO3NO2
AA5228	"	"	"	CN
AA5229	"	"	"	TPH
AA5230	"	"	"	TOC
AA5231	404016-07 (A-G)	BOBKP5	"	SVOC
AA5232	"	"	"	METALS
AA5233	"	"	"	ANIONS
AA5234	"	"	"	NO3NO2
AA5235	"	"	"	CN
AA5236	"	"	"	TPH
AA5237	"	"	"	TOC
AA5423	404065-01	BOBNQ8	"	SVOC
AA5424	"	"	"	METALS
AA5425	"	"	"	ANIONS
AA5426	"	"	"	NO3NO2
AA5427	"	"	"	CN
AA5428	"	"	"	TPH

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IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5435	404065-02	BOBNQ3	SOIL	SVOC
AA5436	"	"	"	METALS
AA5437	"	"	"	ANIONS
AA5438	"	"	"	NO3NO2
AA5439	"	"	"	CN
AA5440	"	"	"	TPH

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

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
Project Manager

9613474.0930

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-21-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 403489 B09WJ9

05

- A 1,250ml P:CLP;TAL Metals,Hg,Ti
- B 1,250ml Gs:VOA CLP
- C 1,250ml aG:Semi-VOA CLP
- D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
- E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
- F 1,250ml aGs:PCB/Pest (8080)
- G 1,125ml G:Cyanide CLP
- H 1,125ml Gw:Kerosene (8015M)
- 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

403489004

~~2)~~

- ~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
- ~~1,250ml Gs:VOA CLP~~
- ~~1,250ml aG:Semi-VOA CLP~~
- ~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
- ~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
- ~~1,250ml aGs:PCB/Pest (8080)~~
- ~~1,125ml G:Cyanide CLP~~
- ~~1,125ml Gw:Kerosene (8015M)~~
- ~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-21-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 Jason E. Rogers 1310	ITAS Karen Hartenberg	3-25-94 10:00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0931

~~0000055~~

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WK0

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2) B09WK1

403489 A 1,250ml P:CLP;TAL Metals,Hg,Ti
06 B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349005

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 3-24-94 1310	Received by:	Date/Time: 3-25-94 10 00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

R-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.0932

~~0000047~~

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

403489 01 — Sample Identification

1)

B09WK2

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900]

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-22-94

[] Field Transfer of Custody — Chain of Possession (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 1310	ITAS 1100	3/25/94 1100

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

U-67

9613474.0933

~~0000049~~

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-23-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 40348902 B09WK4

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349002

2) 40348903 B09WK5

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349003

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 3-24-94 Karen L. Rogers 1310	Received by: ITAS Karen Fritzlug 10 00 am	Date/Time: 3-25-94 10 00 AM
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

0068

WO# 290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006448

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SIWL 457
Bill of Lading/Airbill No. N/A
Offsite Property No. WM4-O-0367 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
03680							
03 A	BOBKM1	S	3-29-94	0850	(1) 250ml aG	Semi-VOA CLP	
B	BOBKM1	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKM1	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKM1	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKM1	S			(1) 125ml G	Cyanide CPL	
F	BOBKM1	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKM1	S			(1) 125ml aGs	TOC 9060	
03631 03	BOBKM1	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
[illegible]	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	[illegible]
[illegible]	3-31-94	1055	[illegible] 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.0634

0069

0000057

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006450

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SIK459
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
03630 04 A	BOBKM3	S	3-29-94	0944	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM3	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM3	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM3	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM3	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM3	S			(1) 125ml aGs	TOC	9060	
03631 04	BOBKM3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
RT Sickle RT Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	RM Arnold RM Arnold
RM Arnold RM Arnold	3-31-94	1055	R. Boyd 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.0954

0070

0000058

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006451

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. TWL 459
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0569 #46
Method of Shipment Government truck
Field Logbook No. ~~N/A~~ 3-31-94
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
103 030 01A	BOBKM4	S	3-29-94	0950	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM4	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM4	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM4	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM4	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM4	S			(1) 125ml aGs	TOC	9060	
03G3 01	BOBKM4	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	3-31-94	0815	Arnold L. Edwards
Arnold L. Edwards	3-31-94	0815	Raymond Rutherford
Raymond Rutherford	3-31-94	1055	R. Boyd JT 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9513274.0936

0000059

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006452

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. 526
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
03630 05 A	BOBKM5	S	3-29-94	1030	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM5	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM5	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM5	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM5	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM5	S			(1) 125ml aGs	TOC	9060	
03631 05	BOBKM5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle	3-31-94	0815	Daniel L. Edwards
Daniel L. Edwards	3-31-94	0815	Ronald Rinehold
Ronald Rinehold	3-31-94	1055	R. Boyd Jr 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.0957

0000060

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006453

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SAL 526
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
0830 02A	BOBKM6	S	3-29-94	1058	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM6	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM6	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM6	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM6	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM6	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM6	S			(1) 125ml aGs	TOC	9060	
1030 31 02	BOBKM6	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	[illegible]
[illegible]	~~1055~~ 3-31-94	1055	[illegible] 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

96131470.0020

0000061

1073

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006454

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation ~~216-U-8 Vitrified Clay Pipeline~~ 200 UP2 [illegible] 3-30-94
Sampling Locations ~~216-U-8 Crib~~ W/U2 Tile Field [illegible] 3-30-94
Ice Chest No. SML 906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104006 06A	BOBKM7	S	3-30-94	17:30	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM7	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM7	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM7	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM7	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM7	S			(1) 125ml aGs	TOC	9060	
104017 06	BOBKM7	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	Ray Arnold Ray Arnold
Ray Arnold Ray Arnold	4-1-94	1210	Tom Gilmore Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.1939

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006466

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SML 906
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation ~~216-U-8 Vitrified Clay~~ Pipeline 200 [illegible] 3.30.94
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations ~~216-U-8 Crib~~ 4 14 D. [illegible] 3.30.94
Offsite Property No. W174-C-C JGT #47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
404016 05 A	BOBKN9	S	3 30 94	1100	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKN9	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKN9	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKN9	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKN9	S			(1) 125ml G	Cyanide	CPL	
F	BOBKN9	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKN9	S			(1) 125ml aGs	TOC	9060	
404017 05	BOBKN9	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	R.H. Arnold R.H. Arnold
R.H. Arnold R.H. Arnold	4-1-94	1210	Tom Gilmore, ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413194.0940

000066

C75

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006469

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations Z Ditch
Ice Chest No. SWL 413
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-C-0367 #47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
04016 37 A	BOBKP5	S	3-30-94	1330	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKP5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKP5	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKP5	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKP5	S			(1) 125ml G	Cyanide	CPL	
F	BOBKP5	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKP5	S			(1) 125ml aGs	TOC	9060	
40407 07	BOBKP5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9613974.0041

0076

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1 006473

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SIGL 906
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations U1/U2 Tile Field
Offsite Property No. W94-0-0369#47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104016	BOBKP7	S	3-30-94	0940	(1) 250ml aG	Semi-VOA	CLP	
03 A	BOBKP7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKP7	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
O	BOBKP7	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKP7	S			(1) 125ml G	Cyanide	CPL	
F	BOBKP7	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKP7	S			(1) 125ml aGs	TOC	9060	
104017 03	BOBKP7	S	3-30-94	0940	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	R.M. Arnold R.M. Arnold
R.M. Arnold R.M. Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413744.1942

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006474

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations U1/U2 Tile Field
Ice Chest No. 5142 906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104016 04 A	BOBKP8	S	3-30-94	0900	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKP8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKP8	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKP8	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKP8	S			(1) 125ml G	Cyanide	CPL	
F	BOBKP8	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKP8	S			(1) 125ml aGs	TOC	9060	
104017 04	BOBKP8	S	3-30-94	0900	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession (Sign and Print Names)

Relinquished By		Date	Time	Received By	
[illegible]	RT Sickle	4-1-94	1000	RM Arnold	RM Arnold
RM Arnold	RM Arnold	4-1-94	1210	[illegible]	ITAS Tom Gilmore

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413974.0913

C278

WO #306

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006261

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-10 Pond
Ice Chest No. GW5009
Bill of Lading/Airbill No. N/A
Offsite Property No.
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS
Analyze per SAF 94-065.

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
A BOBNQ3	S	3-31-94	1200	(1) 250ml aG	Semi-VOA CLP	
B BOBNQ3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBNQ3	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBNQ3	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBNQ3	S			(1) 125ml G	Cyanide CPL	
F BOBNQ3	S			(1) 125ml Gs	TPH Diesel Range 8015m	
~~BOBNQ3~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ RTS 3-31-94 9060	
BOBNQ3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

4040602 A-F
4040602 Rcvd

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-4-94	0830	[signature]
[signature]	4-5-94	0815	Heidelberg OT
			4/5 1030

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.0914

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Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006262

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SWL 413
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations 216-U-10 Pond
Offsite Property No. W94 0-0367 #47
Field Logbook No.

SPECIAL INSTRUCTIONS

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104016 02 A BOBNQ4	S	3-30-94	1330	(1) 250ml aG	Semi-VOA	CLP	
B BOBNQ4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C BOBNQ4	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D BOBNQ4	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E BOBNQ4	S			(1) 125ml G	Cyanide	CPL	
F BOBNQ4	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G BOBNQ4	S			(1) 125ml aGs	TOC	9060	
104017 02 BOBNQ4	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	Ray Arnold Ray Arnold
Ray Arnold Ray Arnold	4-1-94	1210	Tom Gilmore Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

080

9413474.0916

0000067

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006263

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-10 Pond
Ice Chest No. SWL413
Bill of Lading/Airbill No. N/A
Offsite Property No. 6474-C 0369-#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
04016 01 A BOBNQ5	S	3-30-94	1345	(1) 250ml aG	Semi-VOA CLP	
B BOBNQ5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBNQ5	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBNQ5	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBNQ5	S			(1) 125ml G	Cyanide CPL	
F BOBNQ5	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBNQ5	S			(1) 125ml aGs	TOC 9060	
704017 01 BOBNQ5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-1-94	1000	RM Arnold
RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

C-81

9413474.0916

0000068

WO#306

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006267

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-11 Trench
Ice Chest No. GW0 020
Bill of Lading/Airbill No. N/A
Offsite Property No.
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
A	BOBNQ8	S	3-31-94	1405	(1) 250ml aG	Semi-VOA	CLP	
B	BOBNQ8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBNQ8	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBNQ8	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBNQ8	S			(1) 125ml G	Cyanide	CPL	
F	BOBNQ8	S			(1) 125ml Gs	TPH Diesel Range	8015m	
	~~BOBNQ8~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ 3-31-94	9060	
	BOBNQ8	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

404066501 A-F
404066601

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle	4-4-94	0830	Daniel L. Edwards
Daniel L. Edwards	4-5-94	0815	[illegible]

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.0947

0000020

0082

HANFORD ANALYTICAL SERVICES MANAGEMENT

RECORD OF DISPOSITION

ROD-94-0066
Record of Disposition No.

DATE: March 28, 1994	LABORATORY: IT
PROJECT TITLE/NO.: 200-UP-2/SAF 94-065	NCR NO.: n/a

SAMPLE IDENTIFICATION NUMBERS: All samples to be analyzed for Kerosene and/or Titanium.

DESCRIPTION OF EVENT:

Clarification is being provided to the laboratory for samples being analyzed for Kerosene and Titanium (Ti).

DISPOSITION OF SAMPLES:

IT will analyze for Kerosene by performing a modification to method 8015 (TPH) in which the peak search is started earlier to pick up the kerosene. As an additional element to the metals TAL, Ti will be analyzed for using ICP methodology.

APPROVAL SIGNATURES:

J. A. Lerch — 3/28/94
CAS Project Coordinator (Print/Sign Name) — Date

M. A. Wasemiller — 3/28/94
Technical Representative (Print/Sign Name) — Date

N/A
Quality Assurance (Print/Sign Name) — Date

9613474.0949

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-UP-2			DATA PACKAGE: W0025-ITC-027		
VALIDATOR: [illegible]		LAB: ITC		DATE: 06/09/94	
~~CASE:~~ Work order #263			SDG: W0025-ITC-027		
ANALYSES PERFORMED					
☒ CLP/ICP	☒ CLP/GFAA	☒ CLP/Hg	☒ CLP/Cyanide	☐	☐
☐ SW-846/ICP	☐ SW-846/GFAA	☐ SW-846/Hg	☐ SW-846 Cyanide	☐	☐
SAMPLES/MATRIX Soils					
B09W59					
B09WK1					
B09WK2					
B09WK4					
B09WK5					

6/9/94

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:

6-85

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 6/9/94

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: See attached lab blank form for detected analytes in the prep. blank. Assoc. 6/14/94 positive results <5x respective blank conc. have been qualified as undetected (U).

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: The MS %R for antimony and manganese were 38.6% and 179.5% respectively. Assoc. results have been qualified as estimated (UJ/RJ/J).

LCS control limits of 80-120 were applied for titanium. No qualification is required.

i-86

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

Comments: The narrative states that the duplicate RPDs are unacceptable for aluminum and calcium. However, these RPD values are <35% which is the DV requirement for soils. Therefore, no qualification is required.

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:

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:

U-87

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

Comments (attach additional sheets as necessary):

Sample locations are currently not available. Field QC will be evaluated in the final summary report.

HOLDING TIME SUMMARY

W0013-ITC-029

SDG:	VALIDATOR:	DATE: 6/13/94	PAGE 1 OF 2
COMMENTS: Metals - Work Order #263			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WJ9	ICP	3/21/94		4/13/94		23	None
B09WK1	↓	3/22/94		↓		22	↓
B09WK2	↓	3/22/94		↓		22	↓
B09WK4	↓	3/23/94		↓		21	↓
B09WK5	↓	3/23/94		↓		21	↓
B09WJ9	AS	3/21/94		4/14/94		24	↓
B09WK1	↓	3/22/94		4/19/94		28	↓
B09WK2	↓	3/22/94		4/19/94		28	↓
B09WK4	↓	3/23/94		4/14/94		22	↓
B09WK5	↓	3/23/94		4/14/94		22	↓
B09WJ9	Pb	3/21/94		4/19/94		29	↓
B09WK1	↓	3/22/94		4/12/94		21	↓
B09WK2	↓	3/22/94		4/11/94		20	↓
B09WK4	↓	3/23/94		4/11/94		19	↓
B09WK5	↓	3/23/94		4/12/94		20	↓
B09WJ9	Se	3/21/94		4/12/94		22	↓
B09WK1	↓	3/22/94		4/12/94		21	↓

9513174.0954

HOLDING TIME SUMMARY

W0013-ITC-029

SDG:	VALIDATOR: [illegible]	DATE: 6/13/94	PAGE 2 OF 2
COMMENTS: Metals - Work Order # 263			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WK2	Se	3/22/94		4/12/94		21	None
B09WK4	↓	3/23/94		4/12/94		20	↓
B09WK5	↓	3/23/94		4/12/94		20	↓
B09WJ9	Tl	3/21/94		4/14/94		24	↓
B09WK1	↓	3/22/94		4/14/94		23	↓
B09WK2	↓	3/22/94		4/14/94		23	↓
B09WK4	↓	3/23/94		4/14/94		22	↓
B09WK5	↓	3/23/94		4/14/94		22	↓
B09WJ9	Hg	3/21/94		4/08/94		18	↓
B09WK1	↓	3/22/94		↓		17	↓
B09WK2	↓	3/22/94		↓		17	↓
B09WK4	↓	3/23/94		↓		16	↓
B09WK5	↓	3/23/94		↓		16	↓
B09WJ9	CN	3/21/94		3/30/94		9	↓
B09WK1	↓	3/22/94		↓		8	↓
B09WK2	↓	3/22/94		↓		8	↓
B09WK4	↓	3/23/94		↓		7	↓
B09WK5	CN	3/23/94		3/30/94		7	None

6/13/94

9515974.0958

9613474.0956

~~0001658~~

U.S. EPA - CLP

3
BLANKS

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___

Lab Code: ITSTU_ Case No.: W0263 SAS No.: _____ SDG No.: W0013_

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

PBS0331-CN
CPBS0408A-CVAA (AA5775)
APBS0411A-GFAA (AA6037)
PBS0411A-ICP (AA6030)

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C		Prepa-ration Blank	C	M
Aluminum	40.0	U	40.0	U	40.0	U	40.0	U	18+2	37.422	B	P
Antimony	50.0	U	50.0	U	50.0	U	50.0	U		10.000	U	P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U		0.400	U	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U		0.400	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U		0.200	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U		1.000	U	P
Calcium	20.0	U	20.0	U	20.0	U	20.0	U	45.98	29.196	B	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U		2.000	U	P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U		2.000	U	P
Copper	10.0	U	10.0	U	10.0	U	10.0	U		2.000	U	P
Iron	10.0	U	10.0	U	10.0	U	10.0	U	94.14	18.828	B	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U		0.400	U	F
Magnesium	30.0	U	30.0	U	30.0	U	30.0	U	35.13	7.026	B	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U		0.400	U	P
Mercury	0.2	U	0.2	U	0.2	U				0.100	U	CV
Nickel	20.0	U	20.0	U	20.0	U	20.0	U		4.000	U	P
Potassium	1000.0	U	1000.0	U	1000.0	U	1000.0	U		200.000	U	P
Selenium	2.0	U	2.0	U	2.0	U	2.0	U		0.400	U	F
Silver	5.0	U	5.0	U	5.0	U	5.0	U		1.000	U	P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U	154.49	30.898	B	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U		0.400	U	F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U		2.000	U	P
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	11.94	2.388	B	P
Cyanide	10.0	U	10.0	U	10.0	U				1.000	U	AS
Titanium	3.0	U	3.0	U	3.0	U	3.0	U		0.600	U	P

FORM III - IN ILM02.1

6/10/94

9613474.0957

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

B09WK2

Lab Name: ITAS_KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0263 SAS No.: SDG No.: W0013
Matrix: SOIL Level (low/med): LOW
% Solids for Sample: 84.7

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	58.0804		13.0174	B	116.89	38.6	N	P
Arsenic	75-125	12.8926		4.2975		9.45	91.0		F
Barium	75-125	565.3033		107.4895		467.58	97.9		P
Beryllium	75-125	12.5077		0.6242	B	11.69	101.7		P
Cadmium	75-125	11.2757		1.1689	U	11.69	96.5		P
Calcium									NR
Chromium	75-125	67.7218		13.5715		46.76	115.8		P
Cobalt	75-125	127.5018		12.5475		116.89	98.3		P
Copper	75-125	70.4759		14.1630		58.45	96.3		P
Iron									NR
Lead	75-125	8.1322		4.5030		4.72	76.9		F
Magnesium									NR
Manganese	75-125	648.9135		439.0779		116.89	179.5	N	P
Mercury	75-125	0.6780		0.1124	U	0.56	121.1		CV
Nickel	75-125	128.7666		15.3810		116.89	97.0		P
Potassium									NR
Selenium	75-125	2.1511		0.4723	U	2.36	91.1		F
Silver	75-125	13.2255		2.2257	B	11.69	94.1		P
Sodium									NR
Thallium	75-125	9.7686		0.4723	U	11.81	82.7		F
Vanadium	75-125	182.4073		52.7009		116.89	111.0		P
Zinc	75-125	146.3640		30.0303		116.89	99.5		P
Titanium		1760.7678		1392.9980		116.89	314.6		P
Cyanide									NR

Comments:
COMPLETE_CLIENT_I.D.: 403489-01(A-H)

FORM V (Part 1) - IN ILM02.1

6/10/94

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200-UP-2		DATA PACKAGE: W0013-ITC-029
VALIDATOR: [signature]	LAB: ITC	DATE: 06/10/94
~~CASE:~~ work order # ~~299~~ 290		SDG: W0013-ITC-029

6/13/94

ANALYSES PERFORMED					
☒ CLP/ICP	☒ CLP/GFAA	☒ CLP/Hg	☒ CLP/Cyanide	☐	☐
☐ SW-846/ICP	☐ SW-846/GFAA	☐ SW-846/Hg	☐ SW-846 Cyanide	☐	☐

SAMPLES/MATRIX Soils

B0BKM1
B0BKM3
B0BKM4
B0BKM5
B0BKM6

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: CN analysis was performed out of hold-ing time. The assoc. results have been qualified as estimated (UJ).

L-93

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: Na was detected in the assoc. prep blank. All results <5 x blank conc have been qualified as ~~U~~ undetected (U). 6/10/94

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: ~~X~~ 6/10/94 MS % R for assoc is 67.5%. Therefore, all associated results have been qualified as estimated.

LCS control limits of 80-120 were applied to Sb and Ti. No qualification is required.

6-94

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

Comments: The narrative states that the duplicate RPD for chromium is unacceptable. However, the CRPD is 27% which is within the DV requirements of 35% for soils. Therefore, no qualification is required.

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: GFAA analytical spike recoveries for thallium for sample B0BKM4 and B0BKM5 were <85%. The assoc. results have been qualified as estimated (UJ).

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 6/13/94

Are results calculated properly? . . . . . Yes No N/A

Do results meet the CRDLs? . . . . . Yes No N/A

Comments: The iron result for sample B0BKM5 has been corrected from 21300 mg/kg to 22600 as according to the raw data. No qualification is required.

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

Comments (attach additional sheets as necessary):

Sample locations are currently not available. Field QC will be evaluated in the final summary report.

An unidentified sample labeled with an EPA # 0343001 and sample ID AA4458 was analyzed for cyanide only. Since these sample #s were not traceable and all chain of custody records and samples have been accounted for, this data sheet has been attached to the supporting documentation.

HOLDING TIME SUMMARY

W0013-ITC-029

SDG:	VALIDATOR:	DATE: 6/13/94	PAGE 1 OF 2
COMMENTS: Metals, work order # ~~299~~ 290 @ 6/13/94			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B0BKM1	ICP	3/29/94		4/14/94	16		None
B0BKM3		3/29/94					
B0BKM4		3/29/94					
B0BKM5		3/29/94					
B0BKM6		3/29/94					
B0BKM1	As	3/29/94		4/19/94	21		
B0BKM3		3/29/94					
B0BKM4		3/29/94					
B0BKM5		3/29/94					
B0BKM6		3/29/94					
B0BKM1	Pb	3/29/94		4/20/94	22		
B0BKM3		3/29/94		4/20/94	22		
B0BKM4		3/29/94		4/19/94	21		
B0BKM5		3/29/94		4/20/94	22		
B0BKM6		3/29/94		4/20/94	22		
B0BKM1	Se	3/29/94		4/14/94	16		
B0BKM3		3/29/94			16		

9413174.0062

HOLDING TIME SUMMARY

W2013-ETC-029

SDG:	VALIDATOR:	DATE: 6/13/94	PAGE 2 OF 2
COMMENTS: Metals, Work Order # ~~299~~ 290 @ 6/13/94			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
BOBKM4	Se	3/29/94		4/14/94	16		None
BOBKM5		3/29/94					
BOBKM6		3/29/94					
BOBKM1	Tl	3/29/94		4/18/94	20		
BOBKM3		3/29/94					
BOBKM4		3/29/94					
BOBKM5		3/29/94					
BOBKM6		3/29/94					
BOBKM1	Hg	3/29/94		4/08/94	10		
BOBKM3		3/29/94					
BOBKM4		3/29/94					
BOBKM5		3/29/94					
BOBKM6		3/29/94					
BOBKM1	CN	3/29/94		4/13/94	15		US
BOBKM3		3/29/94					US
BOBKM4		3/29/94					US
BOBKM5		3/29/94					US
BOBKM6	CN	3/29/94		4/13/94	15		US

4/13/94

96134.0067

U.S. EPA - CLP

3
BLANKS

Lab Name: ITAS_KNOXVILLE_____ Contract: WESTING/HA

Lab Code: ITSTU_ Case No.: W0290 SAS No.: _____ SDG No.: W0013_

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	PBS 0412 (CW) CPBS0408A (AA 5775) CPBS0412A (AA6073) Preparation Blank APBS0412A (AA6075)	C	M
Aluminum	40.0	U	40.0	U	40.0	U	40.0	U	12.652	B	P
Antimony	50.0	U	50.0	U	50.0	U	50.0	U	10.000	U	P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Calcium	20.0	U	20.0	U	20.0	U	20.0	U	26.240	B	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Copper	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Iron	10.0	U	10.0	U	10.0	U	10.0	U	8.948	B	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Magnesium	31.9	B	30.0	U	30.0	U	30.0	U	7.108	B	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Mercury	0.2	U	0.2	U	0.2	U			0.100	U	CV
Nickel	20.0	U	20.0	U	20.0	U	20.0	U	4.000	U	P
Potassium	1000.0	U	1000.0	U	1000.0	U	1000.0	U	200.000	U	P
Selenium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Silver	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U	124.0 24.972	B	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	1.734	B	P
Titanium	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Cyanide	10.0	U	10.0	U					1.000	U	AS

FORM III - IN ILM02.1

Qualify associated sodium results ~~to~~ ~~for~~ samples BOBKM1 and BOBKM6 as undetected (U).

6/10/94

5/12/94

U 99

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

BOBJ01S

Lab Name: ITAS_KNOXVILLE_____ Contract:WESTING/HA

Lab Code: ITSTU_ Case No.: W0290 SAS No.: _____ SDG No.: W0013_
Matrix: SOIL_____ Level (low/med): _LOW____
% Solids for Sample: _93.0

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	93.2331		10.4395	U	104.40	89.3		P
Arsenic	75-125	5.9140		0.4321	B	8.12	67.5	N	F
Barium	75-125	460.9479		53.2540		417.58	97.6		P
Beryllium	75-125	10.9469		0.2965	B	10.44	102.0		P
Cadmium	75-125	10.4165		1.0440	U	10.44	99.8		P
Calcium									NR
Chromium	75-125	57.4131		12.7884		41.76	106.9		P
Cobalt	75-125	112.5712		6.1906	B	104.40	101.9		P
Copper	75-125	59.1273		10.4040		52.20	93.3		P
Iron									NR
Lead	75-125	5.8105		1.6454		4.06	102.6		F
Magnesium									NR
Manganese	75-125	323.8355		197.5947		104.40	120.9		P
Mercury	75-125	0.6086		0.1075	U	0.54	112.7		CV
Nickel	75-125	113.2456		11.6860		104.40	97.3		P
Potassium									NR
Selenium	75-125	1.6636		0.4058	U	2.03	82.0		F
Silver	75-125	10.5648		1.0440	U	10.44	101.2		P
Sodium									NR
Thallium	75-125	8.9714		0.4058	U	10.14	88.5		F
Vanadium	75-125	133.0723		22.2069		104.40	106.2		P
Zinc	75-125	133.3918		32.6923		104.40	96.5		P
Titanium		994.4483		690.3873		104.40	291.2		P
Cyanide									NR

Comments:
ARTIFACTS_INCLUDE_ROCKS.

FORM V (Part 1) - IN ILM02.1

Qualify As results as estimated (J). Ti does not require qualification since the sample result > 4x spike added.

8
5/12/94

100
~~1100~~

6/15/94

6/10/94

ACCURACY DATA SUMMARY

W0013-ITC-029

SDG:	VALIDATOR:	DATE: 6/10/94	PAGE 1 OF 1	
COMMENTS: GFAA Analytical Spikes				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B0BKM4	Thallium	82%	B0BKM4	UJ
B0BKM5	Thallium	84.7%	B0BKM5	UJ

9613474.0967

~~0002724~~

BOBFMS

Analysis Report Thu 04-14-94 02:59:46 PM page 1

Method: TORCH Sample Name: AA5104 1 Operator: LJM
Run Time: 04/14/94 14:55:54
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1890	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	33.553	L-.00643	L-.02502	.38145	.00260	L.00082	20.740
SDev	.327	.04273	.10178	.00296	.00000	.00222	.194
%RSD	.97356	664.13	406.80	.77713	.05318	270.93	.93374
#1	33.274	L-.01543	L-.13552	.37942	.00260	L.00155	20.573
#2	33.378	L.00651	L-.07849	.38009	.00260	L.00237	20.665
#3	34.013	L.04269	.09276	.38585	.00260	L-.00247	21.019
#4	33.549	L-.05950	L.02118	.38043	.00260	L.00183	20.703
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Pass
High	500.00	15.000	15.000	15.000	15.000	15.000	500.00
Low	.04000	.05000	.08000	.00200	.00100	.00500	.02000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe2714	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04139	.06160	.05168	H107.43	118.12	.07539	24.842
SDev	.00191	.00275	.00076	1.03	1.05	.02543	.295
%RSD	4.6194	4.4572	1.4782	.96101	.89273	33.733	1.1893
#1	.04294	.05922	.05103	H106.61	117.06	.09945	24.624
#2	.04165	.05922	.05234	H106.89	117.74	L.03947	24.689
#3	.03863	.06399	.05101	H108.92	119.55	.08081	25.275
#4	.04233	.06396	.05235	H107.29	118.13	.08182	24.782
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	15.000	15.000	40.000	50.000	500.00	40.000	500.00
Low	.01000	.01000	.01000	.01000	50.000	.05000	.05000

Elem	Mn2576	K_7664	Ni2316	Se1960	Ag3280	Na5895	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.8547	10.421	.04690	L-.15564	.00595	.88099	.26716
SDev	.0175	.306	.00978	.11349	.00194	.03112	.19736
%RSD	.94242	2.9352	20.840	72.920	32.601	3.5326	73.872
#1	1.8392	10.768	.03367	L-.32365	L.00422	.85506	L.08111
#2	1.8462	10.501	.05551	L-.12191	.00763	.85506	.54627
#3	1.8792	10.031	.04557	L-.09987	L.00432	.89656	.22066
#4	1.8542	10.384	.05286	L-.07712	.00764	.91730	.22058
Errors	LC Pass	NOCHECK	LC Pass	LC Low	LC Pass	NOCHECK	LC Pass
High	40.000		15.000	15.000	15.000		15.000
Low	.00200		.02000	.09000	.00500		.12000

Elem	V_2924	Zn2138	B_1826	Mo2020	Li6707	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.25389	.19069	.02433	L-.01783	.03357	.10897	8.4215
SDev	.00282	.00178	.00914	.00793	.00053	.00116	.0901
%RSD	1.1118	.93587	37.581	44.480	1.5747	1.0621	1.0702
#1	.25368	.19229	.02169	L-.01558	.03287	.10797	8.3527
#2	.25284	.19209	.03753	L-.02377	.03350	.10864	8.3753
#3	.25783	.18868	.02167	L-.02440	.03377	.11064	8.5528

$$\frac{mg}{kg}\ Fe = \frac{(11812.0\ \frac{\mu g}{L})(0.200\ L)}{(1.06\ g)(0.986)} = 22603\ \frac{\mu g}{g} = 22603\ \frac{mg}{kg}$$

0102

6/10/94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

0343001

Lab Name: ITAS_KNOXVILLE_____ Contract: WESTING/HA

Lab Code: ITSTU_ Case No.: W0290 SAS No.: _____ SDG No.: W0013_

Matrix (soil/water): SOIL_ Lab Sample ID: AA4458

Level (low/med): LOW__ Date Received: 03/24/94

% Solids: _93.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_				NR
7440-36-0	Antimony_				NR
7440-38-2	Arsenic__				NR
7440-39-3	Barium___				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium__				NR
7440-70-2	Calcium__				NR
7440-47-3	Chromium_				NR
7440-48-4	Cobalt___				NR
7440-50-8	Copper___				NR
7439-89-6	Iron____				NR
7439-92-1	Lead____				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury__				NR
7440-02-0	Nickel___				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium_				NR
7440-22-4	Silver___				NR
7440-23-5	Sodium___				NR
7440-28-0	Thallium_				NR
7440-62-2	Vanadium_				NR
7440-66-6	Zinc____				NR
	Titanium_				NR
5955-70-0_	Cyanide__	1.1	U		AS

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

CYANIDE_ONLY. ~~Verified~~ 6/13/94 ~~6/14/94~~

FORM I - IN

ILM02.1

This is an unidentified sample. The origin is unknown and raw data is not provided in the data pkg.

6/13/94

6/14/94

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200-UP-2		DATA PACKAGE: W0013-ITC-029
VALIDATOR: [illegible]	LAB: ITC	DATE: 06/11/94
~~CASE:~~ Work Order #299		SDG: W0013-ITC-029

6/13/94

ANALYSES PERFORMED					
☒ CLP/ICP	☒ CLP/GFAA	☒ CLP/Hg	☒ CLP/Cyanide	☐	☐
☐ SW-846/ICP	☐ SW-846/GFAA	☐ SW-846/Hg	☐ SW-846 Cyanide	☐	☐

SAMPLES/MATRIX Soils

B0BKM7	B0BNQ4
B0BKN9	B0BNQ5
B0BKP5	
B0BKP7	
B0BKP8	

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:

0104

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: The narrative states that the CCV #2 was unacceptable. However, the samples were reanalyzed and the QC and CCV were acceptable. No qualification is required.

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: See attached lab blank form for detects in blank. Assoc. results < 5x blank conc. have been qualified as undetected (U).

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: Qualify As results as estimated (J/UJ). LCS control limits of 80 to 120 were applied to titanium. No qualification is required.

0105

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

Comments: The narrative states that the duplicate RPD for chromium exceeds control limits at 27% RPD. However, 27% RPD is acceptable according to the DV requirements for soils. Therefore, no qualification is required.

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:

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: The titanium result for sample B0BKN7 exceeded the linear range by 0.6%. No qualification is required.

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

Comments (attach additional sheets as necessary):

Sample locations are not currently available. Field QC will be evaluated in the final summary report.

6/11/94

9613474.0973

HOLDING TIME SUMMARY

WC013-ITC-029

SDG:	VALIDATOR: [illegible]	DATE: 6/13/94	PAGE 1 OF 3
COMMENTS: Metals, Work Order # 299			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B0BFM7	ICP	3/30/94		4/14/94	~~15~~	15	None
B0BXFN9		3/30/94			—		
B0BKP5		3/30/94			—		
B0BKP7		3/30/94			—		
B0BKP8		3/30/94			—		
B0BNQ4		3/30/94			—		
B0BNQ5		3/30/94					
B0BFM7	As	3/30/94		4/19/94	~~20~~	20	
B0BFN9		3/30/94			—		
B0BKP5		3/30/94			—		
B0BKP7		3/30/94			—		
B0BKP8		3/30/94			—		
B0BNQ4		3/30/94			—		
B0BNQ5		3/30/94					
B0BFM7	Se	3/30/94		4/14/94	~~15~~	15	
B0BFN9		3/30/94			—		
B0BKP5		3/30/94					

6/13/94

6/13/94

0108

HOLDING TIME SUMMARY

W0013-ITC-029

SDG:	VALIDATOR:	DATE: 6/13/94	PAGE 2 OF 3
COMMENTS: Metals, Work Order #299			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B0BKP7	Se	3/30/94		4/14/94	+	15	None
B0BKP8		3/30/94					
B0BNQ4		3/30/94					
B0BNQ5		3/30/94					
B0BKM7	Pb	3/30/94		4/19/94		20	
B0BKN9		3/30/94					
B0BKP5		3/30/94					
B0BKP7		3/30/94		4/14/94		15	
B0BKP8		3/30/94					
B0BNQ4		3/30/94					
B0BNQ5		3/30/94					
B0BKM7	Tl	3/30/94		4/18/94		19	
B0BKN9		3/30/94					
B0BKP5		3/30/94					
B0BKP7		3/30/94					
B0BKP8		3/30/94					
B0BNQ4		3/30/94					

9413474.0974

HOLDING TIME SUMMARY

W0013-ITC-029

SDG:	VALIDATOR: [illegible]	DATE: 6/13/94	PAGE 3 OF 3
COMMENTS: Metals, Work Order # 299			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B0BNQ5	Tl	3/30/94		4/18/94		19	None
B0BKM7	Hg	3/30/94		4/08/94		9	
B0BKN9		3/30/94					
B0BKP5		3/30/94					
B0BKP7		3/30/94					
B0BKP8		3/30/94					
B0BNQ4		3/30/94					
B0BNQ5		3/30/94					
B0BKM7	CN	3/30/94		4/13/94		14	
B0BKN9		3/30/94					
B0BKP5		3/30/94					
B0BKP7		3/30/94					
B0BKP8		3/30/94					
B0BNQ4		3/30/94					
B0BNQ5		3/30/94					

9513174.0975

9613474.0976

~~0003205~~

U.S. EPA - CLP

3
BLANKS

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD/WE

Lab Code: ITSTU_ Case No.: W0299 SAS No.: _____ SDG No.: W0013_

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	PBS0412 APBS0412A (6075) PBS0412A (6073) Preparation Blank CPBS0408A (5775)	C	M
Aluminum	40.0	U	40.0	U	40.0	U	40.0	U	12.652	B	P
Antimony	50.0	U	50.0	U	50.0	U	50.0	U	10.000	U	P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Calcium	20.0	U	20.0	U	20.0	U	20.0	U	131.2 26.240	B	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Copper	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Iron	10.0	U	10.0	U	10.0	U	10.0	U	8.948	B	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Magnesium	31.9	B	30.0	U	30.0	U	30.0	U	35.54 7.108	B	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel	20.0	U	20.0	U	20.0	U	20.0	U	4.000	U	P
Potassium	1000.0	U	1000.0	U	1000.0	U	1000.0	U	200.000	U	P
Selenium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Silver	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U	124.6 24.972	B	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	8.67 1.734	B	P
Titanium	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Cyanide	10.0	U	10.0	U	10.0	U			1.000	U	AS

FORM III - IN

ILM02.1
8
5/10/94

6/13/94

0111

9613474.0977

~~0003211~~

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

Lab Name: ITAS_KNOXVILLE Contract:HANFORD/WE BOBJ01S

Lab Code: ITSTU Case No.: WO299 SAS No.: SDG No.: W0013
Matrix: SOIL Level (low/med): LOW
% Solids for Sample: 93.0

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	93.2331		10.4395	U	104.40	89.3		P
Arsenic	75-125	5.9140		0.4321	B	8.12	67.5	N	F
~~Barium~~	75-125	460.9479		53.2540		417.58	97.6		P
Beryllium	75-125	10.9469		0.2965	B	10.44	102.0		P
Cadmium	75-125	10.4165		1.0440	U	10.44	99.8		P
Calcium									NR
Chromium	75-125	57.4131		12.7884		41.76	106.9		P
Cobalt	75-125	112.5712		6.1906	B	104.40	101.9		P
Copper	75-125	59.1273		10.4040		52.20	93.3		P
Iron									NR
Lead	75-125	5.8105		1.6454		4.06	102.6		F
Magnesium									NR
Manganese	75-125	323.8355		197.5947		104.40	120.9		P
Mercury	75-125	0.6086		0.1075	U	0.54	112.7		CV
Nickel	75-125	113.2456		11.6860		104.40	97.3		P
Potassium									NR
Selenium	75-125	1.6636		0.4058	U	2.03	82.0		F
Silver	75-125	10.5648		1.0440	U	10.44	101.2		P
Sodium									NR
Thallium	75-125	8.9714		0.4058	U	10.14	88.5		F
Vanadium	75-125	133.0723		22.2069		104.40	106.2		P
Zinc	75-125	133.3918		32.6923		104.40	96.5		P
Titanium		994.4483		690.3873		104.40	291.2		P
Cyanide									NR

Comments:
ARTIFACTS_INCLUDE_ROCKS.

FORM V (Part 1) - IN ILM02.1

n112 8 5/13/94

Qualify As results as estimated
No qualification is required for titanium results since the ~~sp~~ 6/11/94 sample result is greater than 4x the amount ~~of~~ spike added.

6/11/94

9613474.0978

ACCURACY DATA SUMMARY

W0013-ITC-029

SDG:	VALIDATOR: [illegible]	DATE: 6/11/94	PAGE 1 OF 1	
COMMENTS: GFAA Analytical Spikes				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B0BKP8	Selenium	119%	B0BKP8	UJ
B0BKP7	Thallium	83.3%	B0BKP7	UJ
B0BKP8	Thallium	82.8%	B0BKP8	UJ
B0BKN9	Thallium	79.3%	B0BKN9	UJ
B0BKM7	Thallium	82.7%	B0BKM7	UJ
B0BKP5	Thallium	80.1%	B0BKP5	UJ

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-UP-2			DATA PACKAGE: W0013-ITC-029		
VALIDATOR: [illegible]		LAB: ITC		DATE: 06/12/94	
~~CASE:~~ Work Order # 306			SDG: W0013-ITC-029		
ANALYSES PERFORMED					
☒ CLP/ICP	☒ CLP/GFAA	☒ CLP/Hg	☒ CLP/Cyanide	☐	☐
☐ SW-846/ICP	☐ SW-846/GFAA	☐ SW-846/Hg	☐ SW-846 Cyanide	☐	☐
SAMPLES/MATRIX Soils					
B0BNQ3					
B0BNQ8					

6/13/94

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:

0114

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: Analytes were detected in the prep. blank at positive concentrations. However, the assoc. sample results > 5x respective blank concentration. Therefore, no qualification is required.

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: Qualify antimony and thallium results as estimated (UJ) since the MS %R were 46% and 74%, respectively.

LCS control limits of 80% to 120% (6/13/94) were applied to Sb & Tl. (6/13/94) No qualification is required.

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

Comments: Sample locations are not currently available. Field QC will be evaluated in the final summary report.

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:

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: The titanium result for sample B0BNQ3 exceeded the linear range by 8.6%. No qualification is required.

0116

HOLDING TIME SUMMARY

W0013-ITC-029

SDG:	VALIDATOR:	DATE: 6/13/94	PAGE 1 OF 1
COMMENTS: Metals, Work Order # 306			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B0BNQ8	ICP	3/31/94		4/20/94		20	None
	As			4/19/94		19	
	Tl			4/19/94		19	
	Se			4/19/94		19	
	Pb			4/12/94		12	
	Hg			4/08/94		8	
	CN			4/13/94		13	
B0BNQ3	ICP	3/31/94		4/20/94		20	
	As			4/19/94		19	
	Tl			4/19/94		19	
	Se			4/19/94		19	
	Pb			4/12/94		12	
	Hg			4/08/94		8	
	CN			4/13/94		13	

9613474.0983

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

BOBKM8S

Lab Name: ITAS_KNOXVILLE_____ Contract:HANFORD___

Lab Code: ITSTU_ Case No.: WO306 SAS No.: _____ SDG No.: W0013_
Matrix: SOIL_____ Level (low/med): _LOW____
% Solids for Sample: _98.9

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	56.0797		11.4459	B	96.30	46.3	N	P
Arsenic	75-125	8.5675		2.3306		8.01	77.9		F
Barium	75-125	460.7675		84.2737		385.19	97.7		P
Beryllium	75-125	10.2749		0.4892	B	9.63	101.6		P
Cadmium	75-125	9.5739		0.9630	U	9.63	99.4		P
Calcium									NR
Chromium	75-125	47.9985		9.0885		38.52	101.0		P
Cobalt	75-125	108.5233		12.6053		96.30	99.6		P
Copper	75-125	58.0846		11.4941		48.15	96.8		P
Iron									NR
Lead	75-125	10.7319		6.8076		4.00	98.1		F
Magnesium									NR
Manganese	75-125	449.3004		334.2173		96.30	119.5		P
Mercury	75-125	0.4670		0.0963	U	0.48	97.3		CV
Nickel	75-125	105.2569		9.6432		96.30	99.3		P
Potassium									NR
Selenium	75-125	2.0042		0.4004	U	2.00	100.2		F
Silver	75-125	9.9321		2.1590		9.63	80.7		P
Sodium									NR
Thallium	75-125	7.4383		0.4004	U	10.01	74.3	N	F
Vanadium	75-125	155.5973		56.6286		96.30	102.8		P
Zinc	75-125	131.2726		37.6696		96.30	97.2		P
Titanium		2049.8011		1798.3764		96.30	261.1		P
Cyanide									NR

Comments:

FORM V (Part 1) - IN ILM02.1
8
5/12/94

Qualify Sb and Tl results as estimated (UJ).

6/13/94

0118

9613474.0884

MEMORANDUM

JUN 1994
RECEIVED
TQO

TO: 200-UP-2 Project QA Record June 14, 1994

FR: Christina Jensen, Golder Associates Inc. CJ

RE: PESTICIDE/PCBS DATA VALIDATION SUMMARY FOR DATA PACKAGE: W0013-ITC-029 (923-E418 W0013P.UP2)

INTRODUCTION

This memorandum presents the results of data validation on data package W0013-ITC-029 prepared by International Technology Corporation (IT) laboratory. A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

RECEIVED
JUN 16 1994
VALIDATION DOCUMENTATION

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09WJ9	03/21/94	SOIL	SEE NOTE 1
B09WK1	03/22/94	SOIL	
B09WK2	03/22/94	SOIL	
B09WK4	03/23/94	SOIL	
B09WK5	03/23/94	SOIL	

Notes: 1. The samples were analyzed for CLP Pesticide\PCBs.

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

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

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of five samples were validated in this data package with a total of 140 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets the normal work plan objectives of 90 percent.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

No minor deficiencies were identified during data validation which required qualification of data.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

9613474.0986

Attachment 1

Glossary of Data Reporting Qualifiers

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

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.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

9613474.0988

Attachment 2

Summary of Data Qualifications

WHC-SD-EN-SPP-002. Rev. 2

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: NA	VALIDATOR: C. Jensen	DATE: 06/14/94	PAGE 1 OF 1
COMMENTS: pesticide\PCBs W0013-ITC-029			
PARAMETER	QUALIFIER	SAMPLES AFFECTED	REASON
There were no qualifications required			

9613474.0990

Attachment 3

Qualified Data Summary and Annotated Laboratory Reports

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B09WJ9		B09WK1		B09WK2		B09WK4		B09WK5	
	Date	3-21-94		3-22-94		3-22-94		3-23-94		3-23-94	
	Location	---		---		---		---		---	
	Depth	---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ALPHA-BHC	UG/KG	2.100	U	2.000	U	2.000	U	1.700	U	1.700	U
BETA-BHC	UG/KG	2.100	U	2.000	U	2.000	U	1.700	U	1.700	U
DELTA-BHC	UG/KG	2.100	U	2.000	U	2.000	U	1.700	U	1.700	U
GAMMA-BHC (LINDANE)	UG/KG	2.100	U	2.000	U	2.000	U	1.700	U	1.700	U
HEPTACHLOR	UG/KG	2.100	U	2.000	U	2.000	U	1.700	U	1.700	U
ALDRIN	UG/KG	2.100	U	2.000	U	2.000	U	1.700	U	1.700	U
HEPTACHLOR EPOXIDE	UG/KG	2.100	U	2.000	U	2.000	U	1.700	U	1.700	U
ENDOSULFAN I	UG/KG	2.100	U	2.000	U	2.000	U	1.700	U	1.700	U
DIELDRIN	UG/KG	4.100	U	3.900	U	3.900	U	3.300	U	3.300	U
4,4'-DDE	UG/KG	4.100	U	3.900	U	3.900	U	3.300	U	3.300	U
ENDRIN	UG/KG	4.100	U	3.900	U	3.900	U	3.300	U	3.300	U
ENDOSULFAN II	UG/KG	4.100	U	3.900	U	3.900	U	3.300	U	3.300	U
4,4'-DDD	UG/KG	4.100	U	3.900	U	3.900	U	3.300	U	3.300	U
ENDOSULFAN SULFATE	UG/KG	4.100	U	3.900	U	3.900	U	3.300	U	3.300	U
4,4'-DDT	UG/KG	4.100	U	3.900	U	3.900	U	3.300	U	3.300	U
METHOXYCHLOR	UG/KG	21.000	U	20.000	U	20.000	U	17.000	U	17.000	U
ENDRIN KETONE	UG/KG	4.100	U	3.900	U	3.900	U	3.300	U	3.300	U
ENDRIN ALDEHYDE	UG/KG	4.100	U	3.900	U	3.900	U	3.300	U	3.300	U
ALPHA-CHLORDANE	UG/KG	2.100	U	2.000	U	2.000	U	1.700	U	1.700	U
GAMMA-CHLORDANE	UG/KG	2.100	U	2.000	U	2.000	U	1.700	U	1.700	U
TOXAPHENE	UG/KG	210.000	U	200.000	U	200.000	U	170.000	U	170.000	U
AROCLOR-1016	UG/KG	41.000	U	39.000	U	39.000	U	33.000	U	33.000	U
AROCLOR-1221	UG/KG	83.000	U	80.000	U	79.000	U	67.000	U	67.000	U
AROCLOR-1232	UG/KG	41.000	U	39.000	U	39.000	U	33.000	U	33.000	U
AROCLOR-1242	UG/KG	41.000	U	39.000	U	39.000	U	33.000	U	33.000	U
AROCLOR-1248	UG/KG	41.000	U	39.000	U	39.000	U	33.000	U	33.000	U
AROCLOR-1254	UG/KG	41.000	U	39.000	U	39.000	U	33.000	U	33.000	U
AROCLOR-1260	UG/KG	41.000	U	39.000	U	39.000	U	33.000	U	33.000	U

Verified 5/11/94

9413474.0091

9613474.0992

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ9

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0013 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4621

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 19 decanted: (Y/N) N Date Received: 03/26/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/08/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	2.1	U
319-86-8	delta-BHC	2.1	U
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	2.1	U
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor epoxide	2.1	U
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	4.1	U
72-55-9	4,4'-DDE	4.1	U
72-20-8	Endrin	4.1	U
33213-65-9	Endosulfan II	4.1	U
72-54-8	4,4'-DDD	4.1	U
1031-07-8	Endosulfan sulfate	4.1	U
50-29-3	4,4'-DDT	4.1	U
72-43-5	Methoxychlor	21	U
53494-70-5	Endrin ketone	4.1	U
7421-93-4	Endrin aldehyde	4.1	U
5103-71-9	alpha-Chlordane	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U

FORM I PEST 3/90

Verified 5/6/94

9613474.0993

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK1

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0013 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4629

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 17 decanted: (Y/N) N Date Received: 03/26/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/08/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.9	U
72-55-9	4,4'-DDE	3.9	U
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	3.9	U
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	3.9	U
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.9	U
7421-93-4	Endrin aldehyde	3.9	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

FORM I PEST 3/90

Verified 5/4/94

010

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK2

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0013 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4594

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 15 decanted: (Y/N) N Date Received: 03/26/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/08/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.9	U
72-55-9	4,4'-DDE	3.9	U
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	3.9	U
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	3.9	U
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.9	U
7421-93-4	Endrin aldehyde	3.9	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	79	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

Verified 5/6/94

9613474.0995

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK4

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0013 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4604

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 0 decanted: (Y/N) N Date Received: 03/26/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/08/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

Verified 5/04/94

9613474.0996

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WK5

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0013 SAS No.: _____ SDG No.: W0013

Matrix: (soil/water) SOIL Lab Sample ID: AA4612

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 0 decanted: (Y/N) N Date Received: 03/26/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/31/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/08/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

Verified 5/6/94

9613474.0897

Attachment 4

Laboratory Narrative and Chain-of-Custody Documentation

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

RECORD COPY

May 17, 1994

Job Number: 263; 290; 299; 306

This is the Certificate of Analysis for the following samples:

SDG:	W0013
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	March 26, 1994; April 1, 1994; April 4, 1994, April 6, 1994
Number of Samples:	Twenty-two (22)
Sample Type:	Soil

I. Introduction

On March 26, April 1, April 4 and April 6, 1994, twenty-two (22) soil samples arrived at the 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. Soil results are reported on a dry weight basis.

The samples were analyzed for Target Compound List (TCL) volatiles and semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

MAY 1994
RECEIVED
SDLA

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

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.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for total organic carbon (TOC) based on EPA method 9060.

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

III. Quality Control

The volatiles analyses were performed by purge and trap with a J & W DB-624 capillary column on a Hewlett-Packard 5970 GC/MS/DS and a Finnigan INCOS 500 GC/MS/DS. All QC results were within method specified limits.

The semivolatiles analyses were performed by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL GC/MS/DS. All QC results were within method specified limits. The matrix spike and matrix spike duplicate for sample BOBNQ5 showed high recoveries for one matrix spike compound, phenol.

III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WK2 with acceptable recoveries. One laboratory control sample was analyzed and reported with acceptable recoveries. GPC check sample did not meet criteria when compared against the initial calibration. However, when compared against a GPC solution that was not subjected to GPC clean-up, the GPC sample passed all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples for work order #263 were digested on April 11, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA arsenic, lead, selenium and thallium were performed from April 11 through April 27, 1994; the remaining metals were analyzed by ICP on April 13, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number BO9WK2. Spike recovery (accuracy) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for antimony and manganese by ICP analysis. Poor spike recovery for antimony appears to be attributable to matrix interferences. Poor spike recovery for manganese is

III. Quality Control (Continued)

attributable to sample nonhomogeneity. As the titanium concentration is greater than four times (4X) the spike added, spiking criteria do not apply for this analyte. A post digestion spike was performed for antimony and manganese as required by CLP protocol. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for aluminum and chromium by ICP analysis. These two analytes were slightly outside acceptance limits due to probable sample nonhomogeneity.

The samples for work order #290 were digested on April 12, 4994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14 and April 15, 1994. All run QC was acceptable

The samples for work order #299 were digested on April 12, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14, 1994. All run QC was acceptable. In sample BOBKM7, the titanium concentration exceeded the linear range by 0.6%, which is less than the 5% acceptance range. During the cyanide analysis, the continuing calibration verification #2 was below the acceptable lower limit of 80%. All sample concentrations were nondetects. The samples were reanalyzed with acceptable limits.

The samples for work order #306 were digested on April 15, 1994 for ICP and April 12, 1994 for GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 12 through April 19, 1994; the remaining metals were analyzed by ICP on April 20, 1994. All run QC was acceptable.

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.

"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.

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

"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 total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike duplicate analyses were performed using sample numbers BOBNQ5 and B09WK2 with acceptable results.

On April 15, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WK2. All QC results were acceptable.

The samples were analyzed for anions on April 20, April 22 and April 28, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for total organic carbon by an O.I. TOC 700. Matrix spike/matrix spike duplicate analyses were performed using sample BOBNQ5.

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4589	403489-01 (A-H)	B09WK2	SOIL	METALS
AA4590	"	"	"	VOC
AA4591	"	"	"	SVOC
AA4592	"	"	"	ANIONS
AA4593	"	"	"	NO3NO2
AA4594	"	"	"	PEST/PCB
AA4595	"	"	"	CN
AA4596	"	"	"	TPH
AA4599	403489-02 (A-H)	B09WK4	"	METALS
AA4600	"	"	"	VOC
AA4601	"	"	"	SVOC
AA4602	"	"	"	ANIONS
AA4603	"	"	"	NO3NO2
AA4604	"	"	"	PEST/PCB
AA4605	"	"	"	CN
AA4606	"	"	"	TPH
AA4607	403489-03 (A-H)	B09WK5	"	METALS
AA4608	"	"	"	VOC
AA4609	"	"	"	SVOC
AA4610	"	"	"	ANIONS
AA4611	"	"	"	NO3NO2
AA4612	"	"	"	PEST/PCB
AA4613	"	"	"	CN
AA4614	"	"	"	TPH

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4615	403489-04 (A)	B09WK6	SOIL	VOC
AA4616	403489-05 (A-H)	B09WJ9	"	METALS
AA4617	"	"	"	VOC
AA4618	"	"	"	SVOC
AA4619	"	"	"	ANIONS
AA4620	"	"	"	NO3NO2
AA4621	"	"	"	PEST/PCB
AA4622	"	"	"	CN
AA4623	"	"	"	TPH
AA4624	403489-06 (A-H)	B09WK1	"	METALS
AA4625	"	"	"	VOC
AA4626	"	"	"	SVOC
AA4627	"	"	"	ANIONS
AA4628	"	"	"	NO3NO3
AA4629	"	"	"	PEST/PCB
AA4630	"	"	"	CN
AA4631	"	"	"	TPH
AA4633	403489-07 (A,B)	Trip Blank	"	VOC
AA4634	403489-08 (A,B)	"	"	VOC
AA5075	40363001 (A-G)	BOBKM4	"	SVOC
AA5076	"	"	"	METALS
AA5077	"	"	"	ANIONS
AA5078	"	"	"	NO3NO2
AA5079	"	"	"	CN
AA5080	"	"	"	TPH
AA5081	"	"	"	TOC

IT Corporation
May 17, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5082	40363002 (A-G)	BOBKM6	SOIL	SVOC
AA5083	"	"	"	METALS
AA5084	"	"	"	ANIONS
AA5085	"	"	"	NO3NO2
AA5086	"	"	"	CN
AA5087	"	"	"	TPH
AA5088	"	"	"	TOC
AA5089	40363003 (A-G)	BOBKM1	"	SVOC
AA5090	"	"	"	METALS
AA5091	"	"	"	ANIONS
AA5092	"	"	"	NO3NO2
AA5093	"	"	"	CN
AA5094	"	"	"	TPH
AA5095	"	"	"	TOC
AA5096	40363004 (A-G)	BOBKM3	"	SVOC
AA5097	"	"	"	METALS
AA5098	"	"	"	ANIONS
AA5099	"	"	"	NO3NO2
AA5100	"	"	"	CN
AA5101	"	"	"	TPH
AA5102	"	"	"	TOC
AA5103	40363005 (A-G)	BOBKM5	"	SVOC
AA5104	"	"	"	METALS
AA5105	"	"	"	ANIONS
AA5106	"	"	"	NO3NO2
AA5107	"	"	"	CN
AA5108	"	"	"	TPH
AA5109	"	"	"	TOC

IT Corporation
May 17, 1994

0000009
IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5189	404016-01 (A-G)	BOBNQ5	SOIL	SVOC
AA5190	"	"	"	METALS
AA5191	"	"	"	ANIONS
AA5192	"	"	"	NO3NO2
AA5193	"	"	"	CN
AA5194	"	"	"	TPH
AA5195	"	"	"	TOC
AA5196	404016-02 (A-G)	BOBNQ4	"	SVOC
AA5197	"	"	"	METALS
AA5198	"	"	"	ANIONS
AA5199	"	"	"	NO3NO2
AA5200	"	"	"	CN
AA5201	"	"	"	TPH
AA5202	"	"	"	TOC
AA5203	404016-03 (A-G)	BOBKP7	"	SVOC
AA5204	"	"	"	METALS
AA5205	"	"	"	ANIONS
AA5206	"	"	"	NO3NO2
AA5207	"	"	"	CN
AA5208	"	"	"	TPH
AA5209	"	"	"	TOC
AA5210	404016-04 (A-G)	BOBKP8	"	SVOC
AA5211	"	"	"	METALS
AA5212	"	"	"	ANIONS
AA5213	"	"	"	NO3NO2
AA5214	"	"	"	CN
AA5215	"	"	"	TPH
AA5216	"	"	"	TOC

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5217	404016-05 (A-G)	BOBKN9	SOIL	SVOC
AA5218	"	"	"	METALS
AA5219	"	"	"	ANIONS
AA5220	"	"	"	NO3NO2
AA5221	"	"	"	CN
AA5222	"	"	"	TPH
AA5223	"	"	"	TOC
AA5224	404016-06 (A-G)	BOBKM7	"	SVOC
AA5225	"	"	"	METALS
AA5226	"	"	"	ANIONS
AA5227	"	"	"	NO3NO2
AA5228	"	"	"	CN
AA5229	"	"	"	TPH
AA5230	"	"	"	TOC
AA5231	404016-07 (A-G)	BOBKP5	"	SVOC
AA5232	"	"	"	METALS
AA5233	"	"	"	ANIONS
AA5234	"	"	"	NO3NO2
AA5235	"	"	"	CN
AA5236	"	"	"	TPH
AA5237	"	"	"	TOC
AA5423	404065-01	BOBNQ8	"	SVOC
AA5424	"	"	"	METALS
AA5425	"	"	"	ANIONS
AA5426	"	"	"	NO3NO2
AA5427	"	"	"	CN
AA5428	"	"	"	TPH

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5435	404065-02	BOBNQ3	SOIL	SVOC
AA5436	"	"	"	METALS
AA5437	"	"	"	ANIONS
AA5438	"	"	"	NO3NO2
AA5439	"	"	"	CN
AA5440	"	"	"	TPH

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

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
Project Manager

9613474.1010

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-21-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 403489 B09WJ9

05

- A 1,250ml P:CLP;TAL Metals,Hg,Ti
- B 1,250ml Gs:VOA CLP
- C 1,250ml aG:Semi-VOA CLP
- D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
- E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
- F 1,250ml aGs:PCB/Pest (8080)
- G 1,125ml G:Cyanide CLP
- H 1,125ml Gw:Kerosene (8015M)
- 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

403499004

~~2)~~

- ~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
- ~~1,250ml Gs:VOA CLP~~
- ~~1,250ml aG:Semi-VOA CLP~~
- ~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
- ~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
- ~~1,250ml aGs:PCB/Pest (8080)~~
- ~~1,125ml G:Cyanide CLP~~
- ~~1,125ml Gw:Kerosene (8015M)~~
- ~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-21-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Jason E. Rogers 3-24-94 1310	Karen Fottinday ITAS 3-25-94	10:00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WK0

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2) B09WK1

403489 06

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349005

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 1310		3-25-94 10 00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.1012

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-23-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 40348902 B09WK4

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349002

2) 40348903 B09WK5

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349003

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 Karen L. Rogers 1310	Karen Fabitulus 10 am	3-25-94 10 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

029

9613474.1013

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

403489 01 — Sample Identification

1) B09WK2

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

3-22-94

[] Field Transfer of Custody — Chain of Possession (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 1310	ITAS 1020	3/25/94 1020

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.1014

Attachment 5

Data Validation Supporting Documentation

A
A
-
-
24
9/26/14/94
closure

PESTICIDE/PCB DATA VALIDATION CHECKLIST

Are DBC retention times acceptable? . . . . . Yes No N/A

Is the GC/MS tuning/performance check acceptable? . . . . . Yes No N/A

Comments:

3.2 CALIBRATIONS (METHOD 8080 AND 8081)

Are EVAL standard calibration factors and %RSD values acceptable? . . . . . Yes No N/A

Are quantitation column calibration factor %RSD values acceptable? . . . . . Yes No N/A

Were the analytical sequence requirements met? . . . . . Yes No N/A

Are continuing calibration %D values acceptable? . . . . . Yes No N/A

Comments:

3.3 INSTRUMENT PERFORMANCE AND INITIAL CALIBRATION (3/90 SOW)

Was the initial calibration sequence performed? . . . . . Yes No N/A

Was the resolution acceptable in the resolution check mix? . . Yes No ~~N/A~~ 96/14/94

Is resolution acceptable in the PEM, INDA and INDB? . . . . . Yes No N/A

Are DDT and Endrin breakdowns acceptable? . . . . . Yes No N/A

Are retention times in PEMs and calibration mixes acceptable? . Yes No ~~N/A~~ 96/14/94

Are RPD values in the PEMs acceptable? . . . . . Yes No ~~N/A~~ 96/14/94

Are %RSD values acceptable? . . . . . Yes No N/A

Comments:

3.4 CALIBRATION VERIFICATION (3/90 SOW)

Were the analytical sequence requirements met? . . . . . Yes No N/A

Is resolution acceptable in the PEMs? . . . . . Yes No N/A

Are initial calibrations acceptable? . . . . . Yes No N/A

033

PESTICIDE/PCB DATA VALIDATION CHECKLIST

Are retention times acceptable in the PEMs, INDA and INDB mixes? . . . . . Yes No N/A

Are RPD values in the PEMs acceptable? . . . . . Yes No N/A

Are the DDT and endrin breakdowns acceptable? . . . . . Yes No N/A

Was GPC cleanup performed? . . . . . Yes No N/A

Is the GPC calibration check acceptable? . . . . . Yes No N/A

Was Florisil cleanup performed? . . . . . Yes No N/A

Is the Florisil performance check 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 surrogates analyzed? . . . . . Yes No N/A

Are surrogate recoveries acceptable? . . . . . Yes No N/A

Were MS/MSD samples analyzed? . . . . . Yes No N/A

Are MS/MSD results acceptable? . . . . . Yes No N/A

Were LCS samples analyzed? . . . . . Yes No N/A

Are LCS results acceptable? . . . . . Yes No N/A

Comments:_____

034

PESTICIDE/PCB DATA VALIDATION CHECKLIST

6. PRECISION

Are MS/MSD RPD values acceptable? . . . . . Yes No N/A

Are laboratory duplicate results 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

Comments: The laboratory did not analyze a duplicate sample and it is not required.

7. SYSTEM PERFORMANCE

Is chromatographic performance acceptable? . . . . . Yes No N/A

Are positive results resolved acceptably? . . . . . ① . . . Yes No N/A

Comments: ① There were no positive results.

8. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . Yes No N/A

Is compound quantitation acceptable? . . . . . Yes No N/A

Comments:

9. REPORTED RESULTS AND QUANTITATION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A

Are all results supported in the raw data? . . . . . Yes No N/A

Do results meet the CRQLs? . . . . . Yes No N/A

Comments:

035

HOLDING TIME SUMMARY

SDG:	VALIDATOR: C Jensen	DATE: 6/13/94	PAGE 1 OF 1
COMMENTS: W0013-ITC-029 Pest/PCB			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09W9	Pest/PCB	3/21/94	3/31/94	4/8/94	10	8	none
B09WK1		3/22/94	3/31/94	4/8/94	9	8	
B09WK4		3/23/94	3/31/94	4/8/94	8	8	
B09WK5		3/23/94	3/31/94	4/8/94	8	8	
B09WK2		3/22/94	3/31/94	4/8/94	9	8	

9613474.1019

MEMORANDUM

JUN 1994 RECEIVED TQO

TO: 200-UP-2 Project QA Record

June 12, 1994

FR: Christina Jensen, Golder Associates Inc.

RE: GENERAL GC DATA VALIDATION SUMMARY FOR DATA PACKAGE: W0013-ITC-029 (923-E418 W0013G.UP2)

INTRODUCTION

This memorandum presents the results of data validation on data package W0013-ITC-029 prepared by International Technology Corporation (IT) 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	ANALYSIS
B09WJ9	03/21/94	SOIL	SEE NOTE 1
B09WK1	03/22/94	SOIL	
B09WK2	03/22/94	SOIL	
B09WK4	03/23/94	SOIL	
B09WK5	03/23/94	SOIL	
B0BKM1	03/29/94	SOIL	
B0BKM3	03/29/94	SOIL	
B0BKM4	03/29/94	SOIL	
B0BKM5	03/29/94	SOIL	
B0BKM6	03/29/94	SOIL	
B0BKM7	03/30/94	SOIL	
B0BKN9	03/30/94	SOIL	
B0BKP5	03/30/94	SOIL	
B0BKP7	03/30/94	SOIL	
B0BKP8	03/30/94	SOIL	
B0BNQ4	03/30/94	SOIL	
B0BNQ5	03/30/94	SOIL	
B0BNQ3	03/31/94	SOIL	
B0BNQ8	03/31/94	SOIL	

Notes: 1. The samples were analyzed for high boiling petroleum hydrodrocarbons, as diesel range organics using Method 8015M.

RECEIVED JUN 16 1994 VALIDATION DOCUMENTATION SDLA

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

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

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of nineteen samples were validated in this data package with a total of nineteen determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets the normal work plan objectives of 90 percent.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

No minor deficiencies were identified during data validation which required qualification of data.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

9613474.1021

Attachment 1

Glossary of Data Reporting Qualifiers

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

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.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

9613474.1023

Attachment 2

Summary of Data Qualifications

WHC-SD-EN-SPP-002. Rev. 2

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: NA	VALIDATOR: C. Jensen	DATE: 06/13/94	PAGE 1 OF 1
COMMENTS: KEROSENE W0013-ITC-029			
PARAMETER	QUALIFIER	SAMPLES AFFECTED	REASON
no qualification of the data was required			

9613474.1025

Attachment 3

Qualified Data Summary and Annotated Laboratory Reports

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B09WJ9		B09WK1		B09WK2		B09WK4		B09WK5	
	Date	3-21-94		3-22-94		3-22-94		3-23-94		3-23-94	
	Location	---		---		---		---		---	
	Depth	---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
HIGH BOILING HYDROCARBONS	MG/KG	12.000	U	12.000	U	12.000	U	10.000	U	10.000	U

Verified
5/11/94

9615474.1026

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	BOBKM1		BOBKM3		BOBKM4		BOBKM5		BOBKM6		BOBKM7	
	Date	3-29-94		3-29-94		3-29-94		3-29-94		3-29-94		3-30-94	
	Location	216-U-8		216-U-8		216-U-8		216-U-8		216-U-8		U1/U2 TILE	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
HIGH BOILING HYDROCARBONS	MG/KG	10.000	U	10.000	U	10.000	U	10.000	U	10.000	U	10.000	U

9613174.1027

Verified
6/13/94

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	BOBKN9		BOBKP5		BOBKP7		BOBKP8		BOBNQ3		BOBNQ4	
	Date	3-30-94		3-30-94		3-30-94		3-30-94		3-31-94		3-30-94	
	Location	U14 DITCH		Z DITCH		U1/U2-TILE		U1/U2-TILE		216-U-10		216-U-10	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
HIGH BOILING HYDROCARBONS	MG/KG	10.000	U	10.000	U	10.000	U	10.000	U	10.000		10.000	U

9613744.1029

Verified 5/01/94

010

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	BOBNQ5		BOBNQ8	
	Date	3-30-94		3-31-94	
	Location	216-U-10		216-U-11	
	Depth	---		---	
	Type	SOIL		SOIL	
	Comments	---		---	
Parameter	Units	Result	Q	Result	Q
HIGH BOILING HYDROCARBONS	MG/KG	10.000	U	10.000	U

9413944.1029

Original Validated

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	BO9WK2	Extraction Date:	03/29/94
Lab Sample ID:	AA4596	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.8468
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	12	U	12

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4596	115	126

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

Verified
4/6/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	BO9WK4	Extraction Date:	03/29/94
Lab Sample ID:	AA4606	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9981
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4606	104	112

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

Vouged
9/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	B09WK5	Extraction Date:	03/29/94
Lab Sample ID:	AA4614	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9981
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4614	122	130

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

Verified
6/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	BO9WJ9	Extraction Date:	03/29/94
Lab Sample ID:	AA4623	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.8093
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	12	U	12

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4623	113	126

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

verified
3/6/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	263
Client Sample ID:	BO9WK1	Extraction Date:	03/29/94
Lab Sample ID:	AA4631	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.8346
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	12	U	12

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4631	123	136

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

Verified
5/6/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM4	Extraction Date:	04/08/94
Lab Sample ID:	AA5080	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	0.9526
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5080	98	134

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

Verified
KB 6/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM6	Extraction Date:	04/08/94
Lab Sample ID:	AA5087	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	0.9728
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5087	100	135

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

Verified
5/6/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM1	Extraction Date:	04/08/94
Lab Sample ID:	AA5094	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	0.9701
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5094	95	126

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

Verified
5/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM3	Extraction Date:	04/08/94
Lab Sample ID:	AA5101	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	0.9880
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5101	94	135

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

Verified
7/6/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	290
Client Sample ID:	BOBKM5	Extraction Date:	04/08/94
Lab Sample ID:	AA5108	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	0.9921
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5108	96	135

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

Verified
5/6/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ5	Extraction Date:	04/08/94
Lab Sample ID:	AA5194	Analysis Date:	04/12/94
Sample Matrix:	SOIL	Dryness Factor:	1.00
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5194	115	155

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

Verified
5/6/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBNQ4	Extraction Date:	04/08/94
Lab Sample ID:	AA5201	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	1.00
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5201	105	139

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

Verified
5/11/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP8	Extraction Date:	04/08/94
Lab Sample ID:	AA5208	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	1.00
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5215	98	128

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

Verified
5/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP7	Extraction Date:	04/08/94
Lab Sample ID:	AA5215	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	1.00
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5208	104	139

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

Verified
5/6/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	~~BOBKP9~~ BCBKN9	Extraction Date:	04/08/94
Lab Sample ID:	AA5222 J.S. 5/24/94	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	0.9920
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5222	101	137

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

Verified
5/18/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKP5	Extraction Date:	04/08/94
Lab Sample ID:	AA5229	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	0.9902
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5236	89	120

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

verified
5/6/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	299
Client Sample ID:	BOBKM7	Extraction Date:	04/08/94
Lab Sample ID:	AA5236	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	0.9900
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5229	94	131

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

Verified
4/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	306
Client Sample ID:	BOBNQ8	Extraction Date:	04/08/94
Lab Sample ID:	AA5428	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	0.9731
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5428	97	134

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

Verified
S 4/13/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0013
Contract Name:	Westinghouse Hanford	Job Number:	306
Client Sample ID:	BOBNQ3	Extraction Date:	04/08/94
Lab Sample ID:	AA5440	Analysis Date:	04/13/94
Sample Matrix:	SOIL	Dryness Factor:	0.9737
Concentration Units:	mg/kg		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	I	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA5440	83	119

I - 64% of the DRO result was contributed by 1 component of an unknown identity.

Verified
5/6/13/94

9613474.1049

Attachment 4

Laboratory Narrative and Chain-of-Custody Documentation

9413174.1060 (W0013

HANFORD ANALYTICAL SERVICES MANAGEMENT

RECORD OF DISPOSITION

ROD-94-0066
Record of Disposition No.

DATE: March 28, 1994	LABORATORY: IT
PROJECT TITLE/NO.: 200-UP-2/SAF 94-065	NCR NO.: n/a

SAMPLE IDENTIFICATION NUMBERS: All samples to be analyzed for Kerosene and/or Titanium.

DESCRIPTION OF EVENT:

Clarification is being provided to the laboratory for samples being analyzed for Kerosene and Titanium (Ti).

DISPOSITION OF SAMPLES:

IT will analyze for Kerosene by performing a modification to method 8015 (TPH) in which the peak search is started earlier to pick up the kerosene. As an additional element to the metals TAL, Ti will be analyzed for using ICP methodology.

APPROVAL SIGNATURES:

J. A. Lerch — 3/28/94
CAS Project Coordinator (Print/Sign Name) — Date

M. A. Wasemiller — 3/28/94
Technical Representative (Print/Sign Name) — Date

N/A
Quality Assurance (Print/Sign Name) — Date

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

RECORD COPY

May 17, 1994

Job Number: 263; 290; 299; 306

This is the Certificate of Analysis for the following samples:

SDG:	W0013
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	March 26, 1994; April 1, 1994; April 4, 1994, April 6, 1994
Number of Samples:	Twenty-two (22)
Sample Type:	Soil

I. Introduction

On March 26, April 1, April 4 and April 6, 1994, twenty-two (22) soil samples arrived at the 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. Soil results are reported on a dry weight basis.

The samples were analyzed for Target Compound List (TCL) volatiles and semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

MAY 1994
RECEIVED
SDLA

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

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.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for total organic carbon (TOC) based on EPA method 9060.

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

III. Quality Control

The volatiles analyses were performed by purge and trap with a J & W DB-624 capillary column on a Hewlett-Packard 5970 GC/MS/DS and a Finnigan INCOS 500 GC/MS/DS. All QC results were within method specified limits.

The semivolatiles analyses were performed by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL GC/MS/DS. All QC results were within method specified limits. The matrix spike and matrix spike duplicate for sample BOBNQ5 showed high recoveries for one matrix spike compound, phenol.

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III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WK2 with acceptable recoveries. One laboratory control sample was analyzed and reported with acceptable recoveries. GPC check sample did not meet criteria when compared against the initial calibration. However, when compared against a GPC solution that was not subjected to GPC clean-up, the GPC sample passed all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples for work order #263 were digested on April 11, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA arsenic, lead, selenium and thallium were performed from April 11 through April 27, 1994; the remaining metals were analyzed by ICP on April 13, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number BO9WK2. Spike recovery (accuracy) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for antimony and manganese by ICP analysis. Poor spike recovery for antimony appears to be attributable to matrix interferences. Poor spike recovery for manganese is

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III. Quality Control (Continued)

attributable to sample nonhomogeneity. As the titanium concentration is greater than four times (4X) the spike added, spiking criteria do not apply for this analyte. A post digestion spike was performed for antimony and manganese as required by CLP protocol. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for aluminum and chromium by ICP analysis. These two analytes were slightly outside acceptance limits due to probable sample nonhomogeneity.

The samples for work order #290 were digested on April 12, 4994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14 and April 15, 1994. All run QC was acceptable

The samples for work order #299 were digested on April 12, 1994 for ICP and GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 14 through April 19, 1994; the remaining metals were analyzed by ICP on April 14, 1994. All run QC was acceptable. In sample BOBKM7, the titanium concentration exceeded the linear range by 0.6%, which is less than the 5% acceptance range. During the cyanide analysis, the continuing calibration verification #2 was below the acceptable lower limit of 80%. All sample concentrations were nondetects. The samples were reanalyzed with acceptable limits.

The samples for work order #306 were digested on April 15, 1994 for ICP and April 12, 1994 for GFAA. The CVAA analysis for mercury was performed on April 8, 1994; the GFAA analyses for arsenic, lead, selenium and thallium were performed from April 12 through April 19, 1994; the remaining metals were analyzed by ICP on April 20, 1994. All run QC was acceptable.

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.

"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.

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III. Quality Control (Continued)

"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 total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike duplicate analyses were performed using sample numbers BOBNQ5 and B09WK2 with acceptable results.

On April 15, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WK2. All QC results were acceptable.

The samples were analyzed for anions on April 20, April 22 and April 28, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for total organic carbon by an O.I. TOC 700. Matrix spike/matrix spike duplicate analyses were performed using sample BOBNQ5.

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Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4589	403489-01 (A-H)	B09WK2	SOIL	METALS
AA4590	"	"	"	VOC
AA4591	"	"	"	SVOC
AA4592	"	"	"	ANIONS
AA4593	"	"	"	NO3NO2
AA4594	"	"	"	PEST/PCB
AA4595	"	"	"	CN
AA4596	"	"	"	TPH
AA4599	403489-02 (A-H)	B09WK4	"	METALS
AA4600	"	"	"	VOC
AA4601	"	"	"	SVOC
AA4602	"	"	"	ANIONS
AA4603	"	"	"	NO3NO2
AA4604	"	"	"	PEST/PCB
AA4605	"	"	"	CN
AA4606	"	"	"	TPH
AA4607	403489-03 (A-H)	B09WK5	"	METALS
AA4608	"	"	"	VOC
AA4609	"	"	"	SVOC
AA4610	"	"	"	ANIONS
AA4611	"	"	"	NO3NO2
AA4612	"	"	"	PEST/PCB
AA4613	"	"	"	CN
AA4614	"	"	"	TPH

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Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA4615	403489-04 (A)	B09WK6	SOIL	VOC
AA4616	403489-05 (A-H)	B09WJ9	"	METALS
AA4617	"	"	"	VOC
AA4618	"	"	"	SVOC
AA4619	"	"	"	ANIONS
AA4620	"	"	"	NO3NO2
AA4621	"	"	"	PEST/PCB
AA4622	"	"	"	CN
AA4623	"	"	"	TPH
AA4624	403489-06 (A-H)	B09WK1	"	METALS
AA4625	"	"	"	VOC
AA4626	"	"	"	SVOC
AA4627	"	"	"	ANIONS
AA4628	"	"	"	NO3NO3
AA4629	"	"	"	PEST/PCB
AA4630	"	"	"	CN
AA4631	"	"	"	TPH
AA4633	403489-07 (A,B)	Trip Blank	"	VOC
AA4634	403489-08 (A,B)	"	"	VOC
AA5075	40363001 (A-G)	BOBKM4	"	SVOC
AA5076	"	"	"	METALS
AA5077	"	"	"	ANIONS
AA5078	"	"	"	NO3NO2
AA5079	"	"	"	CN
AA5080	"	"	"	TPH
AA5081	"	"	"	TOC

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KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5082	40363002 (A-G)	BOBKM6	SOIL	SVOC
AA5083	"	"	"	METALS
AA5084	"	"	"	ANIONS
AA5085	"	"	"	NO3NO2
AA5086	"	"	"	CN
AA5087	"	"	"	TPH
AA5088	"	"	"	TOC
AA5089	40363003 (A-G)	BOBKM1	"	SVOC
AA5090	"	"	"	METALS
AA5091	"	"	"	ANIONS
AA5092	"	"	"	NO3NO2
AA5093	"	"	"	CN
AA5094	"	"	"	TPH
AA5095	"	"	"	TOC
AA5096	40363004 (A-G)	BOBKM3	"	SVOC
AA5097	"	"	"	METALS
AA5098	"	"	"	ANIONS
AA5099	"	"	"	NO3NO2
AA5100	"	"	"	CN
AA5101	"	"	"	TPH
AA5102	"	"	"	TOC
AA5103	40363005 (A-G)	BOBKM5	"	SVOC
AA5104	"	"	"	METALS
AA5105	"	"	"	ANIONS
AA5106	"	"	"	NO3NO2
AA5107	"	"	"	CN
AA5108	"	"	"	TPH
AA5109	"	"	"	TOC

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KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5189	404016-01 (A-G)	BOBNQ5	SOIL	SVOC
AA5190	"	"	"	METALS
AA5191	"	"	"	ANIONS
AA5192	"	"	"	NO3NO2
AA5193	"	"	"	CN
AA5194	"	"	"	TPH
AA5195	"	"	"	TOC
AA5196	404016-02 (A-G)	BOBNQ4	"	SVOC
AA5197	"	"	"	METALS
AA5198	"	"	"	ANIONS
AA5199	"	"	"	NO3NO2
AA5200	"	"	"	CN
AA5201	"	"	"	TPH
AA5202	"	"	"	TOC
AA5203	404016-03 (A-G)	BOBKP7	"	SVOC
AA5204	"	"	"	METALS
AA5205	"	"	"	ANIONS
AA5206	"	"	"	NO3NO2
AA5207	"	"	"	CN
AA5208	"	"	"	TPH
AA5209	"	"	"	TOC
AA5210	404016-04 (A-G)	BOBKP8	"	SVOC
AA5211	"	"	"	METALS
AA5212	"	"	"	ANIONS
AA5213	"	"	"	NO3NO2
AA5214	"	"	"	CN
AA5215	"	"	"	TPH
AA5216	"	"	"	TOC

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KNOXVILLE, TN

Client Project ID: Westinghouse Hanford

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III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5217	404016-05 (A-G)	BOBKN9	SOIL	SVOC
AA5218	"	"	"	METALS
AA5219	"	"	"	ANIONS
AA5220	"	"	"	NO3NO2
AA5221	"	"	"	CN
AA5222	"	"	"	TPH
AA5223	"	"	"	TOC
AA5224	404016-06 (A-G)	BOBKM7	"	SVOC
AA5225	"	"	"	METALS
AA5226	"	"	"	ANIONS
AA5227	"	"	"	NO3NO2
AA5228	"	"	"	CN
AA5229	"	"	"	TPH
AA5230	"	"	"	TOC
AA5231	404016-07 (A-G)	BOBKP5	"	SVOC
AA5232	"	"	"	METALS
AA5233	"	"	"	ANIONS
AA5234	"	"	"	NO3NO2
AA5235	"	"	"	CN
AA5236	"	"	"	TPH
AA5237	"	"	"	TOC
AA5423	404065-01	BOBNQ8	"	SVOC
AA5424	"	"	"	METALS
AA5425	"	"	"	ANIONS
AA5426	"	"	"	NO3NO2
AA5427	"	"	"	CN
AA5428	"	"	"	TPH

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IT Corporation
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Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

III. Quality Control (Continued)

TABLE I

Knoxville ID	Richland ID	WHC ID	Matrix	Test
AA5435	404065-02	BOBNQ3	SOIL	SVOC
AA5436	"	"	"	METALS
AA5437	"	"	"	ANIONS
AA5438	"	"	"	NO3NO2
AA5439	"	"	"	CN
AA5440	"	"	"	TPH

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

IT Corporation
May 17, 1994

Client Project ID: Westinghouse Hanford

Job Number: 263; 290; 299; 306

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
Project Manager

9613474.1063

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

403489 01 — Sample Identification

1)

B09WK2

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

LER 3-22-94

[] Field Transfer of Custody — Chain of Possession Less than 100 CPM (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 Laurie Rogers 1310	ITAS Kevin Hattenburg 1100	3/25/94 1100
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.1064

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-23-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

40348902 — Sample Identification

1) B09WK4

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349002

2) 40348903 B09WK5

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349003

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 1310	1025 10 00 am	3-25-94 10 00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.1065

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-21-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 403489 B09WJ9

05

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

403499004

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-21-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 Joann E. Rogers 1310	ITAS Dawn Hottinlug	3-25-94 10:00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.1066

WO 263

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: SMH-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WK0

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2) B09WK1

403489 06

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349005

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 3-24-94 1310	Received by:	Date/Time: 3-25-94 10 00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO# 290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006448

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SIVL 457
Bill of Lading/Airbill No. N/A
Offsite Property No. W74-0-0367 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
03630 03 A	BOBKM1	S	3-29-94	0850	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM1	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM1	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM1	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM1	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM1	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM1	S			(1) 125ml aGs	TOC	9060	
03631 03	BOBKM1	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
[illegible]	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	[illegible] RM Arnold
[illegible] RM Arnold	3-31-94	1055	[illegible] 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413974.1067

045

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006450

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. 5141459
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
03630 04 A	BOBKM3	S	3-29-94	0944	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM3	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM3	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM3	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM3	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM3	S			(1) 125ml aGs	TOC	9060	
03631 04	BOBKM3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
RT Sickle RT Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	RM Arnold RM Arnold
RM Arnold RM Arnold	3-31-94	1055	R. Boud 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9513474.1068

050

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006451

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SWL #59
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0569 #46
Method of Shipment Government truck
Field Logbook No. WRM# 5-31-94
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
103 630 01A	BOBKM4	S	3-29-94	0950	(1) 250ml aG	Semi-VOA CLP	
B	BOBKM4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKM4	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKM4	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKM4	S			(1) 125ml G	Cyanide CPL	
F	BOBKM4	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKM4	S			(1) 125ml aGs	TOC 9060	
03663 01	BOBKM4	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle	5-31-94	0815	[illegible]
[illegible]	5-31-94	0815	[illegible]
[illegible]	5-31-94	1055	R. Boyd IT 3-31-94 1160

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.1069

051

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006452

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. Seal 526
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
03630 05 A	BOBKM5	S	3-29-94	1030	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM5	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM5	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM5	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM5	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM5	S			(1) 125ml aGs	TOC	9060	
03631 05	BOBKM5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	3-31-94	0815	Arnold L. Edwards
Arnold L. Edwards	3-31-94	0815	Ricardo Rhilfrwold
Ricardo Rhilfrwold	3-31-94	1055	R. Boyd Jr 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

052

9413114.1070

WO#290

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006453

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SML 526
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
0830 02A	BOBKM6	S	3-29-94	1058	(1) 250ml aG	Semi-VOA CLP	
B	BOBKM6	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKM6	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKM6	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKM6	S			(1) 125ml G	Cyanide CPL	
F	BOBKM6	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKM6	S			(1) 125ml aGs	TOC 9060	
1030 02	BOBKM6	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	3-31-94	0815	[illegible]
[illegible]	3-31-94	0815	[illegible]
[illegible]	~~4-5-5~~ 3-31-94	1015	[illegible] 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413474.1071

053

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006454

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SNL 906
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation ~~216-U-8 Vitrified Clay Pipeline~~ 200 W 2 [illegible] 3-30-94
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations ~~216-U-8~~ Crib W/42 Tile field [illegible] 3-30-94
Offsite Property No. W94-0-0369#47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104016 06A	BOBKM7	S	3-30-94	17930	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM7	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM7	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM7	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM7	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM7	S			(1) 125ml aGs	TOC	9060	
104017 06	BOBKM7	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	Ray Arnold Ray Arnold
Ray Arnold Ray Arnold	4-1-94	1210	Tom Gilmore Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9519744.1072

054

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006469

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SWL 413
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations Z Ditch
Offsite Property No. W94-0-0567 #47
Field Logbook No.

SPECIAL INSTRUCTIONS

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
04016 07 A BOBKP5	S	3-30-94	1330	(1) 250ml aG	Semi-VOA CLP	
B BOBKP5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBKP5	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBKP5	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBKP5	S			(1) 125ml G	Cyanide CPL	
F BOBKP5	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBKP5	S			(1) 125ml aGs	TOC 9060	
04017 07 BOBKP5	S	↓	↓	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RW Arnold RW Arnold
RW Arnold RW Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9615974.1073

055

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006473

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations U1/U2 Tile Field
Ice Chest No. SYL 906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0367#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104016 03 A	B0BKP7	S	3-30-94	0940	(1) 250ml aG	Semi-VOA	CLP	
B	B0BKP7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	B0BKP7	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	B0BKP7	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	B0BKP7	S			(1) 125ml G	Cyanide	CPL	
F	B0BKP7	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	B0BKP7	S			(1) 125ml aGs	TOC	9060	
104017 03	B0BKP7	S	3-30-94	0940	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

056

9413174.1074

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
	WO#299	006474

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations U1/U2 Tile Field
Ice Chest No. 5142 906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104016 04 A	BOBKP8	S	3-30-94	0900	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKP8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKP8	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKP8	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKP8	S			(1) 125ml G	Cyanide	CPL	
F	BOBKP8	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKP8	S			(1) 125ml aGs	TOC	9060	
104017 04	BOBKP8	S	3-30-94	0900	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
[illegible]	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	[illegible] ITAS Tom Gilmore

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.0076

057

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006466

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation ~~216-U-8 Vitrified Clay Pipeline~~ 200 [illegible] 3-30-94
Sampling Locations ~~216-U-8 Crib~~ [illegible] 3-30-94
Ice Chest No. SML 906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0367 #299
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
404016								
5 A	BOBKN9	S	3 30 94	1100	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKN9	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKN9	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKN9	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKN9	S			(1) 125ml G	Cyanide	CPL	
F	BOBKN9	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKN9	S			(1) 125ml aGs	TOC	9060	
404017 05	BOBKN9	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	[illegible] Tom Gilmore, ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413474.1076

058

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006262

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-10 Pond
Ice Chest No. SWL 415
Bill of Lading/Airbill No. N/A
Offsite Property No. W94 0-0369 #47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
104016 02 A	BOBNQ4	S	3-30-94	1330	(1) 250ml aG	Semi-VOA CLP	
B	BOBNQ4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBNQ4	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBNQ4	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBNQ4	S			(1) 125ml G	Cyanide CPL	
F	BOBNQ4	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBNQ4	S			(1) 125ml aGs	TOC 9060	
104017 02	BOBNQ4	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413974.1077

000087

059

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST WO#299	Page 1 of 1
		006263

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-10 Pond
Ice Chest No. SWL413
Bill of Lading/Airbill No. N/A
Offsite Property No. WH4-0 0369-#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
04016 01 A	BOBNQ5	S	3-30-94	1345	(1) 250ml aG	Semi-VOA	CLP	
B	BOBNQ5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBNQ5	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBNQ5	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBNQ5	S			(1) 125ml G	Cyanide	CPL	
F	BOBNQ5	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBNQ5	S			(1) 125ml aGs	TOC	9060	
04017 01	BOBNQ5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-1-94	1000	RM Arnold
RM Arnold	4-1-94	1210	Tim Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413474.1078

090

WO #306

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006261

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-10 Pond
Ice Chest No. GW5009
Bill of Lading/Airbill No. N/A
Offsite Property No.
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS
Analyze per SAF 94-065.

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
A	BOBNQ3	S	3-31-94	1200	(1) 250ml aG	Semi-VOA CLP	
B	BOBNQ3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBNQ3	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBNQ3	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBNQ3	S			(1) 125ml G	Cyanide CPL	
F	BOBNQ3	S			(1) 125ml Gs	TPH Diesel Range 8015m	
	~~BOBNQ3~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ RSK 3-31-94 9060	
	BOBNQ3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

A 40406502
B
C
D
E
F
~~A~~ 40406
11040 6602 Rad

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-4-94	0830	David L. Edwards
David L. Edwards	4-5-94	0815	Heidelberg OC
			4-5 1030

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413944.0079

061

WO#306

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006267

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. GW0020
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations 216-U-11 Trench
Offsite Property No.
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
A	B0BNQ8	S	3-31-94	1405	(1) 250ml aG	Semi-VOA	CLP	
B	B0BNQ8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	B0BNQ8	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	B0BNQ8	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	B0BNQ8	S			(1) 125ml G	Cyanide	CPL	
F	B0BNQ8	S			(1) 125ml Gs	TPH Diesel Range	8015m	
	~~B0BNQ8~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ RJL 3-31-94	9060	
	B0BNQ8	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

404065 01
404066 01

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-4-94	0830	David L. Edwards
David L. Edwards	4-5-94	0815	[illegible]

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

062

9413474.1080

9613474.1081

Attachment 5

Data Validation Supporting Documentation

GENERAL GC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200 UP7		DATA PACKAGE: W0013-ITC-029
VALIDATOR: C Jensen	LAB: ITC	DATE: 6/12/94
CASE:		SDG:

ANALYSES PERFORMED					
☐ 8010	☒ 8015 M	☐ 8020	☐ 8021	8140	8141
☐ 8150	☐ 8151	☐ WTPH-HCID	☐ WTPH-G	☐ WTPH-D	☐
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX: Soils: (20)

B0BN05	B0BKN9	B0BKM1	B09WJ9
B0BN03	B0BKM7	B0BKM3	B09WK7
B0BN04	B0BKP5	B0BKM5	B09WK4
B0BKP7	B0BKM4	B0BN05	B09WK5
B0BKP8	B0BKM6	B09WK1	B09WK2

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: Verification performed by WHC

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments:

064

GENERAL GC DATA VALIDATION CHECKLIST

3. INSTRUMENT CALIBRATION

3.1 INITIAL CALIBRATION

Was an initial calibration performed? . . . . . (Yes) No N/A

Are %RSD values for calibration or response factors acceptable? . . . . . Yes No (N/A)

Comments: ICAL performed using U.C. standards, r = .996.
%D from 3/10 ICAL 2.7%, 8.8, 7.8

This analysis is a GCFID run.

3.2 CONTINUING CALIBRATION

Was a continuing calibration check performed? . . . . . (Yes) No N/A

Are %D values for calibration or response factors acceptable? . (Yes) No N/A

Comments: See above for %D for continuing cal.

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 surrogates analyzed? . . . . . (Yes) No N/A

Are surrogate recoveries acceptable? . . . . . (Yes) No N/A

Were MS/MSD samples analyzed? . . . . . (Yes) No N/A

Are MS/MSD recoveries acceptable? . . . . . (Yes) No N/A

Were LCS samples analyzed? . . . . . (Yes) No N/A

Are LCS recoveries acceptable? . . . . . (Yes) No N/A

065

GENERAL GC DATA VALIDATION CHECKLIST

Comments:

6. PRECISION

Are MS/MSD sample RPD 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
Comments:

7. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . Yes No N/A
Is compound quantitation acceptable? . . . . . Yes No N/A
Comments:

8. REPORTED RESULTS AND DETECTION LIMITS

Are results reported for all requested analyses? (1) . . . . . Yes No N/A
Are all results supported in the raw data? . . . . . Yes No N/A
Do results meet the CRQLs? . . . . . Yes No N/A
Comments: The reporting limit for this analysis was 10 mg/kg.

(1) TPH diesel range was requested on the chain of custody and high boiling petroleum hydrocarbons, as diesel range organics were reported on the laboratory result forms.

HOLDING TIME SUMMARY

SDG:	VALIDATOR: Chenyan	DATE: 6/12/94	PAGE 1 OF 2
COMMENTS: Kerosene WOOIB-IIC-029			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B0B3NQ8	Petroleum HC	3/31/94	4/8/94	4/13/94	8	5	none
B0B3NQ3		3/31/94			8		
B0B3NQ4		3/30/94			9		
B0BKP7		3/30/94			9		
B0BKP8		3/30/94			9		
B0BKN9		3/30/94			9		
B0BKM7		3/30/94			9		
B0BKP5		3/30/94			9		
B0BKM4		3/29/94	4/8/94	4/12/94	10	4	
B0BKM6		3/29/94			10		
B0BKM1		3/29/94			10		
B0BKM3		3/29/94			10		
B0BKM5		3/29/94			10		
B0B3NQ5		3/30/94			9		
B09WK1		3/22/94	3/29/94	4/8/94	7	9	
B09WJ9		3/21/94	3/29/94	4/8/94	8	9	
B09WK2		3/22/94	3/29/94	4/8/94	7	9	

HOLDING TIME SUMMARY

SDG:	VALIDATOR: C Jensen	DATE: 6/12/94	PAGE 2 OF 2
COMMENTS: Kerosene W0013 - ITC - 029			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WK4	Petroleum HC	3/23/94	3/29/94	4/8/94	6	10	none
B09WK5	↓	3/23/94	3/29/94	4/8/94	6	10	↓
~~B09WK7~~	↓		3/29/94	4/8/94 CJ 6/12/94			

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MEMORANDUM

JUN 1994 RECEIVED TQO

TO: 200-UP-2 Project QA Record

June 24, 1994

FR: Susan Winter, Golder Associates Inc.

RE: RADIOCHEMISTRY DATA VALIDATION SUMMARY FOR DATA PACKAGE: W0013-ITC-029 (923-E418, Filename W0013R.UP2)

INTRODUCTION

This memo presents the results of data validation on data package W0013-ITC-029 prepared by the International Technology Corporation (ITC) laboratory. The samples validated along with the analyses reported and the methods of analysis are provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09WJ9	03/21/94	SOIL	SEE NOTE 1
B09WK1	03/22/94	SOIL	
B09WK2	03/22/94	SOIL	
B09WK4	03/23/94	SOIL	
B09WK5	03/23/94	SOIL	
B0BKM1	03/29/94	SOIL	
B0BKM3	03/29/94	SOIL	
B0BKM4	03/29/94	SOIL	
B0BKM5	03/29/94	SOIL	
B0BKM6	03/29/94	SOIL	
B0BKM7	03/30/94	SOIL	
B0BKN9	03/30/94	SOIL	
B0BKP5	03/30/94	SOIL	
B0BKP7	03/30/94	SOIL	
B0BKP8	03/30/94	SOIL	
B0BNQ3	03/31/94	SOIL	
B0BNQ4	03/30/94	SOIL	
B0BNQ5	03/30/94	SOIL	
B0BNQ8	03/31/94	SOIL	

RECEIVED JUN 27 1994 VALIDATION DOCUMENTATION SDLA

Note 1. All samples were analyzed for gross alpha, gross beta, selenium-79, total strontium, technetium-99, iodine-129, alpha spectroscopy (uranium 233/234, uranium 235, uranium-238, plutonium-238, plutonium-239/240, americium-241, curium-242, curium-244, and neptunium-237), total uranium, and gamma spectroscopy.

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

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

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DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met with the exception of the deficiencies identified below.

Sample Result Verification. All sample results were supported in the raw data with the exception of the thorium-234 minimum detectable acitivity (MDA) value for sample B0BKM7 and the MDA values for several gamma spectroscopy analytes associated with sample B09WK4. The results have been corrected on the laboratory report forms.

The MDA and sample result calculations for technetium-99 and selenium-79 and the MDA calculation for neptunium-237 could not be verified. Therefore, associated sample results have been qualified as estimated. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

Detection Limits. Detection limit goals were met for all results with the exception of plutonium-239/240, plutonium-238, europium-152, europium-155, and technetium-99. Attachment 5 provides supporting documentation.

Completeness. The data package was complete for all requested analyses. A total of nineteen samples were validated in this data package with a total of 667 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data.

Laboratory Blanks

- Uranium-234, americium-241 and potassium-40 were detected at a positive concentrations in the associated laboratory blanks. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

Spike Sample Recovery

- Selenium-79 and neptunium-237 matrix spike percent recoveries were unacceptable. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

Laboratory Control Sample

- Americium-241, neptunium-237, uranium-235 and total strontium laboratory control sample percent recoveries were unacceptable. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

Laboratory Duplicate

- Potassium-40 laboratory duplicate relative percent difference was unacceptable. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

DATA REPORTING

- Results reported at a concentration of less than the minimum detectable activity (MDA) have been qualified as undetected (U) and the MDA is reported in the validated data summary in Attachment 3.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Radiochemical Analyses, WHC-SD-EN-SPP-001, Rev. 1, 1993. Westinghouse Hanford Company, Richland, Washington.

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ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF RADIOCHEMISTRY DATA REPORTING QUALIFIERS

U - Indicates the constituent was analyzed for, but was not detected at a concentration above the minimum detectable activity (MDA). The concentration reported is the MDA corrected for sample aliquot size, dilution factors and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and was not detected at a concentration above the MDA. Due to a quality control deficiency identified during data validation, the concentration reported may not accurately reflect the sample MDA. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. The concentration reported is qualified as estimated due to a quality control deficiency identified during data validation. The associated data should be considered usable for decision making purposes.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported is qualified as unusable due to a quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported is qualified as unusable due to a quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

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ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

SDG: W0013-ITC-029	VALIDATOR:	DATE: June 23, 1994	PAGE 1 OF 2
COMMENTS: RADIOCHEMISTRY			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
URANIUM-234	J	B09WK4 B09WK5	DETECTED IN ASSOCIATED BLANK, SAMPLE RESULTS > MDA AND <5xBLANK CONCENTRATION
AMERICIUM-241	J	B09WK2 B09WK4 B09WK5 B09WJ9 B09WK1 B0BKM4 B0BKM6 B0BKM1 B0BKM3 B0BKM5 B0BNQ5 B0BNQ4 B0BKP7 B0BKP8 B0BKN9 B0BKM7 B0BNQ3	DETECTED IN ASSOCIATED BLANKS, SAMPLE RESULTS > MDA AND <5xASSOCIATED BLANK CONCENTRATION
POTASSIUM-40	J	B09WK4 B09WK5 B0BNQ5 B0BNQ4 B0BKP7 B0BKP8	DETECTED IN ASSOCIATED BLANKS, SAMPLE RESULTS > MDA AND <5xBLANK CONCENTRATION
POTASSIUM-40	J - DETECTS UJ - NONDETECTS	ALL SAMPLES	DUPLICATE RPD > 35%
SELENIUM-79	J - DETECTS UJ - NONDETECTS	ALL SAMPLES	MS %R < 60% BUT > 10%
NEPTUNIUM-237	J - DETECTS UJ - NONDETECTS	ALL SAMPLES	MS %R < 60% BUT > 10%
AMERICIUM-241	J	ALL SAMPLES	LCS %R > 130%
URANIUM-235	J	B09WK2 B09WJ9 B09WK1 B0BKM4 B0BKM1 B0BKM3 B0BKN9 B0BKM7 B0BNQ3 B0BNQ8	LCS %R > 130%
NEPTUNIUM-237	J	B0BNQ8	LCS %R > 130%

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DATA QUALIFICATION SUMMARY

SDG: W0013-ITC-029	VALIDATOR: JW	DATE: June 27, 1994	PAGE 1 OF 1
COMMENTS: RADIOCHEMISTRY			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
TOTAL STRONTIUM	J	B0BKM4 B0BKM6 B0BKM1 B0BKM3 B0BKM5 B0BKN9 B0BKM7 B0BKP5 B0BNQ3 B0BNQ8	LCS %R > 130%
TECHNETIUM-99	J - DETECTS UJ - NONDETECTS	ALL SAMPLES	RESULT AND MDA CALCULATIONS COULD NOT BE VERIFIED
SELENIUM-79	J - DETECTS UJ - NONDETECTS	ALL SAMPLES	RESULT AND MDA CALCULATIONS COULD NOT BE VERIFIED
NEPTUNIUM-237	UJ	B09WK2 B09WK4 B09WK5 B09WJ9 B09WK1 B0BKM4 B0BKM6 B0BKM1 B0BKM3 B0BKM5 B0BNQ5 B0BNQ4 B0BKP7 B0BKP8 B0BKN9 B0BKM7 B0BKP5 B0BNQ3	MDA CALCULATION COULD NOT BE VERIFIED

JW 6/27/94 Revised Page 008

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ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B09WJ9		B09WK1		B09WK2		B09WK4		B09WK5		B0BKM1	
	Date	3-21-94		3-22-94		3-22-94		3-23-94		3-23-94		3-29-94	
	Location	---		---		---		---		---		216-U-8	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
AMERICIUM-241	PCI/G	0.787	J	0.688	J	0.726	J	0.714	J	0.630	J	0.743	J
CURIUM-242	PCI/G	0.029	U	0.033	U	0.032	U	0.029	U	0.041	U	0.022	U
CURIUM-244	PCI/G	0.034	U	0.026	U	0.026	U	0.023	U	0.037	U	0.026	U
NEPTUNIUM-237	PCI/G	0.020	UJ	0.017	UJ	0.011	UJ	0.020	UJ	0.011	UJ	0.011	UJ
PLUTONIUM-238	PCI/G	0.016	U	0.025	U	0.023	U	0.016	U	0.033	U	0.023	U
PLUTONIUM-239/240	PCI/G	0.016	U	0.025	U	0.014	U	0.025	U	0.018	U	0.191	
URANIUM-234	PCI/G	0.593		1.250		2.200		0.101	J	0.087	J	1.800	
URANIUM-235	PCI/G	0.038	J	0.417	J	0.086	J	0.033	U	0.035	U	0.080	J
URANIUM-238	PCI/G	0.683		0.840		2.080		0.088		0.043		1.510	
POTASSIUM-40	PCI/G	14.900	J	15.800	J	10.400	J	0.237	J	0.183	J	16.000	J
COBALT-60	PCI/G	0.021	U	0.023	U	0.024	U	0.013	U	0.012	U	0.023	U
EUROPIUM-152	PCI/G	0.126	U	0.154		0.128	U	0.065	U	0.065	U	0.111	U
MANGANESE-54	PCI/G	---		0.031		---		---		---		---	
CESIUM-137	PCI/G	0.020	U	0.022	U	0.023	U	0.012	U	0.012	U	29.200	
CESIUM-134	PCI/G	0.019	U	0.018	U	0.022	U	0.012	U	0.012	U	0.032	U
RUTHENIUM-106	PCI/G	0.179	U	0.188	U	0.211	U	0.115	U	0.117	U	0.330	U
RADIUM-224	PCI/G	0.842		1.540		1.110		0.109		0.121		0.768	
SODIUM-22	PCI/G	0.265	U	0.028	U	0.026	U	0.014	U	0.011	U	0.026	U
EUROPIUM-155	PCI/G	0.058	U	0.106		0.069	U	0.031	U	0.032	U	0.113	U
THORIUM-234	PCI/G	10.500		15.800		12.000		4.200		---		9.740	
EUROPIUM-154	PCI/G	0.074	U	0.076	U	0.073	U	0.038	U	0.031	U	0.073	U
RADIUM-226	PCI/G	0.640		1.060		0.975		---		0.083		0.617	
URANIUM-235 (by gamma scan)	PCI/G	---		0.078		0.184		---		---		---	
URANIUM-238 (by gamma scan)	PCI/G	0.662		1.160		0.990		0.126		0.119		0.652	
ACTINIUM-228	PCI/G	0.944		1.470		1.190		0.191		0.164		0.889	
THALLIUM-208	PCI/G	0.315		0.458		0.393		---		0.046		0.293	
BISMUTH-214	PCI/G	0.640		1.060		0.975		---		---		0.617	
LEAD-212	PCI/G	0.812		1.460		1.070		0.105		0.117		0.745	
LEAD-214	PCI/G	0.662		1.160		0.990		0.126		0.119		0.652	
THORIUM-232	PCI/G	0.944		1.470		1.190		0.191		0.164		0.889	
RADIUM-228	PCI/G	0.956		1.490		1.210		0.193		0.166		0.898	
IODINE-129	PCI/G	0.846	U	1.080	U	1.010	U	0.527	U	0.518	U	1.530	U
ALPHA	PCI/G	6.790		17.300		14.600		4.480	U	3.530	U	17.500	
BETA	PCI/G	22.700		29.100		21.900		4.450		3.290		91.300	
TOTAL STRONTIUM	PCI/G	0.106	U	0.103	U	0.099	U	0.097	U	0.101	U	9.400	J
SELENIUM-79	PCI/G	1.430	UJ	1.430	UJ	1.660	J	1.430	UJ	1.440	UJ	1.440	UJ
TECHNETIUM-99	PCI/G	0.770	UJ	0.770	UJ	0.770	UJ	0.770	UJ	0.770	UJ	1.930	J
URANIUM	UG/G	2.490		3.580		6.770		0.195		0.222		5.720	

Verified
[illegible] 6/24/94

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Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	BOBKM3		BOBKM4		BOBKM5		BOBKM6		BOBKM7		BOBKN9	
	Date	3-29-94		3-29-94		3-29-94		3-29-94		3-30-94		3-30-94	
	Location	216-U-8		216-U-8		216-U-8		216-U-8		U1/U2 TILE FIELD		U14 DITCH	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
AMERICIUM-241	PCI/G	0.982	J	0.777	J	0.527	J	0.480	J	0.619	J	0.809	J
CURIUM-242	PCI/G	0.042	U	0.044	U	0.029	U	0.028	U	0.032	U	0.022	U
CURIUM-244	PCI/G	0.034	U	0.036	U	0.029	U	0.017		0.026	U	0.027	U
NEPTUNIUM-237	PCI/G	0.011	UJ	0.011	UJ	0.011	UJ	0.011	UJ	0.011	UJ	0.011	UJ
PLUTONIUM-238	PCI/G	0.034		0.039	U	0.045	U	0.021	U	0.016	U	0.026	U
PLUTONIUM-239/240	PCI/G	0.749		0.036		1.010		0.053		0.286		0.387	
URANIUM-234	PCI/G	1.070		0.739		0.810		1.100		1.290		0.943	
URANIUM-235	PCI/G	0.050	J	0.264	J	0.023	U	0.069	U	0.079	J	0.043	J
URANIUM-238	PCI/G	1.040		0.564		0.906		1.080		1.070		0.928	
POTASSIUM-40	PCI/G	14.800	J	15.500	J	15.500	J	15.100	J	14.400	J	13.900	J
COBALT-60	PCI/G	0.015	U	0.021	U	0.020	U	0.022	U	0.015	U	0.025	
EUROPIUM-152	PCI/G	0.124		0.118		0.105	U	0.136		0.085		0.081	U
MANGANESE-54	PCI/G	---		---		---		---		---		---	
CESIUM-137	PCI/G	181.000		8.070		1.890		0.404		64.500		0.728	
CESIUM-134	PCI/G	0.058	U	0.022	U	0.018	U	0.017	U	0.032	U	0.014	U
RUTHENIUM-106	PCI/G	0.172		0.220	U	0.174	U	0.016	U	0.327	U	0.138	U
RADIUM-224	PCI/G	0.748		0.813		0.784		0.834		0.707		0.738	
SODIUM-22	PCI/G	0.020	U	0.024	U	0.025	U	0.025	U	0.017	U	0.018	U
EUROPIUM-155	PCI/G	0.199	U	0.081		0.063	U	0.056	U	0.100	U	0.044	U
THORIUM-234	PCI/G	---		1.570		4.190		4.580		8.340	U	8.330	
EUROPIUM-154	PCI/G	0.056	U	0.067	U	0.069	U	0.069	U	0.047	U	0.050	U
RADIUM-226	PCI/G	0.637		0.667		0.667		0.683		0.549		0.575	
URANIUM-235 (by gamma scan)	PCI/G	---		---		---		---		---		0.104	
URANIUM-238 (by gamma scan)	PCI/G	0.577		0.751		0.680		0.676		0.645		0.609	
ACTINIUM-228	PCI/G	---		0.812		0.802		0.930		0.714		0.762	
THALLIUM-208	PCI/G	---		0.318		0.297		0.283		---		0.241	
BISMUTH-214	PCI/G	0.637		0.667		0.667		0.683		0.549		0.575	
LEAD-212	PCI/G	0.711		0.790		0.760		0.810		0.680		0.709	
LEAD-214	PCI/G	0.577		0.751		0.680		---		0.645		0.609	
THORIUM-232	PCI/G	0.789		0.812		0.802		0.930		---		0.762	
RADIUM-228	PCI/G	---		0.820		0.810		0.939		0.724		0.773	
IODINE-129	PCI/G	2.310	U	1.270	U	1.040	U	0.948	U	0.204	U	0.876	U
ALPHA	PCI/G	12.700		11.500		19.500		12.700		11.800		14.500	
BETA	PCI/G	299.000		50.400		43.600		32.100		114.000		25.200	
TOTAL STRONTIUM	PCI/G	19.600	J	7.370	J	3.830	J	2.210	J	9.370	J	0.174	J
SELENIUM-79	PCI/G	1.430	UJ	1.430	UJ	1.430	UJ	1.430	UJ	1.710	J	1.430	UJ
TECHNETIUM-99	PCI/G	2.840	J	0.770	UJ	1.550	J	0.770	UJ	0.770	UJ	0.770	UJ
URANIUM	UG/G	2.710		3.020		2.760		2.670		3.000		2.870	

Verified
[illegible] 6/24/94

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Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B0BKP5		B0BKP7		B0BKP8		B0BNQ3		B0BNQ4		B0BNQ5	
	Date	3-30-94		3-30-94		3-30-94		3-31-94		3-30-94		3-30-94	
	Location	Z DITCH		U1/U2-TILE FIELD		U1/U2-TILE FIELD		216-U-10		216-U-10		216-U-10	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
AMERICIUM-241	PCI/G	4.740	J	0.461	J	0.791	J	3.460	J	0.696	J	0.721	J
CURIUM-242	PCI/G	0.033	U	0.029	U	0.025	U	0.027	U	0.058	U	0.034	U
CURIUM-244	PCI/G	0.033	U	0.024	U	0.021	U	0.025	U	0.023	U	0.041	U
NEPTUNIUM-237	PCI/G	0.011	UJ	0.017	UJ	0.017	UJ	0.011	UJ	0.011	UJ	0.020	UJ
PLUTONIUM-238	PCI/G	0.524		0.025	U	0.057	U	3.140		0.041	U	0.031	U
PLUTONIUM-239/240	PCI/G	22.200		0.025	U	0.031	U	3.720		0.056	U	0.020	U
URANIUM-234	PCI/G	0.821		0.064		0.066		1.330		0.053		0.031	U
URANIUM-235	PCI/G	0.040	U	0.027	U	0.045	U	0.081	J	0.023	U	0.027	U
URANIUM-238	PCI/G	1.030		0.103		0.049		1.090		0.037		0.045	
POTASSIUM-40	PCI/G	15.100	J	0.349	J	0.190	J	11.300	J	0.425	J	0.226	J
COBALT-60	PCI/G	0.017	U	0.010	U	0.010	U	0.030		0.013	U	0.014	U
EUROPIUM-152	PCI/G	0.084	U	0.052	U	0.054	U	0.071		0.074	U	0.068	U
MANGANESE-54	PCI/G	---		---		---		---		---		---	
CESIUM-137	PCI/G	15.900		0.010	U	0.009	U	67.100		0.014	U	0.013	U
CESIUM-134	PCI/G	0.021	U	0.009	U	0.009	U	0.029	U	0.013	U	0.012	U
RUTHENIUM-106	PCI/G	0.214	U	0.091	U	0.087	U	0.302	U	0.125	U	0.112	U
RADIUM-224	PCI/G	0.902		0.130		0.126		0.485		0.143		0.136	
SODIUM-22	PCI/G	0.018	U	0.012	U	0.010	U	0.015	U	0.016	U	0.014	U
EUROPIUM-155	PCI/G	0.073		0.024	U	0.021	U	0.089	U	0.032	U	0.031	U
THORIUM-234	PCI/G	7.180		1.500		---		5.950		---		3.870	
EUROPIUM-154	PCI/G	0.051	U	0.032	U	0.026	U	0.040	U	0.043	U	0.039	U
RADIUM-226	PCI/G	0.648		0.106		---		0.443		0.107		0.083	
URANIUM-235 (by gamma scan)	PCI/G	---		---		---		---		0.025		---	
URANIUM-238 (by gamma scan)	PCI/G	0.721		0.120		0.115		0.422		0.107		---	
ACTINIUM-228	PCI/G	0.852		0.107		0.140		0.560		0.172		0.182	
THALLIUM-208	PCI/G	0.307		---		0.041		---		---		0.062	
BISMUTH-214	PCI/G	0.648		0.106		---		0.443		---		---	
LEAD-212	PCI/G	0.866		0.125		0.121		0.466		0.138		0.132	
LEAD-214	PCI/G	0.721		0.120		0.115		0.422		0.107		0.115	
THORIUM-232	PCI/G	0.852		0.107		0.140		0.560		0.172		0.182	
RADIUM-228	PCI/G	0.864		0.109		0.142		0.568		0.174		0.183	
IODINE-129	PCI/G	1.270	U	0.537	U	0.525	U	1.990	U	0.550	U	0.553	U
ALPHA	PCI/G	53.100		4.490	U	4.230	U	30.800		3.850	U	4.400	U
BETA	PCI/G	36.800		2.840	U	3.200		147.000		2.840	U	2.850	U
TOTAL STRONTIUM	PCI/G	0.716	J	0.101	U	0.095	U	0.878	J	0.096	U	0.097	U
SELENIUM-79	PCI/G	14.300	UJ	1.440	UJ	1.440	UJ	1.440	UJ	1.430	UJ	1.440	UJ
TECHNETIUM-99	PCI/G	0.770	UJ	0.770	UJ	0.770	UJ	0.801	J	0.770	UJ	0.770	UJ
URANIUM	UG/G	3.190		0.161		0.163		10.900		0.142		0.142	

Verified

6/24/94

9513474.1068

012

Validated Data Summary, Data Package: W0013-ITC-029

	Samp#	B0BNQ8	
	Date	3-31-94	
	Location	216-U-11	
	Depth	---	
	Type	SOIL	
	Comments	---	
Parameter	Units	Result	Q
AMERICIUM-241	PCI/G	0.724	J
CURIUM-242	PCI/G	0.022	U
CURIUM-244	PCI/G	0.018	U
NEPTUNIUM-237	PCI/G	0.015	J
PLUTONIUM-238	PCI/G	0.014	U
PLUTONIUM-239/240	PCI/G	0.131	
URANIUM-234	PCI/G	3.730	
URANIUM-235	PCI/G	0.141	J
URANIUM-238	PCI/G	3.850	
POTASSIUM-40	PCI/G	12.900	J
COBALT-60	PCI/G	0.014	U
EUROPIUM-152	PCI/G	0.071	U
MANGANESE-54	PCI/G	---	
CESIUM-137	PCI/G	15.100	
CESIUM-134	PCI/G	0.018	U
RUTHENIUM-106	PCI/G	0.181	U
RADIUM-224	PCI/G	0.695	
SODIUM-22	PCI/G	0.016	U
EUROPIUM-155	PCI/G	0.060	U
THORIUM-234	PCI/G	4.810	
EUROPIUM-154	PCI/G	0.043	U
RADIUM-226	PCI/G	0.606	
URANIUM-235 (by gamma scan)	PCI/G	---	
URANIUM-238 (by gamma scan)	PCI/G	0.625	
ACTINIUM-228	PCI/G	0.693	
THALLIUM-208	PCI/G	0.236	
BISMUTH-214	PCI/G	0.606	
LEAD-212	PCI/G	0.667	
LEAD-214	PCI/G	0.625	
THORIUM-232	PCI/G	0.693	
RADIUM-228	PCI/G	0.702	
IODINE-129	PCI/G	1.220	U
ALPHA	PCI/G	13.800	
BETA	PCI/G	49.500	
TOTAL STRONTIUM	PCI/G	1.970	J
SELENIUM-79	PCI/G	1.430	UJ
TECHNETIUM-99	PCI/G	1.160	J
URANIUM	UG/G	4.250	

Verified
6/24/94

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9613474.1100

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-490-04	MATRIX:	SOIL
WHC ID:	BO9WJ9	DATE RECEIVED:	3/25/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	7.87E-01	1.63E-01	2.21E-01	3.83E-02	0.433	RD3302	
CM-242	1.07E-02	2.14E-02	2.15E-02	2.89E-02	0.433	RD3302	
CM-244	-6.75E-04	1.35E-03	1.36E-03	3.39E-02	0.433	RD3302	
NP-237	-1.46E-03	2.93E-03	2.94E-03	1.99E-02	0.569	RD3208	
PU-238	0.00E+00	0.00E+00	1.73E-02	1.56E-02	0.724	RD3209	
PU239/40	0.00E+00	0.00E+00	1.73E-02	1.56E-02	0.724	RD3209	
U-234	5.93E-01	1.40E-01	1.64E-01	3.97E-02	0.509	RD3234	
U-235	3.82E-02	3.66E-02	3.70E-02	3.79E-02	0.509	RD3234	
U-238DA	6.83E-01	1.50E-01	1.80E-01	3.79E-02	0.509	RD3234	
K-40	1.49E+01	6.22E-01	1.61E+00	N/A	N/A	RD3219	
CO-60	-4.10E-03	1.31E-02	1.31E-02	2.14E-02	N/A	RD3219	
EU-152	1.08E-01	6.82E-02	6.90E-02	1.26E-01	N/A	RD3219	
CS-137DA	-3.79E-03	1.21E-02	1.21E-02	1.96E-02	N/A	RD3219	
CS-134	8.11E-03	1.15E-02	1.15E-02	1.93E-02	N/A	RD3219	
RU-106DA	-6.72E-02	1.12E-01	1.12E-01	1.79E-01	N/A	RD3219	
RA-224DA	8.42E-01	4.03E-02	9.33E-02	N/A	N/A	RD3219	
NA-22	-4.59E-03	1.56E-02	1.56E-02	2.65E-01	N/A	RD3219	
EU-155	4.18E-02	3.36E-02	3.39E-02	5.78E-02	N/A	RD3219	
EU-154	1.39E-02	4.27E-02	4.27E-02	7.39E-02	N/A	RD3219	
RA-226DA	6.40E-01	5.49E-02	8.43E-02	N/A	N/A	RD3219	
TH-234	1.05E+01	6.56E+00	6.65E+00	N/A	N/A	RD3219	
U-238DA	6.62E-01	5.00E-02	8.29E-02	N/A	N/A	RD3219	
AC-228	9.44E-01	1.04E-01	1.40E-01	N/A	N/A	RD3219	
TL-208	3.15E-01	3.13E-02	4.44E-02	N/A	N/A	RD3219	
BI-214	6.40E-01	5.49E-02	8.43E-02	N/A	N/A	RD3219	
PB-212	8.12E-01	3.89E-02	9.00E-02	N/A	N/A	RD3219	
PB-214	6.62E-01	5.00E-02	8.29E-02	N/A	N/A	RD3219	
TH-232DA	9.44E-01	1.04E-01	1.40E-01	N/A	N/A	RD3219	
RA-228DA	9.56E-01	1.05E-01	1.42E-01	N/A	N/A	RD3219	
I-129LP	-7.78E-01	5.36E-01	5.42E-01	8.46E-01	N/A	RD3219	U
ALPHA	6.79E+00	3.91E+00	3.97E+00	4.05E+00	1	RD3222	
BETA	2.27E+01	3.46E+00	3.77E+00	2.87E+00	1	RD3222	
TOTAL-SR	2.02E-02	4.03E-02	4.06E-02	1.06E-01	0.795	RD3204	U
SE-79	5.74E-01	6.83E-01	1.87E+00	1.43E+00	0.661	RD3253	U
TC-99	3.27E-01	3.26E-01	1.52E+00	7.70E-01	0.689	ITAS-IT-RS-0001	U
URANIUM	2.49E+00	N/A	3.74E-01	4.60E-03	0.919	RD4200	

Verified
6/23/94

682A-6-93

9613474.1101

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-490-05	MATRIX:	SOIL
WHC ID:	B09WK1	DATE RECEIVED:	3/25/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	6.88E-01	1.62E-01	2.13E-01	3.85E-02	0.38	RD3302	
CM-242	0.00E+00	0.00E+00	3.64E-02	3.28E-02	0.38	RD3302	U
CM-244	9.62E-03	1.92E-02	1.93E-02	2.60E-02	0.38	RD3302	U
NP-237	-5.85E-04	1.17E-03	1.18E-03	1.67E-02	0.569	RD3208	U
PU-238	9.09E-03	1.82E-02	1.82E-02	2.46E-02	0.459	RD3209	U
PU239/40	1.82E-02	2.57E-02	2.59E-02	2.46E-02	0.459	RD3209	U
U-234	1.25E+00	1.80E-01	2.47E-01	4.02E-02	0.641	RD3234	
U-235	4.17E-01	1.05E-01	1.19E-01	3.64E-02	0.641	RD3234	
U-238DA	8.40E-01	1.48E-01	1.87E-01	3.42E-02	0.641	RD3234	
K-40	1.58E+01	5.86E-01	1.69E+00	N/A	N/A	RD3219	
CO-60	-1.31E-02	1.42E-02	1.43E-02	2.25E-02	N/A	RD3219	U
EU-152	1.54E-01	6.62E-02	6.80E-02	1.30E-01	N/A	RD3219	
MN-54	3.08E-02	1.67E-02	1.70E-02	N/A	N/A	RD3219	
CS-137DA	1.33E-02	1.22E-02	1.23E-02	2.17E-02	N/A	RD3219	U
CS-134	8.17E-03	1.06E-02	1.06E-02	1.82E-02	N/A	RD3219	U
RU-106DA	8.74E-02	1.09E-01	1.09E-01	1.88E-01	N/A	RD3219	U
RA-224DA	1.54E+00	4.71E-02	1.61E-01	N/A	N/A	RD3219	
NA-22	1.93E-03	1.65E-02	1.65E-02	2.81E-02	N/A	RD3219	U
EU-155	1.06E-01	4.25E-02	4.38E-02	6.90E-02	N/A	RD3219	
EU-154	5.28E-03	4.51E-02	4.51E-02	7.64E-02	N/A	RD3219	U
RA-226DA	1.06E+00	6.45E-02	1.24E-01	N/A	N/A	RD3219	
TH-234	1.58E+01	1.09E+01	1.10E+01	N/A	N/A	RD3219	
U-235	7.82E-02	8.16E-02	8.20E-02	N/A	N/A	RD3219	
U-238DA	1.16E+00	5.76E-02	1.29E-01	N/A	N/A	RD3219	
AC-228	1.47E+00	1.03E-01	1.79E-01	N/A	N/A	RD3219	
TL-208	4.58E-01	3.23E-02	5.61E-02	N/A	N/A	RD3219	
BI-214	1.06E+00	6.45E-02	1.24E-01	N/A	N/A	RD3219	
PB-212	1.46E+00	4.47E-02	1.52E-01	N/A	N/A	RD3219	
PB-214	1.16E+00	5.76E-02	1.29E-01	N/A	N/A	RD3219	
TH-232DA	1.47E+00	1.03E-01	1.79E-01	N/A	N/A	RD3219	
RA-228DA	1.49E+00	1.05E-01	1.83E-01	N/A	N/A	RD3219	
I-129LP	3.35E-01	6.12E-01	6.13E-01	1.08E+00	N/A	RD3219	U
ALPHA	1.73E+01	5.92E+00	6.21E+00	4.41E+00	1	RD3222	
BETA	2.91E+01	3.82E+00	4.27E+00	2.85E+00	1	RD3222	
TOTAL-SR	4.12E-03	3.69E-02	3.70E-02	1.03E-01	0.881	RD3204	U
SE-79	9.41E-01	6.90E-01	1.91E+00	1.43E+00	0.661	RD3253	U
TC-99	2.26E-01	3.27E-01	1.52E+00	7.70E-01	0.689	ITAS-IT-RS-0001	U
URANIUM	3.58E+00	N/A	5.36E-01	4.06E-03	0.919	RD4200	

Verified [illegible] 6/23/94

682A-6-93

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-03-490-01
MATRIX: SOIL
WHC ID: BO9WK2
DATE RECEIVED: 3/25/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	7.26E-01	1.36E-01	1.84E-01	3.38E-02	0.575	RD3302	U
CM-242	-6.42E-04	1.28E-03	1.29E-03	3.23E-02	0.575	RD3302	U
CM-244	5.86E-03	1.28E-02	1.28E-02	2.56E-02	0.575	RD3302	U
NP-237	0.00E+00	0.00E+00	0.00E+00	1.13E-02	0.569	RD3208	U
PU-238	4.26E-03	1.09E-02	1.09E-02	2.30E-02	0.785	RD3209	U
PU239/40	5.31E-03	1.06E-02	1.07E-02	1.44E-02	0.785	RD3209	U
U-234	9.20E+00	2.53E-01	4.00E-01	4.17E-02	0.576	RD3234	
U-235	8.56E-02	5.01E-02	5.15E-02	2.95E-02	0.576	RD3234	J
U-238DA	2.08E+00	2.45E-01	3.82E-01	1.96E-02	0.576	RD3234	
K-40	1.04E+01	6.03E-01	1.20E+00	N/A	N/A	RD3219	U
CO-60	-8.37E-05	1.50E-02	1.50E-02	2.45E-02	N/A	RD3219	U
EU-152	6.96E-02	7.05E-02	7.08E-02	1.28E-01	N/A	RD3219	U
CS-137DA	5.59E-03	1.39E-02	1.40E-02	2.34E-02	N/A	RD3219	U
CS-134	3.63E-03	1.33E-02	1.33E-02	2.19E-02	N/A	RD3219	U
RU-106DA	5.13E-02	1.26E-01	1.26E-01	2.11E-01	N/A	RD3219	U
RA-224DA	1.11E+00	4.59E-02	1.20E-01	N/A	N/A	RD3219	
NA-22	4.42E-03	1.50E-02	1.50E-02	2.64E-02	N/A	RD3219	U
EU-155	4.95E-02	4.02E-02	4.05E-02	6.91E-02	N/A	RD3219	U
EU-154	8.82E-03	4.18E-02	4.18E-02	7.32E-02	N/A	RD3219	U
RA-226DA	9.75E-01	7.12E-02	1.21E-01	N/A	N/A	RD3219	
TH-234	1.20E+01	7.45E+00	7.54E+00	N/A	N/A	RD3219	
U-235	1.84E-01	9.18E-02	9.36E-02	N/A	N/A	RD3219	
U-238DA	9.90E-01	6.31E-02	1.17E-01	N/A	N/A	RD3219	
AC-228	1.19E+00	1.24E-01	1.72E-01	N/A	N/A	RD3219	
TL-208	3.93E-01	3.61E-02	5.33E-02	N/A	N/A	RD3219	
BI-214	9.75E-01	7.11E-02	1.21E-01	N/A	N/A	RD3219	
PB-212	1.07E+00	4.44E-02	1.16E-01	N/A	N/A	RD3219	
PB-214	9.90E-01	6.31E-02	1.17E-01	N/A	N/A	RD3219	
TH-232DA	1.19E+00	1.24E-01	1.72E-01	N/A	N/A	RD3219	
RA-228DA	1.21E+00	1.25E-01	1.74E-01	N/A	N/A	RD3219	
I-129LP	-8.11E-02	5.91E-01	5.91E-01	1.01E+00	N/A	RD3219	U
ALPHA	1.46E+01	5.48E+00	5.71E+00	4.40E+00	1	RD3222	
BETA	2.19E+01	3.40E+00	3.69E+00	2.85E+00	1	RD3222	
TOTAL-SR	1.06E-02	3.67E-02	3.68E-02	9.94E-02	0.898	RD3204	U
SE-79	4.66E+00	6.84E-01	2.51E+00	1.40E+00	0.661	RD3253	J
TC-99	-4.90E-02	3.18E-01	1.49E+00	7.70E-01	0.689	ITAS-IT-RS-0001	UJ
URANIUM	6.77E+00	N/A	1.02E+00	4.60E-03	0.919	RD4200	

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Verified
6/23/94

582A-6-93

9613474.1103

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-490-02	MATRIX:	SOIL
WHC ID:	B09WK4	DATE RECEIVED:	3/25/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	7.14E-01	1.55E-01	2.06E-01	2.27E-02	0.432	RD3302	U
CM-242	0.00E+00	0.00E+00	3.18E-02	2.87E-02	0.432	RD3302	U
CM-244	0.00E+00	0.00E+00	2.54E-02	2.29E-02	0.432	RD3302	U
NP-237	5.86E-03	1.49E-02	1.50E-02	1.99E-02	0.569	RD3208	U
PU-238	0.00E+00	0.00E+00	1.76E-02	1.59E-02	0.71	RD3209	U
PU239/40	-1.18E-03	2.35E-03	2.36E-03	2.54E-02	0.71	RD3209	U
U-234	1.01E-01	5.25E-02	5.42E-02	3.56E-02	0.637	RD3234	U
U-235	3.40E-03	1.33E-02	1.34E-02	3.32E-02	0.637	RD3234	U
U-238DA	8.80E-02	4.91E-02	5.05E-02	3.45E-02	0.637	RD3234	
K-40	2.37E-01	2.15E-01	2.17E-01	N/A	N/A	RD3219	U
CO-60	3.99E-03	7.25E-03	7.26E-03	1.32 ~~2.12E-02~~	N/A	RD3219	U
EU-152	-2.98E-04	3.72E-02	3.72E-02	6.50E-2 ~~1.05E-01~~	N/A	RD3219	U
CS-137DA	1.94E-03	6.74E-03	6.74E-03	1.19E-2 ~~N/A~~	N/A	RD3219	U
CS-134	-9.29E-04	7.38E-03	7.38E-03	1.24 ~~2.21E-02~~	N/A	RD3219	U
RU-106DA	-9.74E-03	6.90E-02	6.90E-02	1.15E-1 ~~2.20E-01~~	N/A	RD3219	U
RA-224DA	1.09E-01	2.19E-02	2.44E-02	N/A	N/A	RD3219	
NA-22	-7.16E-03	8.69E-03	8.72E-03	1.38 ~~2.41E-02~~	N/A	RD3219	U
EU-155	7.55E-03	1.96E-02	1.96E-02	3.11 ~~7.27E-02~~	N/A	RD3219	U
EU-154	-1.98E-02	2.40E-02	2.41E-02	3.85 ~~6.70E-02~~	N/A	RD3219	U
TH-234	4.20E+00	3.35E+00	3.38E+00	N/A	N/A	RD3219	
U-238DA	1.26E-01	2.86E-02	3.12E-02	N/A	N/A	RD3219	
AC-228	1.91E-01	4.35E-02	4.75E-02	N/A	N/A	RD3219	
PB-212	1.05E-01	2.12E-02	2.36E-02	N/A	N/A	RD3219	
PB-214	1.26E-01	2.86E-02	3.12E-02	N/A	N/A	RD3219	
TH-232DA	1.91E-01	4.35E-02	4.75E-02	N/A	N/A	RD3219	
RA-228DA	1.93E-01	4.40E-02	4.81E-02	N/A	N/A	RD3219	
I-129LP	9.72E-02	2.82E-01	2.83E-01	5.27E-01	N/A	RD3219	J
ALPHA	4.52E-01	2.18E+00	2.18E+00	4.48E+00	1	RD3222	U
BETA	4.45E+00	2.07E+00	2.09E+00	2.84E+00	1	RD3222	U
TOTAL-SR	5.19E-03	3.49E-02	3.50E-02	9.70E-02	0.905	RD3204	U
SE-79	-3.23E-01	6.63E-01	1.78E+00	1.43E+00	0.661	RD3253	UJ
TC-99	-5.13E-01	3.12E-01	1.46E+00	7.70E-01	0.689	ITAS-IT-RS-0001	UJ
URANIUM	1.95E-01	N/A	2.92E-02	4.60E-03	0.919	RD4200	

Verified

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682A-6-93

9613474.1104

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-490-03	MATRIX:	SOIL
WHC ID:	BO9WK5	DATE RECEIVED:	3/25/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	6.30E-01	1.43E-01	1.85E-01	3.25E-02	0.449	RD3302	U
CM-242	-8.17E-04	1.64E-03	1.64E-03	4.11E-02	0.449	RD3302	U
CM-244	-1.30E-03	1.84E-03	1.86E-03	3.71E-02	0.449	RD3302	U
NP-237	7.32E-03	1.46E-02	1.47E-02	1.13E-02	0.569	RD3208	U
PU-238	-2.66E-03	3.77E-03	3.79E-03	3.32E-02	0.626	RD3209	U
PU239/40	0.00E+00	0.00E+00	2.00E-02	1.80E-02	0.626	RD3209	U
U-234	8.66E-02	5.65E-02	5.80E-02	4.90E-02	0.491	RD3234	U
U-235	-1.36E-03	1.92E-03	1.93E-03	3.46E-02	0.491	RD3234	U
U-238DA	4.25E-02	3.80E-02	3.85E-02	2.30E-02	0.491	RD3234	
K-40	1.83E-01	2.11E-01	2.12E-01	N/A	N/A	RD3219	U
CO-60	-2.00E-02	8.98E-03	9.20E-03	1.24E-02	N/A	RD3219	U
EU-152	-2.81E-02	3.98E-02	3.99E-02	6.52E-02	N/A	RD3219	U
CS-137DA	-2.30E-03	7.34E-03	7.34E-03	1.24E-02	N/A	RD3219	U
CS-134	5.35E-03	7.35E-03	7.36E-03	1.24E-02	N/A	RD3219	U
RU-106DA	5.11E-02	6.61E-02	6.63E-02	1.17E-01	N/A	RD3219	U
RA-224DA	1.21E-01	2.13E-02	2.45E-02	N/A	N/A	RD3219	
NA-22	-2.43E-03	6.69E-03	6.70E-03	1.12E-02	N/A	RD3219	U
EU-155	1.70E-02	1.99E-02	1.99E-02	3.22E-02	N/A	RD3219	U
EU-154	-6.72E-03	1.85E-02	1.85E-02	3.13E-02	N/A	RD3219	U
RA-226DA	8.33E-02	2.93E-02	3.04E-02	N/A	N/A	RD3219	
U-238DA	1.19E-01	2.21E-02	2.51E-02	N/A	N/A	RD3219	
AC-228	1.64E-01	4.51E-02	4.80E-02	N/A	N/A	RD3219	
TL-208	4.58E-02	1.68E-02	1.74E-02	N/A	N/A	RD3219	
PB-212	1.17E-01	2.06E-02	2.37E-02	N/A	N/A	RD3219	
PB-214	1.19E-01	2.21E-02	2.51E-02	N/A	N/A	RD3219	
TH-232DA	1.64E-01	4.51E-02	4.80E-02	N/A	N/A	RD3219	
RA-228DA	1.66E-01	4.56E-02	4.86E-02	N/A	N/A	RD3219	
I-129LP	-5.05E-01	3.40E-01	3.44E-01	5.18E-01	N/A	RD3219	U
ALPHA	9.05E-01	1.90E+00	1.90E+00	3.53E+00	1	RD3222	U
BETA	3.29E+00	1.87E+00	1.89E+00	2.69E+00	1	RD3222	
TOTAL-SR	7.12E-03	3.67E-02	3.67E-02	1.01E-01	0.879	RD3204	U
SE-79	-8.13E-01	6.50E-01	1.72E+00	1.44E+00	0.661	RD3253	U
TC-99	1.37E-01	3.23E-01	1.51E+00	7.70E-01	0.689	ITAS-IT-RS-0001	U
URANIUM	2.22E-01	N/A	3.33E-02	4.60E-03	0.919	RD4200	

Verified 6/23/94

9613474.1105

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-03-631-03
MATRIX: SOIL
WHC ID: BOBKM1
DATE RECEIVED: 3/31/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	7.43E-01	1.39E-01	1.88E-01	1.75E-02	0.562	RD3302	
CM-242	0.00E+00	0.00E+00	2.39E-02	2.16E-02	0.562	RD3302	U
CM-244	1.90E-02	2.25E-02	2.28E-02	2.61E-02	0.562	RD3302	U
NP-237	0.00E+00	0.00E+00	0.00E+00	1.13E-02	0.569	RD3208	U
PU-238	8.37E-03	1.68E-02	1.68E-02	2.27E-02	0.498	RD3209	U
PU239/40	1.91E-01	8.03E-02	8.64E-02	3.61E-02	0.498	RD3209	
U-234	1.80E+00	2.91E-01	4.21E-01	6.74E-02	0.356	RD3234	
U-235	8.00E-02	6.19E-02	6.34E-02	4.76E-02	0.356	RD3234	
U-238DA	1.51E+00	2.66E-01	3.68E-01	3.17E-02	0.356	RD3234	
K-40	1.60E+01	5.94E-01	1.71E+00	N/A	N/A	RD3219	
CO-60	2.75E-03	1.31E-02	1.31E-02	2.26E-02	N/A	RD3219	U
EU-152	8.18E-02	6.00E-02	6.05E-02	1.11E-01	N/A	RD3219	U
CS-137DA	2.92E+01	2.02E-01	2.92E+00	N/A	N/A	RD3219	U
CS-134	1.03E-02	1.99E-02	1.99E-02	3.21E-02	N/A	RD3219	U
RU-106DA	2.92E-02	2.06E-01	2.06E-01	3.30E-01	N/A	RD3219	U
RA-224DA	7.68E-01	6.49E-02	1.01E-01	N/A	N/A	RD3219	
NA-22	-2.89E-03	1.59E-02	1.59E-02	2.64E-02	N/A	RD3219	U
EU-155	4.41E-02	7.38E-02	7.39E-02	1.13E-01	N/A	RD3219	U
EU-154	-8.02E-03	4.41E-02	4.41E-02	7.29E-02	N/A	RD3219	U
RA-226DA	6.17E-01	6.71E-02	9.12E-02	N/A	N/A	RD3219	
TH-234	9.74E+00	5.48E+00	5.56E+00	N/A	N/A	RD3219	
U-238DA	6.52E-01	9.16E-02	1.13E-01	N/A	N/A	RD3219	
AC-228	8.89E-01	8.61E-02	1.24E-01	N/A	N/A	RD3219	
TL-208	2.93E-01	4.36E-02	5.25E-02	N/A	N/A	RD3219	
BI-214	6.17E-01	6.71E-02	9.12E-02	N/A	N/A	RD3219	
PB-212	7.45E-01	6.30E-02	9.75E-02	N/A	N/A	RD3219	
PB-214	6.52E-01	9.16E-02	1.13E-01	N/A	N/A	RD3219	
TH-232DA	8.89E-01	8.61E-02	1.24E-01	N/A	N/A	RD3219	
RA-228DA	8.98E-01	8.69E-02	1.25E-01	N/A	N/A	RD3219	
I-129LP	-3.29E+00	1.01E+00	1.07E+00	1.53E+00	N/A	RD3219	U
ALPHA	1.75E+01	5.91E+00	6.20E+00	4.23E+00	1	RD3222	
BETA	9.13E+01	6.36E+00	8.76E+00	2.76E+00	1	RD3222	
TOTAL-SR	9.40E+00	3.08E-01	2.33E+00	1.01E-01	0.844	RD3204	
SE-79	-6.29E-01	6.52E-01	1.74E+00	1.44E+00	0.661	RD3253	UJ
TC-99	1.93E+00	3.52E-01	1.66E+00	7.70E-01	0.689	ITAS-IT-RS-0001	
URANIUM	5.72E+00	N/A	8.58E-01	4.60E-03	0.919	RD4200	

Verified [illegible] 6/23/94

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-631-04	MATRIX:	SOIL
WHC ID:	BOBKM3	DATE RECEIVED:	3/31/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	9.82E-01	1.83E-01	2.62E-01	4.53E-02	0.428	RD3302	
CM-242	-8.37E-04	1.67E-03	1.68E-03	4.21E-02	0.428	RD3302	
CM-244	-6.83E-04	1.37E-03	1.37E-03	3.43E-02	0.428	RD3302	
NP-237	0.00E+00	0.00E+00	0.00E+00	1.13E-02	0.569	RD3208	
PU-238	3.36E-02	2.96E-02	3.00E-02	2.99E-02	0.694	RD3209	
PU239/40	7.49E-01	1.34E-01	1.74E-01	1.62E-02	0.694	RD3209	
U-234	1.07E+00	1.80E-01	2.36E-01	3.82E-02	0.553	RD3234	
U-235	4.97E-02	4.00E-02	4.06E-02	3.67E-02	0.553	RD3234	
U-238DA	1.04E+00	1.77E-01	2.31E-01	3.97E-02	0.553	RD3234	
K-40	1.48E+01	4.48E-01	1.55E+00	N/A	N/A	RD3219	
CO-60	-3.39E-03	9.43E-03	9.44E-03	1.53E-02	N/A	RD3219	
EU-152	1.24E-01	4.28E-02	4.46E-02	8.76E-02	N/A	RD3219	
CS-137DA	1.81E+02	4.67E-01	1.82E+01	N/A	N/A	RD3219	
CS-134	2.30E-03	3.53E-02	3.53E-02	5.79E-02	N/A	RD3219	
RU-106DA	1.72E-01	3.64E-01	3.65E-01	6.02E-02	N/A	RD3219	
RA-224DA	7.48E-01	1.14E-01	1.36E-01	N/A	N/A	RD3219	
NA-22	-6.15E-03	1.23E-02	1.23E-02	2.04E-02	N/A	RD3219	
EU-155	-1.13E-01	1.30E-01	1.30E-01	1.99E-01	N/A	RD3219	
EU-154	-1.69E-02	3.37E-02	3.38E-02	5.60E-02	N/A	RD3219	
RA-226DA	6.37E-01	1.23E-01	1.38E-01	N/A	N/A	RD3219	
U-238DA	5.77E-01	1.46E-01	1.57E-01	N/A	N/A	RD3219	
BI-214	6.37E-01	1.23E-01	1.38E-01	N/A	N/A	RD3219	
PB-212	7.11E-01	1.09E-01	1.30E-01	N/A	N/A	RD3219	
PB-214	5.77E-01	1.46E-01	1.57E-01	N/A	N/A	RD3219	
TH-232DA	7.89E-01	8.49E-02	1.16E-01	N/A	N/A	RD3219	
*I-129LP	-1.26E+01	1.53E+00	1.98E+00	2.31E+00	N/A	RD3219	
ALPHA	1.27E+01	4.99E+00	5.17E+00	3.53E+00	1	RD3222	
BETA	2.99E+02	1.13E+01	2.27E+01	2.69E+00	1	RD3222	
TOTAL-SR	1.96E+01	4.52E-01	4.78E+00	1.12E-01	0.815	RD3204	
SE-79	9.33E-01	6.86E-01	1.90E+00	1.43E+00	0.661	RD3253	
TC-99	2.84E+00	3.83E-01	1.74E+00	7.70E-01	0.689	ITAS-IT-RS-0001	
URANIUM	2.71E+00	N/A	4.06E-01	4.60E-03	0.919	RD4200	

* - SEE CASE NARRATIVE

Verified [signature] 6/23/94

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-631-01	MATRIX:	SOIL
WHC ID:	BOBKM4	DATE RECEIVED:	3/31/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
AM-241	7.77E-01	2.02E-01	2.70E-01	3.56E-02	0.276	RD3302
CM-242	0.00E+00	0.00E+00	4.87E-02	4.39E-02	0.276	RD3302
CM-244	1.32E-02	2.65E-02	2.67E-02	3.58E-02	0.276	RD3302
NP-237	7.32E-03	1.46E-02	1.47E-02	1.13E-02	0.569	RD3208
PU-238	-1.80E-03	3.59E-03	3.61E-03	3.88E-02	0.464	RD3209
PU239/40	3.59E-02	3.59E-02	3.64E-02	2.43E-02	0.464	RD3209
U-234	7.39E-01	1.31E-01	1.63E-01	3.32E-02	0.722	RD3234
U-235	2.64E-01	7.82E-02	8.55E-02	2.35E-02	0.722	RD3234
U-238DA	5.64E-01	1.14E-01	1.36E-01	2.53E-02	0.722	RD3234
K-40	1.55E+01	5.22E-01	1.64E+00	N/A	N/A	RD3219
CO-60	-3.87E-03	1.29E-02	1.29E-02	2.12E-02	N/A	RD3219
EU-152	1.18E-01	5.46E-02	5.59E-02	1.05E-01	N/A	RD3219
CS-137DA	8.07E+00	8.91E-02	8.12E-01	N/A	N/A	RD3219
CS-134	-6.63E-04	1.35E-02	1.35E-02	2.21E-02	N/A	RD3219
RU-106DA	1.77E-01	1.29E-01	1.30E-01	2.20E-01	N/A	RD3219
RA-224DA	8.13E-01	4.46E-02	9.27E-02	N/A	N/A	RD3219
NA-22	-1.20E-02	1.53E-02	1.53E-02	2.41E-02	N/A	RD3219
EU-155	8.13E-02	4.31E-02	4.38E-02	7.27E-02	N/A	RD3219
EU-154	-3.33E-02	4.24E-02	4.25E-02	6.70E-02	N/A	RD3219
RA-226DA	6.67E-01	6.41E-02	9.25E-02	N/A	N/A	RD3219
TH-234	1.57E+00	4.74E+00	4.74E+00	N/A	N/A	RD3219
U-238DA	7.51E-01	6.64E-02	1.00E-01	N/A	N/A	RD3219
AC-228	8.12E-01	9.12E-02	1.22E-01	N/A	N/A	RD3219
TL-208	3.18E-01	3.09E-02	4.43E-02	N/A	N/A	RD3219
BI-214	6.67E-01	6.41E-02	9.25E-02	N/A	N/A	RD3219
PB-212	7.90E-01	4.33E-02	9.00E-02	N/A	N/A	RD3219
PB-214	7.51E-01	6.64E-02	1.00E-01	N/A	N/A	RD3219
TH-232DA	8.12E-01	9.12E-02	1.22E-01	N/A	N/A	RD3219
RA-228DA	8.20E-01	9.21E-02	1.23E-01	/NA	N/A	RD3219
I-129LP	2.70E-01	7.31E-01	7.32E-01	1.27E+00	N/A	RD3219
ALPHA	1.15E+01	4.83E+00	4.99E+00	3.85E+00	1	RD3222
BETA	5.04E+01	4.84E+00	5.87E+00	2.84E+00	1	RD3222
TOTAL-SR	7.37E+00	2.83E-01	1.79E+00	1.10E-01	0.777	RD3204
SE-79	-2.14E-01	6.64E-01	1.79E+00	1.43E+00	0.661	RD3253
TC-99	5.88E-02	3.23E-01	1.50E+00	7.70E-01	0.689	ITAS-IT-RS-0001
URANIUM	3.02E+00	N/A	4.53E-01	4.60E-03	0.919	RD4200

Verified [signature] 6/23/94

9613474.1108

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-03-631-05	MATRIX:	SOIL
WHC ID:	BOBKM5	DATE RECEIVED:	3/31/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
AM-241	5.27E-01	1.11E-01	1.41E-01	2.65E-02	0.625	RD3302
CM-242	-5.72E-04	1.14E-03	1.15E-03	2.88E-02	0.625	RD3302
CM-244	1.03E-02	1.66E-02	1.67E-02	2.91E-02	0.625	RD3302
NP-237	7.32E-03	1.46E-02	1.47E-02	1.13E-02	0.569	RD3208
PU-238	4.41E-02	3.88E-02	3.95E-02	4.45E-02	0.53	RD3209
PU239/40	1.01E+00	1.79E-01	2.43E-01	3.76E-02	0.53	RD3209
U-234	8.10E-01	1.37E-01	1.73E-01	3.14E-02	0.722	RD3234
U-235	1.06E-02	1.64E-02	1.64E-02	2.35E-02	0.722	RD3234
U-238DA	9.06E-01	1.45E-01	1.87E-01	1.56E-02	0.722	RD3234
K-40	1.55E+01	5.58E-01	1.65E+00	N/A	N/A	RD3219
CO-60	-1.13E-02	1.26E-02	1.27E-02	1.96E-02	N/A	RD3219
EU-152	1.77E-02	6.06E-02	6.07E-02	1.05E-01	N/A	RD3219
CS-137DA	1.89E+00	5.18E-02	1.96E-01	N/A	N/A	RD3219
CS-134	4.15E-03	1.12E-02	1.12E-02	1.83E-02	N/A	RD3219
RU-106DA	-2.19E-02	1.08E-01	1.08E-01	1.74E-01	N/A	RD3219
RA-224DA	7.84E-01	3.74E-02	8.68E-02	N/A	N/A	RD3219
NA-22	-3.76E-04	1.49E-02	1.49E-02	2.51E-02	N/A	RD3219
EU-155	4.62E-02	3.71E-02	3.74E-02	6.25E-02	N/A	RD3219
EU-154	-1.35E-02	4.13E-02	4.13E-02	6.92E-02	N/A	RD3219
RA-226DA	6.67E-01	4.74E-02	8.18E-02	N/A	N/A	RD3219
TH-234	4.19E+00	4.95E+00	4.97E+00	N/A	N/A	RD3219
U-238DA	6.80E-01	4.60E-02	8.21E-02	N/A	N/A	RD3219
AC-228	8.02E-01	9.26E-02	1.23E-01	N/A	N/A	RD3219
TL-208	2.97E-01	2.93E-02	4.17E-02	N/A	N/A	RD3219
BI-214	6.67E-01	4.74E-02	8.18E-02	N/A	N/A	RD3219
PB-212	7.60E-01	3.62E-02	8.42E-02	N/A	N/A	RD3219
PB-214	6.80E-01	4.60E-02	8.21E-02	N/A	N/A	RD3219
TH-232DA	8.02E-01	9.26E-02	1.23E-01	N/A	N/A	RD3219
RA-228DA	8.10E-01	9.36E-02	1.24E-01	N/A	N/A	RD3219
I-129LP	5.49E-02	6.00E-01	6.00E-01	1.04E+00	N/A	RD3219
ALPHA	1.95E+01	6.18E+00	6.52E+00	4.05E+00	1	RD3222
BETA	4.36E+01	4.55E+00	5.38E+00	2.87E+00	1	RD3222
TOTAL-SR	3.83E+00	2.04E-01	9.41E-01	1.11E-01	0.767	RD3204
SE-79	1.31E+00	6.97E-01	1.95E+00	1.43E+00	0.661	RD3253
TC-99	1.55E+00	3.45E-01	1.62E+00	7.70E-01	0.689	ITAS-IT-RS-0001
URANIUM	2.76E+00	N/A	4.15E-01	4.06E-03	0.919	RD4200

Verified [signature] 6/23/94 ~~0023~~ 022

682A-6-93

9613474.1108

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-03-631-02
MATRIX: SOIL
WHC ID: BOBKM6
DATE RECEIVED: 3/31/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
AM-241	4.80E-01	1.05E-01	1.31E-01	2.62E-02	0.634	RD3302
CM-242	1.35E-02	2.00E-02	2.01E-02	2.84E-02	0.634	RD3302
CM-244	1.73E-02	1.99E-02	2.01E-02	1.56E-02	0.634	RD3302
NP-237	0.00E+00	0.00E+00	0.00E+00	1.13E-02	0.569	RD3208
PU-238	3.79E-03	9.65E-03	9.67E-03	2.05E-02	0.881	RD3209
PU239/40	5.30E-02	3.30E-02	3.38E-02	2.80E-02	0.881	RD3209
U-234	1.10E+00	2.46E-01	3.15E-01	7.14E-02	0.307	RD3234
U-235	2.06E-02	3.87E-02	3.89E-02	6.88E-02	0.307	RD3234
U-238DA	1.08E+00	2.43E-01	3.09E-01	7.14E-02	0.307	RD3234
K-40	1.51E+01	5.59E-01	1.61E+00	N/A	N/A	RD3219
CO-60	1.06E-02	1.20E-02	1.21E-02	2.15E-02	N/A	RD3219
EU-152	1.36E-01	5.62E-02	5.78E-02	1.11E-01	N/A	RD3219
CS-137DA	4.04E-01	2.83E-02	4.94E-02	N/A	N/A	RD3219
CS-134	1.22E-03	1.03E-02	1.03E-02	1.69E-02	N/A	RD3219
RU-106DA	2.46E-03	9.91E-02	9.91E-02	1.61E-01	N/A	RD3219
RA-224DA	8.34E-01	3.53E-02	9.06E-02	N/A	N/A	RD3219
NA-22	4.99E-03	1.45E-02	1.45E-02	2.49E-02	N/A	RD3219
EU-155	4.02E-02	3.28E-02	3.30E-02	5.63E-02	N/A	RD3219
EU-154	1.38E-02	4.02E-02	4.02E-02	6.89E-02	N/A	RD3219
RA-226DA	6.83E-01	5.26E-02	8.62E-02	N/A	N/A	RD3219
TH-234	4.58E+00	4.76E+00	4.78E+00	N/A	N/A	RD3219
U-238DA	6.76E-01	4.73E-02	8.25E-02	N/A	N/A	RD3219
AC-228	9.30E-01	9.55E-02	1.33E-01	N/A	N/A	RD3219
TL-208	2.83E-01	2.52E-02	3.79E-02	N/A	N/A	RD3219
BI-214	6.83E-01	5.26E-02	8.62E-02	N/A	N/A	RD3219
PB-212	8.10E-01	3.43E-02	8.79E-02	N/A	N/A	RD3219
TH-232DA	9.30E-01	9.55E-02	1.33E-01	N/A	N/A	RD3219
RA-228DA	9.39E-01	9.64E-02	1.35E-01	N/A	N/A	RD3219
I-129LP	2.91E-01	5.31E-01	5.32E-01	9.48E-01	N/A	RD3219
ALPHA	1.27E+01	5.18E+00	5.36E+00	4.48E+00	1	RD3222
BETA	3.21E+01	3.98E+00	4.51E+00	2.84E+00	1	RD3222
TOTAL-SR	2.21E+00	1.64E-01	5.50E-01	1.18E-01	0.726	RD3204
SE-79	-5.40E-01	6.54E-01	1.75E+00	1.43E+00	0.661	RD3253
TC-99	2.32E-01	3.24E-01	1.52E+00	7.70E-01	0.689	ITAS-IT-RS-0001
URANIUM	2.67E+00	N/A	4.01E-01	4.60E-03	0.919	RD4200

Verified 6/23/94

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-04-017-06	MATRIX:	SOIL
WHC ID:	BOBKM7	DATE RECEIVED:	4/1/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
AM-241	6.19E-01	1.27E-01	1.65E-01	3.45E-02	0.562	RD3302
CM-242	-6.34E-04	1.27E-03	1.27E-03	3.19E-02	0.562	RD3302
CM-244	-5.20E-04	1.04E-03	1.04E-03	2.61E-02	0.562	RD3302
NP-237	0.00E+00	0.00E+00	0.00E+00	1.13E-02	0.569	RD3208
PU-238	5.96E-03	1.19E-02	1.19E-02	1.61E-02	0.7	RD3209
PU239/40	2.86E-01	8.25E-02	9.26E-02	1.61E-02	0.7	RD3209
U-234	1.29E+00	2.46E-01	3.27E-01	5.44E-02	0.357	RD3234
U-235	7.92E-02	6.21E-02	6.35E-02	5.14E-02	0.357	RD3234
U-238DA	1.07E+00	2.24E-01	2.86E-01	4.77E-02	0.357	RD3234
K-40	1.44E+01	3.80E-01	1.49E+00	N/A	N/A	RD3219
CO-60	1.23E-02	8.36E-03	8.45E-03	1.51E-02	N/A	RD3219
EU-152	8.48E-02	3.78E-02	3.88E-02	7.02E-02	N/A	RD3219
CS-137DA	6.45E+01	1.97E-01	6.45E+00	N/A	N/A	RD3219
CS-134	-1.49E-02	1.96E-02	1.97E-02	3.16E-02	N/A	RD3219
RU-106DA	-2.00E-01	2.02E-01	2.03E-01	3.27E-01	N/A	RD3219
RA-224DA	7.07E-01	6.50E-02	9.61E-02	N/A	N/A	RD3219
NA-22	3.55E-03	1.00E-02	1.00E-02	1.70E-02	N/A	RD3219
EU-155	4.16E-02	6.14E-02	6.15E-02	9.96E-02	N/A	RD3219
EU-154	9.79E-03	2.76E-02	2.76E-02	4.66E-02	N/A	RD3219
RA-226DA	5.49E-01	7.79E-02	9.53E-02	N/A	N/A	RD3219
TH-234	-3.12E-01	5.07E+00	5.07E+00	8.31E-03 ~~N/A~~	N/A	RD3219
U-238DA	6.45E-01	9.57E-02	1.15E-01	N/A	N/A	RD3219
AC-228	7.14E-01	6.20E-02	9.45E-02	N/A	N/A	RD3219
BI-214	5.49E-01	7.79E-02	9.53E-02	N/A	N/A	RD3219
PB-212	6.80E-01	6.24E-02	9.23E-02	N/A	N/A	RD3219
PB-214	6.45E-01	9.57E-02	1.15E-01	N/A	N/A	RD3219
RA-228DA	7.24E-01	6.28E-02	9.58E-02	N/A	N/A	RD3219
I-129LP	-4.68E+00	1.33E+00	1.41E+00	2.04E-01	N/A	RD3219
ALPHA	1.18E+01	4.92E+00	5.09E+00	4.05E+00	1	RD3222
BETA	1.14E+02	7.07E+00	1.03E+01	2.87E+00	1	RD3222
TOTAL-SR	9.37E+00	3.17E-01	2.29E+00	1.12E-01	0.798	RD3204
SE-79	1.71E+00	7.09E-01	1.99E+00	1.44E+00	0.661	RD3253
TC-99	-1.60E-01	3.22E-01	1.49E+00	7.70E-01	0.689	ITAS-IT-RS-0001
URANIUM	3.00E+00	N/A	4.50E-01	4.60E-03	0.919	RD4200

Verified 6/23/94

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-04-017-05
MATRIX: SOIL
WHC ID: BOBKN9
DATE RECEIVED: 4/1/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	8.09E-01	1.48E-01	2.04E-01	1.83E-02	0.539	RD3302	U
CM-242	8.27E-03	1.65E-02	1.66E-02	2.24E-02	0.539	RD3302	U
CM-244	6.23E-03	1.36E-02	1.36E-02	2.73E-02	0.539	RD3302	U
NP-237	0.00E+00	0.00E+00	0.00E+00	1.13E-02	0.569	RD3208	U
PU-238	3.11E-03	1.08E-02	1.08E-02	2.58E-02	0.806	RD3209	U
PU239/40	3.87E-01	8.96E-02	1.05E-01	2.23E-02	0.806	RD3209	
U-234	9.43E-01	1.54E-01	2.00E-01	3.30E-02	0.665	RD3234	
U-235	4.29E-02	3.32E-02	3.37E-02	2.55E-02	0.665	RD3234	
U-238DA	9.28E-01	1.53E-01	1.97E-01	1.70E-02	0.665	RD3234	
K-40	1.39E+01	4.31E-01	1.45E+00	N/A	N/A	RD3219	
CO-60	2.54E-02	1.06E-02	1.09E-02	1.92E-02	N/A	RD3219	
EU-152	6.17E-02	4.52E-02	4.56E-02	8.06E-02	N/A	RD3219	U
CS-137DA	7.28E-01	2.81E-02	7.81E-02	N/A	N/A	RD3219	
CS-134	-8.55E-03	8.64E-03	8.68E-03	1.35E-02	N/A	RD3219	U
RU-106DA	1.35E-03	8.49E-02	8.49E-02	1.38E-01	N/A	RD3219	U
RA-224DA	7.38E-01	2.89E-02	7.93E-02	N/A	N/A	RD3219	
NA-22	6.54E-03	1.05E-02	1.05E-02	1.84E-02	N/A	RD3219	U
EU-155	3.72E-02	2.60E-02	2.63E-02	4.42E-02	N/A	RD3219	U
EU-154	1.80E-02	2.89E-02	2.90E-02	5.03E-02	N/A	RD3219	U
RA-226DA	5.75E-01	4.29E-02	7.17E-02	N/A	N/A	RD3219	
TH-234	8.33E+00	5.38E+00	5.45E+00	N/A	N/A	RD3219	
U-235	1.04E-01	5.41E-02	5.51E-02	N/A	N/A	RD3219	
U-238DA	6.09E-01	3.74E-02	7.15E-02	N/A	N/A	RD3219	
AC-228	7.62E-01	7.49E-02	1.07E-01	N/A	N/A	RD3219	
TL-208	2.41E-01	2.19E-02	3.26E-02	N/A	N/A	RD3219	
BI-214	5.75E-01	4.29E-02	7.17E-02	N/A	N/A	RD3219	
PB-212	7.09E-01	2.78E-02	7.61E-02	N/A	N/A	RD3219	
PB-214	6.09E-01	3.74E-02	7.15E-02	N/A	N/A	RD3219	
TH-232DA	7.62E-01	7.49E-02	1.07E-01	N/A	N/A	RD3219	
RA-228DA	7.73E-01	7.59E-02	1.08E-01	N/A	N/A	RD3219	
I-129LP	-5.58E-01	5.40E-01	5.43E-01	8.76E-01	N/A	RD3219	U
ALPHA	1.45E+01	5.31E+00	5.54E+00	3.53E+00	1	RD3222	
BETA	2.52E+01	3.56E+00	3.93E+00	2.69E+00	1	RD3222	
TOTAL-SR	1.74E-01	5.88E-02	7.22E-02	1.14E-01	0.783	RD3204	
SE-79	4.38E-01	6.79E-01	1.86E+00	1.43E+00	0.661	RD3253	
TC-99	2.29E-01	3.27E-01	1.52E+00	7.70E-01	0.689	ITAS-IT-RS-0001	
URANIUM	2.87E+00	N/A	4.30E-01	4.60E-03	0.919	RD4200	

Verified [signature] 6/22/94

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-04-017-07
MATRIX: SOIL
WHC ID: BOBKP5
DATE RECEIVED: 4/1/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
AM-241	4.74E+00	3.55E-01	8.97E-01	3.55E-02	0.546	RD3302
CM-242	-6.52E-04	1.31E-03	1.31E-03	3.28E-02	0.546	RD3302
CM-244	5.08E-03	1.35E-02	1.35E-02	3.33E-02	0.546	RD3302
NP-237	7.31E-03	1.46E-02	1.47E-02	1.13E-02	0.569	RD3208
PU-238	5.24E-01	1.17E-01	1.41E-01	2.80E-02	0.643	RD3209
PU239/40	2.22E+01	7.59E-01	3.46E+00	1.75E-02	0.643	RD3209
U-234	8.21E-01	1.56E-01	1.94E-01	3.38E-02	0.561	RD3234
U-235	3.47E-02	3.32E-02	3.36E-02	3.95E-02	0.561	RD3234
U-238DA	1.03E+00	1.75E-01	2.27E-01	3.38E-02	0.561	RD3234
K-40	1.51E+01	4.32E-01	1.57E+00	N/A	N/A	RD3219
CO-60	5.94E-03	9.66E-03	9.68E-03	1.66E-02	N/A	RD3219
EU-152	2.23E-02	4.93E-02	4.93E-02	8.38E-02	N/A	RD3219
CS-137DA	1.59E+01	9.43E-02	1.59E+00	N/A	N/A	RD3219
CS-134	-3.53E-03	1.30E-02	1.30E-02	2.09E-02	N/A	RD3219
RU-106DA	7.97E-02	1.29E-01	1.30E-01	2.14E-01	N/A	RD3219
RA-224DA	9.02E-01	4.38E-02	1.00E-01	N/A	N/A	RD3219
NA-22	-1.16E-02	1.14E-02	1.14E-02	1.84E-02	N/A	RD3219
EU-155	7.29E-02	4.31E-02	4.37E-02	6.76E-02	N/A	RD3219
EU-154	-3.20E-02	3.13E-02	3.15E-02	5.10E-02	N/A	RD3219
RA-226DA	6.48E-01	6.60E-02	9.25E-02	N/A	N/A	RD3219
TH-234	7.18E+00	5.27E+00	5.32E+00	N/A	N/A	RD3219
U-238DA	7.21E-01	6.15E-02	9.47E-02	N/A	N/A	RD3219
AC-228	8.52E-01	7.32E-02	1.12E-01	N/A	N/A	RD3219
TL-208	3.07E-01	2.90E-02	4.22E-02	N/A	N/A	RD3219
BI-214	6.48E-01	6.60E-02	9.25E-02	N/A	N/A	RD3219
PB-212	8.66E-01	4.21E-02	9.63E-02	N/A	N/A	RD3219
PB-214	7.21E-01	6.15E-02	9.47E-02	N/A	N/A	RD3219
TH-232DA	8.52E-01	7.32E-02	1.12E-01	N/A	N/A	RD3219
RA-228DA	8.64E-01	7.42E-02	1.14E-01	N/A	N/A	RD3219
I-129LP	-8.94E-01	7.79E-01	7.84E-01	1.27E+00	N/A	RD3219
ALPHA	5.31E+01	9.99E+00	1.15E+01	4.41E+00	1	RD3222
BETA	3.68E+01	4.22E+00	4.87E+00	2.85E+00	1	RD3222
TOTAL-SR	7.16E-01	9.70E-02	1.97E-01	1.13E-01	0.761	RD3204
SE-79	-9.68E-01	6.45E-01	1.70E+00	1.43E+01	0.661	RD3253
TC-99	-3.60E-02	3.23E-01	1.50E+00	7.70E-01	0.689	ITAS-IT-RS-0001
URANIUM	3.19E+00	N/A	4.78E-01	4.60E-03	0.919	RD4200

Verified 6/23/94

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-04-017-03	MATRIX:	SOIL
WHC ID:	BOBKP7	DATE RECEIVED:	4/1/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	4.61E-01	1.27E-01	1.55E-01	2.36E-02	0.417	RD3302	U
CM-242	0.00E+00	0.00E+00	3.20E-02	2.89E-02	0.417	RD3302	U
CM-244	0.00E+00	0.00E+00	2.62E-02	2.37E-02	0.417	RD3302	U
NP-237	-5.86E-04	1.17E-03	1.18E-03	1.68E-02	0.569	RD3208	U
PU-238	0.00E+00	0.00E+00	2.73E-02	2.46E-02	0.459	RD3209	U
PU239/40	9.08E-03	1.82E-02	1.82E-02	2.46E-02	0.459	RD3209	U
U-234	6.36E-02	4.20E-02	4.29E-02	3.23E-02	0.629	RD3234	
U-235	1.22E-02	1.88E-02	1.89E-02	2.70E-02	0.629	RD3234	U
U-238DA	1.03E-01	5.31E-02	5.49E-02	3.23E-02	0.629	RD3234	
K-40	3.49E-01	1.99E-01	2.02E-01	N/A	N/A	RD3219	
CO-60	-5.55E-04	6.13E-03	6.13E-03	1.02E-02	N/A	RD3219	U
EU-152	1.79E-02	2.95E-02	2.95E-02	5.24E-02	N/A	RD3219	U
CS-137DA	5.04E-05	5.93E-03	5.93E-03	9.88E-03	N/A	RD3219	U
CS-134	-2.89E-03	5.70E-03	5.71E-03	9.04E-03	N/A	RD3219	U
RU-106DA	-1.32E-02	5.62E-02	5.62E-02	9.06E-02	N/A	RD3219	U
RA-224DA	1.30E-01	1.70E-02	2.14E-02	N/A	N/A	RD3219	
NA-22	9.31E-04	6.58E-03	6.58E-03	1.15E-02	N/A	RD3219	U
EU-155	9.12E-03	1.40E-02	1.40E-02	2.37E-02	N/A	RD3219	U
EU-154	2.57E-03	1.82E-02	1.82E-02	3.16E-02	N/A	RD3219	U
RA-226DA	1.06E-01	2.47E-02	2.69E-02	N/A	N/A	RD3219	
TH-234	1.50E+00	2.93E+00	2.93E+00	N/A	N/A	RD3219	
U-238DA	1.20E-01	2.02E-02	2.35E-02	N/A	N/A	RD3219	
AC-228	1.07E-01	4.48E-02	4.60E-02	N/A	N/A	RD3219	
BI-214	1.06E-01	2.47E-02	2.69E-02	N/A	N/A	RD3219	
PB-212	1.25E-01	1.64E-02	2.06E-02	N/A	N/A	RD3219	
PB-214	1.20E-01	2.02E-02	2.35E-02	N/A	N/A	RD3219	
TH-232DA	1.07E-01	4.48E-02	4.60E-02	N/A	N/A	RD3219	
RA-228DA	1.09E-01	4.53E-02	4.66E-02	N/A	N/A	RD3219	
I-129LP	-2.75E-03	2.99E-01	2.99E-01	5.37E-01	N/A	RD3219	U
ALPHA	1.81E+00	2.68E+00	2.69E+00	4.49E+00	1	RD3222	U
BETA	1.42E+00	1.74E+00	1.74E+00	2.84E+00	1	RD3222	U
TOTAL-SR	2.66E-02	3.89E-02	3.95E-02	1.01E-01	0.885	RD3204	U
SE-79	-8.54E-01	6.49E-01	1.72E+00	1.44E+00	0.661	RD3253	U
TC-99	2.68E-01	3.24E-01	1.52E+00	7.70E-01	0.689	ITAS-IT-RS-0001	U
URANIUM	1.61E-01	N/A	2.41E-02	4.60E-03	0.919	RD4200	

Verified 6/23/94

682A-6-93

9613474.1114

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-04-017-04	MATRIX:	SOIL
WHC ID:	BOBKP8	DATE RECEIVED:	4/1/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	7.91E-01	1.55E-01	2.12E-01	3.45E-02	0.481	RD3302	U
CM-242	0.00E+00	0.00E+00	2.78E-02	2.51E-02	0.481	RD3302	U
CM-244	0.00E+00	0.00E+00	2.27E-02	2.05E-02	0.481	RD3302	U
NP-237	-5.86E-04	1.17E-03	1.18E-03	1.68E-02	0.569	RD3208	U
PU-238	-4.54E-03	6.41E-03	6.47E-03	5.66E-02	0.368	RD3209	U
PU239/40	0.00E+00	0.00E+00	3.40E-02	3.07E-02	0.368	RD3209	U
U-234	6.56E-02	5.06E-02	5.16E-02	4.85E-02	0.468	RD3234	
U-235	1.36E-02	2.55E-02	2.55E-02	4.52E-02	0.468	RD3234	U
U-238DA	4.85E-02	4.38E-02	4.45E-02	4.69E-02	0.468	RD3234	
K-40	1.90E-01	1.61E-01	1.62E-01	N/A	N/A	RD3219	U
CO-60	-1.51E-04	5.60E-03	5.60E-03	9.60E-03	N/A	RD3219	U
EU-152	2.96E-02	2.91E-02	2.93E-02	5.39E-02	N/A	RD3219	U
CS-137DA	-4.33E-03	5.93E-03	5.95E-03	9.21E-03	N/A	RD3219	U
CS-134	-1.36E-03	5.22E-03	5.22E-03	8.81E-03	N/A	RD3219	U
RU-106DA	2.82E-02	5.22E-02	5.23E-02	8.75E-02	N/A	RD3219	U
RA-224DA	1.26E-01	1.78E-02	2.18E-02	N/A	N/A	RD3219	
NA-22	-4.55E-03	6.06E-03	6.08E-03	9.59E-03	N/A	RD3219	U
EU-155	4.35E-03	1.35E-02	1.35E-02	2.14E-02	N/A	RD3219	U
EU-154	-1.25E-02	1.67E-02	1.68E-02	2.64E-02	N/A	RD3219	U
U-238DA	1.15E-01	1.92E-02	2.24E-02	N/A	N/A	RD3219	
AC-228	1.40E-01	3.96E-02	4.20E-02	N/A	N/A	RD3219	
TL-208	4.14E-02	1.54E-02	1.59E-02	N/A	N/A	RD3219	
PB-212	1.21E-01	1.71E-02	2.09E-02	N/A	N/A	RD3219	
PB-214	1.15E-01	1.92E-02	2.24E-02	N/A	N/A	RD3219	
TH-232DA	1.40E-01	3.96E-02	4.20E-02	N/A	N/A	RD3219	
RA-228DA	1.42E-01	4.02E-02	4.26E-02	N/A	N/A	RD3219	
I-129LP	3.27E-02	2.88E-01	2.88E-01	5.25E-01	N/A	RD3219	U
ALPHA	1.63E+00	2.51E+00	2.51E+00	4.23E+00	1	RD3222	U
BETA	3.20E+00	1.90E+00	1.91E+00	2.76E+00	1	RD3222	
TOTAL-SR	-8.02E-03	3.22E-02	3.23E-02	9.52E-02	0.919	RD3204	U
SE-79	-1.18E+00	6.40E-01	1.68E+00	1.44E+00	0.661	RD3253	UJ
TC-99	1.28E-01	3.21E-01	1.51E+00	7.70E-01	0.689	ITAS-IT-RS-0001	UJ
URANIUM	1.63E-01	N/A	2.44E-02	4.60E-03	0.919	RD4200	

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Verified [signature] 6/23/94

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682A-6-93

9613474.1115

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-04-066-02
MATRIX: SOIL
WHC ID: BOBNQ3
DATE RECEIVED: 4/5/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	3.46E+00	2.75E-01	6.21E-01	2.19E-02	0.666	RD3302	U
CM-242	-5.32E-04	1.06E-03	1.07E-03	2.67E-02	0.666	RD3302	U
CM-244	-8.75E-04	1.24E-03	1.25E-03	2.50E-02	0.666	RD3302	U
NP-237	7.32E-03	1.47E-02	1.47E-02	1.13E-02	0.569	RD3208	U
PU-238	3.14E+00	2.87E-01	5.59E-01	3.26E-02	0.638	RD3209	
PU239/40	3.72E+00	3.11E-01	6.47E-01	1.77E-02	0.638	RD3209	
U-234	1.33E+00	1.86E-01	2.59E-01	3.99E-02	0.643	RD3234	
U-235	8.08E-02	4.66E-02	4.79E-02	3.83E-02	0.643	RD3234	U
U-238DA	1.09E+00	1.68E-01	2.24E-01	3.99E-02	0.643	RD3234	
K-40	1.13E+01	3.23E-01	1.18E+00	N/A	N/A	RD3219	U
CO-60	3.00E-02	1.16E-02	1.20E-02	N/A	N/A	RD3219	
EU-152	7.09E-02	3.19E-02	3.27E-02	6.01E-02	N/A	RD3219	
CS-137DA	6.71E+01	2.01E-01	6.71E+00	N/A	N/A	RD3219	
CS-134	1.17E-03	1.77E-02	1.77E-02	2.89E-02	N/A	RD3219	U
RU-106DA	2.74E-01	1.81E-01	1.83E-01	3.02E-01	N/A	RD3219	U
RA-224DA	4.85E-01	5.61E-02	7.42E-02	N/A	N/A	RD3219	
NA-22	5.25E-04	8.70E-03	8.70E-03	1.47E-02	N/A	RD3219	U
EU-155	7.21E-03	5.83E-02	5.83E-02	8.94E-02	N/A	RD3219	U
EU-154	1.45E-03	2.40E-02	2.40E-02	4.04E-02	N/A	RD3219	U
RA-226DA	4.43E-01	6.21E-02	7.63E-02	N\A	N/A	RD3219	
TH-234	5.95E+00	4.22E+00	4.26E+00	N/A	N/A	RD3219	
U-238DA	4.22E-01	7.06E-02	8.22E-02	N/A	N/A	RD3219	
AC-228	5.60E-01	5.45E-02	7.81E-02	N/A	N/A	RD3219	
BI-214	4.43E-01	6.21E-02	7.63E-02	N/A	N/A	RD3219	
PB-212	4.66E-01	5.39E-02	7.12E-02	N/A	N/A	RD3219	
PB-214	4.22E-01	7.06E-02	8.22E-02	N/A	N/A	RD3219	
TH-232DA	5.60E-01	5.45E-02	7.81E-02	N/A	N/A	RD3219	
RA-228DA	5.68E-01	5.52E-02	7.92E-02	N/A	N/A	RD3219	
I-129LP	-2.66E+00	1.25E+00	1.28E+00	1.99E+00	N/A	RD3219	U
ALPHA	3.08E+01	7.72E+00	8.41E+00	4.49E+00	1	RD3222	
BETA	1.47E+02	7.99E+00	1.26E+01	2.84E+00	1	RD3222	
TOTAL-SR	8.78E-01	1.03E-01	2.37E-01	1.11E-01	0.811	RD3204	U
SE-79	-3.85E-01	6.64E-01	1.77E+00	1.44E+00	0.661	RD3253	U
TC-99	8.01E-01	3.36E-01	1.56E+00	7.70E-01	0.689	ITAS-IT-RS-0001	U
URANIUM	1.09E+01	N/A	1.63E+00	4.60E-03	0.919	RD4200	

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9613474.1116

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

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0013
LAB SAMPLE ID: 4-04-017-02
MATRIX: SOIL
WHC ID: BOBNQ4
DATE RECEIVED: 4/1/94
REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	6.96E-01	1.53E-01	2.02E-01	4.71E-02	0.437	RD3302	U
CM-242	-4.09E-03	5.78E-03	5.83E-03	5.77E-02	0.437	RD3302	U
CM-244	0.00E+00	0.00E+00	2.51E-02	2.27E-02	0.437	RD3302	U
NP-237	0.00E+00	0.00E+00	0.00E+00	1.13E-02	0.569	RD3208	U
PU-238	-1.89E-03	3.78E-03	3.79E-03	4.08E-02	0.442	RD3209	U
PU239/40	-7.55E-03	7.55E-03	7.67E-03	5.60E-02	0.442	RD3209	U
U-234	5.32E-02	3.79E-02	3.86E-02	3.32E-02	0.662	RD3234	
U-235	-5.04E-04	1.01E-03	1.01E-03	2.32E-02	0.662	RD3234	U
U-238DA	3.68E-02	3.09E-02	3.13E-02	2.57E-02	0.662	RD3234	
K-40	4.25E-01	2.39E-01	2.43E-01	N/A	N/A	RD3219	U
CO-60	-2.93E-03	7.34E-03	7.35E-03	1.26E-02	N/A	RD3219	U
EU-152	2.06E-02	4.07E-02	4.08E-02	7.43E-02	N/A	RD3219	U
CS-137DA	5.95E-03	7.60E-03	7.62E-03	1.37E-02	N/A	RD3219	U
CS-134	-1.57E-03	7.74E-03	7.74E-03	1.26E-02	N/A	RD3219	U
RU-106DA	-7.41E-03	7.59E-02	7.59E-02	1.25E-01	N/A	RD3219	U
RA-224DA	1.43E-01	2.13E-02	2.56E-02	N/A	N/A	RD3219	
NA-22	2.66E-03	8.63E-03	8.63E-03	1.56E-02	N/A	RD3219	U
EU-155	7.50E-03	1.81E-02	1.82E-02	3.16E-02	N/A	RD3219	U
EU-154	7.36E-03	2.39E-02	2.39E-02	4.26E-02	N/A	RD3219	U
RA-226DA	1.07E-01	3.42E-02	3.58E-02	N/A	N/A	RD3219	
U-235	2.52E-02	4.01E-02	4.02E-02	N/A	N/A	RD3219	
U-238DA	1.07E-01	2.39E-02	2.62E-02	N/A	N/A	RD3219	
AC-228	1.72E-01	5.43E-02	5.69E-02	N/A	N/A	RD3219	
PB-212	1.38E-01	2.06E-02	2.48E-02	N/A	N/A	RD3219	
PB-214	1.07E-01	2.39E-02	2.62E-02	N/A	N/A	RD3219	
TH-232DA	1.72E-01	5.43E-02	5.69E-02	N/A	N/A	RD3219	
RA-228DA	1.74E-01	5.48E-02	5.75E-02	N/A	N/A	RD3219	
I-129LP	-2.20E-02	3.09E-01	3.09E-01	5.50E-01	N/A	RD3219	U
ALPHA	1.99E+00	2.48E+00	2.49E+00	3.85E+00	1	RD3222	U
BETA	2.68E+00	1.88E+00	1.89E+00	2.84E+00	1	RD3222	U
TOTAL-SR	3.09E-02	3.79E-02	3.87E-02	9.64E-02	0.895	RD3204	U
SE-79	-8.33E-01	6.48E-01	1.72E+00	1.43E+00	0.661	RD3253	U
TC-99	4.45E-01	3.26E-01	1.53E+00	7.70E-01	0.689	ITAS-IT-RS-0001	U
URANIUM	1.42E-01	N/A	2.12E-02	4.60E-03	0.919	RD4200	

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682A-6-93

9613474.1117

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-04-017-01	MATRIX:	SOIL
WHC ID:	BOBNQ5	DATE RECEIVED:	4/1/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER	Q
AM-241	7.21E-01	1.72E-01	2.27E-01	4.65E-02	0.357	RD3302	U
CM-242	0.00E+00	0.00E+00	3.75E-02	3.38E-02	0.357	RD3302	U
CM-244	-8.19E-04	1.64E-03	1.65E-03	4.12E-02	0.357	RD3302	U
NP-237	5.86E-03	1.49E-02	1.50E-02	2.00E-02	0.569	RD3208	U
PU-238	5.75E-03	1.47E-02	1.47E-02	3.11E-02	0.58	RD3209	U
PU239/40	0.00E+00	0.00E+00	2.16E-02	1.95E-02	0.58	RD3209	U
U-234	2.43E-02	2.65E-02	2.67E-02	3.07E-02	0.631	RD3234	U
U-235	-1.06E-03	1.50E-03	1.50E-03	2.69E-02	0.631	RD3234	U
U-238DA	4.52E-02	3.50E-02	3.56E-02	2.69E-02	0.631	RD3234	
K-40	2.26E-01	2.09E-01	2.10E-01	/NA	N/A	RD3219	U
CO-60	3.46E-03	7.66E-03	7.67E-03	1.40E-02	N/A	RD3219	U
EU-152	2.88E-02	3.52E-02	3.53E-02	6.85E-02	N/A	RD3219	U
CS-137DA	7.89E-04	7.66E-03	7.66E-03	1.32E-02	N/A	RD3219	U
CS-134	6.15E-03	7.13E-03	7.16E-03	1.24E-02	N/A	RD3219	U
RU-106DA	-4.94E-03	6.64E-02	6.64E-02	1.12E-01	N/A	RD3219	U
RA-224DA	1.36E-01	2.07E-02	2.48E-02	N/A	N/A	RD3219	
NA-22	3.67E-03	7.77E-03	7.77E-03	1.40E-02	N/A	RD3219	U
EU-155	2.32E-02	1.77E-02	1.78E-02	3.06E-02	N/A	RD3219	U
EU-154	1.02E-02	2.15E-02	2.15E-02	3.86E-02	N/A	RD3219	U
RA-226DA	8.30E-02	3.28E-02	3.38E-02	N/A	N/A	RD3219	
TH-234	3.87E+00	3.24E+00	3.26E+00	N/A	N/A	RD3219	
AC-228	1.82E-01	4.17E-02	4.55E-02	N/A	N/A	RD3219	
TL-208	6.19E-02	1.51E-02	1.63E-02	N/A	N/A	RD3219	
PB-212	1.32E-01	2.01E-02	2.40E-02	N/A	N/A	RD3219	
PB-214	1.15E-01	2.28E-02	2.55E-02	N/A	N/A	RD3219	
TH-232DA	1.82E-01	4.17E-02	4.55E-02	N/A	N/A	RD3219	
RA-228DA	1.83E-01	4.21E-02	4.59E-02	N/A	N/A	RD3219	
I-129LP	4.66E-02	3.04E-01	3.04E-01	5.53E-01	N/A	RD3219	U
ALPHA	1.45E+00	2.52E+00	2.53E+00	4.40E+00	1	RD3222	U
BETA	1.28E+00	1.72E+00	1.73E+00	2.85E+00	1	RD3222	U
TOTAL-SR	2.91E-02	3.81E-02	3.88E-02	9.72E-02	0.902	RD3204	U
SE-79	-4.39E-01	6.64E-01	1.77E+00	1.44E+00	0.661	RD3253	UJ
TC-99	5.79E-01	3.30E-01	1.54E+00	7.70E-01	0.689	ITAS-IT-RS-0001	UJ
URANIUM	1.42E-01	N/A	2.13E-02	4.60E-03	0.919	RD4200	

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Verified [signature] 6/23/94

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682A-6-93

9613474.1118

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

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0013
LAB SAMPLE ID:	4-04-066-01	MATRIX:	SOIL
WHC ID:	BOBNQ8	DATE RECEIVED:	4/5/94
REPORTING UNITS:	pCi/g & ug/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
AM-241	7.24E-01	1.37E-01	1.86E-01	1.76E-02	0.557	RD3302
CM-242	0.00E+00	0.00E+00	2.39E-02	2.15E-02	0.557	RD3302
CM-244	0.00E+00	0.00E+00	1.97E-02	1.77E-02	0.557	RD3302
NP-237	1.46E-02	2.07E-02	2.09E-02	1.13E-02	0.569	RD3208
PU-238	0.00E+00	0.00E+00	1.57E-02	1.42E-02	0.795	RD3209
PU239/40	1.31E-01	5.24E-02	5.56E-02	1.42E-02	0.795	RD3209
U-234	3.73E+00	2.91E-01	5.63E-01	3.50E-02	0.735	RD3234
U-235	1.41E-01	5.66E-02	5.94E-02	2.28E-02	0.735	RD3234
U-238DA	3.85E+00	2.95E-01	5.79E-01	3.50E-02	0.735	RD3234
K-40	1.29E+01	3.68E-01	1.35E+00	N/A	N/A	RD3219
CO-60	5.92E-03	8.17E-03	8.19E-03	1.40E-02	N/A	RD3219
EU-152	5.02E-02	4.00E-02	4.03E-02	7.13E-02	N/A	RD3219
CS-137DA	1.51E+01	1.01E-01	1.51E+00	N/A	N/A	RD3219
CS-134	-1.57E-02	1.14E-02	1.15E-02	1.80E-02	N/A	RD3219
RU-106DA	7.39E-02	1.11E-01	1.11E-01	1.81E-01	N/A	RD3219
RA-224DA	6.95E-01	3.86E-02	7.95E-02	N/A	N/A	RD3219
NA-22	1.49E-03	9.19E-03	9.19E-03	1.57E-02	N/A	RD3219
EU-155	3.52E-02	3.62E-02	3.64E-02	6.03E-02	N/A	RD3219
EU-154	4.12E-03	2.53E-02	2.53E-02	4.34E-02	N/A	RD3219
RA-226DA	6.06E-01	5.29E-02	8.04E-02	N/A	N/A	RD3219
TH-234	4.81E+00	4.48E+00	4.51E+00	N/A	N/A	RD3219
U-238DA	6.25E-01	5.98E-02	8.65E-02	N/A	N/A	RD3219
AC-228	6.93E-01	6.29E-02	9.35E-02	N/A	N/A	RD3219
TL-208	2.36E-01	2.49E-02	3.43E-02	N/A	N/A	RD3219
BI-214	6.06E-01	5.29E-02	8.04E-02	N/A	N/A	RD3219
PB-212	6.67E-01	3.71E-02	7.64E-02	N/A	N/A	RD3219
PB-214	6.25E-01	5.98E-02	8.65E-02	N/A	N/A	RD3219
TH-232DA	6.93E-01	6.29E-02	9.35E-02	N/A	N/A	RD3219
RA-228DA	7.02E-01	6.37E-02	9.48E-02	N/A	N/A	RD3219
I-129LP	4.80E-02	7.14E-01	7.14E-01	1.22E+00	N/A	RD3219
ALPHA	1.38E+01	5.24E+00	5.44E+00	3.85E+00	1	RD3222
BETA	4.95E+01	4.81E+00	5.81E+00	2.84E+00	1	RD3222
TOTAL-SR	1.97E+00	1.47E-01	4.99E-01	1.03E-01	0.807	RD3204
SE-79	-8.18E-01	6.50E-01	1.72E+00	1.43E+00	0.661	RD3253
TC-99	1.16E+00	3.38E-01	1.59E+00	7.70E-01	0.689	ITAS-IT-RS-0001
URANIUM	4.25E+00	N/A	6.37E-01	4.60E-03	0.919	RD4200

Verified 6/23/94

9613474.1119

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

INTERNATIONAL TECHNOLOGY CORPORATION

CERTIFICATE OF ANALYSIS

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

May 27, 1994

Attention: J.A.Lerch

SAF Number	:	94-065
Date SDG Closed	:	April 5, 1994
Number of Samples	:	Nineteen (19)
Sample Type	:	Soil
SDG Number	:	W0013
Data Deliverable	:	Stand Alone

I. Introduction

On March 25 and 31, 1994, and April 1 and 4, 1994, nineteen soil 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
403631-01A	B0BKM4	Soil	3/25/94
403631-02A	B0BKM6	Soil	3/25/94
403631-03A	B0BKM1	Soil	3/25/94
403631-04A	B0BKM3	Soil	3/25/94
403631-05A	B0BKM5	Soil	3/25/94
403490-01A	B09WK2	Soil	3/31/94
403490-02A	B09WK4	Soil	3/31/94
403490-03A	B09WK5	Soil	3/31/94
403490-04A	B09WJ9	Soil	3/31/94
403490-05A	B09WK1	Soil	3/31/94

Regional Office
2800 George Washington Way • Richland, Washington 99352-1613 • 509-375-3131 • FAX: 509-375-5590

IT Corporation is a wholly owned subsidiary of International Technology Corporation

404017-01A	B0BNQ5	Soil	4/1/94
404017-02A	B0BNQ4	Soil	4/1/94
404017-03A	B0BKP7	Soil	4/1/94
404017-04A	B0BKP8	Soil	4/1/94
404017-05A	B0BKN9	Soil	4/1/94
404017-06A	B0BKM7	Soil	4/1/94
404017-07A	B0BKP5	Soil	4/1/94
404066-01A	B0BNQ8	Soil	4/5/94
404066-02A	B0BNQ3	Soil	4/5/94

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:

Alpha Spectroscopy
Americium-241, Curium-244 by method ITAS-RD-3302
Neptunium-237 by method ITAS-RD-3208
Plutonium-238, -239/40 by method ITAS-RD-3209
Uranium-234, -235, -238 by method ITAS-RD-3234
Gamma Spectroscopy
Gamma Scan by method ITAS-RD-3219
Iodine-129 by method ITAS-RD-3219
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
Selenium-79 by method ITAS-RD-3253
Technetium-99 by method ITAS-IT-RS-0001
Total Uranium
Total Uranium by method ITAS-RD-4200

III. Quality Control

The analytical results for each analysis performed under SDG W0013 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate.

Quality control sample results are reported in the same units as sample results except for gross alpha and gross beta quality control sample results which are reported in pCi/sample.

IV. Comments

The initial radioactivity screening of the samples classified them as Category I with the exception of WHC samples B0BKM1, B0BKM3, B0BKM5, B0BKN9, B0BKM7, B0BKP5, B0BNQ8, and B0BNQ3, which were classified as Category II.

Alpha Spectroscopy

Americium-241, Curium-244 by method ITAS-RD-3302
The americium/curium analysis of this SDG was performed in two sets. Both sets of analytical results indicated Am-241 contamination at a level below the contractual detection limit. One sample (B0BNQ3) which was found to have activity greater than the contractual detection limit was reanalyzed to confirm the results. The reanalysis result confirms the original result within 3 sigma and the original result is reported. The blank results for both the original analyses and the reanalysis are acceptable. The LCS results for the original analyses and the reanalysis are biased high due to the low-level contamination. The source of the contamination is being investigated and all cleaning procedures are being examined. The sample and sample duplicate results are within the 3 sigma control limit.

Neptunium-237 by method ITAS-RD-3208
Three matrix spikes were analyzed with the batch. Two matrix spikes failed due to low radiochemical recovery (less than 10%). The matrix spike used for the batch yield correction had a low recovery of 56.8%. The LCS was biased high (153.4%) after yield correction. The high bias is attributed to the difference in the matrices of the matrix spike (soil) and the LCS (water). The batch blank result is acceptable. The sample and sample duplicate results are within the 3 sigma control limit. The batch was reanalyzed in two sets. Both sets had matrix spike recoveries of less than 60%. It is the professional judgement of the Actinide Team Leader that the original analysis of the samples is acceptable and that the failure of the results to meet contract requirements is due to matrix effects.

Plutonium-238, -239/40 by method ITAS-RD-3209
The LCS, batch blank, sample and sample duplicate results are within contractual limits. Two samples (B09WJ9 and B0BKM5) were reanalyzed due to low tracer yields. The reanalysis results are acceptable. The initial reanalysis data indicated that the LCS and batch blank were switched. The results were recalculated and are reported correctly. Sample results for B0BNQ3 show Pu-238 and Pu-239 in almost equal amounts. Th-230 and Th-232 were not detected in the spectrum, therefore a contribution to the Pu-238 result from Th-228 is unlikely. The cause of the unusual results for this sample in unknown.

Uranium-234, -235, -238 by method ITAS-RD-3234
The isotopic uranium analysis of this SDG was performed in two sets. Both sets contain separate items to be addressed in this section. For simplification the sets are identified here as Set One and Set Two.

Set One

Three samples (B0BKP5, B0BNQ8, B0BNQ3) from Set One were reanalyzed due to low tracer yields. The reanalysis of the samples is acceptable and reported. The LCS analyzed in Set One had a low tracer yield (15.9%) and radiochemical recoveries outside of contractual limits for two isotopes. The LCS was recounted for an extended counting time (1000 min.). The radiochemical recoveries for the recounted LCS are within limits for all the isotopes, however, the tracer yield is low (14.3%). The original results are accepted based on the acceptable radiochemical recoveries of the recounted LCS. The recounted LCS results are not reported because of the counting time difference between the sample counting time (200 min.) and the LCS counting time (1000 min.). The original blank, reanalysis blank, reanalysis LCS, sample and sample duplicate results are within contractual requirements.

Set Two

The LCS and the batch blank results are acceptable. The sample and sample duplicate results are within the 3 sigma control limit. Four samples (B09WK2, B09WJ9, B09WK1, B0BKM4) from Set Two were reanalyzed due to low tracer yields. The reanalysis LCS had a low tracer yield (28.6%) and the radiochemical recoveries were just outside the 3 sigma control limit for U-235. The reanalysis LCS was recounted and its recount results confirm the original reanalysis results. The reanalysis batch results are accepted based on the acceptable U-234 and U-238 LCS radiochemical recoveries and the acceptable blank result.

Gamma Spectroscopy

Gamma Scan by method ITAS-RD-3219

Samples B09WK1 and B0BKM3 were recounted because the detection limits were not met for one or more isotopes. The detection limits were not met for B09WK1 because the sample had a low density and therefore less sample (by weight) was required to fill the counting container. Sample B0BKM3 did not meet the detection limits due to high Cs-137 activity interference (matrix effect). The samples were repackaged in 450 ml Marinelli beakers and recounted for 200 minutes. All of the detection limits were achieved for sample B09WK1 on the recount. The detection limit for Eu-155 was not met for sample B0BKM3, however, the result is accepted due to the acceptable blank MDAs. The LCS, batch blank, sample and sample duplicate results meet contractual requirements on both the original analysis and the reanalysis.

Iodine-129 by method ITAS-RD-3219

The effect of the high levels of Cs-137 should be considered when evaluating the result reported for sample B0BKM3. The result has been flagged with an asterisk in the result table. The sample was recounted verifying that the interference observed is a matrix effect. The LCS, batch blank, sample and sample duplicate results are acceptable.

Gas Proportional Counting

Gross Alpha by method ITAS-RD-3222

The LCS and batch blank results are acceptable. The sample and sample duplicate results are within the 3 sigma control limit.

Gross Beta by method ITAS-RD-3222
The LCS and batch blank results are acceptable. The sample and sample duplicate results are within the 3 sigma control limit.

Strontium-90 by method ITAS-RD-3204
The LCS recovery was biased high (156.7%). The high result is attributed to strontium-85 in the spike. Strontium-85 will not be used in future spikes for this analysis on WHC samples. The batch blank result is acceptable. One out of two sets of sample and sample duplicate results are not within the 3 sigma control limit. The results are accepted based on the sample and sample duplicate results which were acceptable and the possibility of non-homogeneity of the sample matrix.

Liquid Scintillation Counting

Selenium-79 by method ITAS-RD-3253
Sample B09WK2 and the sample's matrix spike were switched prior to counting. The first review of the data for the batch indicated the sample whose lab sample ID was 40349001 had activity which the gamma scan identified as Se-75 (the Se-79 analysis matrix spike material) and the sample with the lab sample ID of W0349001 (a matrix spike ID number begins with a "W") had no detectable Se-75 activity. The sample ID numbers were corrected and the sample was recounted for Se-79 and the matrix spike was recounted for Se-75. Two matrix spikes were analyzed with the set and their average radiochemical yield is used for the batch yield correction. The LCS and batch blank results are acceptable. The sample and sample duplicate results are within the 3 sigma control limit.

Technetium-99 by method ITAS-IT-RS-0001
The LCS and batch blank results are acceptable. Two matrix spikes were analyzed with the set and their average radiochemical yield is used for the batch yield correction. The sample and sample duplicate results are within the 3 sigma control limit.

Total Uranium

Total Uranium by method ITAS-RD-4200
The LCS and batch blank results are acceptable. Two matrix spikes were analyzed with the SDG and their average yield is used for yield correction of the sample results. The sample and sample duplicate results are within the 3 sigma control limit.

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

9613474.1127

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-21-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 403489 B09WJ9

05

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml GW:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349004

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml GW:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-21-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-24-94 Jaron E. Rogers 1310	ITAS Karen Fortenberry	3-25-94 10:00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

041

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

~~0082~~

9613474.1128

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: SML-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WK0

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2) B09WK1

403489 06

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349005

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 3-24-94 Lorene E. Rogers 1310	Received by: ITAS Susan Holtzinger	Date/Time: 3-25-94 10 00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

042

~~0034~~

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.1129

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-22-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

403489 01 — Sample Identification

1) B09WK2

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4034900 01

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-22-94

[] Field Transfer of Custody — Chain of Possession (Sign and Print Names) Less than 100 CPM

Relinquished by:	Received by:	Date/Time:
3-24-94 Laurie Rogers 1310	ITAS Kevin Lattinday 1000	3/25/94 1000
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

043 ~~0076~~

9613474.1130

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-23-94

Ice Chest No.: 512 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 40348902 B09WK4

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349002

2) 40348903 B09WK5

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40349003

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Karen L. Rogers 3-24-94 1310	Karen Rottinghaus IT 10 00 am	3-25-94 10 00 am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

044

~~0078~~

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006448

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SML 459
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
03680 03 A	BOBKM1	S	3-29-94	0850	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM1	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM1	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM1	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM1	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM1	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM1	S			(1) 125ml aGs	TOC	9060	
03631 03	BOBKM1	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
RT Sickle	3-31-94	0815	DL Edwards
DL Edwards	3-31-94	0815	RM Arnold RM Arnold
RM Arnold RM Arnold	3-31-94	1055	R Boyd 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

045

0010

9613474.1131

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006450

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SML459
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
403630 04 A	BOBKM3	S	3-29-94	0944	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM3	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM3	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM3	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM3	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM3	S			(1) 125ml aGs	TOC	9060	
403631 04	BOBKM3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
RT Sickle RT Sickle	3-31-94	0815	D L Edwards
D L Edwards	3-31-94	0815	RM Arnold RMArnold
RM Arnold RMArnold	3-31-94	1055	R. Boud 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

046

1010

9413474.1152

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006451

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SWL 459
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #46
Method of Shipment Government truck
Field Logbook No. RWH 3-31-94
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
103 230 01A BOBKM4	S	3-29-94	0950	(1) 250ml aG	Semi-VOA	CLP	
B BOBKM4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C BOBKM4	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
B BOBKM4	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E BOBKM4	S			(1) 125ml G	Cyanide	CPL	
F BOBKM4	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G BOBKM4	S			(1) 125ml aGs	TOC	9060	
103 232 01 BOBKM4	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	3-31-94	0815	Daniel L. Edwards
Daniel L. Edwards	3-31-94	0815	RW Arnold RW Arnold
RW Arnold RW Arnold	3-31-94	1055	R. Boyd IT 3-31-94 1160

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9600

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04

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006452

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. 526 SMC
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
403630 05 A	BOBKM5	S	3-29-94	1030	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM5	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM5	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM5	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM5	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM5	S			(1) 125ml aGs	TOC	9060	
403631 05	BOBKM5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	3-31-94	0815	Daniel L. Edwards
Daniel L. Edwards	3-31-94	0815	RM Arnold
RM Arnold	3-31-94	1055	R. Boyd 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

0102

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048

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006453

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 216-U-8 Vitrified Clay Pipeline
Sampling Locations 216-U-8 Crib
Ice Chest No. SML 526
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#46
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
18630 02A BOBKM6	S	3-29-94	1058	(1) 250ml aG	Semi-VOA	CLP	
B BOBKM6	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C BOBKM6	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D BOBKM6	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E BOBKM6	S			(1) 125ml G	Cyanide	CPL	
F BOBKM6	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G BOBKM6	S			(1) 125ml aGs	TOC	9060	
18630 02 BOBKM6	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle R.T. Sickle	3-31-94	0815	Daniel L. Edwards
Daniel L. Edwards	3-31-94	0815	R.M. Arnold R.M. Arnold
R.M. Arnold R.M. Arnold	~~1055~~ 3-31-94	1055	R. Bond 3-31-94 1100

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

049

6600

9413574.1135

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006454

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation ~~216-U-8 Vitrified Clay Pipeline~~ 200 UP2 RMA 3-30-94
Sampling Locations ~~216-U-8 Crib~~ U1/U2 Tile Field RMA 3-30-94
Ice Chest No. SML 906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
10406 06A	BOBKM7	S	3-30-94	1930	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKM7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKM7	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKM7	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKM7	S			(1) 125ml G	Cyanide	CPL	
F	BOBKM7	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKM7	S			(1) 125ml aGs	TOC	9060	
04017 06	BOBKM7	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold Ray Arnold
Ray Arnold RM Arnold	4-1-94	1210	Tom Gilmore ITAS

***Matrix**

A = Air
DL = Drum Liquids
DS = Drum Solids
L = Liquid
O = Oil
S = Soil
SE = Sediment
SL = Sludge
SO = Solid
T = Tissue
W = Water
WI = Wipe
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

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0117

050

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006466

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation ~~216-U-8 Vitrified Clay Pipeline~~ 200 UP2 RTS 3-30-94
Sampling Locations ~~216-U-8 Crib~~ " " Ditch DMC 3-30-94
Ice Chest No. SML 906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0367 #47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
404016 05 A	BOBKN9	S	3-30-94	1100	(1) 250ml aG	Semi-VOA	CLP	
B	BOBKN9	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBKN9	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBKN9	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBKN9	S			(1) 125ml G	Cyanide	CPL	
F	BOBKN9	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBKN9	S			(1) 125ml aGs	TOC	9060	
404017 05	BOBKN9	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

0116

051

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Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006469

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations Z Ditch
Ice Chest No. SML 413
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369 #47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
404016 07 A BOBKP5	S	3-30-94	1330	(1) 250ml aG	Semi-VOA CLP	
B BOBKP5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBKP5	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBKP5	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBKP5	S			(1) 125ml G	Cyanide CPL	
F BOBKP5	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBKP5	S			(1) 125ml aGs	TOC 9060	
404017 07 BOBKP5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413174.1138

0118

052

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006473

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations U1/U2 Tile Field
Ice Chest No. SML 906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
104016 03 A BOBKP7	S	3-30-94	0940	(1) 250ml aG	Semi-VOA CLP	
B BOBKP7	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C BOBKP7	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D BOBKP7	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E BOBKP7	S			(1) 125ml G	Cyanide CPL	
F BOBKP7	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G BOBKP7	S			(1) 125ml aGs	TOC 9060	
104017 03 BOBKP7	S	3-30-94	0940	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

0114

053

9413047.1139

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006474

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations U1/U2 Tile Field
Ice Chest No. SML 906
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
104016 04 A	BOBKP8	S	3-30-94	0900	(1) 250ml aG	Semi-VOA CLP	
B	BOBKP8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBKP8	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBKP8	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBKP8	S			(1) 125ml G	Cyanide CPL	
F	BOBKP8	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBKP8	S			(1) 125ml aGs	TOC 9060	
104017 04	BOBKP8	S	3-30-94	0900	(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession (Sign and Print Names) Relinquished By		Date	Time	Received By	
R.T. Sickle	RT Sickle	4-1-94	1000	RM Arnold	RM Arnold
RM Arnold	RM Arnold	4-1-94	1210	ITAS	Tom Gilmore

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

054

0115

9413146.1140

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
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Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-10 Pond
Ice Chest No. G W5009
Bill of Lading/Airbill No. N/A
Offsite Property No.
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS
Analyze per SAF 94-065.

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
A BOBNQ3	S	3-31-94	1200	(1) 250ml aG	Semi-VOA	CLP	
B BOBNQ3	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C BOBNQ3	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D BOBNQ3	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E BOBNQ3	S			(1) 125ml G	Cyanide	CPL	
F BOBNQ3	S			(1) 125ml Gs	TPH Diesel Range	8015m	
~~BOBNQ3~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ RTS 3-31-94	9060	
BOBNQ3	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

4040602 Rad

4040602 Rad

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-4-94	0830	[signature]
[signature]	4-5-94	0815	Heidelberg IT
			4/5 1030

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

055

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Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006262

Collector R.T. Sickle
SAF No. 94-065
Ice Chest No. SML 413
Method of Shipment Government truck
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

Company Contact C.A. Rowley
Project Designation 200-UP-2
Bill of Lading/Airbill No. N/A

Telephone 372-3293
Sampling Locations 216-U-10 Pond
Offsite Property No. W94-0-0369 #47
Field Logbook No.

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
104016 02 A	BOBNQ4	S	3-30-94	1330	(1) 250ml aG	Semi-VOA	CLP	
B	BOBNQ4	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBNQ4	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBNQ4	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBNQ4	S			(1) 125ml G	Cyanide	CPL	
F	BOBNQ4	S			(1) 125ml Gs	TPH Diesel Range	8015m	
G	BOBNQ4	S			(1) 125ml aGs	TOC	9060	
104017 02	BOBNQ4	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

Chain of Possession (Sign and Print Names) Relinquished By	Date	Time	Received By
R.T. Sickle R.T. Sickle	4-1-94	1000	RM Arnold RM Arnold
RM Arnold RM Arnold	4-1-94	1210	Tom Gilmore Tom Gilmore ITAS

***Matrix**

A = Air
DL = Drum Liquids
DS = Drum Solids
L = Liquid
O = Oil
S = Soil
SE = Sediment
SL = Sludge
SO = Solid
T = Tissue
W = Water
WI = Wipe
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

056

0113

9413974.1142

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		006263

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-10 Pond
Ice Chest No. SML413
Bill of Lading/Airbill No. N/A
Offsite Property No. W94-0-0369#47
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

SPECIAL INSTRUCTIONS

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
04016 01 A	BOBNQ5	S	3-30-94	1345	(1) 250ml aG	Semi-VOA CLP	
B	BOBNQ5	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury CPL	
C	BOBNQ5	S			(1) 125ml G	Anions F, Cl, SO_4 EPA 300.0	
D	BOBNQ5	S			(1) 125ml G	NO_2 NO_3 EPA 353.2	
E	BOBNQ5	S			(1) 125ml G	Cyanide CPL	
F	BOBNQ5	S			(1) 125ml Gs	TPH Diesel Range 8015m	
G	BOBNQ5	S			(1) 125ml aGs	TOC 9060	
104017 01	BOBNQ5	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253	

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R.T. Sickle	4-1-94	1000	RM Arnold
RM Arnold	4-1-94	1210	Tom Gilmore ITAS

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

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9413741.1146

0112

057

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1 006267

Collector R.T. Sickle
Company Contact C.A. Rowley
Telephone 372-3293
SAF No. 94-065
Project Designation 200-UP-2
Sampling Locations 216-U-11 Trench
Ice Chest No. GWS 020
Bill of Lading/Airbill No. N/A
Offsite Property No.
Method of Shipment Government truck
Field Logbook No.
Shipped to IT
SPECIAL INSTRUCTIONS
Possible Sample Hazards/Remarks None Detected
Special Handling and/or Storage Keep cool

	Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required		Preservative
A	BOBNQ8	S	3-31-94	1405	(1) 250ml aG	Semi-VOA	CLP	
B	BOBNQ8	S			(1) 250ml Poly	Metals -CLP TAL Titanium Mercury	CPL	
C	BOBNQ8	S			(1) 125ml G	Anions F, Cl, SO_4	EPA 300.0	
D	BOBNQ8	S			(1) 125ml G	NO_2 NO_3	EPA 353.2	
E	BOBNQ8	S			(1) 125ml G	Cyanide	CPL	
F	BOBNQ8	S			(1) 125ml Gs	TPH Diesel Range	8015m	
	~~BOBNQ8~~	~~S~~			~~(1) 125ml aGs~~	~~TOC~~ RK 3-31-94	9060	
	BOBNQ8	S			(1) 1000ml Poly	Gross Alpha/Beta ITAS-RD-3322 Gamma Spec. Cs-134,137, I-129, Co-60, K-40, Eu-152/154/155, Ru-106, Na-22 ITAS-RD-3219; Total Uranium ITAS-RD-4200 OR 4201 U-235/234/238 ITAS-RD-3234 Np-237 ITAS-RD-3208; Pu-238/239/240 ITAS-RD-3209; Sr-90 ITAS-RD-3204; Tc-99 ITAS-RD-RS-0001; Am-241, Cm-244 ITAS-RD-3302; Se-79 ITAS-RD-3253		

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40406601

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
R T Sickle R T Sickle	4-4-94	0830	Daniel L. Edwards
Daniel L. Edwards	4-5-94	0815	[illegible] ITAS 4-5-94 10:30

***Matrix**

A = Air
DL = Drum Liquids
DS = Drum Solids
L = Liquid
O = Oil
S = Soil
SE = Sediment
SL = Sludge
SO = Solid
T = Tissue
W = Water
WI = Wipe
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

058

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ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200-UP-2		DATA PACKAGE: W0013-ITC-029
VALIDATOR: [signature]	LAB: ITC	DATE: 06/23/94
CASE:		SDG: W0013-ITC-029

ANALYSES PERFORMED

☒ Gross Alpha/Beta	☒ Strontium-90	☒ Technetium-99	☒ Alpha Spectroscopy	☒ Gamma Spectroscopy	
☒ Total Uranium	☐ Radium-22	☐ Tritium	☒ Se-79	X I-129	

SAMPLES/MATRIX Soils

B09WJ9	06/23/94 B0BKM1	B0BKM7	B0BNQ3
B09WK1	B0BKM3	B0BKN9	B0BNQ4
B09WK2	B0BKM4	B0BKP5	B0BNQ5
B09WK4	B0BKM5	B0BKP7	B0BNQ8
B09WK5	B0BKM6	B0BKP8	

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: No qualification is required if the instruments were calibrated more than 1yr from sample analysis.

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: No qualification is required.

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: U-234, Am-241 and K-40 were detected in the assoc. blanks. Sample results > MDA and <5x blank conc have been qualified as estimated (J).

5. Matrix Spikes . . . . . ☐ N/A

Matrix spike analyzed? . . . . . (Yes) No N/A
Spike recoveries acceptable? . . . . . Yes (No) N/A
Spike source traceable? . . . . . (Yes) No N/A
Spike source expired? . . . . . Yes (No) N/A
Transcription/Calculation Errors? . . . . . Yes (No) N/A

Comments: MS%R for Se-79 and Np-237 were 56% and 57%, respectively. The assoc. results have been qualified as estimated (J/UJ).

061

6. Laboratory Control Samples . . . . . ☐ N/A

LCS analyzed? . . . . . Yes No N/A

LCS recoveries acceptable? . . . . . ~~Yes~~ No N/A 6/23/94

LCS traceable? . . . . . Yes No N/A

6/23/94 Transcription/Calculation Errors? . . . . . Yes No N/A

Comments: Am-241, U-235, and Np-237 LCS%R were > 130%. Associated positive results have been qualified as estimated (J).

7. Chemical Recovery . . . . . ☐ N/A

Chemical carrier added? . . . . . Yes No N/A

Chemical recovery acceptable? . . . . . Yes No N/A

Chemical carrier traceable? . . . . . Yes No N/A

Chemical carrier expired? . . . . . Yes No N/A

Transcription/Calculation errors? . . . . . Yes No N/A

Comments:

8. Duplicates . . . . . ☐ N/A

Duplicates Analyzed? . . . . . Yes No N/A

RPD Values Acceptable? . . . . . Yes No N/A

Transcription/Calculation Errors? . . . . . Yes No N/A

Comments: K-40 RPD is 59%. Assoc. results have been qualified as estimated (J/UJ).

062

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: Sample locations are currently not available. Field QC will be evaluated in the final summary report.

10. Holding Times

Are sample holding times acceptable? . . . . . Yes No N/A

Comments: Samples were collected between 3/21/94 and 3/31/94. All samples ⊗6/24/94 analyses were completed by 5/27/94 which is ≤ 180 days.

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
6/23/94 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: The result and MDA calculations for Tc-99 and Se-79 could not be verified. Assoc. results have been qualified as estimated (J/UJ).
The MDA calculation for Np-237 could not be verified. Assoc. nondetect results (MDAs) have been qualified as estimated (UJ). ⊗6/23/94

Comments: results 6/23/94

All sample and MDA values were supported in the raw data with the exception of the cobalt-60 MDA value for sample B09WK5 and the MDA values for Co-60, Eu-152, Cs-137 DA, Cs-134, Ru-106 DA, Na-22, Eu-155 and Eu-154 assoc. with sample B09WK4 and the Th-234 MDA for sample B0BKM. The laboratory report forms have been corrected accordingly and the associated raw data is attached for reference. 6/23/94 6/23/94 6/23/94

All MDAs meet the RDL with the exception of the following:

Analyte	Sample	MDA (pCi/g)	RDL (pCi/g)
Pu-238	B0BKP8	0.0546	0.05
Pu-239/240	B0BKQ4	0.056	0.05
Eu-152	B09WJ9	0.126	0.1
	B09WK1	0.130	0.1
	B09WK2	0.128	0.1
	B0BKM1	0.111	0.1
	B0BKM4	0.105	0.1
	B0BKM5	0.105	0.1
	B0BKM6	0.111	0.1
Eu-155	B0BKM1	0.113	0.1
	B0BKM3	0.199	0.1
Tc-99	All Samples	0.77	0.5

No qualification is required.

6/23/94

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NUCLIDE SUMMARY REPORT (REV 27-Apr-90) W09W K4

Variable peak width = 3.00 MDA confidence level = 5.00 System error = 5.00

Processing Flags 40349002

Fit singlets = no Variable dead time correction = no
Collection time decay = no Critical level test = no
Propagate all errors = yes Library based efficiency = no

NUCLIDE	PCI /GRAM	SAMPLE PCI /GRAM	1-SIGMA ERROR	% ERROR
BE-7	< 1.522E-01	-.402E-01	4.566E-02	113.55
NA-22	< 1.382E-02	-.716E-02	4.358E-03	60.84
NA-24		--------	HALF LIFE TOO SHORT	
K-40	DETECTED	2.369E-01	1.083E-01	45.69
AR-41		--------	HALF LIFE TOO SHORT	
SC-46	< 2.355E-02	3.483E-02	6.025E-03	17.30
CR-51	< 2.065E-01	-.459E-01	6.206E-02	135.26
MN-54	< 1.396E-02	-.778E-02	4.342E-03	55.80
CO-57	< 6.403E-02	4.243E-02	1.905E-02	44.89
CO-58	< 1.571E-02 5-16-99 no MC	-.460E-02	4.766E-03	103.63
FE-59	< 3.929E-02	-.454E-03	1.152E-02	% 2533.78
CO-60	< 1.323E-02	3.989E-03	3.628E-03	90.95
ZN-65	< 2.802E-02	1.108E-04	8.026E-03	% 7245.8
SE-75	< 1.484E-02	-.178E-02	4.579E-03	256.92
AS-76		--------	HALF LIFE TOO SHORT	
RB-83	< 2.745E-02	-.821E-02	8.707E-03	106.03
SR-85	< 2.078E-02	-.836E-01	9.142E-03	10.94
KRRB-88		--------	HALF LIFE TOO SHORT	
Y-88	< 1.688E-02	-.119E-01	5.571E-03	46.68
ZR-89		--------	HALF LIFE TOO SHORT	
SR-91		--------	HALF LIFE TOO SHORT	
NB-94	< 1.185E-02	-.801E-02	3.734E-03	46.62
NB-95	< 2.635E-02	-.676E-02	8.067E-03	119.33
ZR-95	< 3.080E-02	-.158E-01	9.768E-03	61.86
ZRNB-95	< 3.879E-02	4.493E-03	1.165E-02	259.17
NB-96		--------	HALF LIFE TOO SHORT	
TC-96	< 2.798E+00	1.961E-01	8.322E-01	424.29
ZRNB-97		--------	HALF LIFE TOO SHORT	
MO-99		--------	HALF LIFE TOO SHORT	
RU-103	< 2.100E-02	1.208E-02	5.824E-03	48.23
RU-106DA	< 1.153E-01	-.974E-02	3.448E-02	354.08
CD-109	~~DETECTED~~ no	1.744E-01	1.249E-01	71.62 case liner x Ray MC 5-16-99
AG-110M	< 1.815E-02	-.769E-02	5.502E-03	71.59
SN-113DA	< 1.745E-02	5.075E-03	5.206E-03	102.59
SB-122		--------	HALF LIFE TOO SHORT	
I-124		--------	HALF LIFE TOO SHORT	
SB-124	< 1.725E-02	-.654E-02	5.412E-03	82.78
SB-125	< 3.431E-02	2.151E-02	9.780E-03	45.46
SB-126	< 7.170E-02	-.175E-01	2.141E-02	122.27
I-131	< 2.097E-01	3.113E-02	6.401E-02	205.61
XE-131M	< 2.374E+00	-.474E+00	7.304E-01	154.00
I-132		--------	HALF LIFE TOO SHORT	
BA-133	< 1.432E-02	-.280E-02	4.526E-03	161.69
I-133		--------	HALF LIFE TOO SHORT	
XE-133	< 2.346E+00	8.364E-01	7.021E-01	83.95
XE-133M		--------	HALF LIFE TOO SHORT	
CS-134	< 1.235E-02	-.929E-03	3.691E-03	397.38
CS-136	< 9.116E-02	-.403E-02	2.638E-02	654.18
CS-137DA	< 1.187E-02	1.941E-03	3.369E-03	173.58
CE-139	< 9.235E-03	1.608E-03	2.767E-03	172.10

6/23/94

~~2101~~

065

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40349002 W09WF4

NUCLIDE		PCI /GRAM	SAMPLE PCI /GRAM	1-SIGMA ERROR	% ERROR
BA-140	<	2.438E-01	-.192E+00	7.922E-02	41.20
BALA-140	<	1.840E-01	-.161E-01	5.516E-02	341.60
LA-140			--------	HALF LIFE TOO SHORT	
CE-141	<	2.751E-02	-.202E-01	8.931E-03	44.12
CE-144	<	5.981E-02	-.773E-02	1.857E-02	240.31
CEPR-144	<	1.197E-01	-.155E-01	3.714E-02	240.31
ND-147	<	6.746E-01	2.875E-01	1.951E-01	67.87
EU-152	<	6.502E-02	-.298E-03	1.859E-02	% 6240.15
EU-154	<	3.854E-02	-.198E-01	1.205E-02	60.84
EU-155	<	3.114E-02	7.551E-03	9.796E-03	129.73
W-187			--------	HALF LIFE TOO SHORT	
IR-192	<	1.373E-02	-.114E-02	4.075E-03	357.04
HG-203	<	1.726E-02	4.705E-03	5.112E-03	108.64
BI-207	<	1.125E-02	1.495E-04	3.352E-03	% 2242.34
TL-208	<	1.918E-02	4.511E-02	5.330E-03	11.82
BI-212	<	1.175E-01	7.982E-02	3.290E-02	41.22
PB-212		DETECTED	1.052E-01	1.181E-02	11.22
BI-214	<	3.966E-02	1.105E-01	1.129E-02	10.21
PB-214		DETECTED	1.258E-01	1.560E-02	12.41
RA-224DA		DETECTED	1.088E-01	1.221E-02	11.22
RA-226DA	<	3.966E-02	1.105E-01	1.129E-02	10.21
AC-228		DETECTED	1.910E-01	2.376E-02	12.44
RA-228DA		DETECTED	1.931E-01	2.403E-02	12.44
TH-228	<	3.202E+00	2.077E+00	9.626E-01	46.35
TH-232DA		DETECTED	1.910E-01	2.376E-02	12.44
TH-234		DETECTED	4.196E+00	1.690E+00	40.27
U-235	<	6.385E-02	1.730E-02	1.930E-02	111.60
NP-237	<	2.061E-02	9.056E-03	5.931E-03	65.49
U-238DA		DETECTED	1.258E-01	1.560E-02	12.41
NP-239			--------	HALF LIFE TOO SHORT	
AM-241	<	4.480E-02	2.771E-03	1.411E-02	509.23

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END OF SUMMARY REPORT

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NUCLIDE	PCI /GRAM	SAMPLE PCI /GRAM	1-SIGMA ERROR	% ERROR
BA-140	< 1.253E+00	5.380E-01	3.927E-01	73.00
BALA-140	< 2.415E-01	-.310E+00	8.043E-02	25.93
LA-140		--------	HALF LIFE TOO SHORT	
CE-141	< 1.025E-01	-.423E-01	3.323E-02	78.48
CE-144	< 2.134E-01	1.018E-01	6.934E-02	68.08
CEPR-144	< 4.268E-01	2.037E-01	1.387E-01	68.08
ND-147	< 3.537E+00	-.395E+00	1.119E+00	283.38
EU-152	< 7.016E-02	8.475E-02	1.939E-02	22.88
EU-154	< 4.659E-02	9.787E-03	1.382E-02	141.22
EU-155	< 9.964E-02	4.162E-02	3.077E-02	73.92
W-187		--------	HALF LIFE TOO SHORT	
IR-192	< 5.597E-02	1.987E-04	1.716E-02	% 8638.87
HG-203	< 6.937E-02	-.614E-01	2.213E-02	36.05
BI-207	< 3.151E-02	1.519E-02	9.761E-03	64.27
TL-208	< 4.372E-02	2.361E-01	1.715E-02	7.26
BI-212	< 1.416E-01	4.816E-01	4.461E-02	9.26
PB-212	DETECTED	6.795E-01	4.614E-02	6.79
BI-214	DETECTED	5.491E-01	4.766E-02	8.68
PB-214	DETECTED	6.453E-01	5.772E-02	8.94
RA-224DA	DETECTED	7.074E-01	4.804E-02	6.79
RA-226DA	DETECTED	5.492E-01	4.766E-02	8.68
AC-228	DETECTED	7.139E-01	4.727E-02	6.62
RA-228DA	DETECTED	7.236E-01	4.791E-02	6.62
TH-228	< 1.205E+01	5.764E+00	3.655E+00	63.41
TH-232DA	DETECTED	7.139E-01	4.727E-02	6.62
TH-234	< 8.343E+00	-.312E+00	2.533E+00	812.42
U-235	< 1.990E-01	9.149E-03	6.421E-02	701.79
NP-237	< 8.149E-02	3.050E-02	2.505E-02	82.13
U-238DA	DETECTED	6.453E-01	5.772E-02	8.94
NP-239		--------	HALF LIFE TOO SHORT	
AM-241	< 1.191E-01	3.138E-02	3.934E-02	125.35

END OF SUMMARY REPORT

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6/23/94

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

BLANK RESULTS

LAB NAME: ITAS-RICHLAND SDG NO.: W0013

LAB SAMPLE ID: L-03-490-1B

REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
AM-241	6.04E-01	1.08E-01	1.42E-01	2.19E-02	0.757	RD3302
CM-242	0.00E+00	0.00E+00	1.58E-02	1.42E-02	0.757	RD3302
CM-244	0.00E+00	0.00E+00	1.44E-02	1.30E-02	0.757	RD3302
NP-237	0.00E+00	0.00E+00	0.00E+00	1.13E-02	0.569	RD3208
PU-238	-2.28E-03	3.23E-03	3.25E-03	2.85E-02	0.73	RD3209
PU239/40	-1.14E-03	2.28E-03	2.29E-03	2.46E-02	0.73	RD3209
U-234	2.92E-02	2.80E-02	2.83E-02	2.90E-02	0.668	RD3234
U-235	-1.50E-03	1.73E-03	1.74E-03	2.73E-02	0.668	RD3234
U-238DA	1.15E-02	1.77E-02	1.78E-02	2.54E-02	0.668	RD3234
K-40	1.35E+00	2.06E-01	2.46E-01	4.59E-01	N/A	RD3219
CO-60	-1.79E-03	1.16E-02	1.16E-02	1.98E-02	N/A	RD3219
EU-152	8.59E-02	4.83E-02	4.90E-02	1.02E-01	N/A	RD3219
CS-137DA	-4.74E-03	1.07E-02	1.07E-02	1.77E-02	N/A	RD3219
CS-134	1.15E-02	1.07E-02	1.08E-02	1.90E-02	N/A	RD3219
RU-106DA	-5.04E-02	1.00E-01	1.00E-01	1.63E-01	N/A	RD3219
NA-22	7.64E-03	1.17E-02	1.17E-02	2.16E-02	N/A	RD3219
EU-155	1.89E-02	2.70E-02	2.71E-02	4.39E-02	N/A	RD3219
EU-154	2.15E-02	3.28E-02	3.29E-02	6.09E-02	N/A	RD3219
I-129LP	-1.60E-01	3.09E-01	3.09E-01	5.24E-01	N/A	RD3219
ALPHA	2.02E-02	4.23E-02	4.25E-02	7.87E-02	1	RD3222
BETA	-7.70E-02	2.97E-01	2.97E-01	5.66E-01	1	RD3222
SE-79	1.12E+00	6.95E-01	1.93E+00	1.44E+00	0.661	RD3253
TC-99	-4.12E-01	3.14E-01	1.47E+00	7.70E-01	0.689	ITAS-IT-RS-0001
URANIUM	0.00E+00	N/A	9.97E-04	4.60E-03	0.919	RD4200

6/23/94

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

BLANK RESULTS

LAB NAME: ITAS-RICHLAND SDG NO.: W0013

LAB SAMPLE ID: L-03-490-2B

REPORTING UNITS: pCi/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
PU-238	-2.70E-03	3.82E-03	3.84E-03	3.81E-02	0.618	RD3209
PU239/40	6.74E-03	1.35E-02	1.35E-02	1.83E-02	0.618	RD3209
U-234	1.98E-02	2.65E-02	2.67E-02	3.71E-02	0.547	RD3234
U-235	-1.22E-03	1.72E-03	1.73E-03	3.10E-02	0.547	RD3234
U-238DA	-1.83E-03	2.11E-03	2.13E-03	3.34E-02	0.547	RD3234
K-40	3.62E-01	7.96E-02	8.74E-02	1.84E-01	N/A	RD3219
CO-60	1.51E-03	3.52E-03	3.52E-03	7.10E-03	N/A	RD3219
EU-152	-7.07E-03	1.98E-02	1.98E-02	3.46E-02	N/A	RD3219
CS-137DA	0.00E+00	4.20E-03	0.00E+00	N/A	N/A	RD3219
CS-134	-8.14E-04	3.94E-03	3.94E-03	6.72E-03	N/A	RD3219
RU-106DA	3.23E-02	3.09E-02	3.11E-02	6.07E-02	N/A	RD3219
NA-22	-5.34E-03	4.69E-03	4.72E-03	7.00E-03	N/A	RD3219
EU-155	3.66E-03	1.09E-02	1.09E-02	1.75E-02	N/A	RD3219
EU-154	-1.50E-02	1.32E-02	1.33E-02	1.98E-02	N/A	RD3219

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

BLANK RESULTS

LAB NAME: ITAS-RICHLAND SDG NO.: W0013

LAB SAMPLE ID: L-03-490-1X

REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
TC-99	1.83E-01	3.23E-01	1.51E+00	7.70E-01	0.689	ITAS-IT-RS-0001
URANIUM	0.00E+00	N/A	4.65E-02	4.60E-03	0.919	RD4200

LAB SAMPLE ID: L-04-017-1B

REPORTING UNITS: pCi/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD NUMBER
AM-241	7.35E-01	1.19E-01	1.64E-01	1.30E-02	0.756	RD3302
CM-242	0.00E+00	0.00E+00	1.58E-02	1.42E-02	0.756	RD3302
CM-244	0.00E+00	0.00E+00	1.44E-02	1.30E-02	0.756	RD3302
PU-238	-2.91E-03	5.82E-03	5.85E-03	6.29E-02	0.287	RD3209
PU239/40	-2.91E-03	5.82E-03	5.85E-03	6.28E-02	0.287	RD3209
U-234	4.23E-03	1.43E-02	1.43E-02	3.43E-02	0.591	RD3234
U-235	4.79E-03	1.43E-02	1.43E-02	3.27E-02	0.591	RD3234
U-238DA	5.36E-03	1.42E-02	1.43E-02	3.09E-02	0.591	RD3234

6/23/94

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

MATRIX SPIKE RESULTS

LAB NAME: ITAS-RICHLAND SDG NO.: W0013

LAB SAMPLE ID: W-03-490-01

REPORTING UNITS: pCi/g

ISOTOPE	SPIKE RESULT*	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	SAMPLE RESULT	EXPECTED	% RECOVERY
SE-79	4.10E+01	6.80E+00	6.80E+00	N/A	0	5.41E+01	76

LAB SAMPLE ID: W-03-490-04

REPORTING UNITS: pCi/g

ISOTOPE	SPIKE RESULT*	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	SAMPLE RESULT	EXPECTED	% RECOVERY
TC-99	2.29E+02	2.97E+00	2.93E+01	7.70E-01	1	3.00E+02	76
SE-79	2.53E+01	4.82E+00	4.82E+00	N/A	0	4.51E+01	56

J/UJ

LAB SAMPLE ID: W-03-631-05

REPORTING UNITS: pCi/g

ISOTOPE	SPIKE RESULT*	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	SAMPLE RESULT	EXPECTED	% RECOVERY
TC-99	1.86E+02	2.69E+00	2.44E+01	7.70E-01	1	3.01E+02	62

*SPIKE RESULT CORRECTED FOR SAMPLE RESULT

6/22/94

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

MATRIX SPIKE RESULTS

LAB NAME: ITAS-RICHLAND **SDG NO.:** W0013

LAB SAMPLE ID: W-04-017-04

REPORTING UNITS: pCi/g

ISOTOPE	SPIKE RESULT*	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	SAMPLE RESULT	EXPECTED	% RECOVERY
NP-237	3.20E+00	2.31E-01	7.28E-01	1.67E-02	-5.86E-04	5.63E+00	57

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*SPIKE RESULT CORRECTED FOR SAMPLE RESULT

6/22/94

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

LABORATORY CONTROL SAMPLES

LAB NAME: ITAS-RICHLAND SDG NO.: W0013

LAB SAMPLE ID: L-04-017-1S

REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	EXPECTED	% RECOVERY
AM-241	6.57E+00	3.41E-01	1.04E+00	1.78E-02	0.823	4.59E+00	143
PU239/40	4.51E-01	1.32E-01	1.49E-01	2.60E-02	0.434	4.51E-01	100
U-234	1.15E+00	3.48E-01	4.41E-01	1.07E-01	0.159	1.62E+00	71
U-235	9.86E-02	1.05E-01	1.08E-01	1.15E-01	0.159	7.37E-02	134
U-238DA	1.75E+00	4.29E-01	5.96E-01	1.07E-01	0.159	1.69E+00	104

LAB SAMPLE ID: L-03-490-1S

REPORTING UNITS: pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	EXPECTED	% RECOVERY
AM-241	8.98E+00	4.70E-01	1.59E+00	1.66E-02	0.591	4.59E+00	196
NP-237	8.65E+00	5.04E-01	1.93E+00	1.68E-02	0.569	5.64E+00	153
PU239/40	4.83E-01	1.12E-01	1.30E-01	1.77E-02	0.639	4.59E-01	105
U-234	1.88E+00	2.23E-01	3.39E-01	3.05E-02	0.635	1.62E+00	116
U-235	7.83E-02	4.55E-02	4.67E-02	2.41E-02	0.635	7.38E-02	106
U-238DA	1.59E+00	2.05E-01	2.98E-01	3.05E-02	0.635	1.69E+00	94
CS-137DA	3.88E-01	4.18E-02	5.70E-02	N/A	N/A	3.58E-01	108
RA-226DA	1.08E+00	9.38E-02	1.43E-01	N/A	N/A	1.16E+00	93
AC-228	2.07E+00	1.61E-01	2.63E-01	N/A	N/A	1.89E+00	110
I-129LP	1.21E+01	1.02E+00	1.58E+00	N/A	N/A	9.04E+00	134
ALPHA	5.07E+00	4.75E-01	9.63E-01	9.86E-02	1	4.51E+00	112
BETA	1.24E+01	1.10E+00	1.41E+00	6.07E-01	1	1.13E+01	110
SE-79	4.98E+01	1.29E+01	1.29E+01	N/A	0.661	5.42E+01	92
URANIUM	1.02E+01	0.00E+00	1.53E+00	4.60E-03	0.919	1.01E+01	101

6/22/94

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

LABORATORY CONTROL SAMPLES

LAB NAME: ITAS-RICHLAND SDG NO.: W0013

LAB SAMPLE ID: L-03-490-2S

REPORTING UNITS: pCi/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	EXPECTED	% RECOVERY
PU239/40	3.54E+00	3.01E-01	5.63E-01	3.05E-02	0.653	3.40E+00	104
U-234	1.37E+00	3.02E-01	3.99E-01	8.25E-02	0.252	1.62E+00	85
U-235	9.80E-02	8.11E-02	8.33E-02	6.66E-02	0.252	7.38E-02	133
U-238DA	1.70E+00	3.36E-01	4.68E-01	7.56E-02	0.252	1.69E+00	101
K-40	1.85E+01	6.88E-01	1.98E+00	N/A	N/A	1.95E+01	95
CS-137DA	4.65E-01	4.29E-02	6.32E-02	N/A	N/A	4.80E-01	97
RA-226DA	9.26E-01	7.77E-02	1.21E-01	N/A	N/A	1.16E+00	80

LAB SAMPLE ID: L-04-066-1S

REPORTING UNITS: pCi/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	EXPECTED	% RECOVERY
TOTAL-SR	8.19E+00	2.91E-01	2.03E+00	1.04E-01	0.851	5.23E+00	157

6/22/94

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

RPD CALCULATIONS

LAB NAME: ITAS-RICHLAND SDG NO.: W0013

LAB SAMPLE ID: 4-04-017-01

WHC ID: BOBNQ5

REPORTING UNITS: pCi/g

ISOTOPE	SAMPLE RESULT	DUPLICATE RESULT	RPD
AM-241	7.21E-01	6.33E-01	13.00
CM-242	0.00E+00	0.00E+00	N/A
CM-244	-8.19E-04	0.00E+00	200.00
PU-238	5.75E-03	-2.69E-03	551.63
PU239/40	0.00E+00	-1.07E-02	200.00
U-234	2.43E-02	5.27E-02	73.77
U-235	-1.06E-03	7.26E-03	268.39
U-238DA	4.52E-02	8.43E-02	60.39
K-40	2.26E-01	1.23E-01	59.03
CO-60	3.46E-03	5.61E-03	47.41
EU-152	2.88E-02	4.84E-02	50.78
CS-137DA	7.89E-04	6.36E-03	155.85
CS-134	6.15E-03	-4.64E-03	1429.14
RU-106DA	-4.94E-03	-6.61E-02	172.18
RA-224DA	1.36E-01	1.21E-01	11.67
NA-22	3.67E-03	6.01E-04	143.71
EU-155	2.32E-02	3.06E-03	153.39
EU-154	1.02E-02	-1.66E-03	277.75
AC-228	1.82E-01	2.01E-01	9.92
TL-208	6.19E-02	6.66E-02	7.32
PB-212	1.32E-01	1.18E-01	11.20
PB-214	1.15E-01	1.19E-01	3.42
TH-232DA	1.82E-01	2.01E-01	9.92
RA-228DA	1.83E-01	2.03E-01	10.36

6/23/94

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W0013-ITC-029

Americium/Curium

HEIS No.:	B09WJ9
Lab ID:	40349004
Detector:	ALP130 1
Date Counted:	05/17/94
Aliquot:	2.002
Am241 net cpm:	0.4692
Am241 bkg cpm:	0.0008
Spl count time:	200
Bkg count time:	2500
Eff d/c:	3.225
Decay:	1
Yield:	0.433
Am241 calc:	7.86E-01
Am241 rptd:	7.87E-01
Am241 MDA calc:	~~3.42E-02~~ 3.83 e-2
Am241 MDA rptd:	3.83E-02
Cm244 net cpm:	-0.0004
Cm244 bkg cpm:	0.0004
Cm244 decay:	1.006
Cm244 calc:	-6.74E-04
Cm244 rptd:	-6.75E-04
Cm244 MDA calc:	3.39E-02
Cm244 MDA rptd:	3.39E-02
Cm242 net cpm:	0.0050
Cm242 bkg cpm:	0.0000
Cm242 decay:	1.274
Cm242 calc.:	1.07E-02
Cm242 rptd:	1.07E-02
Cm242 MDA calc:	2.89E-02
Cm242 MDA rptd:	2.89E-02

6/24/94

6/24/94

W0013-ITC-029

Neptunium

HEIS No.:	B09WJ9
Lab ID:	40349004
Detector:	ALP18 1
Date Counted:	05/18/94
Aliquot:	2.00E+00
Np237 net cpm:	-0.001
Np237 bkg cpm:	0.001
Spl count time:	200
Bkg count time:	1000
Eff d/c:	3.7
Decay:	1
Yield:	0.569
Np237 calc:	-1.46E-03
Np237 rptd:	-1.46E-03
Np237 MDA calc:	3.50E-02
Np237 MDA rptd:	1.99E-02

W0013-ITC-029

Plutonium

HEIS No.:	B09WJ9
Lab ID:	40349004
Detector:	ALP18 1
Date Counted:	05/18/94
Aliquot:	2.00E+00
Pu238 net cpm:	0
Pu238 bkg cpm:	0
Spl count time:	200
Bkg count time:	1000
Pu238 Eff d/c:	3.703
Decay:	1.001
Yield:	0.724
Pu238 calc:	0.00E+00
Pu238 rptd:	0.00E+00
Pu238 MDA calc:	1.56E-02
Pu238 MDA rptd:	1.56E-02
Pu239 net cpm:	0
Pu239 bkg cpm:	0
Pu239 d/c:	3.7
Pu239 decay:	1
Pu239 calc:	0.00E+00
Pu239 rptd:	0.00E+00
Pu239 MDA calc:	1.56E-02
Pu239 MDA rptd:	1.56E-02

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W0013-ITC-029

Isotopic Uranium

HEIS No.:	B09WJ9
Lab ID:	40349004
Detector:	ALP3 1
Date Counted:	05/13 94
Aliquot:	2.01E+00
U-234 net cpm:	0.363
U-234 bkg cpm:	0.002
Spl count time:	200
Bkg count time:	2500
Eff d/c:	3.7
Decay:	1
Yield:	0.509
U-234 calc:	5.92E-01
U-234 rptd:	5.93E-01
U-234 MDA calc:	3.97E-02
U-234 MDA rptd:	3.97E-02
U-235 net cpm:	0.0234
U-235 bkg cpm:	0.0016
U-235 decay:	1
U-235 calc:	3.82E-02
U-235 rptd:	3.82E-02
U-235 MDA calc:	3.79E-02
U-235 MDA rptd:	3.79E-02
U-238 net cpm:	0.4184
U-238 bkg cpm:	0.0016
U-238 decay:	1
U-238 calc.:	6.83E-01
U-238 rptd:	6.83E-01
U-238 MDA calc:	3.79E-02
U-238 MDA rptd:	3.79E-02

079

W0013-ITC-029

Gross Alpha

HEIS No.:	B09WJ9
Lab ID:	40349004
Detector:	SET 3
Date Counted:	04/28/94
Aliquot:	4.99E-02
Net counts:	0.15
Bkg counts:	0.03
Spl count time:	100
Bkg count time:	500
d/c:	5.016
Calc.:	6.79E+00
Rptd:	6.79E+00
MDA calc:	4.07E+00
MDA rptd:	4.05E+00

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Gross Beta

HEIS No.:	B09WJ9
Lab ID:	40349004
Detector:	SET 42
Date Counted:	04/28/94
Aliquot:	2.50E-01
Net counts:	4.348
Bkg counts:	1.032
Spl count time:	50
Bkg count time:	500
d/c:	2.898
Calc.:	2.27E+01
Rptd:	2.27E+01
MDA calc:	2.87E+00
MDA rptd:	2.87E+00

9615974.1167

W0013-ITC-029

Strontium 90

HEIS No.:	B09WJ9
Sample:	40349004
Detector:	SET 43
Date Counted:	05/09/94
Sep date:	5/06/94
Sep time:	21:30
Count date:	5/09/94
Count time:	11:40
Hours:	62.166666
Sample amt:	6.03E+00
Net, cpm:	0.152
Count time:	50
Bkg, cpm:	0.908
Count time:	500
D/C 1:	2.181
D/C 2:	1.835
D/C 3:	1.969
Yield:	0.795
Calc:	2.02E-02
Rptd:	2.02E-02
MDA, Calc:	1.06E-01
MDA, rptd:	1.06E-01

9615714.1160

W0013-ITC-029

Selenium 79

HEIS No.:	B09WJ9
Sample:	40349004
Detector:	LSC 4
Date Counted:	05/11/94
Bkg cpm:	19.08
Spl, amt:	1.003
Spl cpm:	20.04
Count time:	100
Spl dpm:	22.8
d/c:	1.11
Yield:	0.661
Blk, dpm:	21.96
Calc:	5.63E+00
Rptd:	5.74E-01
MDA, calc:	1.55E+00
MDA, rptd:	1.43E+00

9613474.1169

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Technetium-99

HEIS No.:	B09WJ9
Sample:	40349004
Detector:	LSC 3
Date Counted:	05/09/94
Bkg cpm:	25.24
Spl, amt:	2.00E+00
Spl cpm:	27.5
Count time:	125
Spl dpm:	29.21
d/c:	40.94
Yield:	0.689
Blk, dpm:	2.69E+01
Calc:	3.48E+00
Rptd:	3.27E-01
MDA, calc:	2.83E+01
MDA, rptd:	7.70E-01

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Total Uranium

HEIS No.:	B09WJ9
Lab ID:	40349004
Date Counted:	05/09/94
ng, raw:	~~2.29E-01~~ 2.29 e3
g, sample:	1.00E+00
Dil. vol:	100.02
Yield, corr:	0.9192
Calc.:	~~2.49E-02~~ 2.49
Rptd:	2.49E+00

6/24/94

6/24/94

085

W0013R.WK1

24-Jun-94