START 9613479.0082

W0225-QES

Quanterra Environmental Services

0045352

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
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CERTIFICATE OF ANALYSIS

Bechtel Hanford Incorporated
P.O. Box 1970
Richland, Washington 99352

November 5, 1994

Attention: Joan Kessner

SEP 1996 RECEIVED EDMC

NOV 1994 RECEIVED Data Log In

Project number	:	550.19
Date Received by Lab	:	September 23, 1994
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W0225
Data Deliverable	:	Standalone

RECORD COPY

I. Introduction

On September 23, 1994, one (1) water sample was received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. Upon receipt, the sample was given the following laboratory ID number to correspond with the specific client ID:

St Louis ID	WHC ID	Richland ID	Matrix	Date of Receipt
6243-001	B0D0B9	4094501	Water	9/23/94

II. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits.

Analyses requested: VOA by EPA method 8240. BNA by EPA method 8270. TAL Metals by SW846; ICP metals by method 6010. Arsenic by method 7060. Mercury by method 7470. Lead by method 7421. Selenium by method 7740. Thallium by method 7841.

Quanterra
Environmental Services

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate analyses were performed per the protocol for this SDG.

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike

V. Comments

Insufficient sample volumewas received to perform the metals analysis by the protocol. Instead of the standard 100 ml, the following aliquots were used for digestion of the sample for the metals analyses:

Mercury	50 mls
ICP	50 mls
GFAA	25 mls

The matrix spike (62.1%) and matrix spike duplicate (53.1%) recoveries for mercury were less than 75%. The associated data for mercury is therefore flagged with an "N". The matrix spike for iron (34.4%) and the matrix spike duiplicate for iron (55.7%) and copper (135%) also did not meet the 75%-125% criteria but the data is not flagged because the sample concentrations were greater than 4X the spike amount.

The RPD for aluminum (23.1) and zinc (26.6) was greater than 20 therefore the associated data is flagged with an "*".

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In the initial analysis, sample 6243-001 gave low recoveries for 2-fluorophenol surrogate at 20% (LCL=21%) and 2-fluorobiphenyl surrogate at 40% (LCL=43%). The MS/MSD gave acceptable recoveries for all surrogates, therefore we conclude that the low recoveries in the unspiked samples were laboratory dependent. QBLK46840 gave high recoveries for 2, 4, 6-tribromophenol surrogate at 143% (UCL=123%) and terphenyl-d14 surrogate at 172% (UCL=141%), probably the result of an instrument bias. Unfortunately, no sample remained to allow re-extraction, therefore, reanalysis of the original extracts was performed.

Sample 6243-001, -001MS and -001MSD were extracted as a single batch and analyzed in a single GC/MS calibration sequence. However, the GC/MS calibration, although passing all method criteria, seemed to have changed at some point in the analytical sequence prior to the analysis of these samples. Therefore, these samples were reanalyzed and both analyses are reported.

The initial analysis showed high surrogate recoveries for several surrogates ion the blank and the LCS and also high LCS target compound recoveries. Upon reanalysis, all surrogate and spike recoveries were in-control. The initial analysis is only being reported as it was reported as "Preliminary Data" earlier.

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Wade H. Price
Project Manager
z:\abbydave\hanw0225.coa

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0D0B9

Lab Name: ITAS-ST.LOUIS Contract: 550-19

Lab Code: ITSL Case No.: V24301 SDG No.: W0225

Matrix: (soil/water) WATER Lab Sample ID: 6243-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: F9840

Level: (low/med) LOW Date Received: 09/23/94

% Moisture: not dec. Date Analyzed: 09/28/94

Column: (pack/cap) CAP Dilution Factor: 1.0

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	2	BJ
67-64-1	Acetone	100	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0D0B9

Lab Name: ITAS-ST.LOUIS Contract: 550-19

Lab Code: ITSL Case No.: V24301 SDG No.: W0225

Matrix: (soil/water) WATER Lab Sample ID: 6243-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: F9840

Level: (low/med) LOW Date Received: 09/23/94

% Moisture: not dec. Date Analyzed: 09/28/94

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0D0B9

Lab Name: ITAS-ST.LOUIS Contract: 550-19

Lab Code: ITSL Case No.: S24301 SAS No.: SDG No.: W0225

Matrix: (soil/water) WATER Lab Sample ID: 6243-001

Sample wt/vol: 1000 (g/mL) ML Lab File ID: H0886

Level: (low/med) LOW Date Received: 09/23/94

% Moisture: not dec. dec. Date Extracted: 09/29/94

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 10/06/94

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	20	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0D0B9

Lab Name: ITAS-ST.LOUIS Contract: 550-19

Lab Code: ITSL Case No.: S24301 SAS No.: SDG No.: W0225

Matrix: (soil/water) WATER Lab Sample ID: 6243-001

Sample wt/vol: 1000 (g/mL) ML Lab File ID: H0886

Level: (low/med) LOW Date Received: 09/23/94

% Moisture: not dec. dec. Date Extracted: 09/29/94

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 10/06/94

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

9613479.0089

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0D0B9

Lab Name: ITAS-ST.LOUIS Contract: 550-19

Lab Code: ITSL Case No.: S24301 SAS No.: SDG No.: W0225

Matrix: (soil/water) WATER Lab Sample ID: 6243-001

Sample wt/vol: 1000 (g/mL) ML Lab File ID: H0886

Level: (low/med) LOW Date Received: 09/23/94

% Moisture: not dec. dec. Date Extracted: 09/29/94

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 10/06/94

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 314409	2,4(1H,3H)-Pyrimidinedione,	19.32	9	J
2.	UNKNOWN	23.24	2	J
3.	UNKNOWN	28.15	2	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0D0B9RE

Lab Name: ITAS-ST.LOUIS Contract: 550-19

Lab Code: ITSL Case No.: S24301 SAS No.: SDG No.: W0225

Matrix: (soil/water) WATER Lab Sample ID: 6243-001RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: A6463

Level: (low/med) LOW Date Received: 09/23/94

% Moisture: not dec. dec. Date Extracted: 09/29/94

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 10/31/94

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	20	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0D0B9RE

Lab Name: ITAS-ST.LOUIS Contract: 550-19

Lab Code: ITSL Case No.: S24301 SAS No.: SDG No.: W0225

Matrix: (soil/water) WATER Lab Sample ID: 6243-001RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: A6463

Level: (low/med) LOW Date Received: 09/23/94

% Moisture: not dec. dec. Date Extracted: 09/29/94

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 10/31/94

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1	J
117-84-0	Di-n-Octyl Phthalate	1	J
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

9613479.0092

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0D0B9

Lab Name: ITAS_ST._LOUIS Contract: 550.19
Lab Code: ITMO Case No.: SAS No.: SDG No.: W0225
Matrix (soil/water): WATER Lab Sample ID: 6243-001
Level (low/med): LOW Date Received: 09/23/94
% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6420		*	P
7440-36-0	Antimony	30.5	U		P
7440-38-2	Arsenic	3.4			F
7440-39-3	Barium	156	B		P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	3.5	B		P
7440-70-2	Calcium	39500			P
7440-47-3	Chromium	57.2			P
7440-48-4	Cobalt	3.2	U		P
7440-50-8	Copper	1500			P
7439-89-6	Iron	4550			P
7439-92-1	Lead	17.1			F
7439-95-4	Magnesium	9630			P
7439-96-5	Manganese	497			P
7439-97-6	Mercury	0.71		N	CV
7440-02-0	Nickel	29.6	B		P
7440-09-7	Potassium	2710	U		P
7782-49-2	Selenium	1.4	U		F
7440-22-4	Silver	4.2	B		P
7440-23-5	Sodium	13200			P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	8.3	B		P
7440-66-6	Zinc	1950		*	P

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

Comments:

FORM I - IN

Quanterra September 29, 1994 04:10 pm
Account: 10722 Project: 550.19 Quanterra-Richland QAS No. 731 Rev. 0
Master Sample Login: 6243

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: PM Review:

Sample Header Template:

Sample No. / #	Client ID / Container Type	C-Matrix / Analysis	Date: Collected	Received	Due	Shipper	Class	Preservative	Anal. Due Date	Hold Date	Site	Rad Category / (Container Numbers:% Filled)	Rad Sample No.
6243-001	8DD089	Water	22-SEP-94 09:05	23-SEP-94 10:30	07-OCT-94	FED-EX	1					Screening not Required	
QUANTERRA RICHLAND I.D. 4094501													
3	VI - Vial-40ml	VOA/8240/Q4					S	HCL	05-OCT-94	06-OCT-94	109A	(101230:100 101231:99 101232:98)	
2	AN - Amber Glass-1L	BNA/8270/Q4					S	COLD	05-OCT-94	29-SEP-94	S17B	(101233:100 101234:99)	
1	AN - Amber Glass-500ml	AS/7060/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		HG/7470/Q4					S	HNO3	05-OCT-94	20-OCT-94	S17B	(101235:100)	
1		ICAP/6010/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		PB/7421/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		SE/7740/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		TL/7841/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
6243-001MS	8DD089	Water	22-SEP-94 09:05	23-SEP-94 10:30	07-OCT-94	FED-EX	1					Screening not Required	
QUANTERRA RICHLAND I.D. 4094501													
3	VI - Vial-40ml	VOA/8240/Q4					S	HCL	05-OCT-94	06-OCT-94	109A	(101230:100 101231:99 101232:98)	
2	AN - Amber Glass-1L	BNA/8270/Q4					S	COLD	05-OCT-94	29-SEP-94	S17B	(101233:100 101234:99)	
1	AN - Amber Glass-500ml	AS/7060/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		HG/7470/Q4					S	HNO3	05-OCT-94	20-OCT-94	S17B	(101235:100)	
1		ICAP/6010/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		PB/7421/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		SE/7740/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		TL/7841/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
6243-001MSD	8DD089	Water	22-SEP-94 09:05	23-SEP-94 10:30	07-OCT-94	FED-EX	1					Screening not Required	
QUANTERRA RICHLAND I.D. 4094501													
3	VI - Vial-40ml	VOA/8240/Q4					S	HCL	05-OCT-94	06-OCT-94	109A	(101230:100 101231:99 101232:98)	
2	AN - Amber Glass-1L	BNA/8270/Q4					S	COLD	05-OCT-94	29-SEP-94	S17B	(101233:100 101234:99)	
1	AN - Amber Glass-500ml	AS/7060/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		HG/7470/Q4					S	HNO3	05-OCT-94	20-OCT-94	S17B	(101235:100)	
1		ICAP/6010/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		PB/7421/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		SE/7740/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	
1		TL/7841/Q4					S	HNO3	05-OCT-94	21-MAR-95	S17B	(101235:100)	

3*=Sample has not been rad screened.

00009

9613479.0093

9613479.0094

Quanterra Environmental Services

C.U.R. and COPIES
COPIED TO: DK-AF
DATE: 09/24/94
TIME:
BY: Larry Phillips

Work Order No.: 6243

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: _____ Date: 09/24/94

Project No: _____ Initiated by: Larry Phillips

Analysis Requested: Refer to RFA/COC RFA/COC Numbers: 481900

Client Sample Numbers Affected: Entire Login

Condition/Variance (Check all that apply): Circle Number to Denote that Item was Evaluated. "NA" = "Not Applicable".

1	NA	Not enough sample received for proper analysis. Received approximately: _____	8.	☐	Custody tape disturbed/broken/missing.
			9.	NA	Sample splits performed by lab.
2	☐	Sample received broken/leaking.	10.	NA	Volatile sample received with approximately _____ mm headspace.
3	☐	Sample received without proper preservative.			
	☐	Cooler temperature not within 4°C ± 2°C Record temperature: 2°	11.	☐	Sample ID on container does not match sample ID on paperwork. Explain:
	☐	pH _____			
	☐	other: _____			
4	☐	Sample received in improper container.	12	☐	All coolers on airbill not received with shipment.
5	☐	Sample received without proper paperwork. Explain:	13.	☐	Other (explain below): Shipping containers not rad surveyed.
6	☐	Paperwork received without sample.			
7.	☐	No sample ID on sample container.			

Notes: (m) Sample 40949501 G

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____

☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Sample(s) processed "as is". Comments: _____

☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: (or designate) _____ Date: _____

Project Management Review: _____ Date: _____

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

00010 1759

Temp. 2° Cor 1759

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 481900
Page 1 of 1

Project Name/No. 1 B94-047
Sample Team Members 2
Profit Center No. 3 4632
Project Manager 4 VanPetley
Purchase Order No. 6
Required Report Date 11 10/7/94

Samples Shipment Date 7 9/23/94
Lab Destination 8 St Louis
Lab Contact 9
Project Contact/Phone 12
Carrier/Waybill No. 13

Bill to: 5 Quanterra Richland

Report to: 10 Quanterra Richland

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Preservative 19	Requested Testing Program 20	F.O.C. Condition on Receipt 21 PH	Disposal Record No. 22
40949501 A	B00089 / H_2O	9/22/94 See WHC	40ml vail COC/SAR	100%	4°C	See WHC COC/SAR	100%	
B		9/22/94	Amber 40ml vail	100%		Voa		
C		9/22/94	Amber 40ml vail	100%		Voa		
D		9/22/94	1 Liter Amber	100%		Semi Voa		
E		9/22/94	1 Liter Amber	100%		Semi Voa		
F		9/22/94	500ml Amber	100%		Metals		
G								
9/23/94								

FOR LAB USE ONLY

FOR LAB USE ONLY

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 ☑ 10/7/94

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

1. Relinquished by 28 (Signature/Affiliation) [signature]	Date: 9/23/94 Time: 1600	1. Received by 28 (Signature/Affiliation) Larry Phillips	Date: 09/24/94 Time: 0930
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

00011

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

9613479 0095

092394A.WQ2

TENNELEC #2

SCREENING CALCULATION SPREADSHEET

all Cat I (R3) 9/23/94

Cust Code	Recieved Date		Screening Prep Date		Count Date	Mnts. Cntd	BACKGROUND Alpha	Beta	Mnts
WHC	9/23/94		9/23		9/23	10	23	211	240

Customer ID WHC/LIQ	pH <2 Rcvd/Req	Residue Wght mG	Vol. Anal. mG mL	Sample Size Gm L	SMPLE CNT DATA Hldr Num.	Total Counts Alpha	Total Counts Beta	Net Sample Counts/Minute Alpha	Net Sample Counts/Minute Beta	DPM / Aliqout Alpha	DPM / Aliqout Beta	uCi per Sample Alpha	uCi per Sample Beta	2 Sigma Error uCi per Sample Alpha	2 Sigma Error uCi per Sample Beta	pCi/(Gm or L) Alpha	pCi/(Gm or L) Beta	Category 1 Yes/No	Aliquot to Cat 1 Gm or L Alpha	Aliquot to Cat 1 Gm or L Beta
BOCXM3	LIQ	1.8	10	2.5	22	9	32	0.80	2.32	2.76E+00	4.36E+00	3.1E-04	4.9E-04	2.6E-07	2.4E-07	1.2E+02	2.0E+02	Yes	8.0E+01	5.1E+02
BOCXX3	LIQ	2.8	10	1.0	94	5	31	0.40	2.22	1.36E+00	4.41E+00	6.1E-05	2.0E-04	7.1E-08	9.5E-08	6.1E+01	2.0E+02	Yes	1.6E+02	5.0E+02
~~BODPB0~~	LIQ	2.2	10	1.0	55	10	34	0.90	2.52	3.13E+00	4.72E+00	1.4E-04	2.1E-04	1.1E-07	1.5E-07	1.4E+02	2.1E+02	Yes	7.1E+01	4.7E+02
TOTAL uCi												5.1E-04	9.0E-04							

BODOB9

JH 9/26/94

409495 ST Louis Chem
409496 Rad.

SDL WO225

0020

96013479.0096

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [x] Priorty [ ] Normal

Collector: Doug Bowers	Company Contact: Andrea Hopkins	Telephone No.: 372-9027
Project Designation: 216-S-10 Ditch	Sampling Location: 200 W	SAF No.: B94-047
Ice Chest No.: GWS 141	Field Logbook No.:	Method of Shipment: Gov. Vehicle
Shipped To: Quanterra	Offsite Property No.: W94-0-0851-43	Bill of Lading/Air Bill No.:
Possible Sample Hazards/Remarks: Unknown at this time		

Preservative	HCL	none	HNO3	HCL	none	none											
Type of Container	Gs	aG	G	P/G	aG	P/G											
No. of Container(s)	3	2	1	4	1	1											
Volume	40 mL	1L	500mL	1L	40mL	20mL											
SAMPLE ANALYSIS 409495	VOA-TCL ABC	Semi-VOA DE	Metals FO	Total Alpha, Total Beta, Gamma Spec 40949601	Activity scan	Total Activity											

Sample No.	Matrix*	Date Sampled	Time Sampled															
BODOB9 01	W	09-22-94	0905	X	X	X	X	X										

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Doug Bowers	9-22-94 1135	Bill Whitten B. Whitten	9-22-94 1135
Bill Whitten B. Whitten	9-23-94 1030	R. Boyd Quinterra	9-23-94 2100 1030

SPECIAL INSTRUCTIONS

SDG W0225

Matrix*

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

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

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

9613479.0097

GWS 141

SAMPLE STATUS REPORT FOR N 2822. RAD SCREEN BOD0B9 TIME: 9/23/94 8: 6
DISPATCHED: 9/21/94 15: 4 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 9/22/94 14: 2

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	J12UP

END OF REPORT

INTERNATIONAL TECHNOLOGY CORPORATION
Regional Office
2800 George Washington Way
Richland, Washington 99352

9613479.0099

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 9/23/94 1030 Client Name BHI

Project/Client # B94-047 B94-024 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) GWS 141

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: 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 5°C

11. The following paperwork should be accounted for (N/A if not applicable): N/A
    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 R. Boyd R Boyd Date/Time 9/23/94 1030

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

9613479.0100

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NO. (To be obtained from PROPERTY MANAGEMENT)
BHI		W94-0-0851-43

PART I - TO BE COMPLETED BY ORIGINATOR

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

The following items are to be shipped from [X] Contractor [ ] Vendor

Routing [ ] Prepaid [ ] Collect

Shipped to
Company: Quanterra (IT)
Address: 2800 George Washington Way
City: Richland, WA 99352
Country: State: Zip Code:

Off-site Custodian:

On-site Custodian: Payroll No.:

Qty.	Property No.	Description (include Manufacture Name, Model, Serial No.)	Acquisition Cost
1 lbs.		Sample #: B0CXX3 B0CXX4 Cooler ID: GWS-141 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.		Sample #: B0CXM3 B0CXM4 Cooler ID; BONEHEAD II Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

[ ] Classified [X] Unclassified [ ] Shipped Under DOE Contract [ ] Shipped Under Contractor's Use Permit Contract

Necessity for the off-site use of this property

[ ] Required for Project Work. List Project No. 200-UP-1 200-ZP-1 216-S-10 DITCH

[ ] Business Trip

[ ] Off-site Assignment

Bill of lading # NA

[ ] Shipment to Subcontractor. List Subcontract No.

[ ] Other (Please specify) Sampling supports RI/FS work in the 200 AREA

RECEIVED
SEP 23 1994
PROPERTY RECORDS

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
[signature]		09/26/94

Location of and Contact for Property (Name/Phone No./Bldg./Area)
P. H. Butcher/ (509) 376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
9-23-94	PTIFA, PU4EA ~~0B410~~ ITE 2072	

Originated By	Date	Authorized By	Date
B.J. WHITTEN	9-23-94	[signature]	9-23-94

Property Representative Signature	Date	Property Management Approval	Date
		[signature]	9/23/94

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

*U.S. GPO: 1994-592-170/00029

R. Boyd Chartena 9-23-94 1030

54-3000-479 (01/94

00016

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0D0B9RE

Lab Name: ITAS-ST.LOUIS Contract: 550-19

Lab Code: ITSL Case No.: S24301 SAS No.: SDG No.: W0225

Matrix: (soil/water) WATER Lab Sample ID: 6243-001RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: A6463

Level: (low/med) LOW Date Received: 09/23/94

% Moisture: not dec. dec. Date Extracted: 09/29/94

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 10/31/94

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 10

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.39	3	J
2. 95169	Benzothiazole	11.50	2	J
3.	UNKNOWN	12.75	4	J
4.	UNKNOWN	13.42	3	J
5.	UNKNOWN	17.78	3	J
6. 314409	2,4(1H,3H)-Pyrimidinedione,	20.98	27	J
7.	UNKNOWN	24.88	9	J
8.	UNKNOWN	28.30	4	J
9.	UNKNOWN	28.43	2	J
10.	UNKNOWN	28.70	5	J

9613479.0102

Quanterra
Environmental
Services

Quanterra Incorporated
2800 George Washington Way
Richland, Washington 99352

509 375-3131 Telephone
509 375-5590 Fax

Analytical Data Package Prepared For

Westinghouse/Bechtel Hanford

Radiochemical Analysis By

Quanterra Environmental Services
Richland Laboratory

Sample Delivery Group Number: W0225

CLIENT ID NUMBER	QUANTERRA ID NUMBER
B0D0B9	40949601

RECORD COPY

NOV 1994
RECEIVED

Quanterra Incorporated
2800 George Washington Way
Richland, Washington 99352

509 375-3131 Telephone
509 375-5590 Fax

CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc.
P.O. Box 969
Richland, WA 99352

November 6, 1994

Attention: Joan Kessner

NOV 1994
RECEIVED
Data
Log In

SAF Number	:	B94-047
Date SDG Closed	:	September 23, 1994
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W0225
Data Deliverable	:	Stand Alone

RECORD COPY

I. Introduction

On September 23, 1994, one water sample was received by the Quanterra Environmental Services Richland Laboratory (QTESRL) for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Bechtel Hanford Inc. (BHI) specific ID:

QTESRL ID	BHI ID	Matrix	Date of Receipt
40949601	E0D0E9	Water	9/23/94

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.

Quanterra
Environmental Services

The requested analyses were:

Gamma Spectroscopy
Gamma Scan by method ITAS-RD-3219
Gas Proportional Counting
Gross Alpha by method ITAS-RD-3222
Gross Beta by method ITAS-RD-3222

III. Quality Control

The analytical results for each analysis performed under SDG W0225 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate. Any exceptions have been noted in the "Comments" section.

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

IV. Comments

Results from the initial radioactivity screening of this sample classified it as Category I.

Gamma Spectroscopy

Gamma Scan by method ITAS-RD-3219
Co-57 was detected in the LCS, but is not reported. It is false positive detection caused by interference with Eu-152 at 122 keV. The Eu-152 recovery in the LCS is biased low (77%). However, the LCS is accepted because the result is within 2.1 sigma of the expected value. Except as noted, the LCS, batch blank, sample and sample duplicate (duplicate of sample B0D0B9) results are within contractual limits.

Gas Proportional Counting

Gross Alpha by method ITAS-RD-3222
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0D0B9) results are within contractual limits.

Gross Beta by method ITAS-RD-3222
The LCS, batch blank, sample and sample duplicate (duplicate of sample B0D0B9) results are within contractual limits.

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
Project Manager

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	W0225
LAB SAMPLE ID:	40949601	MATRIX:	WATER
CLIENT ID:	B0D0B9	DATE RECEIVED:	9/23/94

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CO-58	-2.34E+00	3.12E+00	3.13E+00	5.16E+00	pCi/L	N/A	RD3219
CO-60	-4.48E+00	4.71E+00	4.73E+00	7.18E+00	pCi/L	N/A	RD3219
CS-137DA	4.18E+00	4.90E+00	4.92E+00	9.61E+00	pCi/L	N/A	RD3219
EU-152	-3.12E+00	9.86E+00	9.87E+00	1.68E+01	pCi/L	N/A	RD3219
EU-154	-4.06E+00	1.47E+01	1.47E+01	2.71E+01	pCi/L	N/A	RD3219
EU-155	-3.64E+00	8.15E+00	8.15E+00	1.39E+01	pCi/L	N/A	RD3219
FE-59	-4.63E+00	1.14E+01	1.14E+01	1.94E+01	pCi/L	N/A	RD3219
ALPHA	2.45E+00	1.60E+00	1.62E+00	2.01E+00	pCi/L	100.00%	RD3214
BETA	2.45E+01	2.71E+00	3.22E+00	2.93E+00	pCi/L	100.00%	RD3214

Number of Results: 9