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B099K5-TMA-600 394

TMA

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WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

GENERAL CHEMISTRY
Case No. 10-013
(TMA/ARLI Work Order No. A3-10-013)

METALS
Case No. N3-10-033
(TMA/Skinner & Sherman W.O. Nos. S3-10-082
& S3-10-092)

November 17, 1993

TMA Master Work Order N3-10-033

ms
7/2/96

GENERAL CHEMISTRY RESULTS

CASE NO. 10-013

Water Sample #:

B099K5 B099K9
B099L5

CASE NARRATIVE

The holding time for the pH analysis was exceeded. Careful review of the QC analysis indicates that the data is reliable.

No problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish

Maureen Parrish

9713512.2075

TMA Inc. REPORT Work Order # A3-10-013

Received: 10/11/93 Results by Sample

000009

SAMPLE ID B099K5 FRACTION 01A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.5	mg/L	0.1
pH	9040	7.8	pH	0.1
Sulfate	300.0	34	mg/L	4
Elect. Conductivity	9050	371	umho/cm	6

FORM I

9713512.2076

TMA Inc. REPORT Work Order # A3-10-013

Received: 10/11/93

Results by Sample

000010

SAMPLE ID B099K9 FRACTION 02A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.5	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	37	mg/L	4
Elect. Conductivity	9050	393	umho/cm	6

FORM I

9715512.2077

TMA Inc. REPORT Work Order # A3-10-013

Received: 10/11/93 Results by Sample

000011

SAMPLE ID B099L5 FRACTION 03A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	25	mg/L	1
Elect. Conductivity	9050	325	umhos/cm	6

FORM I

TMA 9713512.2078
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

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NOV 1993 RECEIVED SDLA

November 16, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Three (3) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 12, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310082.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

MS
7/2/96

i

9713512.2079

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099K5

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-033SAS No.: SDG No.: B099K5

Matrix (soil/water): WATER Lab Sample ID: 10082-01S

Level (low/med): LOW Date Received: 10/12/93

% 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	22.0	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	6.2	B		P
7440-39-3	Barium	17.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	33300			P
7440-47-3	Chromium	7.8	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	7.7	B		P
7439-89-6	Iron	47.2	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	10000			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6010			P
7782-49-2	Selenium	3.7	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	20900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	17.3	B		P
7440-66-6	Zinc	7.0	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9213512.2080

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099K9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-033SAS No.: SDG No.: B099K5

Matrix (soil/water): WATER Lab Sample ID: 10082-02S

Level (low/med): LOW Date Received: 10/12/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.9	B		P
7440-39-3	Barium	10.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	37300			P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.8	B		P
7439-89-6	Iron	43.6	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	11000			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6090			P
7782-49-2	Selenium	4.6	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	21800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	15.3	B		P
7440-66-6	Zinc	48.3			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9715512.2081

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099L5

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-033SAS No.: SDG No.: B099K5

Matrix (soil/water): WATER Lab Sample ID: 10082-03S

Level (low/med): LOW Date Received: 10/12/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.3	B		P
7440-39-3	Barium	19.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	34400			P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	63.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9150			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5430			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	14400			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	14.7	B		P
7440-66-6	Zinc	4.9	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

TMA 9713512.2082
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

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November 16, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Three (3) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 12, 1993 from TMA/Norcal.
The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310092.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

MS
7/2/96

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9713512.2083

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

8099K6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-033SAS No.: SDG No.: B099K6

Matrix (soil/water): WATER Lab Sample ID: 10092-01S

Level (low/med): LOW Date Received: 10/12/93

% 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	20.2	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	5.1	B		P
7440-39-3	Barium	17.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	33800			P
7440-47-3	Chromium	8.8	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	35.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	10100			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5910			P
7782-49-2	Selenium	3.2	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	20600			P
7440-28-0	Thallium	2.4	B		P
7440-62-2	Vanadium	17.9	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9713512.2084

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099L0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINNR Case No.: N3-10-033SAS No.: SDG No.: B099K6

Matrix (soil/water): WATER Lab Sample ID: 10092-02S

Level (low/med): LOW Date Received: 10/12/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	5.5	B		P
7440-39-3	Barium	10.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	36500			P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	17.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	10700			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5740			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	20700			P
7440-28-0	Thallium	3.1	B		P
7440-62-2	Vanadium	14.4	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

FORM I - IN ILM02.1

9713512.2085

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B099L6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-033SAS No.: SDG No.: B099K6

Matrix (soil/water): WATER Lab Sample ID: 10092-03S

Level (low/med): LOW Date Received: 10/12/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.9	B		P
7440-39-3	Barium	18.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	34100			P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	18.0	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8930			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5090			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	13500			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	13.3	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

GENERAL CHEMISTRY
Case No. 10-027
(TMA/ARLI Work Order # A3-10-027)

METALS
Case No. 10-052,57
(TMA/Skinner & Sherman W.O. Nos. S3-10-132 & S3-10-133)

December 13, 1993

TMA Master Work Orders N3-10-052 & N3-10-057

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7/2/96

GENERAL CHEMISTRY RESULTS

CASE NO. 10-027

Water Sample #:

B099G1	B099F9
B099H7	B099H9

CASE NARRATIVE

The holding time for the pH analysis was exceeded. Careful review of the QC analysis indicates that the data is reliable.

No problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish

Maureen Parrish

9713512.2088

TMA Inc. REPORT Work Order # A3-10-027

Received: 10/13/93 Results by Sample 000013

SAMPLE ID B099G1 FRACTION 01A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/11/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	7.9	pH	0.1
Sulfate	300.0	42	mg/L	5
Elect. Conductivity	9050	339	umhos/cm	6

FORM I

9713512.2089

000014 SF 11/14

TMA Inc. REPORT Work Order # A3-10-027-4 ~~000014~~

Received: 10/13/93

Results by Sample

SAMPLE ID B099F9 FRACTION 02A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.4	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	10	mg/L	1
Elect. Conductivity	9050	256	umhos/cm	6

FORM I

9713512.2090

TMA Inc. REPORT Work Order # A3-10-027

Received: 10/13/93 Results by Sample

000015

SAMPLE ID B099H7 FRACTION 03A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	49	mg/L	5
Elect. Conductivity	9050	392	umhos/cm	6

FORM I

9713512.2091

TMA Inc. REPORT Work Order # A3-10-027

Received: 10/13/93 Results by Sample

000016

SAMPLE ID B099H9 FRACTION 04A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	48	mg/L	5
Elect. Conductivity	9050	388	umhos/cm	6

FORM I

TMA 9713512.2092
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

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November 23, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Four (4) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 14, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310132.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

MS
7/2/96

9713512.2095

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099F9

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099F9

Matrix (soil/water): WATER Lab Sample ID: 10132-02S

Level (low/med): LOW Date Received: 10/14/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.2	B		P
7440-39-3	Barium	64.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	26600			P
7440-47-3	Chromium	5.3	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	42.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9410			P
7439-96-5	Manganese	23.3			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	4.4	B		P
7440-09-7	Potassium	5390			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	13300			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	34.4	B		P
7440-66-6	Zinc	8.7	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

9713912.2094

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099G1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099F9

Matrix (soil/water): WATER Lab Sample ID: 10132-01S

Level (low/med): LOW Date Received: 10/14/93

% 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	23.6	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	36.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	40000			P
7440-47-3	Chromium	24.2			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	6.5	B		P
7439-89-6	Iron	55.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9760			P
7439-96-5	Manganese	2.9	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4130	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	10800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	9.7	B		P
7440-66-6	Zinc	5.0	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

003

9713512.2095

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099H7

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099F9

Matrix (soil/water): WATER Lab Sample ID: 10132-03S

Level (low/med): LOW Date Received: 10/14/93

% 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	33.3	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.4	B		P
7440-39-3	Barium	25.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.4	B		P
7440-70-2	Calcium	51800			P
7440-47-3	Chromium	11.6			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	45.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8200			P
7439-96-5	Manganese	2.0	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	5.8	B		P
7440-09-7	Potassium	5670			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11500			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	9.1	B		P
7440-66-6	Zinc	16.2	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

004

9713512.2096

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

8099H9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: 8099F9

Matrix (soil/water): WATER Lab Sample ID: 10132-04S

Level (low/med): LOW Date Received: 10/14/93

% 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	15.5	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.2	B		P
7440-39-3	Barium	33.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	52100			P
7440-47-3	Chromium	13.2			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	41.1	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8020			P
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5050			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	7.3	B		P
7440-66-6	Zinc	6.2	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

005

9713512.2097

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

DEC 1993
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SDLA

November 23, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Four (4) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 14, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310133.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

MS
7/2/96

9713512.2098

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099G0

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099G0

Matrix (soil/water): WATER Lab Sample ID: 10133-02S

Level (low/med): LOW Date Received: 10/14/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.3	B		P
7440-39-3	Barium	67.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.4	B		P
7440-70-2	Calcium	26000			P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	64.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9310			P
7439-96-5	Manganese	28.0			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5440			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	13100			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	35.3	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

9713512.2099

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099G2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099G0

Matrix (soil/water): WATER Lab Sample ID: 10133-01S

Level (low/med): LOW Date Received: 10/14/93

% 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	11.8	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.8	B		P
7440-39-3	Barium	36.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	40400			P
7440-47-3	Chromium	20.2			P
7440-48-4	Cobalt	3.0	B		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	76.4	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9880			P
7439-96-5	Manganese	1.9	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4190	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11000			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	8.5	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9715512.2100

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

8099H8

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: 8099G0

Matrix (soil/water): WATER Lab Sample ID: 10133-03S

Level (low/med): LOW Date Received: 10/14/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.2	B		P
7440-39-3	Barium	24.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	52300			P
7440-47-3	Chromium	8.2	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	29.9	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8260			P
7439-96-5	Manganese	1.6	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5800			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	7.6	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

004

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WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

8099J0

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: 809960

Matrix (soil/water): WATER Lab Sample ID: 10133-04S

Level (low/med): LOW Date Received: 10/14/93

% 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	13.0	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.4	B		P
7440-39-3	Barium	33.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	52600			P
7440-47-3	Chromium	10.7			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	35.6	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8090			P
7439-96-5	Manganese	2.0	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5100			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	8.2	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

005

9715512.2102

TMA
Thermo Analytical Inc.

TMA/Norcal
2030 Wright Avenue
P. O. Box 4040
Richmond, CA 94804-0040
(510) 235-2633 Fax No. (510) 235-0438

January 25, 1994

Ref: TMA/Norcal N3-10-059-7279

Ms. Briana Colley
Westinghouse Hanford Company
345 Hills Street
Richland, WA 99352

Dear Ms. Colley:

Enclosed is additional material for Appendix 22, Raw Data for Continuing Calibration for Gross Counters, which was omitted from the report dated December 21, 1993 and January 19, 1993. This section is paginated 198J through 198N and should be inserted after page 198I.

Please call if you have any questions concerning this data.

Sincerely,

D.P. Kharkar

Dinkar P. Kharkar, Ph.D.
Manager, Nuclear Programs

DPK/ck

Enclosure: Data Package

JAN 1994
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TQO

MS
7/2/96

i

9715512.2103

TMA
Thermo Analytical Inc.

TMA/Norcal
2030 Wright Avenue
P. O. Box 4040
Richmond, CA 94804-0040
(510) 235-2633 Fax No. (510) 235-0438

JAN 1994
RECEIVED
SDLA

January 19, 1994

Ref: TMA/Norcal N3-10-059-7279

Ms. Briana Colley
Westinghouse Hanford Company
345 Hills Street
Richland, WA 99352

Dear Ms. Colley:

Enclosed is Appendix 22, Raw Data for Continuing Calibration for Gross Counters, which was omitted from the report dated December 21, 1993. This section is paginated 198a through 198i and should be inserted after page 198. Also enclosed is a new page 2, Index of Documents for Group 7279.

Please call if you have any questions concerning this data.

Sincerely,

D. P. Kharkar

Dinkar P. Kharkar, Ph.D.
Manager, Nuclear Programs

DPK/ss

Enclosure: Data Package

9715512.2104

TMA
Thermo Analytical Inc.

TMA/Norcal
2030 Wright Avenue
P. O. Box 4040
Richmond, CA 94804-0040
(510) 235-2633 Fax No. (510) 235-0438

December 21, 1993

Ref: TMA/Norcal N3-10-059-7279

Ms. Briana Colley
Westinghouse Hanford Company
345 Hills Street
Richland, WA 99352

DEC 1993
RECEIVED
SDLA

Dear Ms. Colley:

Enclosed is the data report for the thirteen water samples received October 14 through October 20, 1993 from location 100-BC-5. Results are given for gross alpha, gross beta, tritium, carbon-14, strontium-90, and technetium-99 analyses. The data package is paginated 1 through 440.

Please call if you have any questions concerning this data.

Sincerely,

D.P. Kharkar

Dinkar P. Kharkar, Ph.D.
Manager, Nuclear Programs

DPK/ss

Enclosure: Data Package

SDG: 7279
Contact: Dinkar Kharkar

TMA NORCAL
REPORTING GROUP 7279

Client: Westinghouse Hanford
Contract: MBH-SVV-069262

CASE NARRATIVE

1.0 GENERAL

TMA/Norcal Sample Delivery Group 7279 is comprised of the samples listed on the chain-of-custody documents below. This sample group was processed under the Westinghouse Hanford Company Statement of Work P.O. MBH-SVV-069262.

1.1 Chains-of-Custody

This report includes data for the thirteen water samples from location 100-BC-5, delivered under Field Log Book #EFL-1036. Chain-of-Custody numbers were not provided.

1.2 Sample Volume

One 4000 mL, one 1000 mL plastic bottles, and one 500 mL glass bottle containing the samples were received for the analyses.

1.3 Missing Samples

All samples listed under Field Log Book #EFL-1036 were received.

1.4 Holding Times

The samples were collected on October 12 through October 18, 1993 and sample processing was initiated within 180 days of collection.

2.0 QUALITY CONTROL

The internal quality control consisted of a laboratory control sample, a blank, and a replicate. All original analyses were performed with QC samples 7279-14 through 7279-17.

The QC samples were prepared by the Quality Control Department. Copies of the QC notebook pages are included in this data package.

2.1 Laboratory Control Samples

The LCS recoveries for all nuclides were acceptable. The MDA's of the results for all analyses met the RDL's.

2.2 Reagent Blanks

The MDA's of the results for all analyses met the RDL's.

2.3 Duplicates

Results were satisfactory for all duplicate analyses. The relative percent difference (RPD) of the recovery for carbon-14 between the original and the duplicate of sample BO99F9 was 92%, however the carbon-14 concentration in both samples were below RDL. The 2 σ error of strontium-90 in the original of sample BO99F9 was underlined because it was larger than both the MDA and the result implying that the MDA may not be a good estimate of the "real" minimum detectable activity.

3.0 ANALYSIS NOTES

3.1 Gross Alpha Analyses

The average MDA for gross alpha was (2 $\pm$ 1) pCi/L. Gross alpha activity above the RDL was found in sample BO99H9.

3.2 Gross Beta Analyses

The average MDA for gross beta was (2 $\pm$ 0.7) pCi/L. Gross beta activity above the RDL was found in all of the samples except BO99L9 and BO99M1.

3.3 Tritium Analyses

The average MDA for sixteen analyses was (200 $\pm$ 0) pCi/L. Tritium activity was found in all of the samples except in samples BO99F9, BO99L9, and BO99M1.

3.4 Carbon-14 Analyses

The average MDA for sixteen analyses was (112 $\pm$ 24)%. The lowest yield was 94% and the highest was 134%. The average MDA was (40 $\pm$ 20) pCi/L. Carbon-14 activity above the RDL was not found in any of the samples.

3.5 Strontium-90 Analyses

The average yield for sixteen analyses was (86 $\pm$ 5)%. The lowest yield was 82% and the highest was 91%. The average MDA was (0.7 $\pm$ 0.1) pCi/L. Strontium-90 activity above the RDL was found in samples BO99H1, BO99H3, BO99H5, BO99H9, and BO99J3.

3.6 Technetium-99 Analyses

The average yield for sixteen analyses was (49 $\pm$ 30)%. The lowest yield was 12% and the highest was 85%. The average MDA was (3 $\pm$ 3) pCi/L. Technetium-99 activity above the RDL was found in all of the samples except BO99F9, BO99L9, and BO99M1. The MDA of the result for sample BO99J5 is underlined because it was slightly higher than the RDL. Since the result was seven times the RDL, the high MDA does not affect the validity of the data.

9713512.2107

N310059-01

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099F9

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-01
Dept sample id 7279-001
Received 10/14/93
Client sample id B099F9
Location/Matrix 100-BC-5 LIQUID
Collected 10/12/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.6	1.3	1	3	J	80A
Gross Beta	Beta	5.2	1.4	2	4		80B
Tritium	10028-17-8	-62	130	200	400	U	H
Carbon 14	14762-75-5	84	21	30	100	J	C
Strontium 90	10098-97-2	0	0.68	0.5	2	U	Y
Technetium 99	14133-76-7	-0.50	1.2	4	5	U	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-01	80A/80	7279-001		0.300 L	11/17/93	11/19/93	DPK
N310059-01	80B/80	7279-001		0.300 L	11/17/93	11/19/93	DPK
N310059-01	H	7279-001		0.0100 L	11/15/93	11/29/93	DPK
N310059-01	C	7279-001		0.0300 L	12/15/93	12/16/93	DPK
N310059-01	Y	7279-001		1.00 L	11/13/93	11/19/93	DPK
N310059-01	TC	7279-001		0.200 L	11/29/93	12/01/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

9713512.2108

N310059-02

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099H7

SDG	7279	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310059-02	Client sample id	B099H7
Dept sample id	7279-002	Location/Matrix	100-BC-5 LIQUID
Received	10/14/93	Collected	10/12/93
		Chain of custody id	EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.0	1.3	1	3	J	80A
Gross Beta	Beta	54	3.0	2	4		80B
Tritium	10028-17-8	2800	250	200	400		H
Carbon 14	14762-75-5	17	24	40	100	U	C
Strontium 90	10098-97-2	0.55	0.85	0.7	2	U	Y
Technetium 99	14133-76-7	54	2.6	2	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-02	80A/80	7279-002		0.300 L	11/17/93	11/19/93	DPK
N310059-02	80B/80	7279-002		0.300 L	11/17/93	11/19/93	DPK
N310059-02	H	7279-002		0.0100 L	11/15/93	11/29/93	DPK
N310059-02	C	7279-002		0.0300 L	12/15/93	12/16/93	DPK
N310059-02	Y	7279-002		1.00 L	11/13/93	11/17/93	DPK
N310059-02	TC	7279-002		0.200 L	11/29/93	12/06/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/20/93

9713512.2109

N310059-03

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099H9

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-03
Dept sample id 7279-003
Received 10/14/93
Client sample id B099H9
Location/Matrix 100-BC-5 LIQUID
Collected 10/12/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	4.3	2.0	2	3		80A
Gross Beta	Beta	96	3.9	2	4		80B
Tritium	10028-17-8	2600	240	200	400		H
Carbon 14	14762-75-5	14	24	40	100	U	C
Strontium 90	10098-97-2	26	3.2	0.7	2		Y
Technetium 99	14133-76-7	69	4.7	5	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-03	80A/80	7279-003		0.300 L	11/17/93	11/19/93	DPK
N310059-03	80B/80	7279-003		0.300 L	11/17/93	11/19/93	DPK
N310059-03	H	7279-003		0.0100 L	11/15/93	11/29/93	DPK
N310059-03	C	7279-003		0.0300 L	12/15/93	12/16/93	DPK
N310059-03	Y	7279-003		1.00 L	11/13/93	11/17/93	DPK
N310059-03	TC	7279-003		0.200 L	11/29/93	12/06/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

TMA
Thermo Analytical Inc.

TMA/Norcal
2030 Wright Avenue
P. O. Box 4040
Richmond, CA 94804-0040
(510) 235-2633 Fax No. (510) 235-0438

9713512.2110

RECORD COPY

JAN 1994
RECEIVED
SDLA

January 10, 1994

Ref: TMA/Norcal N3-10-025-7271

Ms. Briana Colley
Westinghouse Hanford Company
345 Hills Street
Richland, WA 99352

Dear Ms. Colley:

Enclosed is the data report for the sixteen water samples received October 8 through October 11, 1993 from location 100-BC-5. Results are given for gross alpha, gross beta, tritium, carbon-14, strontium-90, and technetium-99 analyses. The data package is paginated 1 through 445-A and 446 through 516.

Please call if you have any questions concerning this data.

Sincerely,

D. P. Kharkar

Dinkar P. Kharkar, Ph.D.
Manager, Nuclear Programs

DPK/ss

Enclosure: Data Package

TMA/Norcal

Report N3-10-025-7271
Sample Delivery Group 7271

Westinghouse Hanford Company
P.O. MB-SW-092

Case Narrative

January 10, 1994

1.0 GENERAL

TMA/Norcal Sample Delivery Group 7271 is comprised of the sixteen water samples from location 100-BC-5, delivered under Field Log Book #EFL-1033, EFL-1036, and EFL-1037. Chain-of-Custody numbers were not provided.

2.0 ANALYSIS NOTES

2.1 Gross Alpha Analyses

The 2 σ error for sample BO99G9 is larger than both the MDA and the result implying that the MDA may not be a good estimate of the "real" minimum detectable activity.

2.2 Gross Beta Analyses

No problems were encountered by the laboratory in the analyses.

2.3 Tritium Analyses

No problems were encountered by the laboratory in the analyses.

2.4 Carbon-14 Analyses

Many of the carbon-14 results are negative values with errors less than 100%. This indicates an apparent negative bias, with an average value being (-61 $\pm$ 48) pCi/L. The absolute value of this bias is less than the RDL of 100 pCi/L. The bias is probably a result of the counting blank having a slightly different counting efficiency than the average sample vial. We are investigating method modifications that may eliminate this source of bias.

The laboratory control sample was counted for 59 minutes which is less than the nominal 150 minutes, because of high carbon-14 activity.

2.5 Strontium-90 Analyses

The 2 σ errors for samples BO99K5, BO99K7, BO99K9, and BO99L5 are larger than both the MDA and the result implying that the MDA may not be a good estimate of the "real" minimum detectable activity.

2.6 Technetium-99 Analyses

The result for the reagent blank is greater than the MDA, however, both the result and the MDA are well below the RDL.

9713512.2112

N310025-16

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099G1

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-16	Client sample id	B099G1
Dept sample id	7271-016	Location/Matrix	100-BC-5 LIQUID
Received	10/13/93	Collected	10/11/93
		Chain of custody id	EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.6	1.3	1	3	J	80A
Gross Beta	Beta	11	1.6	2	4		80B
Tritium	10028-17-8	12000	450	200	400		H
Carbon 14	14762-75-5	-92	25	50	100	U	C
Strontium 90	10098-97-2	0.051	0.17	0.7	2	U	Y
Technetium 99	14133-76-7	16	3.1	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-16	80A/80	7271-016		0.300 L	11/12/93	11/16/93	DPK
N310025-16	80B/80	7271-016		0.300 L	11/12/93	11/16/93	DPK
N310025-16	H	7271-016		0.0100 L	11/13/93	11/29/93	DPK
N310025-16	C	7271-016		0.0300 L	12/14/93	12/16/93	DPK
N310025-16	Y	7271-016		1.00 L	11/10/93	11/15/93	DPK
N310025-16	TC	7271-016		0.200 L	12/01/93	12/10/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

9715612.2115

N310025-07

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099G3

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-07
Dept sample id 7271-007
Received 10/12/93
Client sample id B099G3
Location/Matrix 100-BC-5 LIQUID
Collected 10/09/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	10	2.6	1	3		80A
Gross Beta	Beta	150	4.8	2	4		80B
Tritium	10028-17-8	3200	250	200	400		H
Carbon 14	14762-75-5	-65	24	40	100	U	C
Strontium 90	10098-97-2	47	4.7	0.7	2		Y
Technetium 99	14133-76-7	87	4.6	4	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-07	80A/80	7271-007		0.300 L	11/12/93	11/16/93	DPK
N310025-07	80B/80	7271-007		0.300 L	11/12/93	11/16/93	DPK
N310025-07	H	7271-007		0.0100 L	11/13/93	11/29/93	DPK
N310025-07	C	7271-007		0.0300 L	12/13/93	12/16/93	DPK
N310025-07	Y	7271-007		1.00 L	11/10/93	11/19/93	DPK
N310025-07	TC	7271-007		0.200 L	12/09/93	12/21/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

9713512.2114

N310025-08

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099G5

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-08	Client sample id	B099G5
Dept sample id	7271-008	Location/Matrix	100-BC-5 LIQUID
Received	10/12/93	Collected	10/09/93
		Chain of custody id	EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	-0.13	1.9	2	3	U	80A
Gross Beta	Beta	270	6.4	2	4		80B
Tritium	10028-17-8	3900	270	200	400		H
Carbon 14	14762-75-5	-92	30	50	100	U	C
Strontium 90	10098-97-2	100	8.0	0.7	2		Y
Technetium 99	14133-76-7	100	4.0	3	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-08	80A/80	7271-008		0.300 L	11/12/93	11/16/93	DPK
N310025-08	80B/80	7271-008		0.300 L	11/12/93	11/16/93	DPK
N310025-08	H	7271-008		0.0100 L	11/13/93	11/29/93	DPK
N310025-08	C	7271-008		0.0300 L	12/13/93	12/16/93	DPK
N310025-08	Y	7271-008		1.00 L	11/10/93	11/19/93	DPK
N310025-08	TC	7271-008		0.200 L	12/08/93	12/23/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

9713512.2115

N310025-09

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099G7

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-09
Dept sample id 7271-009
Received 10/12/93
Client sample id B099G7
Location/Matrix 100-BC-5 LIQUID
Collected 10/09/93
Chain of custody id EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	4.9	1.9	1	3		80A
Gross Beta	Beta	92	3.8	2	4		80B
Tritium	10028-17-8	8800	390	200	400		H
Carbon 14	14762-75-5	-57	23	40	100	U	C
Strontium 90	10098-97-2	21	0.97	0.7	2		Y
Technetium 99	14133-76-7	64	3.8	4	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-09	80A/80	7271-009		0.300 L	11/12/93	11/16/93	DPK
N310025-09	80B/80	7271-009		0.300 L	11/12/93	11/16/93	DPK
N310025-09	H	7271-009		0.0100 L	11/13/93	11/29/93	DPK
N310025-09	C	7271-009		0.0300 L	12/13/93	12/16/93	DPK
N310025-09	Y	7271-009		1.00 L	11/10/93	11/19/93	DPK
N310025-09	TC	7271-009		0.200 L	12/09/93	12/21/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

9713512.2116

N310025-10

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099G9

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-10
Dept sample id 7271-010
Received 10/12/93
Client sample id B099G9
Location/Matrix 100-BC-5 LIQUID
Collected 10/09/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.99	1.3	1	3	U	80A
Gross Beta	Beta	79	3.5	2	4		80B
Tritium	10028-17-8	2600	230	200	400		H
Carbon 14	14762-75-5	-78	21	40	100	U	C
Strontium 90	10098-97-2	20	1.1	0.7	2		Y
Technetium 99	14133-76-7	65	4.1	5	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-10	80A/80	7271-010		0.300 L	11/12/93	11/16/93	DPK
N310025-10	80B/80	7271-010		0.300 L	11/12/93	11/16/93	DPK
N310025-10	H	7271-010		0.0100 L	11/13/93	11/29/93	DPK
N310025-10	C	7271-010		0.0300 L	12/13/93	12/16/93	DPK
N310025-10	Y	7271-010		1.00 L	11/10/93	11/19/93	DPK
N310025-10	TC	7271-010		0.200 L	12/08/93	12/21/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

9713512.2117

N310025-11

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099J9

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-11	Client sample id	B099J9
Dept sample id	7271-011	Location/Matrix	100-BC-5 LIQUID
Received	10/12/93	Collected	10/10/93
		Chain of custody id	EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.2	1.4	2	3	U	80A
Gross Beta	Beta	27	2.3	2	4		80B
Tritium	10028-17-8	2100	220	200	400		H
Carbon 14	14762-75-5	-84	27	50	100	U	C
Strontium 90	10098-97-2	0.034	0.19	0.8	2	U	Y
Technetium 99	14133-76-7	50	1.8	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-11	80A/80	7271-011		0.300 L	11/12/93	11/16/93	DPK
N310025-11	80B/80	7271-011		0.300 L	11/12/93	11/16/93	DPK
N310025-11	H	7271-011		0.0100 L	11/13/93	11/29/93	DPK
N310025-11	C	7271-011		0.0300 L	12/13/93	12/16/93	DPK
N310025-11	Y	7271-011		1.00 L	11/10/93	11/15/93	DPK
N310025-11	TC	7271-011		0.200 L	12/01/93	12/21/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

9713512.2118

N310025-12

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099K1

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-12	Client sample id	B099K1
Dept sample id	7271-012	Location/Matrix	100-BC-5 LIQUID
Received	10/12/93	Collected	10/10/93
		Chain of custody id	EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.19	0.95	1	3	U	80A
Gross Beta	Beta	38	2.6	2	4		80B
Tritium	10028-17-8	2600	230	200	400		H
Carbon 14	14762-75-5	-58	18	30	100	U	C
Strontium 90	10098-97-2	0.037	0.18	0.7	2	U	Y
Technetium 99	14133-76-7	62	2.8	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-12	80A/80	7271-012		0.300 L	11/12/93	11/16/93	DPK
N310025-12	80B/80	7271-012		0.300 L	11/12/93	11/16/93	DPK
N310025-12	H	7271-012		0.0100 L	11/13/93	11/29/93	DPK
N310025-12	C	7271-012		0.0300 L	12/14/93	12/16/93	DPK
N310025-12	Y	7271-012		1.00 L	11/10/93	11/15/93	DPK
N310025-12	TC	7271-012		0.200 L	12/08/93	12/23/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

9713512.2119

N310025-13

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099K3

SDG 7271 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N310025-13 Client sample id B099K3
Dept sample id 7271-013 Location/Matrix 100-BC-5 LIQUID
Received 10/12/93 Collected 10/08/93
Chain of custody id EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.76	0.85	1	3	U	80A
Gross Beta	Beta	3.6	1.4	2	4	J	80B
Tritium	10028-17-8	73	120	200	400	U	H
Carbon 14	14762-75-5	-65	27	50	100	U	C
Strontium 90	10098-97-2	0.094	0.19	0.7	2	U	Y
Technetium 99	14133-76-7	3.5	1.1	3	5	BJ	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-13	80A/80	7271-013		0.300 L	11/12/93	11/16/93	DPK
N310025-13	80B/80	7271-013		0.300 L	11/12/93	11/16/93	DPK
N310025-13	H	7271-013		0.0100 L	11/13/93	11/29/93	DPK
N310025-13	C	7271-013		0.0300 L	12/14/93	12/23/93	DPK
N310025-13	Y	7271-013		1.00 L	11/10/93	11/15/93	DPK
N310025-13	TC	7271-013		0.200 L	12/08/93	12/13/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

9713512.2120

N310025-04

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099K5

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-04
Dept sample id 7271-004
Received 10/11/93
Client sample id B099K5
Location/Matrix 100-BC-5 LIQUID
Collected 10/07/93
Chain of custody id EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	3.2	1.5	1	3		80A
Gross Beta	Beta	22	2.1	2	4		80B
Tritium	10028-17-8	26000	640	200	400		H
Carbon 14	14762-75-5	-90	31	60	100	U	C
Strontium 90	10098-97-2	0	0.97	0.7	2	U	Y
Technetium 99	14133-76-7	27	1.5	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-04	80A/80	7271-004		0.300 L	11/12/93	11/16/93	DPK
N310025-04	80B/80	7271-004		0.300 L	11/12/93	11/16/93	DPK
N310025-04	H	7271-004		0.0100 L	11/13/93	11/29/93	DPK
N310025-04	C	7271-004		0.0300 L	12/03/93	12/06/93	DPK
N310025-04	Y	7271-004		1.00 L	11/10/93	11/15/93	DPK
N310025-04	TC	7271-004		0.200 L	12/09/93	12/13/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

9713512.2121

N310025-01

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099K7

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-01
Dept sample id 7271-001
Received 10/08/93
Client sample id B099K7
Location/Matrix 100-BC-5 LIQUID
Collected 10/06/93
Chain of custody id EFL-1033

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.88	1.1	1	3	U	80A
Gross Beta	Beta	11	1.7	2	4		80B
Tritium	10028-17-8	870	160	200	400		H
Carbon 14	14762-75-5	41	29	50	100	U	C
Strontium 90	10098-97-2	0	0.96	0.7	2	U	Y
Technetium 99	14133-76-7	13	1.2	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-01	80A/80	7271-001		0.300 L	11/12/93	11/16/93	DPK
N310025-01	80B/80	7271-001		0.300 L	11/12/93	11/16/93	DPK
N310025-01	H	7271-001		0.0100 L	11/13/93	11/29/93	DPK
N310025-01	C	7271-001		0.0300 L	12/02/93	12/17/93	DPK
N310025-01	Y	7271-001		1.00 L	11/10/93	11/15/93	DPK
N310025-01	TC	7271-001		0.200 L	12/09/93	12/13/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

9713512.2122

N310025-05

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099K9

SDG 7271 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N310025-05 Client sample id B099K9
Dept sample id 7271-005 Location/Matrix 100-BC-5 LIQUID
Received 10/11/93 Collected 10/07/93
Chain of custody id EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	3.0	1.7	1	3		80A
Gross Beta	Beta	120	4.2	2	4		80B
Tritium	10028-17-8	5300	310	200	400		H
Carbon 14	14762-75-5	-19	24	40	100	U	C
Strontium 90	10098-97-2	0	1.0	0.7	2	U	Y
Technetium 99	14133-76-7	260	41	3	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-05	80A/80	7271-005		0.300 L	11/12/93	11/16/93	DPK
N310025-05	80B/80	7271-005		0.300 L	11/12/93	11/16/93	DPK
N310025-05	H	7271-005		0.0100 L	11/13/93	11/29/93	DPK
N310025-05	C	7271-005		0.0300 L	12/03/93	12/06/93	DPK
N310025-05	Y	7271-005		1.00 L	11/10/93	11/15/93	DPK
N310025-05	TC	7271-005		0.200 L	11/22/93	12/23/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

N310025-02

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099L1

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-02
Dept sample id 7271-002
Received 10/08/93
Client sample id B099L1
Location/Matrix 100-BC-5 LIQUID
Collected 10/06/93
Chain of custody id EFL-1033

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.50	1.0	1	3	U	80A
Gross Beta	Beta	7.1	1.4	2	4		80B
Tritium	10028-17-8	550	150	200	400		H
Carbon 14	14762-75-5	-57	27	50	100	U	C
Strontium 90	10098-97-2	0.010	0.17	0.7	2	U	Y
Technetium 99	14133-76-7	11	0.87	1	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-02	80A/80	7271-002		0.300 L	11/12/93	11/16/93	DPK
N310025-02	80B/80	7271-002		0.300 L	11/12/93	11/16/93	DPK
N310025-02	H	7271-002		0.0100 L	11/13/93	11/29/93	DPK
N310025-02	C	7271-002		0.0300 L	12/03/93	12/17/93	DPK
N310025-02	Y	7271-002		1.00 L	11/10/93	11/15/93	DPK
N310025-02	TC	7271-002		0.200 L	12/09/93	12/13/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

9713512.2124

N310025-14

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099L3

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-14	Client sample id	B099L3
Dept sample id	7271-014	Location/Matrix	100-BC-5 LIQUID
Received	10/12/93	Collected	10/09/93
		Chain of custody id	EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.1	1.6	2	3	J	80A
Gross Beta	Beta	68	3.3	2	4		80B
Tritium	10028-17-8	3000	250	200	400		H
Carbon 14	14762-75-5	-44	26	50	100	U	C
Strontium 90	10098-97-2	0	0.68	0.7	2	U	Y
Technetium 99	14133-76-7	92	5.4	3	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-14	80A/80	7271-014		0.300 L	11/12/93	11/16/93	DPK
N310025-14	80B/80	7271-014		0.300 L	11/12/93	11/16/93	DPK
N310025-14	H	7271-014		0.0100 L	11/13/93	11/29/93	DPK
N310025-14	C	7271-014		0.0300 L	12/14/93	12/16/93	DPK
N310025-14	Y	7271-014		1.00 L	11/10/93	11/19/93	DPK
N310025-14	TC	7271-014		0.200 L	12/09/93	12/23/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

9713512.2125

N310025-06

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099L5

SDG 7271 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N310025-06 Client sample id B099L5
Dept sample id 7271-006 Location/Matrix 100-BC-5 LIQUID
Received 10/11/93 Collected 10/07/93
Chain of custody id EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.0	1.4	1	3	J	80A
Gross Beta	Beta	67	3.3	2	4		80B
Tritium	10028-17-8	2400	230	200	400		H
Carbon 14	14762-75-5	-25	30	50	100	U	C
Strontium 90	10098-97-2	0	1.2	0.8	2	U	Y
Technetium 99	14133-76-7	97	4.3	5	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-06	80A/80	7271-006		0.300 L	11/12/93	11/16/93	DPK
N310025-06	80B/80	7271-006		0.300 L	11/12/93	11/16/93	DPK
N310025-06	H	7271-006		0.0100 L	11/13/93	11/29/93	DPK
N310025-06	C	7271-006		0.0300 L	12/04/93	12/06/93	DPK
N310025-06	Y	7271-006		1.00 L	11/10/93	11/15/93	DPK
N310025-06	TC	7271-006		0.200 L	12/10/93	12/16/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

9713512.2126

N310025-03

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099L7

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-03
Dept sample id 7271-003
Received 10/08/93
Client sample id B099L7
Location/Matrix 100-BC-5 LIQUID
Collected 10/06/93
Chain of custody id EFL-1033

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.042	0.85	1	3	U	80A
Gross Beta	Beta	6.1	1.4	2	4		80B
Tritium	10028-17-8	900	160	200	400		H
Carbon 14	14762-75-5	-64	29	50	100	U	C
Strontium 90	10098-97-2	-0.071	0.22	0.8	2	U	Y
Technetium 99	14133-76-7	8.5	3.8	3	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-03	80A/80	7271-003		0.300 L	11/12/93	11/16/93	DPK
N310025-03	80B/80	7271-003		0.300 L	11/12/93	11/16/93	DPK
N310025-03	H	7271-003		0.0100 L	11/13/93	11/29/93	DPK
N310025-03	C	7271-003		0.0300 L	12/03/93	12/06/93	DPK
N310025-03	Y	7271-003		1.00 L	11/10/93	11/15/93	DPK
N310025-03	TC	7271-003		0.200 L	12/01/93	12/10/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

9713512.2127

N310025-15

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099M7

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-15	Client sample id	B099M7
Dept sample id	7271-015	Location/Matrix	100-BC-5 LIQUID
Received	10/12/93	Collected	10/10/93
		Chain of custody id	EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.5	1.3	1	3	J	80A
Gross Beta	Beta	35	2.5	2	4		80B
Tritium	10028-17-8	2000	210	200	400		H
Carbon 14	14762-75-5	-58	29	50	100	U	C
Strontium 90	10098-97-2	-0.006	0.47	0.7	2	U	Y
Technetium 99	14133-76-7	52	5.0	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-15	80A/80	7271-015		0.300 L	11/12/93	11/16/93	DPK
N310025-15	80B/80	7271-015		0.300 L	11/12/93	11/16/93	DPK
N310025-15	H	7271-015		0.0100 L	11/13/93	11/29/93	DPK
N310025-15	C	7271-015		0.0300 L	12/14/93	12/16/93	DPK
N310025-15	Y	7271-015		1.00 L	11/10/93	11/19/93	DPK
N310025-15	TC	7271-015		0.200 L	12/01/93	12/23/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

9713512.2128

N310059-04

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099H1

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-04
Dept sample id 7279-004
Received 10/15/93
Client sample id B099H1
Location/Matrix 100-BC-5 LIQUID
Collected 10/13/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.9	1.7	2	3	U	80A
Gross Beta	Beta	110	4.1	2	4		80B
Tritium	10028-17-8	2300	230	200	400		H
Carbon 14	14762-75-5	-77	31	50	100	U	C
Strontium 90	10098-97-2	33	3.7	0.7	2		Y
Technetium 99	14133-76-7	60	3.4	3	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-04	80A/80	7279-004		0.300 L	11/17/93	11/19/93	DPK
N310059-04	80B/80	7279-004		0.300 L	11/17/93	11/19/93	DPK
N310059-04	H	7279-004		0.0100 L	11/15/93	11/29/93	DPK
N310059-04	C	7279-004		0.0300 L	12/13/93	12/16/93	DPK
N310059-04	Y	7279-004		1.00 L	11/13/93	11/17/93	DPK
N310059-04	TC	7279-004		0.200 L	11/30/93	12/02/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

9713512.2129

N310059-12

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099H3

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-12
Dept sample id 7279-012
Received 10/20/93
Client sample id B099H3
Location/Matrix 100-BC-5 LIQUID
Collected 10/18/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.8	1.5	2	3	U	80A
Gross Beta	Beta	52	3.0	2	4		80B
Tritium	10028-17-8	2200	230	200	400		H
Carbon 14	14762-75-5	-69	26	50	100	U	C
Strontium 90	10098-97-2	4.8	2.1	0.7	2		Y
Technetium 99	14133-76-7	58	1.9	2	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-12	80A/80	7279-012		0.300 L	11/17/93	11/19/93	DPK
N310059-12	80B/80	7279-012		0.300 L	11/17/93	11/19/93	DPK
N310059-12	H	7279-012		0.0100 L	11/16/93	11/29/93	DPK
N310059-12	C	7279-012		0.0300 L	12/14/93	12/16/93	DPK
N310059-12	Y	7279-012		1.00 L	11/13/93	11/17/93	DPK
N310059-12	TC	7279-012		0.200 L	11/29/93	12/10/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

9713512.2150

N310059-13

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099H5

SDG	7279	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310059-13	Client sample id	B099H5
Dept sample id	7279-013	Location/Matrix	100-BC-5 LIQUID
Received	10/20/93	Collected	10/18/93
		Chain of custody id	EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	-0.22	1.2	2	3	U	80A
Gross Beta	Beta	55	3.0	2	4		80B
Tritium	10028-17-8	2200	220	200	400		H
Carbon 14	14762-75-5	-86	25	40	100	U	C
Strontium 90	10098-97-2	6.6	0.53	0.7	2		Y
Technetium 99	14133-76-7	55	1.7	1	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-13	80A/80	7279-013		0.300 L	11/17/93	11/19/93	DPK
N310059-13	80B/80	7279-013		0.300 L	11/17/93	11/19/93	DPK
N310059-13	H	7279-013		0.0100 L	11/16/93	11/29/93	DPK
N310059-13	C	7279-013		0.0300 L	12/14/93	12/16/93	DPK
N310059-13	Y	7279-013		1.00 L	11/13/93	11/17/93	DPK
N310059-13	TC	7279-013		0.200 L	11/29/93	12/06/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/20/93

9713512.2131

N310059-05

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099J1

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-05
Dept sample id 7279-005
Received 10/15/93
Client sample id B099J1
Location/Matrix 100-BC-5 LIQUID
Collected 10/13/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.64	1.3	2	3	U	80A
Gross Beta	Beta	49	2.8	2	4		80B
Tritium	10028-17-8	2000	220	200	400		H
Carbon 14	14762-75-5	-110	30	50	100	U	C
Strontium 90	10098-97-2	1.4	0.28	0.7	2	J	Y
Technetium 99	14133-76-7	56	4.0	5	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-05	80A/80	7279-005		0.300 L	11/17/93	11/19/93	DPK
N310059-05	80B/80	7279-005		0.300 L	11/17/93	11/19/93	DPK
N310059-05	H	7279-005		0.0100 L	11/15/93	11/29/93	DPK
N310059-05	C	7279-005		0.0300 L	12/13/93	12/16/93	DPK
N310059-05	Y	7279-005		1.00 L	11/13/93	11/17/93	DPK
N310059-05	TC	7279-005		0.200 L	11/29/93	12/06/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

9713512.2152

N310059-08

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099J3

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-08
Dept sample id 7279-008
Received 10/15/93
Client sample id B099J3
Location/Matrix 100-BC-5 LIQUID
Collected 10/14/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.7	1.7	2	3	J	80A
Gross Beta	Beta	83	3.6	2	4		80B
Tritium	10028-17-8	3300	250	200	400		H
Carbon 14	14762-75-5	-79	34	60	100	U	C
Strontium 90	10098-97-2	17	0.73	0.6	2		Y
Technetium 99	14133-76-7	69	1.9	1	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-08	80A/80	7279-008		0.300 L	11/17/93	11/19/93	DPK
N310059-08	80B/80	7279-008		0.300 L	11/17/93	11/19/93	DPK
N310059-08	H	7279-008		0.0100 L	11/16/93	11/29/93	DPK
N310059-08	C	7279-008		0.0300 L	12/13/93	12/16/93	DPK
N310059-08	Y	7279-008		1.00 L	11/13/93	11/17/93	DPK
N310059-08	TC	7279-008		0.200 L	11/29/93	12/02/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

9713512.2133

N310059-09

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099J5

SDG 7279 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N310059-09 Client sample id B099J5
Dept sample id 7279-009 Location/Matrix 100-BC-5 LIQUID
Received 10/15/93 Collected 10/14/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.4	0.85	0.9	3	J	80A
Gross Beta	Beta	28	1.6	1	4		80B
Tritium	10028-17-8	1500	200	200	400		H
Carbon 14	14762-75-5	-10	27	50	100	U	C
Strontium 90	10098-97-2	0.022	0.19	0.8	2	U	Y
Technetium 99	14133-76-7	35	2.9	6	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-09	80A/80	7279-009		0.300 L	11/18/93	11/19/93	DPK
N310059-09	80B/80	7279-009		0.300 L	11/18/93	11/19/93	DPK
N310059-09	H	7279-009		0.0100 L	11/16/93	11/29/93	DPK
N310059-09	C	7279-009		0.0300 L	12/14/93	12/16/93	DPK
N310059-09	Y	7279-009		1.00 L	11/13/93	11/19/93	DPK
N310059-09	TC	7279-009		0.200 L	11/29/93	12/01/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

9713512.2134

N310059-06

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099J7

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-06
Dept sample id 7279-006
Received 10/15/93
Client sample id B099J7
Location/Matrix 100-BC-5 LIQUID
Collected 10/13/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.2	1.3	2	3	U	80A
Gross Beta	Beta	34	2.5	2	4		80B
Tritium	10028-17-8	1600	210	200	400		H
Carbon 14	14762-75-5	-64	28	50	100	U	C
Strontium 90	10098-97-2	1.1	0.26	0.7	2	J	Y
Technetium 99	14133-76-7	39	1.1	1	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-06	80A/80	7279-006		0.300 L	11/17/93	11/19/93	DPK
N310059-06	80B/80	7279-006		0.300 L	11/17/93	11/19/93	DPK
N310059-06	H	7279-006		0.0100 L	11/15/93	11/29/93	DPK
N310059-06	C	7279-006		0.0300 L	12/13/93	12/16/93	DPK
N310059-06	Y	7279-006		1.00 L	11/13/93	11/17/93	DPK
N310059-06	TC	7279-006		0.200 L	11/30/93	12/06/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

9713512.2155

N310059-10

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099L9

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-10
Dept sample id 7279-010
Received 10/15/93
Client sample id B099L9
Location/Matrix 100-BC-5 LIQUID
Collected 10/15/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.13	0.77	1	3	U	80A
Gross Beta	Beta	-0.31	0.72	1	4	U	80B
Tritium	10028-17-8	23	130	200	400	U	H
Carbon 14	14762-75-5	-110	34	60	100	U	C
Strontium 90	10098-97-2	0.030	0.20	0.7	2	U	Y
Technetium 99	14133-76-7	0.66	1.1	1	5	U	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-10	80A/80	7279-010		0.300 L	11/18/93	11/19/93	DPK
N310059-10	80B/80	7279-010		0.300 L	11/18/93	11/19/93	DPK
N310059-10	H	7279-010		0.0100 L	11/16/93	11/29/93	DPK
N310059-10	C	7279-010		0.0300 L	12/14/93	12/16/93	DPK
N310059-10	Y	7279-010		1.00 L	11/13/93	11/19/93	DPK
N310059-10	TC	7279-010		0.200 L	11/29/93	12/01/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

9713512.2136

N310059-11

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099M1

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-11
Dept sample id 7279-011
Received 10/15/93
Client sample id B099M1
Location/Matrix 100-BC-5 LIQUID
Collected 10/15/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.24	1.2	2	3	U	80A
Gross Beta	Beta	0.64	1.1	2	4	U	80B
Tritium	10028-17-8	-38	130	200	400	U	H
Carbon 14	14762-75-5	-110	31	50	100	U	C
Strontium 90	10098-97-2	0.022	0.21	0.8	2	U	Y
Technetium 99	14133-76-7	0.98	0.78	2	5	U	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-11	80A/80	7279-011		0.300 L	11/17/93	11/19/93	DPK
N310059-11	80B/80	7279-011		0.300 L	11/17/93	11/19/93	DPK
N310059-11	H	7279-011		0.0100 L	11/16/93	11/29/93	DPK
N310059-11	C	7279-011		0.0300 L	12/14/93	12/16/93	DPK
N310059-11	Y	7279-011		1.00 L	11/13/93	11/17/93	DPK
N310059-11	TC	7279-011		0.200 L	11/29/93	12/02/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

9713512.2157

N310059-07

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099M9

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-07
Dept sample id 7279-007
Received 10/15/93
Client sample id B099M9
Location/Matrix 100-BC-5 LIQUID
Collected 10/13/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.6	1.3	1	3	J	80A
Gross Beta	Beta	43	2.7	2	4		80B
Tritium	10028-17-8	2100	220	200	400		H
Carbon 14	14762-75-5	-39	28	50	100	U	C
Strontium 90	10098-97-2	0.92	1.2	0.7	2	J	Y
Technetium 99	14133-76-7	58	1.9	1	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-07	80A/80	7279-007		0.300 L	11/17/93	11/19/93	DPK
N310059-07	80B/80	7279-007		0.300 L	11/17/93	11/19/93	DPK
N310059-07	H	7279-007		0.0100 L	11/15/93	11/29/93	DPK
N310059-07	C	7279-007		0.0300 L	12/13/93	12/16/93	DPK
N310059-07	Y	7279-007		1.00 L	11/13/93	11/17/93	DPK
N310059-07	TC	7279-007		0.200 L	11/29/93	12/06/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

9713512.2158

TMA

RECORD COPY

DEC 1993
RECEIVED
SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

GENERAL CHEMISTRY
Case No. 10-020
(TMA/ARLI Work Order # A3-10-020)

METALS
Case No. N3-10-044
(TMA/Skinner & Sherman W.O. Nos. S3-10-114 & S3-10-115)

December 13, 1993

TMA Master Work Order N3-10-044

9713512.2159

TMA Inc. REPORT Work Order # A3-10-020

Received: 10/12/93

Results by Sample

000009

SAMPLE ID B099G3 FRACTION 01A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	47	mg/L	5
Elect. Conductivity	9050	417	umhos/cm	6

FORM I

9713512.2140

TMA Inc. REPORT Work Order # A3-10-020

Received: 10/12/93 Results by Sample

000010

SAMPLE ID B099G5 FRACTION 02A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	49	mg/L	5
Elect. Conductivity	9050	418	umhos/cm	6

FORM I

9713512.2141

TMA Inc. REPORT Work Order # A3-10-020

Received: 10/12/93 Results by Sample 000011

SAMPLE ID B099G7 FRACTION 03A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.1	mg/L	0.1
pH	9040	8.1	pH	0.1
Sulfate	300.0	50	mg/L	5
Elect. Conductivity	9050	393	umhos/cm	6

FORM I

9713512.2142

TMA Inc. REPORT Work Order # A3-10-020

Received: 10/12/93 Results by Sample 000012

SAMPLE ID B099G9 FRACTION 04A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	51	mg/L	5
Elect. Conductivity	9050	398	umhos/cm	6

FORM I

9713512.2143

TMA Inc. REPORT Work Order # A3-10-020

Received: 10/12/93 Results by Sample

000013

SAMPLE ID B099J9 FRACTION 05A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/10/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	7.9	pH	0.1
Sulfate	300.0	66	mg/L	5
Elect. Conductivity	9050	447	umhos/cm	6

FORM I

9713512.2144

TMA Inc. REPORT Work Order # A3-10-020

Received: 10/12/93 Results by Sample 000014

SAMPLE ID B099K1 FRACTION 06A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/10/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	46	mg/L	5
Elect. Conductivity	9050	410	umhos/cm	6

FORM I

9713512.2145

TMA Inc. REPORT Work Order # A3-10-020

Received: 10/12/93 Results by Sample 000015

SAMPLE ID B099K3 FRACTION 07A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	7.9	pH	0.1
Sulfate	300.0	31	mg/L	5
Elect. Conductivity	9050	352	umhos/cm	6

FORM I

9713512.2146

TMA Inc. REPORT Work Order # A3-10-020

Received: 10/12/93 Results by Sample 000016

SAMPLE ID B099L3 FRACTION 08A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	38	mg/L	5
Elect. Conductivity	9050	354	umhos/cm	6

FORM I

9713512.2147

TMA Inc. REPORT Work Order # A3-10-020

Received: 10/12/93 Results by Sample

000017

SAMPLE ID B099M7 FRACTION 09A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/10/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	7.9	pH	0.1
Sulfate	300.0	67	mg/L	5
Elect. Conductivity	9050	446	umhos/cm	6

FORM I

TMA 9713512.2148
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

DEC 1993 RECEIVED SBLA

November 16, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Nine (9) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 13, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310114.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exceptions:

The laboratory duplicate for lead exceeded the control limit requirement.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal
Steven R. Provencal
Lead Chemist

MS
7/2/96

9713512.2149

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099G3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-01S

Level (low/med): LOW Date Received: 10/13/93

% 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	1240			P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	59.2	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	53800			P
7440-47-3	Chromium	18.6			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	43.5			P
7439-89-6	Iron	1620			P
7439-92-1	Lead	4.7		*	P
7439-95-4	Magnesium	9060			P
7439-96-5	Manganese	101			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	7.8	B		P
7440-09-7	Potassium	2210	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11300			P
7440-28-0	Thallium	2.9	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	25.7			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9713512.2150

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099G5

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-02S

Level (low/med): LOW Date Received: 10/13/93

% 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	68.1	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	32.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	52900			P
7440-47-3	Chromium	14.3			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	130			P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	7260			P
7439-96-5	Manganese	5.6	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	5.9	B		P
7440-09-7	Potassium	2950	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	14300			P
7440-28-0	Thallium	2.3	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	13.2	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099G7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-03S

Level (low/med): LOW Date Received: 10/13/93

% 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	35.6	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	30.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	49800			P
7440-47-3	Chromium	22.0			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	63.8	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	7510			P
7439-96-5	Manganese	2.2	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	1760	B		P
7782-49-2	Selenium	3.0	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	9730			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	9.5	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

9713512.2152

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099G9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-04S

Level (low/med): LOW Date Received: 10/13/93

% 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	11.3	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	32.3	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	55400			P
7440-47-3	Chromium	10.7			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	28.4	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	7430			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4420	B		P
7782-49-2	Selenium	3.0	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11900			P
7440-28-0	Thallium	2.0	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

5

9713512.2153

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099J9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-05S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.2	B		P
7440-39-3	Barium	14.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	51700			P
7440-47-3	Chromium	32.0			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	106			P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	11900			P
7439-96-5	Manganese	2.7	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	6.5	B		P
7440-09-7	Potassium	6640			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	13100			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	9.2	B		P
7440-66-6	Zinc	7.6	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

6

9713512.2154

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099K1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-06S

Level (low/med): LOW Date Received: 10/13/93

% 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	20.5	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	13.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	45400			P
7440-47-3	Chromium	14.3			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	93.9	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	10500			P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	4.3	B		P
7440-09-7	Potassium	5900			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	12000			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	10.0	B		P
7440-66-6	Zinc	15.0	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

7

9713512.2155

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099K3

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-07S

Level (low/med): LOW Date Received: 10/13/93

% 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	15.1	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	11.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	35100			P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	64.8	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	12400			P
7439-96-5	Manganese	1.6	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4480	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11400			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	21.6	B		P
7440-66-6	Zinc	9.2	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

8

9713512.2156

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099L3

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-08S

Level (low/med): LOW Date Received: 10/13/93

% 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	11.2	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.3	B		P
7440-39-3	Barium	56.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	36700			P
7440-47-3	Chromium	2.4	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	111			P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	10500			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5200			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	17100			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	20.2	B		P
7440-66-6	Zinc	6.1	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9

9713512.2157

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099M7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-09S

Level (low/med): LOW Date Received: 10/13/93

% 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	26.2	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	14.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	50500			P
7440-47-3	Chromium	28.7			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	3.5	B		P
7439-89-6	Iron	104			P
7439-92-1	Lead	10.3		*	P
7439-95-4	Magnesium	11700			P
7439-96-5	Manganese	2.7	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	8.1	B		P
7440-09-7	Potassium	6400			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	12600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	10.3	B		P
7440-66-6	Zinc	15.0	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

10

TMA 9713512.2158
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

DEC 1993 RECEIVED SWLA

November 16, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Nine (9) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 13, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310115.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exception:

The laboratory duplicate for lead exceeded the control limit requirement.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal
Steven R. Provencal
Lead Chemist

MS
7/2/96

9713512.2159

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099G4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-01S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	32.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	51500			P
7440-47-3	Chromium	9.8	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	46.9	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	8440			P
7439-96-5	Manganese	0.91	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	1980	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11300			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	6.1	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9713512.2160

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099G6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-02S

Level (low/med): LOW Date Received: 10/13/93

% 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	15.2	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	31.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	51600			P
7440-47-3	Chromium	3.6	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	24.0	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	7080			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	2880	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	13800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	6.4	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9713512.2161

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099G8

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-03S

Level (low/med): LOW Date Received: 10/13/93

% 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	14.5	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	31.2	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	50600			P
7440-47-3	Chromium	22.6			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	34.6	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	7620			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	1820	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	10100			P
7440-28-0	Thallium	1.9	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.6	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

9713512.2162

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099H0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-04S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.9	B		P
7440-39-3	Barium	31.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	54200			P
7440-47-3	Chromium	9.4	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	21.1	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	7290			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4230	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11500			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

5

9713512.2163

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099K0

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-05S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.2	B		P
7440-39-3	Barium	14.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	51900			P
7440-47-3	Chromium	14.0			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	32.2	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	12000			P
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6650			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	13100			P
7440-28-0	Thallium	3.0	B		P
7440-62-2	Vanadium	9.4	B		P
7440-66-6	Zinc	8.0	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

6

9713512.2164

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099K2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-06S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.1	B		P
7440-39-3	Barium	14.2	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	45700			P
7440-47-3	Chromium	9.8	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	23.7	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	10600			P
7439-96-5	Manganese	1.0	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6100			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	12300			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	10.2	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

7

9713512.2165

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099K4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-07S

Level (low/med): LOW Date Received: 10/13/93

% 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	22.1	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	11.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	34600			P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	27.8	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	12300			P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4490	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11300			P
7440-28-0	Thallium	2.0	B		P
7440-62-2	Vanadium	23.1	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

8

9713512.2166

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099L4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-08S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.3	B		P
7440-39-3	Barium	51.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	37000			P
7440-47-3	Chromium	3.0	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	26.7	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	10200			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5230			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	17000			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	19.3	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9

9713512.2167

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099M8

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-09S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.1	B		P
7440-39-3	Barium	14.2	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	50800			P
7440-47-3	Chromium	13.4			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	11.4	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	11700			P
7439-96-5	Manganese	1.2	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6490			P
7782-49-2	Selenium	3.0	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	12900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	9.1	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

10

9713512.2168

TMA

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WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

GENERAL CHEMISTRY
Case No. 10-012
(TMA/ARLI Work Order # A3-10-012)

METALS
Case No. N3-10-023
(TMA/Skinner & Sherman W.O. Nos. S3-10-080 & S3-10-081)

December 13, 1993

TMA Master Work Order N3-10-023

MS
7/2/96

GENERAL CHEMISTRY RESULTS

CASE NO. 10-012

Water Sample #:

B099K7 B099L1
B099L7

CASE NARRATIVE

The holding time for the pH analysis was exceeded. Careful review of the QC analysis indicates that the data is reliable.

No problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish

Maureen Parrish

TMA Inc. REPORT Work Order # A3-10-012

Received: 10/08/93 Results by Sample

SAMPLE ID B099K7 FRACTION 01A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.4	mg/L	0.1
pH	9040	8.1	pH	0.1
Sulfate	300.0	33	mg/L	5
Elect. Conductivity	9050	339	umho/cm	6

FORM I

9713512.2171

TMA Inc. REPORT Work Order # A3-10-012

Received: 10/08/93 Results by Sample 000010

SAMPLE ID B099L1 FRACTION 02A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.4	mg/L	0.1
pH	9040	7.9	pH	0.1
Sulfate	300.0	33	mg/L	5
Elect. Conductivity	9050	341	umho/cm	6

FORM I

9713512.2172

TMA Inc. REPORT Work Order # A3-10-012

Received: 10/08/93

Results by Sample

000011

SAMPLE ID B099L7 FRACTION 03A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	7.9	pH	0.1
Sulfate	300.0	36	mg/L	5
Elect. Conductivity	9050	362	umho/cm	6

FORM I

TMA 9713512.2173
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

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November 16, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Three (3) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 11, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310080.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

MS
7/2/96

9713512.2174

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099K7

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K7

Matrix (soil/water): WATER Lab Sample ID: 10080-01S

Level (low/med): LOW Date Received: 10/11/93

% 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	27.0	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	7.1	B		P
7440-39-3	Barium	9.7	B		P
7440-41-7	Beryllium	0.28	B		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	32800			P
7440-47-3	Chromium	22.7			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	123			P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9930			P
7439-96-5	Manganese	2.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6870			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	14900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	28.2	B		P
7440-66-6	Zinc	10.6	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9713512.2175

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099L1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K7

Matrix (soil/water): WATER Lab Sample ID: 10080-02S

Level (low/med): LOW Date Received: 10/11/93

% 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	35.3	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.6	B		P
7440-39-3	Barium	13.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	35700			P
7440-47-3	Chromium	13.6			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	70.3	B		P
7439-92-1	Lead	4.6			P
7439-95-4	Magnesium	9940			P
7439-96-5	Manganese	1.5	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6110			P
7782-49-2	Selenium	4.2	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	16600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	20.4	B		P
7440-66-6	Zinc	4.6	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9715512.2176

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099L7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K7

Matrix (soil/water): WATER Lab Sample ID: 10080-03S

Level (low/med): LOW Date Received: 10/11/93

% 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	21.0	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.9	B		P
7440-39-3	Barium	32.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	43000			P
7440-47-3	Chromium	9.7	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	36.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	10500			P
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4320	B		P
7782-49-2	Selenium	3.3	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	8350			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	7.2	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

TMA 9713512.2177
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

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DEC 1993 RECEIVED SDLA

November 16, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Three (3) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 11, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310081.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

MS
7/2/96

9713512.2179

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099K8

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K8

Matrix (soil/water): WATER Lab Sample ID: 10081-01S

Level (low/med): LOW Date Received: 10/11/93

% 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	27.8	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.6	B		P
7440-39-3	Barium	8.3	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	32000			P
7440-47-3	Chromium	22.4			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	72.2	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9750			P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6860			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	14900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	27.3	B		P
7440-66-6	Zinc	4.8	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9713512.2179

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099L2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K8

Matrix (soil/water): WATER Lab Sample ID: 10081-02S

Level (low/med): LOW Date Received: 10/11/93

% 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	17.2	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.2	B		P
7440-39-3	Barium	14.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	34300			P
7440-47-3	Chromium	13.0			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	28.5	B		P
7439-92-1	Lead	4.1			P
7439-95-4	Magnesium	9640			P
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6220			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	16800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	18.7	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9713512.2190

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099L8

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K8

Matrix (soil/water): WATER Lab Sample ID: 10081-03S

Level (low/med): LOW Date Received: 10/11/93

% 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	29.5	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.0	B		P
7440-39-3	Barium	32.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	42100			P
7440-47-3	Chromium	8.2	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	3.3	B		P
7439-89-6	Iron	14.4	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	10300			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4430	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	8600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.6	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

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Results of Analyses For:

GENERAL CHEMISTRY
Case No. 10-034
(TMA/ARLI Work Order # A3-10-034)

METALS
Case No. N3-10-066
(TMA/Skinner & Sherman W.O. Nos. S3-10-201 & S3-10-202)

December 13, 1993

TMA Master Work Order N3-10-066

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WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

GENERAL CHEMISTRY
CASE NO. 10-034
(TMA/ARLI Work Order # A3-10-034)

General Chemistry results are presented
for the following WHC WATER sample(s):

B099H1	B099J1
B099J7	B099M9

Norcal Work Order # N3-10-066

Thermo Analytical Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

Date submitted:

11/16/93

9713512.2183

TMA Inc. REPORT Work Order # A3-10-034

Received: 10/15/93

Results by Sample

000010

SAMPLE ID B099H1 FRACTION 01A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/13/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	48	mg/L	5
Elect. Conductivity	9050	383	umhos/cm	6

FORM I

9713512.2184

TMA Inc. REPORT

Received: 10/15/93

Results by Sample

Work Order # A3-10-034

000011

SAMPLE ID B099J1 FRACTION 02A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/13/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	7.5	pH	0.1
Sulfate	300.0	40	mg/L	5
Elect. Conductivity	9050	350	umhos/cm	6

FORM I

9713512.2185

TMA Inc. REPORT

Results by Sample

Received: 10/15/93

Work Order # A3-10-034 000012 11/16/93

SAMPLE ID B099J7 FRACTION 03A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/13/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	43	mg/L	5
Elect. Conductivity	9050	363	umhos/cm	6

FORM I

9713512.2186

TMA Inc. REPORT Work Order # A3-10-034

Received: 10/15/93 Results by Sample 000013

SAMPLE ID B099M9 FRACTION 04A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/13/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	7.6	pH	0.1
Sulfate	300.0	40	mg/L	5
Elect. Conductivity	9050	355	umhos/cm	6

FORM I

9713512 2187

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

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December 10, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Four (4) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 20, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310202.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exceptions:

The laboratory duplicate for lead exceeded the control limit requirement.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

MS
7/9/96

i

9713512.2188

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

8099H2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: 8099H2

Matrix (soil/water): WATER Lab Sample ID: 10202-01S

Level (low/med): LOW Date Received: 10/20/93

% 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	16.2	B		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	3.4	B		P
7440-39-3	Barium	25.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	51200			P
7440-47-3	Chromium	7.5	B		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	9.2	U		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	7890			P
7439-96-5	Manganese	1.8	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	4560	B		P
7782-49-2	Selenium	3.1	B		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	11400			P
7440-28-0	Thallium	1.7	B		P
7440-62-2	Vanadium	8.8	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9713512.2189

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 8099J2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: 8099H2

Matrix (soil/water): WATER Lab Sample ID: 10202-02S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.7	B		P
7440-39-3	Barium	28.2	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	44100			P
7440-47-3	Chromium	60.2			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	9.2	U		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	8130			P
7439-96-5	Manganese	2.2	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	4750	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	10200			P
7440-28-0	Thallium	2.2	B		P
7440-62-2	Vanadium	7.5	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

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WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 8099J8

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: 8099H2

Matrix (soil/water): WATER Lab Sample ID: 10202-03S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	6.1	B		P
7440-39-3	Barium	7.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	43800			P
7440-47-3	Chromium	13.5			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	9.2	U		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	9600			P
7439-96-5	Manganese	2.7	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	6120			P
7782-49-2	Selenium	3.0	B		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	12600			P
7440-28-0	Thallium	2.3	B		P
7440-62-2	Vanadium	10.8	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

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WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 8099N0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: 8099H2

Matrix (soil/water): WATER Lab Sample ID: 10202-04S

Level (low/med): LOW Date Received: 10/20/93

% 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	22.8	B		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.8	B		P
7440-39-3	Barium	29.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	45100			P
7440-47-3	Chromium	60.2			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	9.2	U		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	8320			P
7439-96-5	Manganese	2.0	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	4840	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	10300			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.5	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

5

9713512.2192

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

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December 10, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Four (4) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 20, 1993 from TMA/Norcal.
The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310201.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

MS
7/9/96

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WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099H1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: B099H1

Matrix (soil/water): WATER Lab Sample ID: 10201-01S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	4.8	B		P
7440-39-3	Barium	25.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	50900			P
7440-47-3	Chromium	4.1	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	9.2	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	7810			P
7439-96-5	Manganese	1.8	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	4650	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	11500			P
7440-28-0	Thallium	3.9	B		P
7440-62-2	Vanadium	8.2	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 8099J1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: 8099H1

Matrix (soil/water): WATER Lab Sample ID: 10201-02S

Level (low/med): LOW Date Received: 10/20/93

% 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	856			P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	36.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	45200			P
7440-47-3	Chromium	57.2			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	37.2	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8250			P
7439-96-5	Manganese	27.4			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	4900	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	10500			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.9	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

03

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WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B099J7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: B099H1

Matrix (soil/water): WATER Lab Sample ID: 10201-03S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.9	B		P
7440-39-3	Barium	7.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	43000			P
7440-47-3	Chromium	12.8			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	9.2	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9420			P
7439-96-5	Manganese	2.0	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	6170			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	12400			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	10.3	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

04

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WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INOFGANIC ANALYSIS DATA SHEET

8099M9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: 8099H1

Matrix (soil/water): WATER Lab Sample ID: 10201-04S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.7	B		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.5	B		P
7440-39-3	Barium	31.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	44000			P
7440-47-3	Chromium	55.7			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	9.2	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8130			P
7439-96-5	Manganese	2.2	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	4760	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	10100			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.4	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

05

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TMA

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Results of Analyses For:

GENERAL CHEMISTRY
Case No.10-044
(TMA/ARLI Work Order # A3-10-044)

METALS
Case No. N3-10-088
(TMA/Skinner & Sherman W.O. #s S3-10-205 & S3-10-206)

December 14, 1993

TMA Master Work Order # N3-10-088

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WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

GENERAL CHEMISTRY
CASE NO. 10-044
(TMA/ARLI Work Order # A3-10-044)

General Chemistry results are presented
for the following WHC WATER sample(s):

B099H3	B099H5
B099J3	B099J5
B099L9	B099M1

Norcal Work Order # N3-10-088

Thermo Analytical Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

Date submitted:

12/13/93

TMA Inc. REPORT Work Order # A3-10-044

Received: 10/19/93 Results by Sample

SAMPLE ID B099J3 FRACTION 01A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/14/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.1	pH	0.1
Sulfate	300.0	49	mg/L	10
Elect. Conductivity	9050	376	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-10-044

Received: 10/19/93 Results by Sample

SAMPLE ID B099J5 FRACTION 02A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/14/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	7.8	pH	0.1
Sulfate	300.0	29	mg/L	5
Elect. Conductivity	9050	299	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-10-044

Received: 10/19/93 Results by Sample

SAMPLE ID B099L9 FRACTION 03A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/15/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	<0.1	mg/L	0.1
pH	9040	5.8	pH	0.1
Sulfate	300.0	<1	mg/L	1
Elect. Conductivity	9050	<6	umhos/cm	6

FORM I

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TMA Inc. REPORT Work Order # A3-10-044

Received: 10/19/93 Results by Sample

SAMPLE ID B099M1 FRACTION 04A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/15/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	<0.1	mg/L	0.1
pH	9040	5.7	pH	0.1
Sulfate	300.0	<1	mg/L	1
Elect. Conductivity	9050	<6	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-10-044

Received: 10/19/93

Results by Sample

SAMPLE ID B099H3 FRACTION 05A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/18/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	7.8	pH	0.1
Sulfate	300.0	46	mg/L	5
Elect. Conductivity	9050	381	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-10-044

Received: 10/19/93

Results by Sample

SAMPLE ID B099H5 FRACTION 06A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/18/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.4	mg/L	0.1
pH	9040	7.8	pH	0.1
Sulfate	300.0	47	mg/L	5
Elect. Conductivity	9050	380	umhos/cm	6

FORM I

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

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December 9, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Six (6) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 20, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310205.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exceptions:

The ICP serial dilution for calcium exceeded the control limit requirements.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

MS
7/9/96

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WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099H3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-05S

Level (low/med): LOW Date Received: 10/20/93

% 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	22.3	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	5.5	B		P
7440-39-3	Barium	15.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	47800		E	P
7440-47-3	Chromium	30.8			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	73.2	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8750			P
7439-96-5	Manganese	2.8	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	13.3	B		P
7440-09-7	Potassium	5430			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.1	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

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WESTINGHOUSE/HANFORD

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099H5

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-06S

Level (low/med): LOW Date Received: 10/20/93

% 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	17.7	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.4	B		P
7440-39-3	Barium	16.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	50300		E	P
7440-47-3	Chromium	25.4			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	47.9	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	7760			P
7439-96-5	Manganese	2.0	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	10.0	B		P
7440-09-7	Potassium	5150			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9713512.2208

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099J3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-01S

Level (low/med): LOW Date Received: 10/20/93

% 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	29.2	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.8	B		P
7440-39-3	Barium	32.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.4	B		P
7440-70-2	Calcium	54000		E	P
7440-47-3	Chromium	11.0			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	3.6	B		P
7439-89-6	Iron	5.3	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	6680			P
7439-96-5	Manganese	0.84	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	6.1	B		P
7440-09-7	Potassium	4880	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11300			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.3	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

9715512.2209

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099J5

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-02S

Level (low/med): LOW Date Received: 10/20/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.3	B		P
7440-39-3	Barium	11.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	33200		E	P
7440-47-3	Chromium	13.0			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	5.3	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8280			P
7439-96-5	Manganese	1.8	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4960	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	9210			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	7.4	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

5

9713592.2210

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099L9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-03S

Level (low/med): LOW Date Received: 10/20/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U	E	P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	5.3	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	22.9	U		P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	68.5	U		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	114	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

6

9713512.2211

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099M1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-04S

Level (low/med): LOW Date Received: 10/20/93

% 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	318			P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	259	B	E	P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	5.9	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	54.3	B		P
7439-96-5	Manganese	9.9	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	68.5	U		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	137	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

FILE COPY

DEC 1993
RECEIVED
SDLA

December 9, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Six (6) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 20, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310206.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exceptions:

The laboratory duplicate for lead exceeded the control limit requirements.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

DEC 1993
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7/9/96

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WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099H4

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-05S

Level (low/med): LOW Date Received: 10/20/93

% 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	20.4	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	5.3	B		P
7440-39-3	Barium	14.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	47600			P
7440-47-3	Chromium	9.8	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	26.4	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	8660			P
7439-96-5	Manganese	1.7	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5490			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.6	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After. CLEAR Artifacts:

Comments:

2

9713512.2214

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

8099H6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: 8099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-06S

Level (low/med): LOW Date Received: 10/20/93

% 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	38.9	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	5.5	B		P
7440-39-3	Barium	17.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	49400			P
7440-47-3	Chromium	9.8	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	56.3	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	7660			P
7439-96-5	Manganese	1.9	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5140			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11400			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9713512.2215

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099J4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-01S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.3	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	5.0	B		P
7440-39-3	Barium	32.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	55700			P
7440-47-3	Chromium	10.8			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	52.4	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	6900			P
7439-96-5	Manganese	0.81	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5070			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

9713512.2216

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

8099J6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: 8099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-02S

Level (low/med): LOW Date Received: 10/20/93

% 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	16.6	B		P
7440-36-0	Antimony	14.8	B		P
7440-38-2	Arsenic	5.2	B		P
7440-39-3	Barium	12.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	34900			P
7440-47-3	Chromium	11.9			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	18.4	B		P
7439-92-1	Lead	3.4		*	P
7439-95-4	Magnesium	8680			P
7439-96-5	Manganese	0.93	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5310			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	9730			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	8.4	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

5

9713512.2217

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

8099M0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: 8099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-03S

Level (low/med): LOW Date Received: 10/20/93

% 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	35.6	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U		P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	31.6	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	22.9	U		P
7439-96-5	Manganese	0.81	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	68.5	U		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	114	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

6

9713512.2218

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

8099M2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: 8099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-04S

Level (low/med): LOW Date Received: 10/20/93

% 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	14.8	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U		P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	27.2	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	22.9	U		P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	68.5	U		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	114	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

7

9713512.2219

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Project Designation/Sampling Locations 100-BC-5

Ice Chest No. TAB

Bill of Lading/Airbill No. 2519009878

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Telephone (509) 376-5045

Collection Date 10/6/93

Field Logbook No. EFL-1033

Offsite Property No. W94-0-0001-5

Sample Identification

B0 99K7

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99K8

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp/K. Trapp	10/6/93	1500	L Sweeney/L Sweeney	10-7-93	0800
L Sweeney/L Sweeney	10-7-93	0100	H. NARCISO TMA/NORCAL	10-8-93	11:35

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 10/6/93 at 1500.

A-6000-407 (12/92) WEF061

9713512.2220

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/6/93 Time 1310 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99K7	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs	WATER	TRITIUM, C-14
BO 99K8	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-5
			BOL: # ~~2519009~~ 2519009878 LCS 10-9-93
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 10-8-93

Analysis Required _____

65

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2221

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/6/93

Ice Chest No. TAB

Field Logbook No. EFL-1033

Bill of Lading/Airbill No. 2579009878

Offsite Property No. W94-0-0001-5

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

BO 9941

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

BO 9942

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	10/6/93	1500	L Sweeney / L Sweeney	10-7-93	0800
L Sweeney / L Sweeney	10-7-93	1000	[illegible] / H. HARLISO TMA/NORCAL	10-8-93	11:35

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: ~~K. Trapp / K. Trapp~~ KT 10/6/93 Sec in Frig 3 on 10/6/93 at 1500

A-6000-407 (12/92) WEF061

9715512.2222

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/6/93 Time 1150 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 9941	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs	WATER	TRITIUM, C-14
BO 9942	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-5
			BOL: # 2519009878
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [illegible] Title Sample Control Technician Date 10-8-93

Analysis Required _____

67

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9715512.2223

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/6/93

Ice Chest No. TAB

Field Logbook No. EFL-1033

Bill of Lading/Airbill No. 2519009878

Offsite Property No. W94-0-0001-5

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 9927

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

B0 9928

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp/K. Trapp	10/6/93	1500	L. Sweeney/L. Sweeney	10/7/93	0800
L. Sweeney/L. Sweeney	10/7/93	1000	H. Narcisco TMA/NORCAL	10/8/93	11:35

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Spt in Fig 2 on 10/6/93 at 1900

A-6000-407 (12/92) WEF061

9713512.2224

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/6/93 Time 1015 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0 9947	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs	WATER	TRITIUM, C-14
B0 9948	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-5
			BOL: # 2S7900 9878
			TASK#: 93-286

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [illegible] Title SAMPLE CONTROL TECHNICIAN Date 10-8-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2225

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/7/93

Ice Chest No. SML-384

Field Logbook No. EFL-1037

Bill of Lading/Airbill No. 2519009900

Offsite Property No. W94-6-0001-8

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99K5

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99K6

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	10/7/93	1445	AJ Simpson AJ SIMPSON	10/8/93	0911
AJ Simpson AJ SIMPSON	10/8/93	0911	[illegible] H. NARCISO TMA/NORCAL	10-11-93	8:00

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 10/7/93 at 1445

Rec'd SATURDAY 10-9-93 OPENED 10/11/93

A-6000-407 (12/92) WEF061

9713512.2226

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/7/93 Time 1030 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0 99K5	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs	WATER	TRITIUM, C-14
B0 99K6	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-8
			BOL: # 2519009900
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title Sample Control Technician Date 10-11-93

Analysis Required _____

71

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

9715512.2227

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/7/93

Ice Chest No. SML-384

Field Logbook No. EFL-1037

Bill of Lading/Airbill No. 2519009900

Offsite Property No. W94-0-0001-8

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99K9

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99L0

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp/K. Trapp	10/7/93	1445	AJ Simpson AJ SIMPSON	10/8/93	OTR
AJ Simpson AJ SIMPSON	10/8/93	0912	[illegible] H. HARCISO TMA/HOPCAL	10-11-93	8:00

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: SPC in Frig 3 on 10/7/93 at 1445

Rec'd SATURDAY 10-9-93 OPENED 10/11/93

A-6000-407 (12/92) WEF061

9715512.2228

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/7/93 Time 1145 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99K9	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs	WATER	TRITIUM, C-14
BO 99L0	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-8
			BOL: # 2519009900
			TASK#: 93-286

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 10-11-93

Analysis Required

73

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2229

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Project Designation/Sampling Locations 100-BC-5

Ice Chest No. SML 384

Bill of Lading/Airbill No. 2519009900

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Telephone (509) 376-5045

Collection Date 10/7/93

Field Logbook No. EFL-1037

Offsite Property No. W94-0-0001-8

Sample Identification

BO 9925

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

2; 500ml; Gs; WATER; TRITIUM, C-14

BO 9926

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	10/7/93	1445	AJ Simpson AJ SIMPSON	10/8/93	0910
AJ Simpson AJ SIMPSON	10/8/93	0910	[illegible] H. NARCISO TMA/HPDCAL	10-11-93	8:00

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 10/7/93 at 1445

Rec'd SATURDAY 10-9-93 OPENED 10/11/93

A-6000-407 (12/92) WEF061

9715512.2250

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/7/93 Time 1340 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 9925	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs	WATER	TRITIUM, C-14
BO 9926	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-8
			BOL: # 2519009100
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title Sample Control Technician Date 10-11-93

Analysis Required _____

75

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2231

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Project Designation/Sampling Locations 100-BC-5

Ice Chest No. SML-3604

Bill of Lading/Airbill No. 2519009911

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Telephone (509) 376-5045

Collection Date 10/9/93

Field Logbook No. EFL 1036

Offsite Property No. W94-0-0001-10

Sample Identification

B0 99G3

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99G4

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
GG Hamilton	10/9/93	1220	AJ Simpson AJ SIMPSON	10/11/93	0837
AJ Simpson AJ SIMPSON	10/11/93	0838	A. NARCISO TMA/NORCAL	10-12-93	11:50

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:
STORED SAMPLES IN FRIG 2B on 10/9/93 @ 1220

A-6000-407 (12/92) WEF061

9713512.2232

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/9/93 Time 1010 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99G3	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs ✓✓	WATER	TRITIUM, C-14
BO 99G4	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-10
			BOL: # 2519009911
			TASK#: 93-286

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 10-12-93

Analysis Required

77

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2253

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/9/93

Ice Chest No. SMC-399

Field Logbook No. EFC-1037

Bill of Lading/Airbill No. 2519009911

Offsite Property No. W94-D-0001-~~11~~

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99G5

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99G6

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee	10/9/93	1221	AJ Simpson AJ SIMPSON	10/11/93	08 45
AJ Simpson AJ SIMPSON	10/11/93	0845	H. NARCISO TMA/NARCISO	10-12-93	11:50

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: rel'd. to Orig. # 30 by K.D. Lee 10/9/93 1221

A-6000-407 (12/92) WEF061

9713512.2234

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/9/93 Time 1120 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99G5	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs ✓	WATER	TRITIUM, C-14
BO 99G6	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-11
			BOL: # 251900 9911
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 10-12-93

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9213512.2235

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/9/93

Ice Chest No. SMC-399

Field Logbook No. EFL-1037

Bill of Lading/Airbill No. 2519009911

Offsite Property No. W94-0-0001-11

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99G7

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99G8

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee K.D. Lee	10/9/93	1221	AJ Simpson AJ SIMPSON	10/11/93	0844
AJ Simpson AJ Simpson	10/11/93	0844	H. NARCISO TMA/NORCAL	10-12-93	11:50

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: rel'ing. to Fris H 3C by K.D. Lee 10/9/93 1221

A-6000-407 (12/92) WEF061

9713512.2236

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/9/93 Time 1015 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99G7	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs	WATER	TRITIUM, C-14
BO99G8	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-11
			BOL: #261900 9911
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title Sample control Technician Date 10-12-93

Analysis Required _____

81

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2237

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/9/93

Ice Chest No. SML-364

Field Logbook No. EFL 1036

Bill of Lading/Airbill No. 2519009911

Offsite Property No. W94-0-0001-10

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

BO 99G9

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

BO 99H0

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished By	Frig 2B Date	Time	Received By	Date	Time
GG Hamilton GG Hamilton	10/9/93	1220	AJ Simpson AJ SIMPSON	10/11/93	0838
AJ Simpson Simpson	10/11/93	0839	[illegible] TMA/NORCAL H. NARCISO	10-12-93	11:50

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:
Samples Stored in Frig 2B on 10/9/93@1220 [illegible]

A-6000-407 (12/92) WEF061

9713512.2258

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/9/93 Time 0800 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0 99G9	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs ✓✓	WATER	TRITIUM, C-14
B0 99H0	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-10
			BOL: # 251900991 1
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 10-12-93

Analysis Required _____

83

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2239

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/10/93

Ice Chest No. SML-386

Field Logbook No. EFL-1037

Bill of Lading/Airbill No. 2519009911

Offsite Property No. W94-0-0001-10

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99J9

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99K0

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee K.D. Lee	10/10/93	1208	AJ Simpson AJ Simpson	10/11/93	0873
AJ Simpson AJ SIMPSON	10/11/93	0834	H. Narciso H. NARCISO TMA/NORCAL	10-12-93	11:50

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 2B by K.D. Lee 10/10/93 1208

A-6000-407 (12/92) WEF061

9713512.2240

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/10/93 Time 0926 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0 9939	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs ✓✓	WATER	TRITIUM, C-14
B0 9940	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-10
			BOL: # 2519009911
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title Sample Control Technician Date 10-12-93

Analysis Required _____

85

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9213512.2241

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Project Designation/Sampling Locations 100-BC-5

Ice Chest No. SML-364

Bill of Lading/Airbill No. 2519009911

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Telephone (509) 376-5045

Collection Date 10/10/93

Field Logbook No. EFL-1037

Offsite Property No. W94-0-0001-4

Sample Identification

B0 99K1

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99K2

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee K.D. Lee	10/10/93	1208	AJ Simpson AJ SIMPSON	10/11/93	0839
AJ Simpson AJ SIMPSON	10/11/93	0839	[illegible] H. NARCISO TMA/NORCAL	10-12-93	11:50

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: rel'wg. to frig. # 2A by K.D. Lee 10/10/93 1208

A-6000-407 (12/92) WEF061

9713512.2242

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/10/93 Time 1038 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99K1	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs ✓✓	WATER	TRITIUM, C-14
BO 99K2	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-10
			BOL: # 2519009911
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title Sample Control Technician Date 10-12-93

Analysis Required _____

87

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

9713512.2243

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/8/93

Ice Chest No. SMC-399 AJS 10/11/93

Field Logbook No. EFL-1037

Bill of Lading/Airbill No. ~~2S1 9911~~ 2S19009911

Offsite Property No. W94-0-0001-11

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

BO 99K3

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

BO 99K4

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee K.D. Lee	10/8/93	1230	AJ Simpson AJ SIMPSON	10/11/93	0843
AJ Simpson AJ SIMPSON	10/11/93	0843	H. Narciso H. NARCISO	10-12-93	1150

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to fr.g. # 3A by K.D. Lee 10/8/93 1230

A-6000-407 (12/92) WEF061

9713512.2244

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/8/93 Time 1045 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99K3	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs ✓	WATER	TRITIUM, C-14
BO 99K4	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-009-11
			BOL: # 2519009911
			TASK#: 93-286

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title Sample Control Technician Date 10-12-93

Analysis Required

89

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2245

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/9/93

Ice Chest No. SML-386

Field Logbook No. EFL-1037

Bill of Lading/Airbill No. 2519009911

Offsite Property No. W94-0-0001-10

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

BO 9923

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

BO 9924

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee	10/9/93	1221	AJ SIMPSON	10/11/93	0935
AJ Simpson	10/11/93	0935	H. NARCISO	10-12-93	11:50

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to fr.g. # 3C by K.D Lee 10/9/93 1221

A-6000-407 (12/92) WEF061

9713512.2246

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/9/93 Time 0858 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 9943	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs ✓✓	WATER	TRITIUM, C-14
BO 9944	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-10
			BOL: # 2S1900G9911
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title Sample Control Technician Date 10-12-93

Analysis Required _____

91

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

9713512.2247

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/10/93

Ice Chest No. SML-386

Field Logbook No. EFL-1037

Bill of Lading/Airbill No. 2519009911

Offsite Property No. W94-D-0001-10

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

BO 99M7

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

BO 99M8

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee	10/10/93	1208	AJ Simpson AJ SIMPSON	10/11/93	0832
AJ Simpson AJ SIMPSON	10/11/93	0832	H. Narciso H. NARCISO	10-12-93	11:50

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 2B by K.D. Lee 10/10/93 1208

A-6000-407 (12/92) WEF061

9713512.2248

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/10/93 Time 0926 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99M7	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs ✓✓	WATER	TRITIUM, C-14
BO 99M8	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-10
			BOL: # 251G009911
			TASK#: 93-286

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 10-12-93

Analysis Required

93

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

9713512.2249

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Project Designation/Sampling Locations 100-BC-5

Ice Chest No. GWSQ59

Bill of Lading/Airbill No. 2519009933

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Telephone (509) 376-5045

Collection Date 10/11/93

Field Logbook No. EFL-1036

Offsite Property No. W94-0-0001-16

Sample Identification

B0 99G1

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99G2

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp/K. Trapp	10/11/93	1345	L Sweeney L Sweeney	10-12-93	0730
L Sweeney L Sweeney	10-12-93	1000	Kermit Blum K. Blum	10-13-93	1130

Final Sample Disposition

Disposal Method:

Disposed by:

Date/Time:

Comments: Set in Frig 3 on 10/11/93 at 1345

A-6000-407 (12/92) WEF061

9713512.2250

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/11/93 Time 1120 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0 99G1	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs	WATER	TRITIUM, C-14
B0 99G2	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-16
			BOL: # 2519009933
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

FORM OF PAYMENT 97 3512.2251 (91)

Check ☐ GBL ☐ FCCOD ☐

Bill to Shipper ☒ Bill to Consignee ☐ Third Party Billing ☐

EMERY WORLDWIDE — A CF Company

SERVICES ** — UNITED STATES / CANADA: Same Day (Extra Charges) ☐; AM ☒; Second Day ☐; PM ☐; Saturday Delivery ☐

INTERNATION.: Express ☐; Standard Plus ☐; Preferred ☐; Standard ☐; Bus. Docu; Cu Cle; D

Shipper's Account Number: E 850281585

Date: 10-07-93 | Origin: PSC | Shipment Number: 251900987

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD
BLDG 1163
2355 STEVENS DRIVE
RICHLAND WA — Canada ☐

To:
TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA — Canada ☐

Tariff Dest.

Check to Shipper $

Hold for Pick Up ☐

EMERY WORL will accept Cc check with a. being assum Shipper, incl but not limit non-payment. and misrepre

Customer's Reference Numbers: W81232 PB5AA W94-0-0001#5

Zip: 99352

Consignee's Account Number: E

Zip: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (in Lbs.)
PH BUTCHER 1 COOLER ID: TAB WATER SAMPLES	1	24	16	17	1	101

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared $

251900987 8

Remarks: OVERNIGHT DELIVERY SIGNATURE SECURITY SERVICE

Shipper's Signature X 10-7-93

Zip Ship ☐ — For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 ☒; Urgent Pack 12X15 ☒

1-OAK-1

International Shipments: Free Domicile ☐; Commodity Code

Third Party Account Number mandatory for Third Party Billing. E — Third Party Account Number

International Customs Value | International Insurance

Base Charge | Total Transportation Charges | Other Charges/Advance at Origin (OC/AO)

Terms and Conditions on Back

EMERY WORLDWIDE — A CF Company

SIGNATURE AND TALLY RECORD

60029-46 (8/89) Litho USA

DATE: 10-07-93 SHIPMENT NO.: 251900987 8

SHIPP WESTINGHOUSE SHIPPING DEPT (509) 376

REFERENCE NO.: W94-0-0001#5

SHIPPER NAME AND ADDRESS
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD COMPANY
2355 STEVENS DRIVE 1163 BUILDING
PO BOX 1970
RICHLAND WA 99352

CONSIGNEE NAME AND ADDRESS
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA 94804

Pieces	Weight	Description/Marks	Emery Authorization No.
1	101 LBS	COOLER ID: TAB WATER SAMPLES	

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW

Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Dat
1. DENNIS FINLEY WESTINGHOUSE HANFORD CO WESTINGHOUSE SHIPPING	RICHLAND WA		
2.			
3.			
4.			
5. DAN LUTTRELL EWW	OAK		
6. JOSE SANTIAGO	RICHMOND		10-8-
7.			
8.			

96

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

FORM OF PAYMENT

ck ☐ GBL ☐ FCCOD ☐

to per ☐ X Bill to Consignee ☐ Third Party Billing ☐

Shipper's Account Number
850281585

EMERY WORLDWIDE
A CF Company

33

SERVICES **

UNITED STATES / CANADA: Same Day (Extra Charges) ☐ AM ☐ PM ☐ Second Day ☐ Saturday Delivery XX

INTERNATIONAL: Express ☐ Standard Plus ☐ Preferred ☐ Standard ☐ Business Documents ☐ Customs Clearance ☐ Delivery ☐

Date	Origin	Shipment Number
10-08-93	PSC	251900990

From:
STINGHOUSE SHIPPING DEPT (509) 376-6665
S. DEPARTMENT OF ENERGY C/O
ESTINGHOUSE HANFORD
BLDG 1163
155 STEVENS DRIVE
CHLAND WA
Canada ☐

To:
TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA
Canada ☐

Tariff Dest. | Gate

Check to Shipper $

Hold for Pick Up ☐

EMERY WORLDWI will accept Consig check with all ris being assumed b Shipper, including but not limited to non-payment, frau and misrepresenta

Customer's Reference Numbers: 81232 PB5AA W93-0-000148
Zip: 99352
E Consignee's Account Number
Zip: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
COOLER SML 384 TER SAMPLES	1	24	16	14	1	101

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

2 5 1 9 0 0 9 9 0 0

Remarks
TURDAY DELIVERY
IATURE SECURITY SERVICE
er's ture X C. R. Nelson

Zip Ship ☐
For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used
Urgent Letter 9X12 ☒ Urgent Pack 12X15 ☒

1-OAK-SA

Terms and Conditions on Back

International Shipments
Free Domicile ☐
Commodity Code
Third Party Account Number mandatory for Third Party Billing. E
Third Party Account Number
International Customs Value
International Insurance
e Charge
Total Transportation Charges
Other Charges/Advance at Origin ☐ OC/AO- $

WORLDWIDE Company

SIGNATURE AND TALLY RECORD
60029-46 (8/89) Litho USA

SHIPP WESTINGHOUSE SHIPPING DEPT (509) 376-6
REFERENCE NO.: W93-0-000148

SHIPPER NAME AND ADDRESS
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD COMPANY
2355 STEVENS DRIVE 1163 BUILDING
PO BOX 1970
RICHLAND WA 99352

CONSIGNEE NAME AND ADDRESS
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA 94804

OHK

Pieces	Weight	Description/Marks	Emery Authorization No.
1	101 LBS	WATER SAMPLES COOLER ID: SML 384 ON 1 COOLER	

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW

Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1. CHUCK NELSON WESTINGHOUSE HANFORD CO	RICHLAND WA SHIPPING DEPT		
2.			
3. K Rodney Hanson	Pac		
4. C Lockyrown	Fldy		
5.			
6.			
7.			
8.			

97

SPECIAL HANDLING INSTRUCTIONS

CONTROL COPY ATTACH TO CR

9713512.2253

FORM OF PAYMENT

Check ☐ GBL ☐ FCCOD ☐

Bill to Shipper ☐ Bill to Consignee ☐ Third Party Billing ☐

EMERY WORLDWIDE A CF Company

SERVICES **

UNITED STATES / CANADA: Same Day (Extra Charges) ☐ AM ☐ PM ☐ Second Day ☐ Saturday Delivery ☐

INTERNATIO: Express ☐ Standard Plus ☐ Preferred ☐ Standard ☐

E Shipper's Account Number: 850281585

Date: 10-11-93 | Origin: PSC | Shipment Number: 251900999

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD
BLDG 1163
2355 STEVENS DRIVE
RICHLAND WA

Canada ☐

To:
TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA 94804

Canada ☐

Tariff Dest.

Check to Shipper $

Hold for Pick Up ☐

EMERY WOR: will accept C check with a being assum Shipper, incl but not limite non-payment and misrepre.

Customer's Reference Numbers: W81232 PB5AA W94-0001 #10 & #11

Zip: 99352

E Consignee's Account Number

Zip: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (in Lbs.)
PH BUTCHER 3 COOLERS SML 399 104#; SML386 105#;SML364 103# WATER SAMPLES	3	24	16	17	3	312

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared $

251900999 11

Remarks:
OVERNIGHT DELIVERY
SIGNATURE SECURITY SERVICE

Shipper's Signature: 10-11-93

Zip Ship ☐
For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used

Urgent Letter 9X12 ☒ | Urgent Pack 12X15 ☒

International Shipments: Free Domicile ☐

Commodity Code

Third Party Account Number mandatory for Third Party Billing. E

Third Party Account Number

International Customs Value

International Insurance

Base Charge

Total Transportation Charges

Other Charges/Advance at Origin ☐ OC/AO- $

1-OAK-1

Terms and Conditions on Back

9713512.2254

FORM OF PAYMENT

Bill to Shipper [X] Bill to Consignee [ ] Third Party Billing [ ]

E Shipper's Account Number 850281585

EMERY WORLDWIDE

A CF Company

SERVICES * *

Same Day (Extra Charge) [ ] Standard Rate [ ] Preferred [ ] Standard [ ] Second Day [ ] Saturday Delivery [ ]

INTERNATIONAL

Date 10-12-93 Origin PSC Shipment Number 2519009933

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD
BLDG 1163
2355 STEVENS DRIVE
RICHLAND WA Canada [ ]

To:
TMA7NORCAL
t
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA Canada [ ]

Hold for Pick Up [ ]

Tariff Dest.

Check to Shipper $

EMERY WORLD will accept Con check with all being assume Shipper, inclu but not limite non-payment, and misrepres

Customer's Reference Numbers
W81232 PB5AA W94-0-0001#16 99352

E Consignee's Account Number

Zip 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (in Lbs.)
1 COOLER GWS059 WATER SAMPLES	1	24	16	17	1	50

FOR INFORMATION OR RATES CALL 1-800-44 EMERY (1-800-443-6379)

Declared Va $

2519009933

Remarks
OVERNIGHT DELIVERY
SIGNATURE SECURITY SERVICE

Shipper's Signature 10-12-93

Zip Ship [ ]
For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used
Urgent Letter 9X12 [X] Urgent Pack 12X15 [X]

International Shipments
Free Domicile [ ]
Commodity Code
Third Party Account Number mandatory for Third Party Billing.
Third Party Account Number E

Base Charge
International Customs Value
International Insurance
Total Transportation Charges
Other Charges/Advance at Origin [ ] OCA/AD $

1-OAK-t

Terms and Conditions on Back

SATURDAY
Overnight Delivery

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
Westinghouse Hanford Company		W94-0-0009-8

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 BURLINGTON ☒ Contractor ☐ Vendor

Shipped to
TMA/NORCAL
2030 WRIGHT AVE
RICHMOND CA 94804

Off-site Custodian: Delores Sanchez

Full Title: Project Coodinator

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1	1 poly cooler. Contains soil samples that are double-bagged and packed in wet ice and vermiculite. Samples are nonhazardous. SML 54B 65LBS Sample #: B098Y7, B098Y8, B098Y9	

☐ 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 at the 200 Areas

Bill of Lading 997 332 663

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
	110333	10-08-93

Location of Property (Area & Bldg.)	Contact	Phone
200 Area	L. E. Rogers	376-7690

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
10-8-93	81710/PT2AB	N/A

Originated By	Relinquished by:	Date	Authorized By	Date
J.T. Hogan	1200	10-8-93	Lynn T. Powers	10-8-93
Signature and Name of Property Control		Custodian Date	Property Management Approval	Date
			M. Hankel	10/8/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Date 10-8-93	100			

DISTRIBUTION

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

Hanford Site Property Services

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W93-0-0001-8

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to
TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 101 lbs.	Sample #: B09KK9 B09LC0 B09KK5 B09KK6 B09KC5 Cooler ID: SNL-334 B09LC6 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: 1LJ5 10/5/93 Cooler ID: Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 area.

Bill of lading # 2519004900

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

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	PH Butcher	(509) 376-5046

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
10/5/93	W81283/ PB5AA	NA

Originated By	Date	Authorized By	Date
P H Butcher	10/5/93	G Thompson	10/5/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		P Hankel	10/8/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Chuck Nelson (3C)	101			
Date 10-08-93				

DISTRIBUTION

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

Contractor WHC	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W94-0-0001-10

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 105 lbs.	Sample #: B099M7 B099M8 B099J9 B099K0 B099L3 B099L4 Cooler ID: SML-356 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 103 lbs.	Sample #: B099K1 B099K2 B099K3 B099H0 B099G3 B099G4 Cooler ID: SML-364 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Areas.

Bill of lading # 2519009911

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
		11-4-93

Location of Property (Area & Bldg.)	Contact	Phone
200 BC-5	PH Butcher	(509) 376-6045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
10/11/93	W81232/PB5AA	NA

Originated By	Date	Authorized By	Date
P.H. Butcher	10/11/93	G.J. Simmons	10/11/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		J. Hankel	10/11/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Camillet Date 10-11-93	102			

DISTRIBUTION

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

54-3000-479 (09/89)

Contractor WHC	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W94-[illegible]-00001-10

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 105 lbs.	Sample #: B09M7 B09M5 B09J9 B09K0 B09L3 B09L4 Cooler ID: SMC-356 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 103 lbs.	Sample #: B09K1 B09K2 B09L1 B09H0 B09G3 B09G4 Cooler ID: SMC-364 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area.

Bill of lading # 251-009911

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

Location of Property (Area & Bldg.)	Contact	Phone
200 BC-5	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
10/11/93	W81232/PB5AA	NA

Originated By	Date	Authorized By	Date
[illegible]	10/11/93	[illegible]	10/11/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	10/11/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]	103			
Date 10-11-93				

DISTRIBUTION

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

54-3000-479 (09/89)

399

OVERNIGHT DELIVERY

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-0-0001-11

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: BU0K3 BU0K4A BU9967 BU9965 BU9963 BU9966 Cooler ID: SWL-399 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: AS 10/11/93 Cooler ID: Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 areas

Bill of lading # 2S1109911

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

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	PH Butcher	(509) 376-6045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
10/11/93	W81232/ 1235AA	NA

Originated By	Date	Authorized By	Date
P.H. Butcher	10/11/93	C.J. Simpson	10/11/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		J P Thacker	10/11/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Gunilla	104			
Date 10-11-93				

DISTRIBUTION

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

9713512.2260

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/12/93

Ice Chest No. SML-407

Field Logbook No. EFL-1036

Bill of Lading/Airbill No. 2519009977

Offsite Property No. W94-0-0001-17

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B099F9

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

B099G0

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	10/12/93	1445	L Sweeney / L Sweeney	10/13/93	0800
L Sweeney / L Sweeney	10/13/93	1000	H. Narciso / H. NARCISO	10-14-93	11:30

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 10/12/93 at 1445

A-6000-407 (12/92) WEF061

9713512.2261

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/12/93 Time 1045 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99F9	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs	WATER	TRITIUM, C-14
BO 99G0	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-17
			BOL: # 2519009977
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Francise Title SAMPLE CONTROL TECHNICIAN Date 10-14-93

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2262

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/12/93

Ice Chest No. SMC-407

Field Logbook No. EFL-1036

Bill of Lading/Airbill No. 2519009977

Offsite Property No. W94-0-0001-17

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99H7

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99H8

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	10/12/93	1445	L Sweeney / L Sweeney	10/13/93	0800
L Sweeney / L Sweeney	10/13/93	1000	Francisco H. NARCISO	10-14-93	11:30

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: SPT in Frig 3 on 10/12/93 at 1445

A-6000-407 (12/92) WEF061

9713512.2263

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/12/93 Time 1145 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99H7	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs	WATER	TRITIUM, C-14
BO 99H8	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-17
			BOL: # 2519009977
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 10-14-93

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2264

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/12/93

Ice Chest No. SML-407

Field Logbook No. EFL-036

Bill of Lading/Airbill No. 2519009987

Offsite Property No. W94-0-0001-17

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99H9

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99J0

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	10/12/93	1445	L Sweeney / L Sweeney	10/13/93	0800
L Sweeney / L Sweeney	10/13/93	1000	H. Narciso / H. NARCISO	10-14-93	11:30

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Got in Frig 3 on 10/12/93 at 1445

A-6000-407 (12/92) WEF061

9713512.2265

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/12/93 Time 1250 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99H9	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs	WATER	TRITIUM, C-14
BO 99J0	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-17
			BOL: # 2519009977
			TASK#: 93-286

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Francisco Title SAMPLE CONTROL TECHNICIAN Date 10-14-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2266

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/13/93

Ice Chest No. EA017

Field Logbook No. EFL-1036

Bill of Lading/Airbill No. 2519009988

Offsite Property No. W94-0-0001-17

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99H1

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED
1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH
1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)
1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)
2; 500ml; Gs; WATER; TRITIUM, C-14

B0 99H2

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp/K. Trapp	10/13/93	1350	L Sweeney/L Sweeney	10-14-93	0630
L Sweeney/L Sweeney	10-14-93	1000	Kermit Blum K.Blum	10-15-93	1030

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 10/13/93 at 1350

A-6000-407 (12/92) WEF061

9713512.2267

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/13/93 Time ~~1030~~ 0930 hours at 10/13/93

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0 99H1	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	2; 500ml; Gs ✓✓	WATER	TRITIUM, C-14
B0 99H2	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-000117
			BOL: # 251900998 8
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2268

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/13/93

Ice Chest No. GWS24T

Field Logbook No. EFL-1036

Bill of Lading/Airbill No. 2519009988

Offsite Property No. W94-0-0001-17

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B099J1

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

1; 1L; ~~2; 500ml;~~ Gs; WATER; TRITIUM, C-14

KT 10/13/93

B099J2

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	10/13/93	1350	L Sweeney L Sweeney	10-14-93	0630
L Sweeney L Sweeney	10/14/93	1000	Kermit Blum K. Blum	10-15-93	1030

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 10/13/93 at 1350

A-6000-407 (12/92) WEF061

9713512.2269

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/13/93 Time 1200 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B099J1	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	~~2; 500ml; Gs~~ 1; 1L; Gs ✓ KR 10/13/93	WATER	TRITIUM, C-14
B099J2	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-17
			BOL: # 2519009988
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

70

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2270

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/13/93

Ice Chest No. EA017

Field Logbook No. EFL-1036

Bill of Lading/Airbill No. 2519009988

Offsite Property No. W94-0-0001-17

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99J7

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

1; 1L; ~~2; 500ml;~~ Gs; WATER; TRITIUM, C-14

KT 10/13/93

B0 99J8

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	10/13/93	1350	L Sweeney L Sweeney	10/14/93	0630
L Sweeney L Sweeney	10/14/93	1000	Kermit Blum K. Blum	10-15-93	1030

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: SET in Frig 3 on 10/13/93 at 1350

A-6000-407 (12/92) WEF061

9713512.2271

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/13/93 Time 1040 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99J7	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	~~2; 500ml; Gs~~ 1; 1L; GS ✓	WATER	TRITIUM, C-14
	KT 10/17/93		
BO 99J8	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-17
			BOL: # 2519009988
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

72

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2272

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/13/93

Ice Chest No. GWS24T

Field Logbook No. EFL-1036

Bill of Lading/Airbill No. 2519009988

Offsite Property No. W94- 0-0001-17

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

BO 99M9

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

1; 1L; ~~2; 500ml;~~ Gs; WATER; TRITIUM, C-14

KT 10/13/93

BO 99N0

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Tiapp / K. Tiapp	10/13/93	1350	L Sweeney / L Sweeney	10/14/93	0630
L Sweeney / L Sweeney	10/14/93	1000	Kermit Blum K. Blum	10-15-93	1030

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Spt in Frig 3 on 10/13/93 at 1350

A-6000-407 (12/92) WEF061

9713512.2273

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/13/97 Time 1200 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 99M9	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P ✓	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P ✓	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P ✓	WATER	Tc-99 (HCl pH<2.0)
	~~2; 500ml; Gs~~ 1; 1L; GS ✓	WATER	TRITIUM, C-14
	KT 10/13/97		
BO 99N0	1; 1L; P ✓	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-17
			BOL: # 251900998 8
			TASK#: 93-286

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2274

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/14/93

Ice Chest No. ~~GW5003~~ GW5003 LCS 10/18/93

Field Logbook No. EFL-1036

Bill of Lading/Airbill No. 251901002 1

Offsite Property No. W94- 0-0001-20

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99J3

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

1; 1L; ~~2; 500ml~~; Gs; WATER; TRITIUM, C-14

KT 10/14/93

B0 99J4

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Dhapp / K. Trapp	10/14/93	1300	AJ Simpson AJ SIMPSON	10/18/93	0720
AJ Simpson AJ Simpson	10/18/93	0720	H. Harciso H. HARCISO	10-19-93	11:00

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/92) WEF061

9715512.2275

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/14/93 Time 0930 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0 99 J3	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	~~2; 500ml; Gs~~ 1-1L; Gs	WATER	TRITIUM, C-14
	KT 10/14/93		
B0 99J4	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94-0-0001-20
			BOL: # 2519010021
			TASK#: 93-286

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 10-19-93

Analysis Required

76

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2276

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/14/93

Ice Chest No. ~~GWS003~~ GWS003 LCS 10/18/93

Field Logbook No. EFL-1036

Bill of Lading/Airbill No. 2519010021

Offsite Property No. W94-0-0001-20

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99J5

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

1; 1L; ~~2; 500ml~~; Gs; WATER; TRITIUM, C-14

KT 10/14/93

B0 99J6

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	10/14/93	1300	CJ Simpson AJ SIMPSON	10/18/93	0724
CJ Simpson AJ Simpson	10/18/93	0724	[illegible] / H. NARCISO	10-19-93	11:00

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Freezer on 10/14/93 at 1300

A-6000-407 (12/92) WEF061

9713512.2277

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/14/93 Time 1090 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B099J5	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	~~2; 500ml; Gs~~ ~~1; 2~~ 1; 1L; Gs	WATER	TRITIUM, C-14
	KT 10/14/93		
B099J6	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0 -0001 -20
			BOL: # 2519010021
			TASK#: 93-286

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 10-19-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

9713512.2278

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/15/93

Ice Chest No. G1VS056

Field Logbook No. EFL-1036

Bill of Lading/Airbill No. 2519010021

Offsite Property No. W94-0-0001-20

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

BO 9919

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

~~2; 500ml~~; Gs; WATER; TRITIUM, C-14

1; 1L [illegible]

BO 99M0

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp/K. Trapp	10/15/93	1230	L Sweeney L Sweeney	10/18/93	0750
L Sweeney L Sweeney	10/18/93	1000	H Harciso/H. HARCISO	10-19-93	11:00

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 10/15/93 at 1230

A-6000-407 (12/92) WEF061

9713512.2279

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/15/93 Time 1120 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0 99L9	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	~~2; 500ml~~; Gs	WATER	TRITIUM, C-14
	1; 1L 10/15/93		
B0 99M0	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-20
			BOL: # 25190100 21
			TASK#: 93-286

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title Sample Control Technician Date 10-19-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2280

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/15/93

Ice Chest No. GWS056

Field Logbook No. EFL-1036

Bill of Lading/Airbill No. 2519010021

Offsite Property No. W94-0-0001-20

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B099m1

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

~~2; 500ml~~; Gs; WATER; TRITIUM, C-14

1; 1L 10/15/93

B099m2

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	10/15/93	1230	L Swaney L Swaney	10/18/93	0750
L Swaney L Swaney	10/18/93	1000	[illegible] / H. NARCISO	10-19-93	11:00

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 10/15/93 at 1230

A-6000-407 (12/92) WEF061

9713512.2281

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled 10/15/93 Time 1120 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO99M1	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	~~2; 500ml;~~ Gs	WATER	TRITIUM, C-14
	1; 1L		
BO99M2	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-20
			BOL: # 2519010021
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title Sample Control Technician Date 10-19-93

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2282

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/18/93

Ice Chest No. GWS045

Field Logbook No. EFL-103C

Bill of Lading/Airbill No. 2519010054

Offsite Property No. W94-0-0001-22

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 99H3

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

1; 1L; ~~2; 500ml;~~ Gs; WATER; TRITIUM, C-14

KK 10/18/93

B0 99H4

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Tripp / K. Tripp	10/18/93	1230	L Sweeney / L Sweeney	10/19/93	0800
L Sweeney / L Sweeney	10/19/93	1000	[illegible] / H. [illegible]	10-20-93	11:35

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 7 on 10/18/93 at 1230

A-6000-407 (12/92) WEF061

9713512.2283

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled _____ Time _____ hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0 99H3	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	~~2; 500ml; Gs~~ 1; 1L; GS	WATER	TRITIUM, C-14
	KT 10/18/93		
B0 99H4	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-22
			BOL: # 2519010054
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 10-20-93

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713512.2284

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-BC-5

Collection Date 10/18/93

Ice Chest No. GWS045

Field Logbook No. EFL-1036

Bill of Lading/Airbill No. 2S19010054

Offsite Property No. W94-0-0001-22

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B099H5

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) UNFILTERED

1; 1L; P; WATER; ANIONS(F, SO4), CONDUCTIVITY, pH

1; 4L; G/P; WATER; GROSS ALPHA/BETA, Sr-90(HNO3 pH<2.0)

1; 1L; G/P; WATER; Tc-99(HCl pH<2.0)

1; 1L; ~~2; 500ml~~; Gs; WATER; TRITIUM, C-14

KT 10/18/93

B099H6

1; 1L; P; WATER; CLP-ICP METALS, ARSENIC, LEAD, SELENIUM, THALLIUM(HNO3 pH<2.0) FILTERED

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	10/18/93	1230	L Sweeney / L Sweeney	10-19-93	0800
L Sweeney / L Sweeney	10-19-93	1000	[illegible] / H. Harvey	10-20-93	11:35

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 10/18/93 at 1230

A-6000-407 (12/92) WEF061

9713512.2285

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, G. Hamilton Date Sampled _____ Time _____ hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0 99H5	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) UNFILTERED
	1; 1L; P	WATER	ANIONS(F, SO4), CONDUCTIVITY, pH
	1; 4L; G/P	WATER	GROSS ALPHA/BETA, Sr-90 (HNO3 pH<2.0)
	1; 1L; G/P	WATER	Tc-99 (HCl pH<2.0)
	~~2; 500ml; Gs~~ 1; 1L; Gs	WATER	TRITIUM, C-14
	KT 10/18/93		
B0 99H6	1; 1L; P	WATER	CLP-ICP METALS, ARSENIC, LEAD, SELENIUM,
			THALLIUM (HNO3 pH<2.0) FILTERED
			OPC: # W94- 0-0001-22
			BOL: # 25M01005-4
			TASK#: 93-286

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Francis Title Sample Control Technician Date 10-20-93

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

86

A-6000-406(05/90)

9713512.2286

FORM OF PAYMENT

ck ☐ GBL ☐ FCCOD ☐

l to oper ☒ Bill to Consignee ☐ Third Party Billing ☐

EMERY WORLDWIDE

A CF Company

SERVICES **

UNITED STATES / CANADA: Same Day (Extra Charges) ☐ AM ☒ Second Day ☐ PM ☐ Saturday Delivery ☐

INTERNATIONAL: Express ☐ Standard Plus ☐ Preferred ☐ Standard ☐ Business Documents ☐ Customs Clearance ☐ Delivery ☐

Shipper's Account Number: 050281585

Date: 19 10-18-93 | Origin: C | Shipment Number: 251901005 4

To:

ESTINGHOUSE SHIPPING DEPT (509) 376-6665
.S. DEPARTMENT OF ENERGY C/O
ESTINGHOUSE HANFORD
BLDG 1163
155 STEVENS DRIVE
CHLAND WA Canada ☐

TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA Canada ☐

Hold for Pick Up ☐

Tariff Dest. | Gateway

Check to Shipper $

EMERY WORLDWIDE will accept Consignee check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentatior

Customer's Reference Numbers: 1232 PB5AA W94-0-0001#22 | Zip: 99352

E | Consignee's Account Number | Zip: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
COOLER ID: GWS 045 TER SAMPLES	1	24	16	17	1	68

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

2 5 1 9 0 1 0 0 5 4

Remarks: VERNIGHT DELIVERY IGNATURE SECURITY SERVIC 10198

Zip Ship ☐ For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 ☒ Urgent Pack 12X15 ☒

International Shipments: Commodity Code | Free Domicile ☐

Third Party Account Number mandatory for Third Party Billing. | E | Third Party Account Number

International Customs Value | International Insurance

e Charge

Total Transportation Charges | Other Charges/Advance at Origin ☐ OC/AO- $

1-OAK-A

Terms and Conditions on Back

9713512.2287

FORM OF PAYMENT

ck ☐ GBL ☐ FCCOD ☐

[X] Bill to Consignee ☐ Third Party Billing ☐

EMERY WORLDWIDE

A CF Company

SERVICES **

UNITED STATES / CANADA

Same Day (Extra Charges) ☐ AM ☐ PM ☐ Second Day ☐

INTERNATIONAL

Express ☐ Standard Plus ☐ Preferred ☐ Standard ☐

Business Documents ☐ Customs Clearance ☐ Delivery ☐

Shipper's Account Number: 850281585

Pcs: 18 | Origin: PSC | Shipment Number: 251901002 1

10-18-93

To:

STINGHOUSE SHIPPING DEPT (509) 376-6665
S. DEPARTMENT OF ENERGY C/O
STINGHOUSE HANFORD
BLDG 1163
55 STEVENS DRIVE
CHLAND WA

TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA US

Tariff Dest. | Gateway

Check to Shipper $

Hold for Pick Up ☐

Canada ☐

Customer's Reference Numbers: 1232 PBA55 W94-0001#20

Zip: 99352

E Consignee's Account Number

Zip: 94804

EMERY WORLDWIDE will accept Consignee's check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
BUTCHER COOLER ID: GWS003 79# S056 67# WATER MPLES	2	24	16	17	2	146

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

2 5 1 9 0 1 0 0 2 1

Remarks: DELIVERY GNATURE SECURITY SERVICE

1310 10-18-93

Zip Ship ☐ For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 ☐ Urgent Pack 12X15 ☒

International Shipments: Free Domicile ☐

Commodity Code

Third Party Account Number mandatory for Third Party Billing. E

Third Party Account Number

International Customs Value

International Insurance

Charge

Total Transportation Charges

Other Charges/Advance at Origin ☐ OC/AO- $

1-OAK-A

Terms and Conditions on Back

Overnight Delivery

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-0-0001-20

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geochemistry	Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to
TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 79 lbs.	Sample #: B099J5, B099J6, B099J3, B099J4 Cooler ID: GWSC 3 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 67 lbs.	Sample #: B099L9, B099M0, B099M1, B099M2 Cooler ID: GW S056 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # 2519C0021

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

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
10-18-93	W81232/ TBA55	NA

Originated By	Date	Authorized By	Date
PH Butcher	10/18/93	[illegible]	

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	10/18/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]				
Date 10-18-93		89		

DISTRIBUTION

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

54-3000-479 (09/89)

9713512.2289

FORM OF PAYMENT

Check ☐ GBL ☐ FCCOD ☐

Bill to Shipper [X] Bill to Consignee ☐ Third Party Billing ☐

EMERY WORLDWIDE — A GF Company

SERVICES ** — UNITED STATES / CANADA: Same Day (Extra Charges) ☐ AM [X] Second Day ☐ PM ☐ Saturday Delivery ☐

INTERNATIONAL: Express ☐ Standard Plus ☐ Preferred ☐ Standard ☐ Business Document ☐ Customs Clearance ☐ Deliver ☐

Shipper's Account Number: 850281585

Date: 10-14-93 | Origin: PSC | Shipment Number: 251900998

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD
BLDG 1163
2355 STEVENS DRIVE
RICHLAND WA Canada ☐

To:
TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA

Tariff Dest. | Gate

Hold for Pick ☐ Ca ☐

Customer's Reference Numbers: 481232 PB5AA W94-0-0001#17 | Zip: 99352

Consignee's Account Number: E | Zip: 94804

Description: COOLERS ID: EA017 75# IS 24T 67# ATER SAMPEES

Dimensions: Pcs. 2 | L 14 | W 16 | H 17

Total Pieces: 2 | Total Weight (In Lbs.): 142

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

251900998 8

Remarks: OVERNIGHT DELIVERY SIGNATURE SECURITY SERVICE

Shipper's Signature: 10-14-93

Zip Ship ☐ — For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 ☐ | Urgent Pack 12X15 ☐

International Shipments: Free Domicile ☐ | Commodity Code

Third Party Account Number mandatory for Third Party Billing. | Third Party Account Number: E

International Customs Value | International Insurance

Total Transportation Charges | Other Charges/Advance at Origin: OC/AO- ☐ $

Terms and Conditions on Back.

1-OAC-A

OVERNIGHT DELIVERY

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-0-0001-17

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 75 lbs.	Sample #: B099H1, B099H2, B099J7, B099J8, ~~B099J1~~ ~~B099J2~~ LCS 10/14/93 Cooler ID: EA017 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 67 lbs.	Sample #: B099J1, B099J2, B099M9, B099N0 Cooler ID: GWS 24T Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA.

Bill of lading # 2519009988

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
	56439	10-13

Location of Property (Area & Bldg.)	Contact	Phone
100-BC-5	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
10-14-93	W81232/ PBSAA	NM

Originated By	Date	Authorized By	Date
PH Butcher	10-14-93	AJ Simpson	10/14/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		JP Henkel	10/14/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
10/13/93		91		
Date				

DISTRIBUTION

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

54-3000-479 (09/89)

Overnight Delivery 2291

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-0-0001-17

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 75 lbs.	Sample #: B099H1, B099H2, B099J7, B099J8, ~~B099J1~~ ~~B099J2~~ LCS 10/14/93 Cooler ID: EA017 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 67 lbs.	Sample #: B099J1, B099J2, B099M9, B099N0 Cooler ID: GWS 24T Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA.

Bill of lading # 2519009988

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

Location of Property (Area & Bldg.)	Contact	Phone
100-R-5	PH Butcher	(509) 376-6045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
10-14-93	W81232/ DRSAA	NM

Originated By	Date	Authorized By	Date
PH Butcher	10-14-93	AJ Simpson	10/14/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		JP Henkel	10/14/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
10-13-93				
Date				

92

DISTRIBUTION

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

54-3000-479 (09/89)

9713512.2292

(84)

EMERY WORLDWIDE

A CF Company

FORM OF PAYMENT

CK ☐ GBL ☐ FCCOD ☐

to Bill to Consignee ☐ Third Party Billing ☐

Shipper's Account Number: 850281585

SERVICES **

UNITED STATES / CANADA: Same Day (Extra Charges) ☐ AM ☐ PM ☐ Second Day ☐ Saturday Delivery ☐

INTERNATIONAL: Express ☐ Standard Plus ☐ Preferred ☐ Standard ☐ Business Documents ☐ Customs Clearance ☐ Delivery ☐

Date	Origin	Shipment Number
10-13-93	PSC	251900997 7

From:
ESTINGHOUSE SHIPPING DEPT (509) 376-6665
.S. DEPARTMENT OF ENERGY C/O
STINGHOUSE HANFORD
BLDG 1163
55 STEVENS DRIVE
CHLAND WA Canada ☐

To:
TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA Canada ☐

Hold for Pick Up ☐

Tariff Dest. | Gateway

Check to Shipper $

EMERY WORLDWIDE will accept Consignee' check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation

Customer's Reference Numbers: 232 PB5AA W94-0001#17

Zip: 99352

E Consignee's Account Number

Zip: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (in Lbs.)
OOLER ID: SML 407 ER SAMPLES	1	24	16	17	1	104

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

2519009977

Remarks
ERNIGHT DELIVERY
GNATURE SECURITY SERVICE

Zip Ship ☐
For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used
Urgent Letter 9X12 ☐ Urgent Pack 12X15 ☐

International Shipments: Free Domicile ☐
Commodity Code

Third Party Account Number mandatory for Third Party Billing. E Third Party Account Number

International Customs Value | International Insurance

Charge

Total Transportation Charges | Other Charges/Advance at Origin ☐ OC/AC- $

10AKA

Terms and Conditions on Back

9713512.2293

EMERY WORLDWIDE — A CF Company

SIGNATURE AND TALLY RECORD

60029-46 (8/89) Litho USA

DATE: 10-13-93 SHIPMENT NO.: 261900997 7
SHIPPER: WESTINGHOUSE SHIPPING DEPT (509) 376-6665
REFERENCE NO.: W94-0-000[illegible]

SHIPPER NAME AND ADDRESS
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD COMPANY
2355 STEVENS DRIVE 1163 BUILDING
PO BOX 1970
RICHLAND WA 99352

CONSIGNEE NAME AND ADDRESS
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA 94804

Pieces	Weight	Description/Marks	Emery Authorization No.
1	104	COOLER ID: SML 407 WATER SAMPLES	

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW

	Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1.	CG MILLER WESTINGHOUSE HANFORD CO	RICHLAND WA SHIPPING DEPT	[illegible]	[illegible]
2.				
3.	[illegible]	[illegible]	[illegible]	[illegible]
4.				
5.	DAN LUTTRELL EWW	OAK	Dan Luttrell	[illegible]
6.	AR Cousu	Richmond	AR Cousu	11:26 10-14-93
7.				
8.				

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

9713512.2294

VALIDATION SUMMARY

9713512.2295

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099K5

INORGANIC ANALYSIS DATA SHEET

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

ab Code: SKINER Case No.: N3-10-033SAS No.: SDG No.: B099K5

atrix (soil/water): WATER Lab Sample ID: 10082-01S

evel (low/med): LOW Date Received: 10/12/93

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	22.0	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	6.2	B		P
7440-39-3	Barium	17.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	33300			P
7440-47-3	Chromium	7.8	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	7.7	B		P
7439-89-6	Iron	47.2	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	10000			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6010			P
7782-49-2	Selenium	3.7	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	20900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	17.3	B		P
7440-66-6	Zinc	7.0	B		P
	Cyanide				NR

olor Before: COLORLESS Clarity Before: CLEAR Texture:

olor After: COLORLESS Clarity After: CLEAR Artifacts:

omments: NOT VALIDATED 2/1/94

2

9713512.2296

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099K9

INORGANIC ANALYSIS DATA SHEET

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

ab Code: SKINER Case No.: N3-10-033SAS No.: SDG No.: B099K5

atrix (soil/water): WATER Lab Sample ID: 10082-02S

evel (low/med): LOW Date Received: 10/12/93

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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.9	B		P
7440-39-3	Barium	10.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	37300			P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.8	B		P
7439-89-6	Iron	43.6	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	11000			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6090			P
7782-49-2	Selenium	4.6	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	21800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	15.3	B		P
7440-66-6	Zinc	48.3			P
	Cyanide				NR

olor Before: COLORLESS Clarity Before: CLEAR Texture:

olor After: COLORLESS Clarity After: CLEAR Artifacts:

omments: NOT VALIDATED 2/1/94 RM

3

9713512.2297

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099L5

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

ab Code: SKINER Case No.: N3-10-033SAS No.: SDG No.: B099K5

atrix (soil/water): WATER Lab Sample ID: 10082-03S

evel (low/med): LOW Date Received: 10/12/93

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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.3	B		P
7440-39-3	Barium	19.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	34400			P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	63.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9150			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5430			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	14400			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	14.7	B		P
7440-66-6	Zinc	4.9	B		P
	Cyanide				NR

olor Before: COLORLESS Clarity Before: CLEAR Texture:

olor After: COLORLESS Clarity After: CLEAR Artifacts:

omments: NOT VALIDATED 2/1/94 [illegible]

4

9713512.2298

TMA Inc. REPORT Work Order # A3-10-013

Received: 10/11/93 Results by Sample

000009

SAMPLE ID B099K5 FRACTION 01A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.5	mg/L	0.1
pH	9040	7.8	pH	0.1
Sulfate	300.0	34	mg/L	4
Elect. Conductivity	9050	371	umho/cm	6

NV 2/1/94

FORM I

9713512.2299

TMA Inc. REPORT Work Order # A3-10-013

Received: 10/11/93 Results by Sample

000010

SAMPLE ID B099K9 FRACTION 02A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.5	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	37	mg/L	4
Elect. Conductivity	9050	393	umho/cm	6

NV 2/1/94

FORM I

9713512.2300

TMA Inc. REPORT Work Order # A3-10-013

Received: 10/11/93 Results by Sample

000011

SAMPLE ID B099L5 FRACTION 03A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	25	mg/L	1
Elect. Conductivity	9050	325	umhos/cm	6

NV 2/1/94

FORM I

9715512.2301

N310059-01

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099F9

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-01
Dept sample id 7279-001
Received 10/14/93
Client sample id B099F9
Location/Matrix 100-BC-5 LIQUID
Collected 10/12/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.6	1.3	1	3	J	80A
Gross Beta	Beta	5.2	1.4	2	4		80B
Tritium	10028-17-8	-62	130	200	400	UJ	H
Carbon 14	14762-75-5	84	21	30	100	J	C
Strontium 90	10098-97-2	0	0.68	0.5	2	U	Y
Technetium 99	14133-76-7	-0.50	1.2	4	5	U	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-01	80A/80	7279-001		0.300 L	11/17/93	11/19/93	DPK
N310059-01	80B/80	7279-001		0.300 L	11/17/93	11/19/93	DPK
N310059-01	H	7279-001		0.0100 L	11/15/93	11/29/93	DPK
N310059-01	C	7279-001		0.0300 L	12/15/93	12/16/93	DPK
N310059-01	Y	7279-001		1.00 L	11/13/93	11/19/93	DPK
N310059-01	TC	7279-001		0.200 L	11/29/93	12/01/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

DATA SHEETS
Page 1
SUMMARY DATA SECTION
Page 14

RBC
1-21-94

9713512.2302

N310059-04

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099H1

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-04
Dept sample id 7279-004
Received 10/15/93
Client sample id B099H1
Location/Matrix 100-BC-5 LIQUID
Collected 10/13/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST
Gross Alpha	Alpha	1.9	1.7	2	3	U	80A
Gross Beta	Beta	110	4.1	2	4		80B
Tritium	10028-17-8	2300	230	200	400	J	H
Carbon 14	14762-75-5	-77	31	50	100	UJ	C
Strontium 90	10098-97-2	33	3.7	0.7	2		Y
Technetium 99	14133-76-7	60	3.4	3	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-04	80A/80	7279-004		0.300 L	11/17/93	11/19/93	DPK
N310059-04	80B/80	7279-004		0.300 L	11/17/93	11/19/93	DPK
N310059-04	H	7279-004		0.0100 L	11/15/93	11/29/93	DPK
N310059-04	C	7279-004		0.0300 L	12/13/93	12/16/93	DPK
N310059-04	Y	7279-004		1.00 L	11/13/93	11/17/93	DPK
N310059-04	TC	7279-004		0.200 L	11/30/93	12/02/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

DATA SHEETS
Page 2
SUMMARY DATA SECTION
Page 15

RBC
1-27-94

9713512.2303

N310059-12

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099H3

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-12
Dept sample id 7279-012
Received 10/20/93
Client sample id B099H3
Location/Matrix 100-BC-5 LIQUID
Collected 10/18/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.8	1.5	2	3	U	80A
Gross Beta	Beta	52	3.0	2	4		80B
Tritium	10028-17-8	2200	230	200	400	J	H
Carbon 14	14762-75-5	-69	26	50	100	U J	C
Strontium 90	10098-97-2	4.8	2.1	0.7	2		Y
Technetium 99	14133-76-7	58	1.9	2	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-12	80A/80	7279-012		0.300 L	11/17/93	11/19/93	DPK
N310059-12	80B/80	7279-012		0.300 L	11/17/93	11/19/93	DPK
N310059-12	H	7279-012		0.0100 L	11/16/93	11/29/93	DPK
N310059-12	C	7279-012		0.0300 L	12/14/93	12/16/93	DPK
N310059-12	Y	7279-012		1.00 L	11/13/93	11/17/93	DPK
N310059-12	TC	7279-012		0.200 L	11/29/93	12/10/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

RBC
1-21-94

9713512.2304

N310059-13

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099H5

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-13
Dept sample id 7279-013
Received 10/20/93
Client sample id B099H5
Location/Matrix 100-BC-5 LIQUID
Collected 10/18/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	-0.22	1.2	2	3	U	80A
Gross Beta	Beta	55	3.0	2	4		80B
Tritium	10028-17-8	2200	220	200	400	J	H
Carbon 14	14762-75-5	-86	25	40	100	U J	C
Strontium 90	10098-97-2	6.6	0.53	0.7	2		Y
Technetium 99	14133-76-7	55	1.7	1	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-13	80A/80	7279-013		0.300 L	11/17/93	11/19/93	DPK
N310059-13	80B/80	7279-013		0.300 L	11/17/93	11/19/93	DPK
N310059-13	H	7279-013		0.0100 L	11/16/93	11/29/93	DPK
N310059-13	C	7279-013		0.0300 L	12/14/93	12/16/93	DPK
N310059-13	Y	7279-013		1.00 L	11/13/93	11/17/93	DPK
N310059-13	TC	7279-013		0.200 L	11/29/93	12/06/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

RBC
1-27-94

9713512.2305

N310059-02

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099H7

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-02
Dept sample id 7279-002
Received 10/14/93
Client sample id B099H7
Location/Matrix 100-BC-5 LIQUID
Collected 10/12/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.0	1.3	1	3	J	80A
Gross Beta	Beta	54	3.0	2	4		80B
Tritium	10028-17-8	2800	250	200	400	J	H
Carbon 14	14762-75-5	17	24	40	100	U J	C
Strontium 90	10098-97-2	0.55	0.85	0.7	2	U	Y
Technetium 99	14133-76-7	54	2.6	2	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-02	80A/80	7279-002		0.300 L	11/17/93	11/19/93	DPK
N310059-02	80B/80	7279-002		0.300 L	11/17/93	11/19/93	DPK
N310059-02	H	7279-002		0.0100 L	11/15/93	11/29/93	DPK
N310059-02	C	7279-002		0.0300 L	12/15/93	12/16/93	DPK
N310059-02	Y	7279-002		1.00 L	11/13/93	11/17/93	DPK
N310059-02	TC	7279-002		0.200 L	11/29/93	12/06/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

RBC
1-21-94

9713512.2306

N310059-03

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099H9

SDG	7279	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310059-03	Client sample id	B099H9
Dept sample id	7279-003	Location/Matrix	100-BC-5 LIQUID
Received	10/14/93	Collected	10/12/93
		Chain of custody id	EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	4.3	2.0	2	3		80A
Gross Beta	Beta	96	3.9	2	4		80B
Tritium	10028-17-8	2600	240	200	400	J	H
Carbon 14	14762-75-5	14	24	40	100	UJ	C
Strontium 90	10098-97-2	26	3.2	0.7	2		Y
Technetium 99	14133-76-7	69	4.7	5	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-03	80A/80	7279-003		0.300 L	11/17/93	11/19/93	DPK
N310059-03	80B/80	7279-003		0.300 L	11/17/93	11/19/93	DPK
N310059-03	H	7279-003		0.0100 L	11/15/93	11/29/93	DPK
N310059-03	C	7279-003		0.0300 L	12/15/93	12/16/93	DPK
N310059-03	Y	7279-003		1.00 L	11/13/93	11/17/93	DPK
N310059-03	TC	7279-003		0.200 L	11/29/93	12/06/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/20/93

RBC
1-21-94

9713512.2307

N310059-05

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099J1

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-05
Dept sample id 7279-005
Received 10/15/93
Client sample id B099J1
Location/Matrix 100-BC-5 LIQUID
Collected 10/13/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.64	1.3	2	3	U	80A
Gross Beta	Beta	49	2.8	2	4		80B
Tritium	10028-17-8	2000	220	200	400	J	H
Carbon 14	14762-75-5	-110	30	50	100	UJ	C
Strontium 90	10098-97-2	1.4	0.28	0.7	2	J	Y
Technetium 99	14133-76-7	56	4.0	5	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-05	80A/80	7279-005		0.300 L	11/17/93	11/19/93	DPK
N310059-05	80B/80	7279-005		0.300 L	11/17/93	11/19/93	DPK
N310059-05	H	7279-005		0.0100 L	11/15/93	11/29/93	DPK
N310059-05	C	7279-005		0.0300 L	12/13/93	12/16/93	DPK
N310059-05	Y	7279-005		1.00 L	11/13/93	11/17/93	DPK
N310059-05	TC	7279-005		0.200 L	11/29/93	12/06/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

RBC
1-21-94

9713512.2308

N310059-08

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099J3

SDG	7279	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310059-08	Client sample id	B099J3
Dept sample id	7279-008	Location/Matrix	100-BC-5 LIQUID
Received	10/15/93	Collected	10/14/93
		Chain of custody id	EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.7	1.7	2	3	J	80A
Gross Beta	Beta	83	3.6	2	4		80B
Tritium	10028-17-8	3300	250	200	400	J	H
Carbon 14	14762-75-5	-79	34	60	100	UJ	C
Strontium 90	10098-97-2	17	0.73	0.6	2		Y
Technetium 99	14133-76-7	69	1.9	1	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-08	80A/80	7279-008		0.300 L	11/17/93	11/19/93	DPK
N310059-08	80B/80	7279-008		0.300 L	11/17/93	11/19/93	DPK
N310059-08	H	7279-008		0.0100 L	11/16/93	11/29/93	DPK
N310059-08	C	7279-008		0.0300 L	12/13/93	12/16/93	DPK
N310059-08	Y	7279-008		1.00 L	11/13/93	11/17/93	DPK
N310059-08	TC	7279-008		0.200 L	11/29/93	12/02/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/20/93

RBC
1-21-94

9715512.2309

N310059-09

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099J5

SDG 7279 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N310059-09 Client sample id B099J5
Dept sample id 7279-009 Location/Matrix 100-BC-5 LIQUID
Received 10/15/93 Collected 10/14/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.4	0.85	0.9	3	J	80A
Gross Beta	Beta	28	1.6	1	4		80B
Tritium	10028-17-8	1500	200	200	400	J	H
Carbon 14	14762-75-5	-10	27	50	100	UJ	C
Strontium 90	10098-97-2	0.022	0.19	0.8	2	U	Y
Technetium 99	14133-76-7	35	2.9	6	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-09	80A/80	7279-009		0.300 L	11/18/93	11/19/93	DPK
N310059-09	80B/80	7279-009		0.300 L	11/18/93	11/19/93	DPK
N310059-09	H	7279-009		0.0100 L	11/16/93	11/29/93	DPK
N310059-09	C	7279-009		0.0300 L	12/14/93	12/16/93	DPK
N310059-09	Y	7279-009		1.00 L	11/13/93	11/19/93	DPK
N310059-09	TC	7279-009		0.200 L	11/29/93	12/01/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

RBC
1-21-94

9715512.2310

N310059-06

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099J7

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-06
Dept sample id 7279-006
Received 10/15/93
Client sample id B099J7
Location/Matrix 100-BC-5 LIQUID
Collected 10/13/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.2	1.3	2	3	U	80A
Gross Beta	Beta	34	2.5	2	4		80B
Tritium	10028-17-8	1600	210	200	400	J	H
Carbon 14	14762-75-5	-64	28	50	100	U J	C
Strontium 90	10098-97-2	1.1	0.26	0.7	2	J	Y
Technetium 99	14133-76-7	39	1.1	1	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-06	80A/80	7279-006		0.300 L	11/17/93	11/19/93	DPK
N310059-06	80B/80	7279-006		0.300 L	11/17/93	11/19/93	DPK
N310059-06	H	7279-006		0.0100 L	11/15/93	11/29/93	DPK
N310059-06	C	7279-006		0.0300 L	12/13/93	12/16/93	DPK
N310059-06	Y	7279-006		1.00 L	11/13/93	11/17/93	DPK
N310059-06	TC	7279-006		0.200 L	11/30/93	12/06/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

RBC
1-21-94

9713512.2311

N310059-10

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099L9

SDG	7279	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310059-10	Client sample id	B099L9
Dept sample id	7279-010	Location/Matrix	100-BC-5 LIQUID
Received	10/15/93	Collected	10/15/93
		Chain of custody id	EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.13	0.77	1	3	U	80A
Gross Beta	Beta	-0.31	0.72	1	4	U	80B
Tritium	10028-17-8	23	130	200	400	U J	H
Carbon 14	14762-75-5	-110	34	60	100	U J	C
Strontium 90	10098-97-2	0.030	0.20	0.7	2	U	Y
Technetium 99	14133-76-7	0.66	1.1	1	5	U	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-10	80A/80	7279-010		0.300 L	11/18/93	11/19/93	DPK
N310059-10	80B/80	7279-010		0.300 L	11/18/93	11/19/93	DPK
N310059-10	H	7279-010		0.0100 L	11/16/93	11/29/93	DPK
N310059-10	C	7279-010		0.0300 L	12/14/93	12/16/93	DPK
N310059-10	Y	7279-010		1.00 L	11/13/93	11/19/93	DPK
N310059-10	TC	7279-010		0.200 L	11/29/93	12/01/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/20/93

RBC
1-21-94

9713512.2312

N310059-11

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099M1

SDG	7279	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310059-11	Client sample id	B099M1
Dept sample id	7279-011	Location/Matrix	100-BC-5 LIQUID
Received	10/15/93	Collected	10/15/93
		Chain of custody id	EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.24	1.2	2	3	U	80A
Gross Beta	Beta	0.64	1.1	2	4	U	80B
Tritium	10028-17-8	-38	130	200	400	U J	H
Carbon 14	14762-75-5	-110	31	50	100	U J	C
Strontium 90	10098-97-2	0.022	0.21	0.8	2	U	Y
Technetium 99	14133-76-7	0.98	0.78	2	5	U	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-11	80A/80	7279-011		0.300 L	11/17/93	11/19/93	DPK
N310059-11	80B/80	7279-011		0.300 L	11/17/93	11/19/93	DPK
N310059-11	H	7279-011		0.0100 L	11/16/93	11/29/93	DPK
N310059-11	C	7279-011		0.0300 L	12/14/93	12/16/93	DPK
N310059-11	Y	7279-011		1.00 L	11/13/93	11/17/93	DPK
N310059-11	TC	7279-011		0.200 L	11/29/93	12/02/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/20/93

RBC
1-21-94

9713512.2313

N310059-07

TMA NORCAL
REPORTING GROUP 7279

DATA SHEET

B099M9

SDG 7279
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310059-07
Dept sample id 7279-007
Received 10/15/93
Client sample id B099M9
Location/Matrix 100-BC-5 LIQUID
Collected 10/13/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.6	1.3	1	3	J	80A
Gross Beta	Beta	43	2.7	2	4		80B
Tritium	10028-17-8	2100	220	200	400	J	H
Carbon 14	14762-75-5	-39	28	50	100	UJ	C
Strontium 90	10098-97-2	0.92	1.2	0.7	2	J	Y
Technetium 99	14133-76-7	58	1.9	1	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310059-07	80A/80	7279-007		0.300 L	11/17/93	11/19/93	DPK
N310059-07	80B/80	7279-007		0.300 L	11/17/93	11/19/93	DPK
N310059-07	H	7279-007		0.0100 L	11/15/93	11/29/93	DPK
N310059-07	C	7279-007		0.0300 L	12/13/93	12/16/93	DPK
N310059-07	Y	7279-007		1.00 L	11/13/93	11/17/93	DPK
N310059-07	TC	7279-007		0.200 L	11/29/93	12/06/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/20/93

RBC
1-21-94

9713512.2314

000014 SF 11/16/93

TMA Inc. REPORT Work Order # AZ-10-027 ~~000014~~

:ived: 10/13/93 Results by Sample

'LE ID B099F9 FRACTION 02A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.4	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	10	mg/L	1
Elect. Conductivity	9050	256	umhos/cm	6

NV 2/1/94 Jm

FORM I

9713512.2315

TMA Inc. REPORT Work Order # A3-10-027

eived: 10/13/93 Results by Sample 000013

PLE ID B099G1 FRACTION 01A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/11/93 Category

NV 2/1/94

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	7.9	pH	0.1
Sulfate	300.0	42	mg/L	5
Elect. Conductivity	9050	339	umhos/cm	6

FORM I

9713512.2316

TMA Inc. REPORT Work Order # A3-10-027

:eived: 10/13/93 Results by Sample

000015

IPLE ID B099H7 FRACTION 03A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	49	mg/L	5
Elect. Conductivity	9050	392	umhos/cm	6

NV 2/1/94 fm

FORM I

9713512.2317

TMA Inc. REPORT Work Order # A3-10-027

ceived: 10/13/93 Results by Sample

000016

MPLE ID B099M9 FRACTION 04A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.0	pH	0.1
Sulfate	300.0	48	mg/L	5
Elect. Conductivity	9050	388	umhos/cm	6

NV 2/1/94

FORM I

9413512.2318

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099F9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099F9

Matrix (soil/water): WATER Lab Sample ID: 10132-02S

Level (low/med): LOW Date Received: 10/14/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.2	B		P
7440-39-3	Barium	64.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	26600			P
7440-47-3	Chromium	5.3	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	42.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9410			P
7439-96-5	Manganese	23.3			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	4.4	B		P
7440-09-7	Potassium	5390			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	13300			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	34.4	B		P
7440-66-6	Zinc	8.7	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: Not Validated 2/1/94 fm

002

9/15/12 2519

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099G1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099F9

Matrix (soil/water): WATER Lab Sample ID: 10132-01S

Level (low/med): LOW Date Received: 10/14/93

% 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	23.6	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	36.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	40000			P
7440-47-3	Chromium	24.2			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	6.5	B		P
7439-89-6	Iron	55.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9760			P
7439-96-5	Manganese	2.9	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4130	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	10800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	9.7	B		P
7440-66-6	Zinc	5.0	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: Not Validated 2/1/94 LM

003

9215112.2320

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099H7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099F9

Matrix (soil/water): WATER Lab Sample ID: 10132-03S

Level (low/med): LOW Date Received: 10/14/93

% 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	33.3	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.4	B		P
7440-39-3	Barium	25.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.4	B		P
7440-70-2	Calcium	51800			P
7440-47-3	Chromium	11.6			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	45.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8200			P
7439-96-5	Manganese	2.0	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	5.8	B		P
7440-09-7	Potassium	5670			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11500			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	9.1	B		P
7440-66-6	Zinc	16.2	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: Not Validated 2/1/94 [signature]

004

9/15/92.2321

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

8099H9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: 8099F9

Matrix (soil/water): WATER Lab Sample ID: 10132-04S

Level (low/med): LOW Date Received: 10/14/93

% 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	15.5	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.2	B		P
7440-39-3	Barium	33.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	52100			P
7440-47-3	Chromium	13.2			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	41.1	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8020			P
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5050			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	7.3	B		P
7440-66-6	Zinc	6.2	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: Not Validated 2/1/94

005

FORM I - IN ILM02.1

9715112.2322

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099G0

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

ab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099G0

atrix (soil/water): WATER Lab Sample ID: 10133-02S

evel (low/med): LOW Date Received: 10/14/93

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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.3	B		P.
7440-39-3	Barium	67.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.4	B		P
7440-70-2	Calcium	26000			P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	64.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9310			P
7439-96-5	Manganese	28.0			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5440			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	13100			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	35.3	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: NOT VALIDATED 2/1/94 ~~EMD~~

002

9713512.2323

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099G2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099G0

Matrix (soil/water): WATER Lab Sample ID: 10133-01S

Level (low/med): LOW Date Received: 10/14/93

% 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	11.8	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.8	B		P
7440-39-3	Barium	36.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	40400			P
7440-47-3	Chromium	20.2			P
7440-48-4	Cobalt	3.0	B		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	76.4	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9880			P
7439-96-5	Manganese	1.9	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4190	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11000			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	8.5	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: NOT VALIDATED 2/1/94 Em

3

9713512.2324

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099H8

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099G0

Matrix (soil/water): WATER Lab Sample ID: 10133-03S

Level (low/med): LOW Date Received: 10/14/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.2	B		P
7440-39-3	Barium	24.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	52300			P
7440-47-3	Chromium	8.2	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	29.9	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8260			P
7439-96-5	Manganese	1.6	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5800			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	7.6	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: NOT VALIDATED 2/1/94 (RW)

004

9215312.2325

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099J0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: 10-052,57SAS No.: SDG No.: B099G0

Matrix (soil/water): WATER Lab Sample ID: 10133-04S

Level (low/med): LOW Date Received: 10/14/93

% 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	13.0	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.4	B		P
7440-39-3	Barium	33.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	52600			P
7440-47-3	Chromium	10.7			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	35.6	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8090			P
7439-96-5	Manganese	2.0	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5100			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	8.2	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: NOT VALIDATED 2/1/94 (fn)

005

9713512.2326

TMA NORCAL
REPORTING GROUP 7271

N310025-16

B099G1

DATA SHEET

SDG 7271 | Client Westinghouse Hanford
Contact Dinkar Kharkar | Contract MBH-SVV-069262

Lab sample id N310025-16 | Client sample id B099G1
Dept sample id 7271-016 | Location/Matrix 100-BC-5 LIQUID
Received 10/13/93 | Collected 10/11/93
Chain of custody id EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.6	1.3	1	3	J	80A
Gross Beta	Beta	11	1.6	2	4		80B
Tritium	10028-17-8	12000	450	200	400	J	H
Carbon 14	14762-75-5	-92	25	50	100	U	C
Strontium 90	10098-97-2	0.051	0.17	0.7	2	U	Y
Technetium 99	14133-76-7	16	3.1	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-16	80A/80	7271-016		0.300 L	11/12/93	11/16/93	DPK
N310025-16	80B/80	7271-016		0.300 L	11/12/93	11/16/93	DPK
N310025-16	H	7271-016		0.0100 L	11/13/93	11/29/93	DPK
N310025-16	C	7271-016		0.0300 L	12/14/93	12/16/93	DPK
N310025-16	Y	7271-016		1.00 L	11/10/93	11/15/93	DPK
N310025-16	TC	7271-016		0.200 L	12/01/93	12/10/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

RBC 3/7/94

9713512.2327

TMA NORCAL
REPORTING GROUP 7271

N310025-07

DATA SHEET

B099G3

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-07	Client sample id	B099G3
Dept sample id	7271-007	Location/Matrix	100-BC-5 LIQUID
Received	10/12/93	Collected	10/09/93
		Chain of custody id	EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	10	2.6	1	3		80A
Gross Beta	Beta	150	4.8	2	4		80B
Tritium	10028-17-8	3200	250	200	400	J	H
Carbon 14	14762-75-5	-65	24	40	100	U	C
Strontium 90	10098-97-2	47	4.7	0.7	2		Y
Technetium 99	14133-76-7	87	4.6	4	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-07	80A/80	7271-007		0.300 L	11/12/93	11/16/93	DPK
N310025-07	80B/80	7271-007		0.300 L	11/12/93	11/16/93	DPK
N310025-07	H	7271-007		0.0100 L	11/13/93	11/29/93	DPK
N310025-07	C	7271-007		0.0300 L	12/13/93	12/16/93	DPK
N310025-07	Y	7271-007		1.00 L	11/10/93	11/19/93	DPK
N310025-07	TC	7271-007		0.200 L	12/09/93	12/21/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

RBC 3/7/94

9715012.2329

N310025-08

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099G5

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-08	Client sample id	B099G5
Dept sample id	7271-008	Location/Matrix	100-BC-5 LIQUID
Received	10/12/93	Collected	10/09/93
		Chain of custody id	EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	-0.13	1.9	2	3	U	80A
Gross Beta	Beta	270	6.4	2	4		80B
Tritium	10028-17-8	3900	270	200	400	J	H
Carbon 14	14762-75-5	-92	30	50	100	U	C
Strontium 90	10098-97-2	100	8.0	0.7	2		Y
Technetium 99	14133-76-7	100	4.0	3	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-08	80A/80	7271-008		0.300 L	11/12/93	11/16/93	DPK
N310025-08	80B/80	7271-008		0.300 L	11/12/93	11/16/93	DPK
N310025-08	H	7271-008		0.0100 L	11/13/93	11/29/93	DPK
N310025-08	C	7271-008		0.0300 L	12/13/93	12/16/93	DPK
N310025-08	Y	7271-008		1.00 L	11/10/93	11/19/93	DPK
N310025-08	TC	7271-008		0.200 L	12/08/93	12/23/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

RBC 3/7/94

9713512.2329

TMA NORCAL
REPORTING GROUP 7271

N310025-09

DATA SHEET

B099G7

SDG 7271 | Client Westinghouse Hanford
Contact Dinkar Kharkar | Contract MBH-SVV-069262

Lab sample id N310025-09 | Client sample id B099G7
Dept sample id 7271-009 | Location/Matrix 100-BC-5 LIQUID
Received 10/12/93 | Collected 10/09/93
Chain of custody id EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	4.9	1.9	1	3		80A
Gross Beta	Beta	92	3.8	2	4		80B
Tritium	10028-17-8	8800	390	200	400	J	H
Carbon 14	14762-75-5	-57	23	40	100	U	C
Strontium 90	10098-97-2	21	0.97	0.7	2		Y
Technetium 99	14133-76-7	64	3.8	4	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-09	80A/80	7271-009		0.300 L	11/12/93	11/16/93	DPK
N310025-09	80B/80	7271-009		0.300 L	11/12/93	11/16/93	DPK
N310025-09	H	7271-009		0.0100 L	11/13/93	11/29/93	DPK
N310025-09	C	7271-009		0.0300 L	12/13/93	12/16/93	DPK
N310025-09	Y	7271-009		1.00 L	11/10/93	11/19/93	DPK
N310025-09	TC	7271-009		0.200 L	12/09/93	12/21/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

QBC 3/7/94

9713512.2330

TMA NORCAL
REPORTING GROUP 7271

N310025-10

DATA SHEET

B099G9

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-10	Client sample id	B099G9
Dept sample id	7271-010	Location/Matrix	100-BC-5 LIQUID
Received	10/12/93	Collected	10/09/93
		Chain of custody id	EFL-1036

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.99	1.3	1	3	U	80A
Gross Beta	Beta	79	3.5	2	4		80B
Tritium	10028-17-8	2600	230	200	400	J	H
Carbon 14	14762-75-5	-78	21	40	100	U	C
Strontium 90	10098-97-2	20	1.1	0.7	2		Y
Technetium 99	14133-76-7	65	4.1	5	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-10	80A/80	7271-010		0.300 L	11/12/93	11/16/93	DPK
N310025-10	80B/80	7271-010		0.300 L	11/12/93	11/16/93	DPK
N310025-10	H	7271-010		0.0100 L	11/13/93	11/29/93	DPK
N310025-10	C	7271-010		0.0300 L	12/13/93	12/16/93	DPK
N310025-10	Y	7271-010		1.00 L	11/10/93	11/19/93	DPK
N310025-10	TC	7271-010		0.200 L	12/08/93	12/21/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

RBC 3/7/94

9715512.2331

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

N310025-11

B099J9

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-11
Dept sample id 7271-011
Received 10/12/93
Client sample id B099J9
Location/Matrix 100-BC-5 LIQUID
Collected 10/10/93
Chain of custody id EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.2	1.4	2	3	U	80A
Gross Beta	Beta	27	2.3	2	4		80B
Tritium	10028-17-8	2100	220	200	400	J	H
Carbon 14	14762-75-5	-84	27	50	100	U	C
Strontium 90	10098-97-2	0.034	0.19	0.8	2	U	Y
Technetium 99	14133-76-7	50	1.8	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-11	80A/80	7271-011		0.300 L	11/12/93	11/16/93	DPK
N310025-11	80B/80	7271-011		0.300 L	11/12/93	11/16/93	DPK
N310025-11	H	7271-011		0.0100 L	11/13/93	11/29/93	DPK
N310025-11	C	7271-011		0.0300 L	12/13/93	12/16/93	DPK
N310025-11	Y	7271-011		1.00 L	11/10/93	11/15/93	DPK
N310025-11	TC	7271-011		0.200 L	12/01/93	12/21/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

RBC 3/7/94

9713512.2332

N310025-12

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099K1

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-12
Dept sample id 7271-012
Received 10/12/93
Client sample id B099K1
Location/Matrix 100-BC-5 LIQUID
Collected 10/10/93
Chain of custody id EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.19	0.95	1	3	U	80A
Gross Beta	Beta	38	2.6	2	4		80B
Tritium	10028-17-8	2600	230	200	400	J	H
Carbon 14	14762-75-5	-58	18	30	100	U	C
Strontium 90	10098-97-2	0.037	0.18	0.7	2	U	Y
Technetium 99	14133-76-7	62	2.8	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-12	80A/80	7271-012		0.300 L	11/12/93	11/16/93	DPK
N310025-12	80B/80	7271-012		0.300 L	11/12/93	11/16/93	DPK
N310025-12	H	7271-012		0.0100 L	11/13/93	11/29/93	DPK
N310025-12	C	7271-012		0.0300 L	12/14/93	12/16/93	DPK
N310025-12	Y	7271-012		1.00 L	11/10/93	11/15/93	DPK
N310025-12	TC	7271-012		0.200 L	12/08/93	12/23/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

RBC 3/7/94

9713512.2333

TMA NORCAL
REPORTING GROUP 7271

N310025-13

DATA SHEET

B099K3

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-13	Client sample id	B099K3
Dept sample id	7271-013	Location/Matrix	100-BC-5 LIQUID
Received	10/12/93	Collected	10/08/93
		Chain of custody id	EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.76	0.85	1	3	U	80A
Gross Beta	Beta	3.6	1.4	2	4	J	80B
Tritium	10028-17-8	73	120	200	400	UJ	H
Carbon 14	14762-75-5	-65	27	50	100	U	C
Strontium 90	10098-97-2	0.094	0.19	0.7	2	U	Y
Technetium 99	14133-76-7	3.5	1.1	3	5	BJ	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-13	80A/80	7271-013		0.300 L	11/12/93	11/16/93	DPK
N310025-13	80B/80	7271-013		0.300 L	11/12/93	11/16/93	DPK
N310025-13	H	7271-013		0.0100 L	11/13/93	11/29/93	DPK
N310025-13	C	7271-013		0.0300 L	12/14/93	12/23/93	DPK
N310025-13	Y	7271-013		1.00 L	11/10/93	11/15/93	DPK
N310025-13	TC	7271-013		0.200 L	12/08/93	12/13/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

RBC 3/7/94

9415212.2504

TMA NORCAL
REPORTING GROUP 7271

N310025-04

B099K5

DATA SHEET

SDG 7271 | Client Westinghouse Hanford
Contact Dinkar Kharkar | Contract MBH-SVV-069262

Lab sample id N310025-04 | Client sample id B099K5
Dept sample id 7271-004 | Location/Matrix 100-BC-5 LIQUID
Received 10/11/93 | Collected 10/07/93
Chain of custody id EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	3.2	1.5	1	3		80A
Gross Beta	Beta	22	2.1	2	4		80B
Tritium	10028-17-8	26000	640	200	400	J	H
Carbon 14	14762-75-5	-90	31	60	100	U	C
Strontium 90	10098-97-2	0	0.97	0.7	2	U	Y
Technetium 99	14133-76-7	27	1.5	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-04	80A/80	7271-004		0.300 L	11/12/93	11/16/93	DPK
N310025-04	80B/80	7271-004		0.300 L	11/12/93	11/16/93	DPK
N310025-04	H	7271-004		0.0100 L	11/13/93	11/29/93	DPK
N310025-04	C	7271-004		0.0300 L	12/03/93	12/06/93	DPK
N310025-04	Y	7271-004		1.00 L	11/10/93	11/15/93	DPK
N310025-04	TC	7271-004		0.200 L	12/09/93	12/13/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

RBC
3/7/94

9413512.2355

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

N310025-01

B099K7

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-01
Dept sample id 7271-001
Received 10/08/93
Client sample id B099K7
Location/Matrix 100-BC-5 LIQUID
Collected 10/06/93
Chain of custody id EFL-1033

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.88	1.1	1	3	U	80A
Gross Beta	Beta	11	1.7	2	4		80B
Tritium	10028-17-8	870	160	200	400	J	H
Carbon 14	14762-75-5	41	29	50	100	U	C
Strontium 90	10098-97-2	0	0.96	0.7	2	U	Y
Technetium 99	14133-76-7	13	1.2	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-01	80A/80	7271-001		0.300 L	11/12/93	11/16/93	DPK
N310025-01	80B/80	7271-001		0.300 L	11/12/93	11/16/93	DPK
N310025-01	H	7271-001		0.0100 L	11/13/93	11/29/93	DPK
N310025-01	C	7271-001		0.0300 L	12/02/93	12/17/93	DPK
N310025-01	Y	7271-001		1.00 L	11/10/93	11/15/93	DPK
N310025-01	TC	7271-001		0.200 L	12/09/93	12/13/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

RBC 3/7/94

9713512.2336

N310025-05

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099K9

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-05	Client sample id	B099K9
Dept sample id	7271-005	Location/Matrix	100-BC-5 LIQUID
Received	10/11/93	Collected	10/07/93
		Chain of custody id	EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	3.0	1.7	1	3		80A
Gross Beta	Beta	120	4.2	2	4		80B
Tritium	10028-17-8	5300	310	200	400	J	H
Carbon 14	14762-75-5	-19	24	40	100	U	C
Strontium 90	10098-97-2	0	1.0	0.7	2	U	Y
Technetium 99	14133-76-7	260	41	3	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-05	80A/80	7271-005		0.300 L	11/12/93	11/16/93	DPK
N310025-05	80B/80	7271-005		0.300 L	11/12/93	11/16/93	DPK
N310025-05	H	7271-005		0.0100 L	11/13/93	11/29/93	DPK
N310025-05	C	7271-005		0.0300 L	12/03/93	12/06/93	DPK
N310025-05	Y	7271-005		1.00 L	11/10/93	11/15/93	DPK
N310025-05	TC	7271-005		0.200 L	11/22/93	12/23/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

RBC 3/7/94

9713512.2357

N310025-02

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099L1

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-02
Dept sample id 7271-002
Received 10/08/93
Client sample id B099L1
Location/Matrix 100-BC-5 LIQUID
Collected 10/06/93
Chain of custody id EFL-1033

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.50	1.0	1	3	U	80A
Gross Beta	Beta	7.1	1.4	2	4		80B
Tritium	10028-17-8	550	150	200	400	J	H
Carbon 14	14762-75-5	-57	27	50	100	U	C
Strontium 90	10098-97-2	0.010	0.17	0.7	2	U	Y
Technetium 99	14133-76-7	11	0.87	1	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-02	80A/80	7271-002		0.300 L	11/12/93	11/16/93	DPK
N310025-02	80B/80	7271-002		0.300 L	11/12/93	11/16/93	DPK
N310025-02	H	7271-002		0.0100 L	11/13/93	11/29/93	DPK
N310025-02	C	7271-002		0.0300 L	12/03/93	12/17/93	DPK
N310025-02	Y	7271-002		1.00 L	11/10/93	11/15/93	DPK
N310025-02	TC	7271-002		0.200 L	12/09/93	12/13/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

RBC 3/7/94

9713512.2338

N310025-14

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099L3

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-14
Dept sample id 7271-014
Received 10/12/93
Client sample id B099L3
Location/Matrix 100-BC-5 LIQUID
Collected 10/09/93
Chain of custody id EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.1	1.6	2	3	J	80A
Gross Beta	Beta	68	3.3	2	4		80B
Tritium	10028-17-8	3000	250	200	400	J	H
Carbon 14	14762-75-5	-44	26	50	100	U	C
Strontium 90	10098-97-2	0	0.68	0.7	2	U	Y
Technetium 99	14133-76-7	92	5.4	3	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-14	80A/80	7271-014		0.300 L	11/12/93	11/16/93	DPK
N310025-14	80B/80	7271-014		0.300 L	11/12/93	11/16/93	DPK
N310025-14	H	7271-014		0.0100 L	11/13/93	11/29/93	DPK
N310025-14	C	7271-014		0.0300 L	12/14/93	12/16/93	DPK
N310025-14	Y	7271-014		1.00 L	11/10/93	11/19/93	DPK
N310025-14	TC	7271-014		0.200 L	12/09/93	12/23/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

RBC 3/7/94

9213512.2339

N310025-06

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099L5

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-06	Client sample id	B099L5
Dept sample id	7271-006	Location/Matrix	100-BC-5 LIQUID
Received	10/11/93	Collected	10/07/93
		Chain of custody id	EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.0	1.4	1	3	J	80A
Gross Beta	Beta	67	3.3	2	4		80B
Tritium	10028-17-8	2400	230	200	400	J	H
Carbon 14	14762-75-5	-25	30	50	100	U	C
Strontium 90	10098-97-2	0	1.2	0.8	2	U	Y
Technetium 99	14133-76-7	97	4.3	5	5		TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-06	80A/80	7271-006		0.300 L	11/12/93	11/16/93	DPK
N310025-06	80B/80	7271-006		0.300 L	11/12/93	11/16/93	DPK
N310025-06	H	7271-006		0.0100 L	11/13/93	11/29/93	DPK
N310025-06	C	7271-006		0.0300 L	12/04/93	12/06/93	DPK
N310025-06	Y	7271-006		1.00 L	11/10/93	11/15/93	DPK
N310025-06	TC	7271-006		0.200 L	12/10/93	12/16/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

JRBC 3/7/94

9713512.2340

N310025-03

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099L7

SDG	7271	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310025-03	Client sample id	B099L7
Dept sample id	7271-003	Location/Matrix	100-BC-5 LIQUID
Received	10/08/93	Collected	10/06/93
		Chain of custody id	EFL-1033

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.042	0.85	1	3	U	80A
Gross Beta	Beta	6.1	1.4	2	4		80B
Tritium	10028-17-8	900	160	200	400	J	H
Carbon 14	14762-75-5	-64	29	50	100	U	C
Strontium 90	10098-97-2	-0.071	0.22	0.8	2	U	Y
Technetium 99	14133-76-7	8.5	3.8	3	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-03	80A/80	7271-003		0.300 L	11/12/93	11/16/93	DPK
N310025-03	80B/80	7271-003		0.300 L	11/12/93	11/16/93	DPK
N310025-03	H	7271-003		0.0100 L	11/13/93	11/29/93	DPK
N310025-03	C	7271-003		0.0300 L	12/03/93	12/06/93	DPK
N310025-03	Y	7271-003		1.00 L	11/10/93	11/15/93	DPK
N310025-03	TC	7271-003		0.200 L	12/01/93	12/10/93	DPK

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.27
Report date	12/29/93

RBC 3/7/94

9713512.2341

N310025-15

TMA NORCAL
REPORTING GROUP 7271

DATA SHEET

B099M7

SDG 7271
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310025-15
Dept sample id 7271-015
Received 10/12/93
Client sample id B099M7
Location/Matrix 100-BC-5 LIQUID
Collected 10/10/93
Chain of custody id EFL-1037

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.5	1.3	1	3	J	80A
Gross Beta	Beta	35	2.5	2	4		80B
Tritium	10028-17-8	2000	210	200	400	J	H
Carbon 14	14762-75-5	-58	29	50	100	U	C
Strontium 90	10098-97-2	-0.006	0.47	0.7	2	U	Y
Technetium 99	14133-76-7	52	5.0	2	5	B	TC

LAB SAMPLE	TEST	PLANCHET	SUFFIX	ALIQUOT	ANALYZED	REVIEWED	BY
N310025-15	80A/80	7271-015		0.300 L	11/12/93	11/16/93	DPK
N310025-15	80B/80	7271-015		0.300 L	11/12/93	11/16/93	DPK
N310025-15	H	7271-015		0.0100 L	11/13/93	11/29/93	DPK
N310025-15	C	7271-015		0.0300 L	12/14/93	12/16/93	DPK
N310025-15	Y	7271-015		1.00 L	11/10/93	11/19/93	DPK
N310025-15	TC	7271-015		0.200 L	12/01/93	12/23/93	DPK

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.27
Report date 12/29/93

RBC 3/7/94

9715512.2342

TMA Inc. REPORT Work Order # A3-10-020

eived: 10/12/93 Results by Sample

000009

PLE ID B099G3 FRACTION 01A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.0 J	pH	0.1
Sulfate	300.0	47	mg/L	5
Elect. Conductivity	9050	417	umhos/cm	6

PLE
12-1-94

FORM I

9715512.2345

TMA Inc. REPORT Work Order # A3-10-020

ceived: 10/12/93 Results by Sample

000010

MPLE ID B099G5 FRACTION 02A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.0J	pH	0.1
Sulfate	300.0	49	mg/L	5
Elect. Conductivity	9050	418	umhos/cm	6

PLR
1/27/94

FORM I

9713512.2344

TMA Inc. REPORT Work Order # A3-10-020

ceived: 10/12/93 Results by Sample 000011

MPLE ID B099G7 FRACTION 03A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.1	mg/L	0.1
pH	9040	8.1J	pH	0.1
Sulfate	300.0	50	mg/L	5
Elect. Conductivity	9050	393	umhos/cm	6

PLB
1/27/94

FORM I

9713512.2345

TMA Inc. REPORT Work Order # A3-10-020

ceived: 10/12/93 Results by Sample 000012

MPLE ID B099G9 FRACTION 04A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	8.0J	pH	0.1
Sulfate	300.0	51	mg/L	5
Elect. Conductivity	9050	398	umhos/cm	6

PHD
1/27/94

FORM I

9216512.2396

TMA Inc. REPORT Work Order # A3-10-020

eived: 10/12/93 Results by Sample 000013

PLE ID B099J9 FRACTION 05A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/10/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	7.9 J	pH	0.1
Sulfate	300.0	66	mg/L	5
Elect. Conductivity	9050	447	umhos/cm	6

PLD
11/27/94

FORM I

9713512.2347

TMA Inc. REPORT Work Order # A3-10-020

:eived: 10/12/93 Results by Sample 000014

IPLE ID B099K1 FRACTION 06A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/10/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	8.0 J	pH	0.1
Sulfate	300.0	46	mg/L	5
Elect. Conductivity	9050	410	umhos/cm	6

PRD
1/27/94

FORM I

9716512.2348

TMA Inc. REPORT Work Order # A3-10-020

:eived: 10/12/93 Results by Sample 000015

:PLE ID B099K3 FRACTION 07A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	7.9	pH	0.1
Sulfate	300.0	31	mg/L	5
Elect. Conductivity	9050	352	umhos/cm	6

RWD
1/27/94

FORM I

9713512.2349

TMA Inc. REPORT Work Order # A3-10-020

ceived: 10/12/93 Results by Sample 000016

MPLE ID B099L3 FRACTION 08A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.3	mg/L	0.1
pH	9040	8.0J	pH	0.1
Sulfate	300.0	38	mg/L	5
Elect. Conductivity	9050	354	umhos/cm	6

FWZ
1/27/94

FORM I

9716512.2350

TMA Inc. REPORT Work Order # A3-10-020

:eived: 10/12/93 Results by Sample 000017

'PLE ID B099M7 FRACTION 09A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/10/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	7.9 J	pH	0.1
Sulfate	300.0	67	mg/L	5
Elect. Conductivity	9050	446	umhos/cm	6

PMS
11/27/94

FORM I

SAMPLE NUMBER: B099G3

INORGANIC ANALYSIS DATA SHEET

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

ab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

atrix (soil/water): WATER Lab Sample ID: 10114-01S

evel (low/med): LOW Date Received: 10/13/93

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	1240			P	
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	59.2	B		P	
7440-41-7	Beryllium	0.20	U		P	U
7440-43-9	Cadmium	1.3	U		P	U
7440-70-2	Calcium	53800			P	
7440-47-3	Chromium	18.6			P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	43.5		U	P	U
7439-89-6	Iron	1620			P	
7439-92-1	Lead	4.7		*	P	J
7439-95-4	Magnesium	9060			P	
7439-96-5	Manganese	101			P	
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	7.8	B		P	
7440-09-7	Potassium	2210	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	11300			P	
7440-28-0	Thallium	2.9	B		P	U
7440-62-2	Vanadium	5.5	U		P	
7440-66-6	Zinc	25.7			P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

WMS 1-13-94

Comments:

1/18/94 JM

9213512.2352

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099G5

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-02S

Level (low/med): LOW Date Received: 10/13/93

% 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	68.1	~~B~~		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	32.9	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	52900			P	
7440-47-3	Chromium	14.3			P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	130			P	U
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	7260			P	
7439-96-5	Manganese	5.6	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	5.9	B		P	
7440-09-7	Potassium	2950	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	14300			P	
7440-28-0	Thallium	2.3	B		P	U
7440-62-2	Vanadium	5.5	U		P	
7440-66-6	Zinc	13.2	~~B~~		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

HMS 1-13-94

Comments:

1/18/94 [illegible]

3

FORM I - IN ILM02.1

9715512.2353

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099G7

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

ab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

atrix (soil/water): WATER Lab Sample ID: 10114-03S

evel (low/med): LOW Date Received: 10/13/93

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	35.6	B		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	30.9	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	49800			P	
7440-47-3	Chromium	22.0			P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	63.8	~~B~~		P	UJ
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	7510			P	
7439-96-5	Manganese	2.2	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	1760	B		P	
7782-49-2	Selenium	3.0	B		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	9730			P	
7440-28-0	Thallium	1.6	U		P	
7440-62-2	Vanadium	5.5	U		P	
7440-66-6	Zinc	9.5	~~B~~		P	U
	Cyanide				NR	

olor Before: COLORLESS Clarity Before: CLEAR Texture:

olor After: COLORLESS Clarity After: CLEAR Artifacts:

omments:

HMS 1-13-94

11/18/94 JM

4

FORM I - IN ILM02.1

9213012.2354

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099G9

INORGANIC ANALYSIS DATA SHEET

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

ab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

atrix (soil/water): WATER Lab Sample ID: 10114-04S

evel (low/med): LOW Date Received: 10/13/93

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	11.3	~~B~~		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	32.3	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	55400			P	
7440-47-3	Chromium	10.7			P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	28.4	~~B~~		P	U
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	7430			P	
7439-96-5	Manganese	0.80	U		P	
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	4420	B		P	
7782-49-2	Selenium	3.0	B		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	11900			P	
7440-28-0	Thallium	2.0	~~B~~		P	U
7440-62-2	Vanadium	5.5	U		P	
7440-66-6	Zinc	4.4	U		P	
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1/18/94

5

FORM I - IN ILM02.1

9713512.2355

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099J9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-05S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P	
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	3.2	B		P	
7440-39-3	Barium	14.5	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	51700			P	
7440-47-3	Chromium	32.0			P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	106			P	U
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	11900			P	
7439-96-5	Manganese	2.7	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	6.5	B		P	
7440-09-7	Potassium	6640			P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	13100			P	
7440-28-0	Thallium	1.6	U		P	
7440-62-2	Vanadium	9.2	B		P	
7440-66-6	Zinc	7.6	~~B~~		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1/18/94 JM

6

FORM I - IN ILM02.1

9713512.2356

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099K1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-06S

Level (low/med): LOW Date Received: 10/13/93

% 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	20.5	B		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	13.6	B		P	
7440-41-7	Beryllium	0.20	U		P	U
7440-43-9	Cadmium	1.3	U		P	U
7440-70-2	Calcium	45400			P	
7440-47-3	Chromium	14.3			P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	U
7439-89-6	Iron	93.9	B		P	U
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	10500			P	
7439-96-5	Manganese	1.4	B		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	4.3	B		P	
7440-09-7	Potassium	5900			P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	12000			P	
7440-28-0	Thallium	1.6	U		P	U
7440-62-2	Vanadium	10.0	B		P	
7440-66-6	Zinc	15.0	B		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1/18/94

7

FORM I - IN ILM02.1

9713512.2357

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099K3

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-07S

Level (low/med): LOW Date Received: 10/13/93

% 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	15.1	B		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	11.9	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	35100			P	
7440-47-3	Chromium	2.1	U		P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	64.8	B		P	U
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	12400			P	
7439-96-5	Manganese	1.6	B		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	4480	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	11400			P	
7440-28-0	Thallium	1.6	U		P	
7440-62-2	Vanadium	21.6	B		P	
7440-66-6	Zinc	9.2	B		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1/18/94 JM

JMS 8-13-94

FORM I - IN ILM02.1

9715512.2358

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099L3

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-08S

Level (low/med): LOW Date Received: 10/13/93

% 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	11.2	~~B~~		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	3.3	B		P	
7440-39-3	Barium	56.1	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	36700			P	
7440-47-3	Chromium	2.4	B		P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	111			P	U
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	10500			P	
7439-96-5	Manganese	0.80	U		P	
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	5200			P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	17100			P	
7440-28-0	Thallium	1.6	U		P	
7440-62-2	Vanadium	20.2	B		P	
7440-66-6	Zinc	6.1	~~B~~		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1/18/94 SD

HMB 1-13

9

FORM I - IN ILM02.1

9715512.2359

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099M7

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G3

Matrix (soil/water): WATER Lab Sample ID: 10114-09S

Level (low/med): LOW Date Received: 10/13/93

% 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	26.2	~~B~~		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	14.5	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	50500			P	
7440-47-3	Chromium	28.7			P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	3.5	~~B~~		P	U
7439-89-6	Iron	104			P	U
7439-92-1	Lead	10.3		*	P	J
7439-95-4	Magnesium	11700			P	
7439-96-5	Manganese	2.7	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	8.1	B		P	
7440-09-7	Potassium	6400			P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	12600			P	
7440-28-0	Thallium	1.6	U		P	
7440-62-2	Vanadium	10.3	B		P	
7440-66-6	Zinc	15.0	~~B~~		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1/8/94

10

FORM I - IN ILM02.1

9715912.2360

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099G4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-01S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	32.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	51500			P
7440-47-3	Chromium	9.8	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	46.9	~~B~~		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	8440			P
7439-96-5	Manganese	0.91	~~B~~		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	1980	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11300			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	6.1	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1-13-94

1/18/94

2

9715512.2361

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099G6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-02S

Level (low/med): LOW Date Received: 10/13/93

% 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	15.2	~~B~~		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	31.8	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	51600			P	
7440-47-3	Chromium	3.6	B		P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	24.0	~~B~~		P	JC
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	7080			P	
7439-96-5	Manganese	0.80	U		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	2880	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	13800			P	
7440-28-0	Thallium	1.6	U		P	U
7440-62-2	Vanadium	5.5	U		P	
7440-66-6	Zinc	6.4	~~B~~		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

BMS 1-13-94

Comments:

1/18/94 JM

FORM I - IN ILM02.1

9715512.2362

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099G8

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-03S

Level (low/med): LOW Date Received: 10/13/93

% 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	14.5	Ø		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	31.2	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	50600			P	
7440-47-3	Chromium	22.6			P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	34.6	Ø		P	U
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	7620			P	
7439-96-5	Manganese	0.80	U		P	
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	1820	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	10100			P	
7440-28-0	Thallium	1.9	Ø		P	U
7440-62-2	Vanadium	5.5	U		P	
7440-66-6	Zinc	4.6	Ø		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1/18/94

1-13-94

4

FORM I - IN ILM02.1

9213512.2365

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099H0

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-04S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P	
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.9	B		P	
7440-39-3	Barium	31.7	B		P	
7440-41-7	Beryllium	0.20	U		P	U
7440-43-9	Cadmium	1.3	U		P	U
7440-70-2	Calcium	54200			P	
7440-47-3	Chromium	9.4	B		P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	21.1	~~B~~		P	U
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	7290			P	
7439-96-5	Manganese	0.80	U		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	4230	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	11500			P	
7440-28-0	Thallium	1.6	U		P	
7440-62-2	Vanadium	5.5	U		P	
7440-66-6	Zinc	4.4	U		P	
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1-13-94

FORM I - IN ILM02.1

9713512.2364

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099K0

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-05S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	4.2	B		P	
7440-39-3	Barium	14.5	B		P	
7440-41-7	Beryllium	0.20	U		P	U
7440-43-9	Cadmium	1.3	U		P	U
7440-70-2	Calcium	51900			P	
7440-47-3	Chromium	14.0			P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	U
7439-89-6	Iron	32.2	~~B~~		P	U
7439-92-1	Lead	2.9	U	*	P	U
7439-95-4	Magnesium	12000			P	
7439-96-5	Manganese	1.3	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	6650			P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	13100			P	
7440-28-0	Thallium	3.0	~~B~~		P	U
7440-62-2	Vanadium	9.4	B		P	
7440-66-6	Zinc	8.0	~~B~~		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1-13-94

11/8/94

6

FORM I - IN ILM02.1

9713512.2365

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099K2

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-06S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	4.1	B		P	
7440-39-3	Barium	14.2	B		P	
7440-41-7	Beryllium	0.20	U		P	U
7440-43-9	Cadmium	1.3	U		P	U
7440-70-2	Calcium	45700			P	
7440-47-3	Chromium	9.8	B		P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	U
7439-89-6	Iron	23.7	~~B~~		P	U
7439-92-1	Lead	2.9	U	*	P	U
7439-95-4	Magnesium	10600			P	
7439-96-5	Manganese	1.0	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	6100			P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	12300			P	
7440-28-0	Thallium	1.6	U		P	U
7440-62-2	Vanadium	10.2	B		P	
7440-66-6	Zinc	4.4	U		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1-13-94

1/18/94

7

FORM I - IN ILM02.1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099K4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-07S

Level (low/med): LOW Date Received: 10/13/93

% 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	22.1	~~B~~		P	U
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	11.9	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	34600			P	
7440-47-3	Chromium	2.1	U		P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	27.8	~~B~~		P	U
7439-92-1	Lead	2.9	U	*	P	UJ
7439-95-4	Magnesium	12300			P	
7439-96-5	Manganese	1.4	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	4490	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	11300			P	
7440-28-0	Thallium	2.0	~~B~~		P	U
7440-62-2	Vanadium	23.1	B		P	
7440-66-6	Zinc	4.4	U		P	
	Cyanide				NR	

HMB 1-13-94

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1/18/94

8

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099L4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-08S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P	
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.3	B		P	
7440-39-3	Barium	51.6	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	37000			P	
7440-47-3	Chromium	3.0	B		P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	26.7	~~B~~		P	U
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	10200			P	
7439-96-5	Manganese	0.80	U		P	
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	5230			P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	17000			P	
7440-28-0	Thallium	1.6	U		P	
7440-62-2	Vanadium	19.3	B		P	
7440-66-6	Zinc	4.4	U		P	
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

HMB 1-13-94

Comments:

7/18/94

9

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099M8

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-044SAS No.: SDG No.: B099G4

Matrix (soil/water): WATER Lab Sample ID: 10115-09S

Level (low/med): LOW Date Received: 10/13/93

% 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	10.6	U		P	
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	3.1	B		P	
7440-39-3	Barium	14.2	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	50800			P	
7440-47-3	Chromium	13.4			P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.5	U		P	
7439-89-6	Iron	11.4	~~B~~		P	U
7439-92-1	Lead	2.9	U	*	P	J
7439-95-4	Magnesium	11700			P	
7439-96-5	Manganese	1.2	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	6490			P	
7782-49-2	Selenium	3.0	B		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	12900			P	
7440-28-0	Thallium	1.6	U		P	
7440-62-2	Vanadium	9.1	B		P	
7440-66-6	Zinc	4.4	U		P	
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1/18/94

1-13-94

10

Kearney/Centaur Division
A.T. Kearney, Inc.
2952 George Washington Way
Richland, Washington 99352
509 375 5667
Facsimile 509 375 5151

9713512.2369

Management Consultants

FEB 1994

ATKEARNEY

February 7, 1994

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

Reference: Purchase Order No. 272980; Task Order KD-93-07, Validation of 100 Area Data, Validation Report Submittal.

Internal: A.T. Kearney Project Number G954-30

Dear Ms. Duncan:

Enclosed are five copies of the following data validation report:

- WHC-SD-EN-TI-237 100-BC-5, Fifth Round Groundwater Sampling.

Please feel free to contact me at (415) 595-4300 if you have any questions.

Sincerely,

John W. Goode, Ph.D
Task Order Manager

RECEIVED
FEB 7 1994
VALIDATION DOCUMENTATION
SDLA

cc. R. Henckel, WHC
M. Schwab, WHC
K. Pool, HASM
J. Koehnen
J. Darabaris
H. Duncan

Validation Reports 100-BC-5

FEB 1994
RECEIVED
TOD

DATA VALIDATION REPORT FOR THE 100-BC-5 OPERABLE UNIT FIFTH ROUND GROUNDWATER SAMPLING

Submitted To:

Westinghouse Hanford Company
P.O. Box 1970
2355 Stevens Drive
Richland, WA 99352

RECEIVED
FEB 7 1994
VALIDATION DOCUMENTATION
SDLA

Submitted By:

A.T. Kearney, Inc.
2952 George Washington Way
Richland, WA 99352

In Response To:

Purchase Order 272980
Task Order K-94-07

Document Control Number
WHC-SD-EN-TI-237, Rev. 0

February 1994

9715112.2371

ACRONYMS

%D	Percent difference
AA	Atomic absorption
BFB	Bromofluorobenzene
BNA	Base/neutral and acid (equivalent to semivolatiles)
CCB	Continuing calibration blank
CCV	Continuing calibration verification
CLP	Contract Laboratory Program
CRA	CRDL standard for AA
CRDL	Contract required detection limit
CRI	CRDL standard for ICP
CRII	CRDL standard for ICP initial
CRIF	CRDL standard for ICP final
CRQL	Contract required quantitation limit
DBC	Dibutylchlorendate
DFTPP	Decafluorotriphenylphosphine
DQO	Data quality objectives
EPA	U.S. Environmental Protection Agency
GC/MS	Gas chromatography/mass spectrometry
GC	Gas chromatography
GFAA	Graphite furnace atomic absorption
ICB	Initial Calibration Blank
ICP	Inductively coupled plasma emission spectrometry
ICS	ICP interference check sample
ICV	Initial calibration verification
IDL	Instrument detection limit
LCS	Laboratory control sample
LCSS	Laboratory control sample soil
LCSW	Laboratory control sample water
MSA	Method of standard addition
MS/MSD	Matrix spike/matrix spike duplicate
NV	Not Validated
PBS	Preparation blank soil
PBW	Preparation blank water
PCB	Polychlorinated biphenyl
PEM	Performance evaluation mixture
QA	Quality assurance
QC	Quality control
RF	Response factor
RIC	Reconstructed ion chromatogram
RPD	Relative percent difference
RRF	Relative response factor
RRT	Relative retention time
RSD	Relative standard deviation
RT	Retention time
SDG	Sample delivery group
SOW	Statement of work
TAL	Target analyte list
TCL	Target compound list
TIC	Tentatively identified compounds
TOC	Total organic carbon
TOX	Total organic halides
V	Validated
VOC	Volatile organic compounds

1.0 INTRODUCTION

The following samples were obtained from the 100-BC-5 Operable Unit Fifth Round Groundwater Sampling event:

B099F9	B099H2	B099J5	B099K8	B099M1
B099G0	B099H3	B099J6	B099K9	B099M2
B099G1	B099H4	B099J7	B099L0	B099M3
B099G2	B099H5	B099J8	B099L1	B099M4
B099G3	B099H6	B099J9	B099L2	B099M5
B099G4	B099H7	B099K0	B099L3	B099M6
B099G5	B099H8	B099K1	B099L4	B099M7
B099G6	B099H9	B099K2	B099L5	B099M8
B099G7	B099J0	B099K3	B099L6	B099M9
B099G8	B099J1	B099K4	B099L7	B099N0
B099G9	B099J2	B099K5	B099L8	
B099H0	B099J3	B099K6	B099L9	
B099H1	B099J4	B099K7	B099M0	

Westinghouse-Hanford has requested that a minimum of 20% of the total number of Sample Delivery Groups be validated for the 100-BC-5 Operable Unit Fifth Round Groundwater Sampling Investigation. Therefore, the data from the chemical analysis of 34 samples from this sampling event and their related quality assurance samples were reviewed and validated to verify that reported sample results were of sufficient quality to support decisions regarding remedial actions performed at this site. The samples were analyzed by Thermo-Analytic Laboratories (TMA) and Roy F. Weston Laboratories (WESTON) using U.S. Environmental Protection Agency (EPA) CLP protocols.

Sample analyses included:

- Inorganics
- General chemical parameters.

The table below lists the Sample Delivery Groups (SDGs) that were validated for this sampling event. The validated data are included in this report.

Two sets of split samples were submitted to WESTON Laboratories as shown below:

Set 1:

Sample No.	Split Sample No.	Well Location
B099J1	B099M5	199-B5-1
B099J2	B099M6	

Set 2:

Sample No.	Split Sample No.	Well Location
B099J9	B099M3	199-B9-2
B099K0	B099M4	

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

Two sets of field duplicate samples were submitted to TMA as shown below:

Set 1:

Sample No.	Duplicate Sample No.	Well Location
B099J1	B099M9	199-B5-1
B099J2	B099N0	

Set 2:

Sample No.	Duplicate Sample No.	Well Location
B099J9	B099M7	199-B9-2
B099K0	B099M8	

The field duplicate sample results for the well locations were included in the validated data. The results were compared using the sample guidelines for determining the RPD between a sample and its duplicate. For several of the inorganics parameters the results fell outside the required control limit. Westinghouse-Hanford does not require qualification of samples based upon field duplicate precision results. A more detailed discussion is presented in section 2.6.2. All results for the well locations appear in the summary tables within this report.

Two sets of equipment blanks were submitted to TMA as shown in the table below. The first set was collected on 10/15/93 and designated EB 1. The second set was also collected on 10/15/93 and designated EB 2.

JN - Indicates the analyte was analyzed for and that there is presumptive evidence of the presence of the compound. The concentration reported is considered an estimate which should be used for informational purposes only.

R - Indicates the analyte was analyzed for and due to a significant QC deficiency, the data are deemed unusable. Analytic results flagged "R" are invalid and provide no information as to whether or not the analyte is present.

It should be noted that, frequently, results will bear two qualifiers - one given by the laboratory and one given during the validation process. For example, a "U" qualifier is given by the laboratory when the compound has not been detected during the analysis, and a "J" qualifier may be added during the validation to qualify the result due to minor quality problems. Therefore, the resulting qualification is "UJ", where the "U" qualifier has been given by the laboratory and the "J" qualifier given by the validator.

The results of data validation performed for the 100-BC-5 Operable Unit Fifth Round Groundwater Sampling are contained in the tables following each of the chapters in this report.

Several general quality trends which resulted in data qualification were observed. These included:

- The metals analysis showed minor matrix spike accuracy problems, laboratory duplicate RPD results outside of QC, analytical spike recoveries below the QC limit and ICP serial dilution %D results greater than the QC limits. Approximately five percent of the metals results were flagged "J" due to these factors.

- Some laboratory blank contamination as well as negative blank results were noted in the inorganics analysis. Associated results were flagged accordingly. Contamination, however, was not sufficiently high to affect the usability of the data.

- The holding time from sample collection to preparation and analysis was exceeded for pH in all wet chemistry data packages. Associated results were flagged accordingly.

- All Tritium results in two data packages were qualified as estimates due to a failure to analyze a matrix spike sample.

WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	NV/V	INORGANICS
199-B2-12	B099F9	W	10/12/93	NV	2-12
	B099G0	W	10/12/93	NV	2-13
199-B2-13	B099G1	W	10/11/93	NV	2-12
	B099G2	W	10/11/93	NV	2-13
199-B3-1	B099G3	W	10/09/93	V	2-14
	B099G4	W	10/09/93	V	2-18
199-B3-46	B099G5	W	10/09/93	V	2-14
	B099G6	W	10/09/93	V	2-18
199-B3-47	B099G7	W	10/09/93	V	2-14
	B099G8	W	10/09/93	V	2-18
199-B4-1	B099G9	W	10/09/93	V	2-14
	B099H0	W	10/09/93	V	2-18
199-B4-4	B099H1	W	10/13/93	V	2-22
	B099H2	W	10/13/93	V	2-27
199-B4-5	B099H3	W	10/18/93	NV	2-31
	B099H4	W	10/18/93	NV	2-35
199-B4-7	B099H5	W	10/18/93	NV	2-31
	B099H6	W	10/18/93	NV	2-35
199-B4-8	B099H7	W	10/12/93	NV	2-12
	B099H8	W	10/12/93	NV	2-13
199-B4-9	B099H9	W	10/12/93	NV	2-12
	B099J0	W	10/12/93	NV	2-13
199-B5-1	B099J1	W	10/13/93	V	2-22
	B099J2	W	10/13/93	V	2-27
	B099M5	W	10/13/93	V	2-49
	B099M6	W	10/13/93	V	2-49
	B099M9	W	10/13/93	V	2-22
	B099N0	W	10/13/93	V	2-27
199-B5-2	B099J3	W	10/14/93	NV	2-31
	B099J4	W	10/14/93	NV	2-35
199-B8-6	B099J5	W	10/19/93	NV	2-31
	B099J6	W	10/19/93	NV	2-35
199-B9-1	B099J7	W	10/13/93	V	2-22
	B099J8	W	10/13/93	V	2-27

2.0 INORGANIC DATA VALIDATION

2.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and checked for completeness:

B099G3	B099H1	B099H3	B099M3
B099G4	B099H2	B099H4	B099M5

2.2 HOLDING TIMES

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

All holding time requirements for all analytes in all data packages reviewed were met.

2.3 INSTRUMENT PERFORMANCE AND CALIBRATIONS

Performance of specific instrument quality assurance and quality control procedures, including deficiencies noted during the quality assurance review, are outlined below.

Three calibration standards and a blank were analyzed for arsenic, lead, selenium and thallium by GFAA. The correlation coefficient of a least squares linear regression met the requirements for calibration in all cases.

Up to five calibration standards and a blank were analyzed for mercury by CVAA. The correlation coefficient of a least squares linear regression met the requirements for calibration.

At least one standard and a blank were analyzed by ICP for all other elements.

The above calibrations were each immediately verified with an ICV standard and a calibration blank. The ICV was prepared from a source independent of the calibration standards, at a mid-calibration range concentration. The ICV percent recovery must fall within the control limits of 90 to 110 percent for metals analyzed by ICP and GFAA, and 80 to 120 percent for mercury. Calibration linearity near the detection limit was

- Sample number B099M9 in SDG No. B099H1.
- Sample numbers B099H2 and B099N0 in SDG No. B099H2.

Due to the presence of laboratory blank contamination, the following sample was flagged "U" for cobalt:

- Sample number B099M3 in SDG No. B099M3.

Due to the presence of laboratory blank contamination, the following samples were flagged "U" for copper:

- Sample numbers B099G3 and B099M7 in SDG No. B099G3.
- Sample number B099M3 in SDG No. B099M3.

Due to the presence of laboratory blank contamination, the following samples were flagged "U" for iron:

- Sample numbers B099G5, B099G7, B099G9, B099J9, B099K1, B099K3, B099L3 and B099M7 in SDG No. B099G3.
- Sample numbers B099G4, B099G6, B099G8, B099H0, B099K0, B099K2, B099K4, B099L4 and B099M8 in SDG No. B099G4.
- Sample numbers B099M0 and B099M2 in SDG No. B099H4.
- Sample numbers B099M3 and B099M4 in SDG No. B099M3.
- Sample numbers B099M5 and B099M6 in SDG No. B099M5.

Due to the presence of laboratory blank contamination, the following samples were flagged "U" for manganese:

- Sample numbers B099G5, B099G7, B099J9, B099K1, B099K3 and B099M7 in SDG No. B099G3.
- Sample numbers B099G4, B099K0, B099K2, B099K4 and B099M8 in SDG No. B099G4.
- Sample numbers B099H1, B099J7 and B099M9 in SDG No. B099H1.
- Sample numbers B099H2, B099J8 and B099N0 in SDG No. B099H2.
- Sample number B099M0 in SDG No. B099H4.

Due to the presence of laboratory blank contamination, the following sample was flagged "U" for silver:

- Sample number B099M6 in SDG No. B099M5.

Due to the presence of laboratory blank contamination, the following samples were flagged "U" for thallium:

- Sample numbers B099G3, B099G5 and B099G9 in SDG No. B099G3.

Due to a negative calibration blank result greater than two times the sample result, the following samples were flagged "J" for lead:

- Sample numbers B099M3 and B099M4 in SDG No. B099M3.

Due to a negative calibration blank result greater than two times the sample result, the following samples were flagged "J" for thallium:

- Sample numbers B099J1, B099J7 and B099M9 in SDG No. B099H1.
- Sample numbers B099H2, B099J2, B099J8 and B099N0 in SDG No. B099H2.
- Sample numbers B099M3 and B099M4 in SDG No. B099M3.

Due to a negative preparation blank result greater than ten times the sample result, the following samples were flagged "J" for aluminum:

- Sample numbers B099M0 and B099M2 in SDG No. B099H4.

Due to a negative preparation blank result greater than ten times the sample result, the following samples were flagged "J" for calcium:

- Sample numbers B099M0 and B099M2 in SDG No. B099H4.

Due to a negative preparation blank result greater than ten times the sample result, the following samples were flagged "J" for chromium:

- Sample numbers B099M0 and B099M2 in SDG No. B099H4.

Due to a negative preparation blank result greater than ten times the sample result, the following samples were flagged "J" for iron:

- Sample numbers B099H1, B099J1, B099J7 and B099M9 in SDG No. B099H1.

Due to a negative preparation blank result greater than ten times the sample result, the following samples were flagged "J" for potassium:

- Sample numbers B099M0 and B099M2 in SDG No. B099H4.

Due to a negative preparation blank result greater than ten times the sample result, the following samples were flagged "J" for selenium:

- Sample numbers B099M3 and B099M4 in SDG No. B099M3.

No other negative blank results were detected.

The laboratory duplicate result fell outside the QC limits and the associated results were flagged "J" for lead in the following samples:

- Sample numbers B099G3, B099G5, B099G7, B099G9, B099J9, B099K1, B099K3, B099L3 and B099M7 in SDG No. B099G3.
- Sample numbers B099G4, B099G6, B099G8, B099H0, B099K0, B099K2, B099K4, B099L4 and B099M8 in SDG No. B099G4.
- Sample numbers B099M0 and B099M2 in SDG No. B099H4.

All other laboratory duplicate recovery results were acceptable.

2.6.2 Field Duplicate Samples

Field duplicate analyses are used to measure both the laboratory and the field sampling procedure precision. Samples whose precision fell outside the quality control requirements are listed below. In accordance with the Westinghouse-Hanford Guidelines samples were not qualified on this basis.

- For aluminum sample numbers B099JI and B099M9 in SDG No. B099H1.
- For lead sample numbers B099J9 and B099M7 in SDG No. B099G3.
- For manganese sample numbers B099J1 and B099M9 in SDG No. B099H1.

2.6.3 ICP Serial Dilution

After the original sample analysis, a second analysis is required on a five-fold serial dilution to allow result comparison for matrix effects. The subsequent concentrations of the reanalysis are compared with the original analysis. If the analyte concentration is sufficiently high (a minimum factor of 50 above the IDL), then the serial dilution must agree within 10% of the original determination after correction for dilution.

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

The ICP serial dilution result fell outside the QC limits and the associated results were flagged "J" for calcium in the following samples:

- Sample numbers B099L9 and B099M1 in SDG No. B099H3.

B099M1	B099M2
B099M3	N099M4
B099M5	B099M6
B099M7	B099M8
B099M9	B099N0

All total versus dissolved sample results met the required QC criteria as described above.

2.7 FURNACE AA QUALITY CONTROL

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

2.7.1 Duplicate Injections

Each furnace analysis requires a minimum of two injections (burns), except for full MSA. For concentrations greater than CRDL, the duplicate injection readings must agree within 20% RSD or CV. If these requirements are not met, the analytical sample must be rerun once (i.e., two additional burns). If the readings are then still outside the QC limits, the result is qualified as an estimate and flagged "J".

All duplicate injection quality control requirements were met.

2.7.2 Analytical Spike Recoveries

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

The analytical spike recovery fell outside the established QC limits and the associated result was flagged "J" for arsenic in the following sample:

- Sample number B099M3 in SDG No. B099M3.

The analytical spike recovery fell outside the established QC limits and the associated results were flagged "J" for lead in the following samples:

number. Without this information Internal Chains of Custody can not be verified as those belonging to samples in this report. Refer to Sections F-5, paragraph 1.5 and F-3, paragraph 1.4 of the EPA CLP SOW 3/90 protocol.

All raw data associated with WESTON has not been labeled with the client (EPA) ID number. Results labeled with only the laboratory sample ID number is insufficient. Refer to Section B-10 of the EPA CLP SOW 3/90.

Except as noted in the preceding sections, all other validated data are usable for all purposes.

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B099G0																				
Sample Number		B099G0		B099G2		B099H8		B099J0													
Location		199-B2-12		199-B2-13		199-B4-8		199-B4-9													
Remarks		NV,Fil		NV,Fil		NV,Fil		NV,Fil													
Sample Date		10/12/93		10/11/93		10/12/93		10/12/93													
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	10.6	U	11.8		10.6	U	13.0													
Antimony	60	12.9	U	12.9	U	12.9	U	12.9	U												
Arsenic	10	4.3		2.8		4.2		2.4													
Barium	200	67.1		36.0		24.7		33.6													
Beryllium	5	0.20	U	0.20	U	0.20	U	0.20	U												
Cadmium	5	1.4		1.3	U	1.3	U	1.3	U												
Calcium	5000	26000		40400		52300		52600													
Chromium	10	2.1	U	20.2		8.2		10.7													
Cobalt	50	2.6	U	3.0		2.6	U	2.6	U												
Copper	25	2.5	U	2.5	U	2.5	U	2.5	U												
Iron	100	64.5		76.4		29.9		35.6													
Lead	3	2.9	U	2.9	U	2.9	U	2.9	U												
Magnesium	5000	9310		9880		8260		8090													
Manganese	15	28.0		1.9		1.6		2.0													
Mercury	0.2	0.20	U	0.20	U	0.20	U	0.20	U												
Nickel	40	3.4	U	3.4	U	3.4	U	3.4	U												
Potassium	5000	5440		4190		5800		5100													
Selenium	5	2.8	U	2.8	U	2.8	U	2.8	U												
Silver	10	2.6	U	2.6	U	2.6	U	2.6	U												
Sodium	5000	13100		11000		11800		11800													
Thallium	10	1.6	U	1.6	U	1.6	U	1.6	U												
Vanadium	50	35.3		8.5		7.6		8.2													
Zinc	20	4.4	U	4.4	U	4.4	U	4.4	U												
Cyanide	10	N/A		N/A		N/A		N/A													

NV=Not Validated, Fil=Filtered, N/A=Not Applicable

BLANK AND SAMPLE DATA SUMMARY

SDG: B099G3	REVIEWER: HS			DATE: 1/13/94				PAGE 1 OF 1	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
CCB	Aluminum	19.9			ug/L	99.5	199	B099G5, B099G7, B099G9, B099K1, B099K3, B099L3, B099M7	U
ICB	Copper	22.2			ug/L	111	222	B099G3, B099M7	U
PBW	Iron	32.0			ug/L	160	320	B099G5, B099G7, B099G9, B099J9, B099K1, B099K3, B099L3, B099M7	U
CCB	Manganese	1.4			ug/L	7.0	14.0	B099G5, B099G7, B099J9, B099K1, B099K3, B099M7	U
CCB	Thallium	2.8			ug/L	14.0	28.0	B099G3, B099G5, B099G9	U
ICB	Zinc	14.4			ug/L	72.0	144	B099G3, B099G5, B099G7, B099J9, B099K1, B099K3, B099L3, B099M7	U

DATA QUALIFICATION SUMMARY

SDG: B099G3	REVIEWER: HS	DATE: 1/13/94	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Aluminum	U	B099G5, B099G7, B099G9, B099K1, B099K3, B099L3, B099M7	Lab Blank
Copper	U	B099G3, B099M7	Lab Blank
Iron	U	B099G5, B099G7, B099G9, B099J9, B099K1, B099K3, B099L3, B099M7	Lab Blank
Manganese	U	B099G5, B099G7, B099J9, B099K1, B099K3, B099M7	Lab Blank
Thallium	U	B099G3, B099G5, B099G9	Lab Blank
Zinc	U	B099G3, B099G5, B099G7, B099J9, B099K1, B099K3, B099L3, B099M7	Lab Blank
Lead	J	All	Lab Duplicate
Lead	None	B099J9, B099M7	Field Duplicate

BLANK AND SAMPLE DATA SUMMARY

SDG: B099G4	REVIEWER: HS			DATE: 1/13/94				PAGE 1 OF 1	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
CCB	Aluminum	19.9			ug/L	99.5	199	B099G6, B099G8, B099K4	U
PBW	Iron	32.0			ug/L	160	320	All	U
CCB	Manganese	1.4			ug/L	7.0	14.0	B099G4, B099K0, B099K2, B099K4, B099M8	U
CCB	Thallium	2.8			ug/L	14.0	28.0	B099G8, B099K0, B099K4	U
ICB	Zinc	14.4			ug/L	72.0	144	B099G4, B099G6, B099G8, B099K0	U

DATA QUALIFICATION SUMMARY

SDG: B099G4	REVIEWER: HS	DATE: 1/13/94	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Aluminum	U	B099G6, B099G8, B099K4	Lab Blank Contamination
Iron	U	All	Lab Blank Contamination
Manganese	U	B099G4, B099K0, B099K2, B099K4, B099M8	Lab Blank Contamination
Thallium	U	B099G8, B099K0, B099K4	Lab Blank Contamination
Zinc	U	B099G4, B099G6, B099G8, B099K0	Lab Blank Contamination
Lead	J	All	Lab Duplicate

BLANK AND SAMPLE DATA SUMMARY

SDG: B099H1	REVIEWER: HS			DATE: 1/11/94				PAGE 1 OF 1	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
PBW	Aluminum	28.3			ug/L	142	283	B099M9	U
CCB	Manganese	2.0			ug/L	10	20	B099H1, B099J7, B099M9	U

9513123.2380

PRECISION DATA SUMMARY

SDG: B099H1	REVIEWER: HS	DATE: 1/11/94	PAGE 1 OF 1		
COMMENTS:					
COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
Aluminum	B099J1	B099M9	193	B099J1, B099M9	None
Manganese	B099J1	B099M9	170	B099J1, B099M9	None

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B099H2																				
Sample Number		B099H2		B099J2		B099J8		B099N0													
Location		199-B4-4		199-B5-1		199-B9-1		199-B5-1													
Remarks		Filtered		Filtered		Filtered		Dup.Fil.													
Sample Date		10/13/93		10/13/93		10/13/93		10/13/93													
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	16.2	U	15.5	U	15.5	U	22.8	U												
Antimony	60	9.2	U	9.2	U	9.2	U	9.2	U												
Arsenic	10	3.4		2.7		6.1		2.8													
Barium	200	25.7		28.2		7.4		29.4													
Beryllium	.5	0.20	U	0.20	U	0.20	U	0.20	U												
Cadmium	5	1.0	U	1.0	U	1.0	U	1.0	U												
Calcium	5000	51200		44100		43800		45100													
Chromium	10	7.5	J	60.2		13.5		60.2													
Cobalt	50	3.0	U	3.0	U	3.0	U	3.0	U												
Copper	25	2.9	U	2.9	U	2.9	U	2.9	U												
Iron	100	9.2	UJ	9.2	UJ	9.2	UJ	9.2	UJ												
Lead	3	2.9	U	2.9	U	2.9	U	2.9	U												
Magnesium	5000	7890		8130		9600		8320													
Manganese	15	1.8	U	2.2	U	2.7	U	2.0	U												
Mercury	0.2	0.20	U	0.20	U	0.20	U	0.20	U												
Nickel	40	3.9	U	3.9	U	3.9	U	3.9	U												
Potassium	5000	4560		4750		6120		4840													
Selenium	5	3.1		2.8	U	3.0		2.8	U												
Silver	10	3.7	U	3.7	U	3.7	U	3.7	U												
Sodium	5000	11400		10200		12600		10300													
Thallium	10	1.7	J	2.2	J	2.3	J	1.6	UJ												
Vanadium	50	8.8		7.5		10.8		6.5													
Zinc	20	8.5	U	8.5	U	8.5	U	8.5	U												
Cyanide	10	N/A		N/A		N/A		N/A													

Dup=Duplicate, Fil=Filtered, N/A=Not Applicable

BLANK AND SAMPLE DATA SUMMARY

SDG: B099H2	REVIEWER: HS			DATE: 1/12/94				PAGE 1 OF 1	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	2X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
CCB	Chromium	-6.0			ug/L	-12.0	-60.0	B099H2	J
CCB	Iron	-12.9			ug/L	-25.8	-129	B099H2, B099J2, B099J8, B099N0	J
CCB	Thallium	-1.6			ug/L	-3.2	-16.0	B099H2, B099J2, B099J8, B099N0	J

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B099H3																				
Sample Number		B099H3		B099H5		B099J3		B099J5		B099L9		B099M1									
Location		199-B4-5		199-B4-7		199-B5-2		199-B8-6		EB-1		EB-2									
Remarks		NV		NV		NV		NV		Equip.BLK		Equip.BLK									
Sample Date		10/18/93		10/18/93		10/14/93		10/19/93		10/15/93		10/15/93									
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	22.3		17.7		29.2		10.6	U	10.6	U	318									
Antimony	60	12.9	U	12.9	U	12.9	U	12.9	U	12.9	U	12.9	U								
Arsenic	10	5.5		4.4		3.8		2.3		2.1	U	2.1	U								
Barium	200	15.0		16.7		32.1		11.0		1.2	U	1.5									
Beryllium	5	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U								
Cadmium	5	1.3	U	1.3	U	1.4		1.3	U	1.3	U	1.3	U								
Calcium	5000	47800		50300		54000		33200		59.0	UJ	259	J								
Chromium	10	30.8		25.4		11.0		13.0		2.1	U	2.1	U								
Cobalt	50	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U								
Copper	25	2.7		2.5	U	3.6		2.5	U	2.5	U	2.5	U								
Iron	100	73.2		47.9		5.3	U	5.3	U	5.3	UJ	5.9	J								
Lead	3	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U								
Magnesium	5000	8750		7760		6680		8280		22.9	U	54.3									
Manganese	15	2.8		2.0		0.84		1.8		0.80	U	9.9									
Mercury	0.2	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U								
Nickel	40	13.3		10.0		6.1		3.4	U	3.4	U	3.4	U								
Potassium	5000	5430		5150		4880		4960		68.5	U	68.5	U								
Selenium	5	2.8	U	2.8	U	2.8	U	2.8	U	2.8	U	2.8	U								
Silver	10	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U								
Sodium	5000	11600		11600		11300		9210		114	U	137									
Thallium	10	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U								
Vanadium	50	6.1		5.5		6.3		7.4		5.5	U	5.5	U								
Zinc	20	4.4	U	4.4	U	4.4	U	4.4	U	4.4	U	4.4	U								
Cyanide	10	N/A		N/A		N/A		N/A		N/A		N/A									

NV=Not Validated, EB=Equipment Blank, N/A=Not Applicable

PRECISION DATA SUMMARY

SDG: B099H3	REVIEWER: SC	DATE: 1/13/94	PAGE 1 OF 1
COMMENTS:			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
Calcium	B099H5	B099H5L	11.0	B099L9, B099M1	J

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B099H4																				
Sample Number		B099H4		B099H6		B099J4		B099J6		B099M0		B099M2									
Location		199-B4-5		199-B4-7		199-B5-2		199-B8-6		EB-1		EB-2									
Remarks		NV, Fil		NV, Fil		NV, Fil		NV, Fil		EB, Fil		EB, Fil									
Sample Date		10/18/93		10/18/93		10/14/93		10/19/93		10/15/93		10/15/93									
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	20.4		38.9		15.3		16.6		35.6	J	14.8	J								
Antimony	60	12.9	U	12.9	U	12.9	U	14.8		12.9	U	12.9	U								
Arsenic	10	5.3		5.5		5.0		5.2		2.1	U	2.1	U								
Barium	200	14.5		17.4		32.1		12.1		1.2	U	1.2	U								
Beryllium	5	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U								
Cadmium	5	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U								
Calcium	5000	47600		49400		55700		34900		59.0	UJ	59.0	UJ								
Chromium	10	9.8		9.8		10.8		11.9		2.1	UJ	2.1	UJ								
Cobalt	50	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U								
Copper	25	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U								
Iron	100	26.4		56.3		52.4		18.4		31.6	U	27.2	U								
Lead	3	2.9	U	2.9	U	2.9	U	3.4		2.9	UJ	2.9	UJ								
Magnesium	5000	8660		7660		6900		8680		22.9	U	22.9	U								
Manganese	15	1.7		1.9		0.81		0.93		0.81	U	0.80	U								
Mercury	0.2	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U								
Nickel	40	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U								
Potassium	5000	5490		5140		5070		5310		68.5	UJ	68.5	UJ								
Selenium	5	2.8	U	2.8	U	2.8	U	2.8	U	2.8	U	2.8	U								
Silver	10	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U								
Sodium	5000	11600		11400		11900		9730		114	U	114	U								
Thallium	10	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U								
Vanadium	50	6.6		5.5	U	5.5	U	8.4		5.5	U	5.5	U								
Zinc	20	4.4	U	4.4	U	4.4	U	4.4	U	4.4	U	4.4	U								
Cyanide	10	N/A		N/A		N/A		N/A		N/A		N/A									

EB=Equipment Blank, NV=Not Validated, Fil=Filtered, N/A=Not Applicable

PRECISION DATA SUMMARY

SDG: B099H4	REVIEWER: SC	DATE: 1/13/94	PAGE 1 OF 1
COMMENTS:			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
Lead	B099H6	B099H6D	200.0	B099M0, B099M2	J

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B099K5																				
Sample Number		B099K5		B099K9		B099L5															
Location		699-65-72		699-66-64		699-72-73															
Remarks		NV		NV		NV															
Sample Date		10/7/93		10/7/93		10/7/93															
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	22.0		10.6	U	10.6	U														
Antimony	60	12.9	U	12.9	U	12.9	U														
Arsenic	10	6.2		4.9		4.3															
Barium	200	17.0		10.9		19.4															
Beryllium	5	0.20	U	0.20	U	0.20	U														
Cadmium	5	1.3	U	1.3	U	1.3	U														
Calcium	5000	33300		37300		34400															
Chromium	10	7.8		2.1	U	2.1	U														
Cobalt	50	2.6	U	2.6	U	2.6	U														
Copper	25	7.7		2.8		2.5	U														
Iron	100	47.2		43.6		63.3															
Lead	3	2.9	U	2.9	U	2.9	U														
Magnesium	5000	10000		11000		9150															
Manganese	15	0.80	U	0.80	U	0.80	U														
Mercury	0.2	0.20	U	0.20	U	0.20	U														
Nickel	40	3.4	U	3.4	U	3.4	U														
Potassium	5000	6010		6090		5430															
Selenium	5	3.7		4.6		2.8	U														
Silver	10	2.6	U	2.6	U	2.6	U														
Sodium	5000	20900		21800		14400															
Thallium	10	1.6	U	1.6	U	1.6	U														
Vanadium	50	17.3		15.3		14.7															
Zinc	20	7.0		48.3		4.9															
Cyanide	10	N/A		N/A		N/A															

NV=Not Validated, N/A=Not Applicable

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: TMA																					
Case	SDG: B099K7																				
Sample Number		B099K7		B099L1		B099L7															
Location		699-65-83		699-67-86		699-72-92															
Remarks		NV		NV		NV															
Sample Date		10/6/93		10/6/93		10/6/93															
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	27.0		35.3		21.0															
Antimony	60	12.9	U	12.9	U	12.9	U														
Arsenic	10	7.1		2.6		2.9															
Barium	200	9.7		13.4		32.6															
Beryllium	5	0.28		0.20	U	0.20	U														
Cadmium	5	1.3	U	1.3	U	1.3	U														
Calcium	5000	32800		35700		43000															
Chromium	10	22.7		13.6		9.7															
Cobalt	50	2.6	U	2.6	U	2.6	U														
Copper	25	2.5	U	2.7		2.5	U														
Iron	100	123		70.3		36.5															
Lead	3	2.9	U	4.6		2.9	U														
Magnesium	5000	9930		9940		10500															
Manganese	15	2.3		1.5		1.3															
Mercury	0.2	0.20	U	0.20	U	0.20	U														
Nickel	40	3.4	U	3.4	U	3.4	U														
Potassium	5000	6870		6110		4320															
Selenium	5	2.8	U	4.2		3.3															
Silver	10	2.6	U	2.6	U	2.6	U														
Sodium	5000	14900		16600		8350															
Thallium	10	1.6	U	1.6	U	1.6	U														
Vanadium	50	28.2		20.4		7.2															
Zinc	20	10.6		4.6		4.4	U														
Cyanide	10	N/A		N/A		N/A															

NV=Not Validated, N/A=Not Applicable

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B099M3																				
Sample Number		B099M3		B099M4																	
Location		199-B9-2		199-B9-2																	
Remarks		Split		Split, Fil																	
Sample Date		10/10/93		10/10/93																	
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	14.0	U	17.9																	
Antimony	60	20.0	U	20.0	U																
Arsenic	10	2.8	J	2.5																	
Barium	200	17.0		15.7																	
Beryllium	5	1.0	U	1.0	U																
Cadmium	5	2.0	U	2.0	U																
Calcium	5000	46800	J	51000	J																
Chromium	10	17.4		17.4																	
Cobalt	50	10.7	U	5.0	U																
Copper	25	5.9	U	3.0	U																
Iron	100	15.8	U	17.8	U																
Lead	3	2.3	J	2.0	UJ																
Magnesium	5000	11100	J	11900	J																
Manganese	15	2.2		2.0	U																
Mercury	0.2	.10	U	.10	U																
Nickel	40	8.6		8.0	U																
Potassium	5000	5340		5480																	
Selenium	5	20.0	UJ	20.0	UJ																
Silver	10	3.0	U	3.0	U																
Sodium	5000	11700	J	12400	J																
Thallium	10	2.0	UJ	2.0	UJ																
Vanadium	50	41.4	U	47.6	U																
Zinc	20	9.4	U	3.0	U																
Cyanide	10	N/A		N/A																	

Fil=Filtered, N/A=Not Applicable

BLANK AND SAMPLE DATA SUMMARY

SDG: B099M3	REVIEWER: SC			DATE: 1/12/94				PAGE 2 OF 2	
COMMENTS:									
SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	2X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
CCB	Lead	-2.7			ug/L	-5.4		B099M3, B099M4	J
PBW	Selenium	-2.3			ug/L		-23.0	B099M3, B099M4	J
ICB	Thallium	-3.1			ug/L	-6.2		B099M3, B099M4	J

PRECISION DATA SUMMARY

SDG: B099M3	REVIEWER: SC	DATE: 1/12/94		PAGE 1 OF 1	
COMMENTS:					
COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
Calcium	B099M3	B099M3L	11.5	B099M3, B099M4	J
Magnesium	B099M3	B099M3L	18.9	B099M3, B099M4	J
Sodium	B099M3	B099M3L	14.8	B099M3, B099M4	J

INORGANIC ANALYSIS, WATER MATRIX, (µg/L)

Project: WESTINGHOUSE-HANFORD																					
Laboratory: Roy F. Weston																					
Case	SDG: B099M5																				
Sample Number		B099M5		B099M6																	
Location		199-B5-1		199-B5-1																	
Remarks		Split		Split, Fil																	
Sample Date		10/13/93		10/13/93																	
Inorganic Analytes	CRDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	200	48.0	U	48.0	U																
Antimony	60	46.0	U	46.0	U																
Arsenic	10	2.8		2.5																	
Barium	200	30.5		29.8																	
Beryllium	5	1.0	U	1.0	U																
Cadmium	5	5.0	U	5.0	U																
Calcium	5000	44900		46100																	
Chromium	10	63.9		66.5																	
Cobalt	50	7.0	U	7.0	U																
Copper	25	7.0	U	7.0	U																
Iron	100	34.0	U	7.9	U																
Lead	3	2.0	U	2.0	U																
Magnesium	5000	8260		8600																	
Manganese	15	2.0	U	2.0	U																
Mercury	0.2	.10	U	.10	U																
Nickel	40	12.0	U	12.0	U																
Potassium	5000	5390		5360																	
Selenium	5	2.5	J	2.7	J																
Silver	10	7.0	U	8.2	U																
Sodium	5000	10400		10700																	
Thallium	10	2.0	U	2.0	U																
Vanadium	50	7.7	U	3.1	U																
Zinc	20	10.2	U	4.2	U																
Cyanide	10	N/A		N/A																	

Fil=Filtered, N/A=Not Applicable

ACCURACY DATA SUMMARY

SDG: B099M5	REVIEWER: SC	DATE: 1/11/94	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B099M5A	Selenium	64.0	B099M5	J
B099M6A	Selenium	75.0	B099M6	J

WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	NV/V	WET CHEMISTRY
199-B2-12	B099F9	W	10/12/93	NV	3-4
199-B2-13	B099G1	W	10/11/93	NV	3-4
199-B3-1	B099G3	W	10/09/93	V	3-5
199-B3-46	B099G5	W	10/09/93	V	3-5
199-B3-47	B099G7	W	10/09/93	V	3-5
199-B4-1	B099G9	W	10/09/93	V	3-5
199-B4-4	B099H1	W	10/13/93	V	3-8
199-B4-5	B099H3	W	10/18/93	NV	3-11
199-B4-7	B099H5	W	10/18/93	NV	3-11
199-B4-8	B099H7	W	10/12/93	NV	3-4
199-B4-9	B099H9	W	10/12/93	NV	3-4
199-B5-1	B099J1 B099M5 B099M9	W W W	10/13/93 10/13/93 10/13/93	V V V	3-8 3-19 3-8
199-B5-2	B099J3	W	10/14/93	NV	3-11
199-B8-6	B099J5	W	10/19/93	NV	3-11
199-B9-1	B099J7	W	10/13/93	V	3-8
199-B9-2	B099J9 B099M3 B099M7	W W W	10/10/93 10/10/93 10/10/93	V V V	3-5 3-16 3-5
199-B9-3	B099K1	W	10/10/93	V	3-5
699-63-90	B099K3	W	10/08/93	V	3-5
699-65-72	B099K5	W	10/07/93	NV	3-14
699-65-83	B099K7	W	10/06/93	NV	3-15
699-66-64	B099K9	W	10/07/93	NV	3-14
699-67-86	B099L1	W	10/06/93	NV	3-15
699-71-77	B099L3	W	10/09/93	V	3-5
699-72-73	B099L5	W	10/07/93	NV	3-14
699-72-92	B099L7	W	10/06/93	NV	3-15

3.0 WET CHEMISTRY DATA VALIDATION

3.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B099G3	B099H3	B099M5
B099H1	B099M3	

3.2 HOLDING TIMES

Analytical holding times for fluoride, sulfate, pH and specific conductance were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are twenty-eight days for fluoride, sulfate and specific conductance analyses, and seventy-two hours for pH analysis.

The seventy-two hour holding time for pH was exceeded and all associated results were flagged "J":

- All samples in SDG No. B099G3.
- All samples in SDG No. B099H1.
- All samples in SDG No. B099H3.
- Sample number B099M3 in SDG No. B099M3.
- Sample number B099M5 in SDG No. B099M5.

Holding times for all other analyses reviewed met QC requirements.

3.3 CALIBRATIONS

3.3.1 Initial Calibration

The following calibration procedures must be conducted:

- At least a blank and three standards were used to establish the ion chromatography, ion selective electrode, spectrophotometer, calibrations prior to sample analysis and the correlation was $\geq$0.995.

analyses are used to measure both the laboratory and the field sampling procedure precision.

All duplicate analyses results were acceptable for this data.

3.7 ANALYTE QUANTITATION AND DETECTION LIMITS

Sample results and reported detection limits were recalculated to ensure that the reported results were accurate. Raw data were examined for anomalies, transcription errors, and reduction errors. In addition, the reviewer verified that the results fell within the linear range of the instrument.

3.8 OVERALL ASSESSMENT AND SUMMARY

A review of instrument continuing calibration information and QC data indicate that instrument performance was adequate for all analyses. The holding times for pH for all samples in five data packages were exceeded and all associated results were qualified as estimates and flagged "J". Results that are qualified as estimates are usable for limited purposes. All other QC results are considered accurate within the standard error associated with the methods.

WET CHEMISTRY/ANIONS ANALYSIS, WATER MATRIX, (mg/L)

Project: WESTINGHOUSE-HANFORD																			
Laboratory: TMA																			
Case	SDG: B099G3																		
Sample Number		B099G3		B099G5		B099G7		B099G9		B099J9		B099K1		B099K3		B099L3		B099M7	
Location		199-B3-1		199-B3-46		199-B3-47		199-B4-1		199-B9-2		199-B9-3		699-63-90		699-71-77		199-B9-2	
Remarks																		Duplicate	
Sample Date		10/9/93		10/9/93		10/9/93		10/9/93		10/10/93		10/10/93		10/8/93		10/9/93		10/10/93	
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300.0	0.2		0.2		0.1		0.2		0.3		0.3		0.3		0.3		0.2	
Sulfate	300.0	47		49		50		51		66		46		31		38		67	
pH (pH units)	9040	8.0	J	8.0	J	8.1	J	8.0	J	7.9	J	8.0	J	7.9	J	8.0	J	7.9	J
Specific Conduct. (umhos/cm)	9050	417		418		393		398		447		410		352		354		446	

DATA QUALIFICATION SUMMARY

SDG: B099G3	REVIEWER: PG	DATE: 1/27/94	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
pH	J	B099G3, B099G5, B099G7, B099G9, B099J9, B099K1, B099K3, B099L3, B099M7	Holding Time Exceeded

HOLDING TIME SUMMARY

SDG: B099H1	REVIEWER: PG			DATE: 1/27/94		PAGE 1 OF 1	
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B099H1	pH	10/13/93		10/18/93		3	J
B099J1	pH	10/13/93		10/18/93		3	J
B099J7	pH	10/13/93		10/18/93		3	J
B099M9	pH	10/13/93		10/18/93		3	J

WET CHEMISTRY/ANIONS ANALYSIS, WATER MATRIX, (mg/L)

Project: WESTINGHOUSE-HANFORD																			
Laboratory: TMA																			
Case	SDG: B099H3																		
Sample Number		B099H3		B099H5		B099J3		B099J5		B099L9		B099M1							
Location		199-B4-5		199-B4-7		199-B5-2		199-B8-6		EB-1		EB-2							
Remarks		NV		NV		NV		NV		Equip.BLK		Equip.BLK							
Sample Date		10/18/93		10/18/93		10/14/93		10/19/93		10/15/93		10/15/93							
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300.0	0.3		0.4		0.2		0.3		0.1	U	0.1	U						
Sulfate	300.0	46		47		49		29		1	U	1	U						
pH (pH units)	9040	7.8		7.8		8.1		7.8		5.8	J	5.7	J						
Specific Conduct. (umhos/cm)	9050	381		380		376		299		6.0	U	6.0	U						

NV=Not Validated, EB=Equipment Blank

DATA QUALIFICATION SUMMARY

SDG: B099H3	REVIEWER: PG	DATE: 1/27/94	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
pH	J	B099L9, B099M1	Holding Time Exceeded

WET CHEMISTRY/ANIONS ANALYSIS, WATER MATRIX, (mg/L)

Project: WESTINGHOUSE-HANFORD																			
Laboratory: TMA																			
Case	SDG: B099K7																		
Sample Number		B099K7		B099L1		B099L7													
Location		699-65-83		699-67-86		699-72-92													
Remarks		NV		NV		NV													
Sample Date		10/6/93		10/6/93		10/6/93													
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300.0	0.4		0.4		0.2													
Sulfate	300.0	33		33		36													
pH (pH units)	9040	8.1		7.9		7.9													
Specific Conduct. (umhos/cm)	9050	339		341		362													

NV=Not Validated

HOLDING TIME SUMMARY

SDG: B099M3	REVIEWER: SC			DATE: 1/12/94		PAGE 1 OF 1	
COMMENTS:							
FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B099M3	pH	10/10/93		10/15/93		3	J

WET CHEMISTRY/ANIONS ANALYSIS, WATER MATRIX, (mg/L)

Page__1__ of__1__

Project: WESTINGHOUSE-HANFORD																			
Laboratory: Roy F. Weston																			
Case	SDG: B099M5																		
Sample Number		B099M5																	
Location		199-B5-1																	
Remarks		Split																	
Sample Date		10/13/93																	
Analytes	Method	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	300.0	0.50	U																
Sulfate	300.0	42.3																	
pH (pH units)	9040	7.5	J																
Specific Conduct. (umhos/cm)	9050	330																	

DATA QUALIFICATION SUMMARY

SDG: B099M5	REVIEWER: SC	DATE: 1/11/94	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
pH	J	B099M5	Holding Time Exceeded

WELL AND SAMPLE INFORMATION					SAMPLE LOCATION INFORMATION
SAMPLE LOCATION	SAMPLE NUMBER	MATRIX	DATE SAMPLED	NV/V	RADIOCHEMISTRY
199-B2-12	B099F9	W	10/12/93	V	8-4
199-B2-13	B099G1	W	10/11/93	V	8-6
199-B3-1	B099G3	W	10/09/93	V	8-6
199-B3-46	B099G5	W	10/09/93	V	8-6
199-B3-47	B099G7	W	10/09/93	V	8-6
199-B4-1	B099G9	W	10/09/93	V	8-6
199-B4-4	B099H1	W	10/13/93	V	8-4
199-B4-5	B099H3	W	10/18/93	V	8-4
199-B4-7	B099H5	W	10/18/93	V	8-4
199-B4-8	B099H7	W	10/12/93	V	8-4
199-B4-9	B099H9	W	10/12/93	V	8-4
199-B5-1	B099J1 B099M5 B099M9	W W W	10/13/93 10/13/93 10/13/93	V V V	8-4 8-9 8-5
199-B5-2	B099J3	W	10/14/93	V	8-4
199-B8-6	B099J5	W	10/19/93	V	8-4
199-B9-1	B099J7	W	10/13/93	V	8-4
199-B9-2	B099J9 B099M3 B099M7	W W W	10/10/93 10/10/93 10/10/93	V V V	8-6 8-8 8-7
199-B9-3	B099K1	W	10/10/93	V	8-6
699-63-90	B099K3	W	10/08/93	V	8-6
699-65-72	B099K5	W	10/07/93	V	8-6
699-65-83	B099K7	W	10/06/93	V	8-6
699-66-64	B099K9	W	10/07/93	V	8-7
699-67-86	B099L1	W	10/06/93	V	8-7
699-71-77	B099L3	W	10/09/93	V	8-7
699-72-73	B099L5	W	10/07/93	V	8-7
699-72-92	B099L7	W	10/06/93	V	8-7

4.0 GROSS ALPHA AND GROSS BETA DATA VALIDATION

4.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B099F9 B099G1 B099M3 B099M5

4.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

4.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the gas proportional counter used for gross alpha and gross beta determination is capable of producing acceptable and reliable analytical data. The initial calibration was performed according to manufacturer's recommendations and consists of an instrument efficiency determination as a function of alpha or beta particle energy, and as a function of the mass of material submitted for counting. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible.

All calibration results, including efficiency checks and background counts, were acceptable.

4.4 ACCURACY

Accuracy was evaluated by analyzing soil or distilled water samples spiked with known amounts of alpha or beta emitting radionuclides. The sample activity as determined by analysis is compared to the known activity to assess accuracy. Acceptable accuracy of spiked sample data must fall within a range of 70 to 130 percent. If spiked sample results were outside this range, associated sample data were either not qualified, qualified as estimates "J", or rejected "R", depending on the individual sample activity.

All accuracy results were acceptable.

5.0 STRONTIUM-90 DATA VALIDATION

5.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B099F9 B099G1 B099M3 B099M5

5.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

5.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the low background counting system used for strontium-90 determination is capable of producing acceptable and reliable analytical data. The initial calibration was performed according to manufacturer's recommendations and consists of an instrument counting system efficiency determination. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible.

All calibration results, including efficiency checks and background counts, were acceptable.

5.4 ACCURACY

Accuracy was evaluated by analyzing soil or distilled water samples spiked with known amounts of beta emitting radionuclides. The sample activity as determined by analysis is compared to the known activity to assess accuracy. The acceptable laboratory control sample recovery range is 70 to 130 percent, while that for a matrix spike is 60 to 140 percent. If spiked sample results were outside this range, associated sample data were either not qualified, qualified as estimates "J", or rejected "R", depending on the activity of the individual sample. A chemical tracer is used to determine the efficiency of the analytical method, with tracer yield limits of 30 to 105 percent. Sample results above the MDA with chemical yields outside the above stated limits were qualified as estimates or rejected.

All accuracy results were acceptable.

6.0 TECHNETIUM-99 DATA VALIDATION

6.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B099F9 B099G1 B099M3 B099M5

6.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

6.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the low background counting system used for technetium-99 determination is capable of producing acceptable and reliable analytical data. The initial calibration was performed according to manufacturer's recommendations and consists of an instrument counting system efficiency determination. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible.

All calibration results, including efficiency checks and background counts, were acceptable.

6.4 ACCURACY

Accuracy was evaluated by analyzing soil or distilled water samples spiked with known amounts of beta emitting radionuclides. The sample activity as determined by analysis is compared to the known activity to assess accuracy. The acceptable laboratory control sample recovery range is 70 to 130 percent, while that for a matrix spike is 60 to 140 percent. If spike sample results were outside this range, associated sample data were either not qualified, qualified as estimates "J", or rejected "R", depending on the activity of the individual sample. A chemical tracer is used to determine the efficiency of the analytical method, with tracer yield limits of 30 to 105 percent. Sample results with chemical yields outside the above stated limits were qualified as estimates or rejected depending on sample activity.

7.0 CARBON-14 DATA VALIDATION

7.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B099F9 B099G1 B099M3 B099M5

7.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

7.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the low background liquid scintillation counting system used for carbon-14 determination is capable of producing acceptable and reliable analytical data. Each counting system must be factory calibrated at installation and after any maintenance or repair. Calibration consists of an instrument efficiency determination for each applicable radionuclide. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible.

All calibration results, including efficiency checks and background counts, were acceptable.

7.4 ACCURACY

Accuracy was evaluated by analyzing soil or distilled water samples spiked with known amounts of beta emitting radionuclides. The sample activity as determined by analysis is compared to the known activity to assess accuracy. The acceptable laboratory control sample recovery range is 70 to 130 percent. If LCS sample results were outside this range, associated sample data were either not qualified, qualified as estimates "J", or rejected "R", depending on the activity of the individual sample. A chemical tracer is used to determine the efficiency of the analytical method, with tracer yield limits of 30 to 105 percent. Sample results above the MDA with chemical yields outside the above stated limits were qualified as estimates or rejected.

8.0 TRITIUM DATA VALIDATION

8.1 DATA PACKAGE COMPLETENESS

The following data packages (SDG Nos.) were submitted for validation and found to be complete:

B099F9 B099G1 B099M3 B099M5

8.2 HOLDING TIMES

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for this analysis is six months.

All holding times were acceptable.

8.3 INSTRUMENT CALIBRATION AND PERFORMANCE

Instrument calibration is performed to establish that the low background liquid scintillation counting system used for tritium determination is capable of producing acceptable and reliable analytical data. Each counting system must be factory calibrated at installation and after any maintenance or repair. Calibration consists of an instrument efficiency determination for each applicable radionuclide. Continuing calibration checks are performed to verify that instrument performance is stable and reproducible.

All calibration results, including efficiency checks and background counts, were acceptable.

8.4 ACCURACY

Accuracy was evaluated by analyzing soil or distilled water samples spiked with known amounts of beta emitting radionuclides. The sample activity as determined by analysis is compared to the known activity to assess accuracy. The acceptable laboratory control sample recovery range is 70 to 110 percent, while that for a matrix spike is 60 to 140 percent. If spike sample results were outside this range, associated sample data were either not qualified, qualified as estimates "J", or rejected "R" depending on the activity of the individual sample.

Due to the lack of a matrix spike analysis, all Tritium results in SDG Nos. B099F9 and B099G1 were qualified as estimates and flagged "J".

Project: WESTINGHOUSE-HANFORD
Laboratory: TMA
Case | SDG: B099F9

Sample Number	B099F9		B099H1		B099H3		B099H5		B099H7		B099H9		B099J1		B099J3		B099J5		B099J7	
Location	199-B2-12		199-B4-4		199-B4-5		199-B4-7		199-B4-8		199-B4-9		199-B5-1		199-B5-2		199-B8-6		199-B9-1	
Remarks																				
Sample Date	10/12/93		10/13/93		10/18/93		10/18/93		10/12/93		10/12/93		10/13/93		10/14/93		10/19/93		10/13/93	
Radiochemistry Analytes	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	2.6	J	1.9	U	1.8	U	-0.22	U	2.0	J	4.3		0.64	U	2.7	J	1.4	J	1.2	U
Gross Beta	5.2		110		52		55		54		96		49		83		28		34	
Tritium	-62	UJ	2300	J	2200	J	2200	J	2800	J	2600	J	2000	J	3300	J	1500	J	1600	J
Carbon-14	84	J	-77	U	-69	U	-86	U	17	U	14	U	-110	U	-79	U	-10	U	-64	U
Strontium-90	0	U	33		4.8		6.6		0.55	U	26		1.4	J	17		0.022	U	1.1	J
Technetium-99	-0.50	U	60		58		55		54		69		56		69		35		39	

EB = Equipment Blank

WHC-SD-EN-TI-237, Rev. 0

RADIOCHEMISTRY ANALYSIS, WATER MATRIX, (pCi/L+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD
Laboratory: TMA
Case | SDG: B099G1

Sample Number	B099G1		B099G3		B099G5		B099G7		B099G9		B099J9		B099K1		B099K3		B099K5		B099K7	
Location	199-B2-13		199-B3-1		199-B3-46		199-B3-47		199-B4-1		199-B9-2		199-B9-3		699-63-90		699-65-72		699-65-83	
Remarks																				
Sample Date	10/11/93		10/09/93		10/09/93		10/09/93		10/09/93		10/10/93		10/10/93		10/08/93		10/07/93		10/06/93	
Radiochemistry Analytes	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	2.6	J	10		-0.13	U	4.9		0.99	U	1.2	U	0.19	U	0.76	U	3.2		0.88	U
Gross Beta	11		150		270		92		79		27		38		3.6	J	22		11	
Tritium	12000	J	3200	J	3900	J	8800	J	2600	J	2100	J	2600	J	73	UJ	26000	J	870	J
Carbon-14	-92	U	-65	U	-92	U	-57	U	-78	U	-84	U	-58	U	-65	U	-90	U	41	U
Strontium-90	0.051	U	47		100		21		20		0.034	U	0.037	U	0.094	U	0	U	0	U
Technetium-99	16		87		100		64		65		50		62		3.5	J	27		13	

RADIOCHEMISTRY ANALYSIS, WATER MATRIX, (pCi/L+-2 standard deviations)

Project: WESTINGHOUSE-HANFORD																				
Laboratory: Teledyne																				
Case	SDG: B099M5																			
Sample Number	B099M5																			
Location	199-B5-1																			
Remarks	Split																			
Sample Date	10/13/93																			
Radiochemistry Analytes	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Gross Alpha	4.0																			
Gross Beta	43																			
Tritium	2200																			
Carbon-14	-11	U																		
Strontium-90	1.4																			
Technetium-99	66																			

9.0 REFERENCES

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

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

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

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

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

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

EPA, 1991, *EPA Contract Laboratory Program Statement of Work for Organics Analyses, Multi-Media, Multi-Concentration*, Environmental Protection Agency, Washington, D.C.

WHC, 1992a, *Data Validation Procedures for Chemical Analyses*, WHC-SD-EN-SPP-002, Rev. 1, Westinghouse Hanford Company, April 1992.

WHC, March 1994, *Data Validation Procedure for Radiological Analyses*, WHC-SD-EN-SPP-001, Revision 2, Westinghouse Hanford Company, 1994.

9715912.2424

TMA Inc. REPORT Work Order # A3-10-012

Received: 10/08/93

Results by Sample

000009

SAMPLE ID B099K7 FRACTION 01A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.4	mg/L	0.1
pH	9040	8.1	pH	0.1
Sulfate	300.0	33	mg/L	5
Elect. Conductivity	9050	339	umho/cm	6

NV 2/1/94

FORM I

9713512.2425

TMA Inc. REPORT Work Order # A3-10-012

Received: 10/08/93 Results by Sample 000010

SAMPLE ID B099L1 FRACTION 02A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.4	mg/L	0.1
pH	9040	7.9	pH	0.1
Sulfate	300.0	33	mg/L	5
Elect. Conductivity	9050	341	umho/cm	6

NV - 2/1/94 RM

FORM I

9713512.2426

TMA Inc. REPORT Work Order # A3-10-012

Received: 10/08/93 Results by Sample 000011

SAMPLE ID B099L7 FRACTION 03A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300.0	0.2	mg/L	0.1
pH	9040	7.9	pH	0.1
Sulfate	300.0	36	mg/L	5
Elect. Conductivity	9050	362	umho/cm	6

NV 2/1/94

FORM I

9713512.2427

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099K7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K7

Matrix (soil/water): WATER Lab Sample ID: 10080-01S

Level (low/med): LOW Date Received: 10/11/93

% 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	27.0	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	7.1	B		P
7440-39-3	Barium	9.7	B		P
7440-41-7	Beryllium	0.28	B		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	32800			P
7440-47-3	Chromium	22.7			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	123			P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9930			P
7439-96-5	Manganese	2.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6870			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	14900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	28.2	B		P
7440-66-6	Zinc	10.6	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: NOT VALIDATED 2/1/94 [signature]

2

9713512.2428

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099L1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K7

Matrix (soil/water): WATER Lab Sample ID: 10080-02S

Level (low/med): LOW Date Received: 10/11/93

% 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	35.3	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.6	B		P
7440-39-3	Barium	13.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	35700			P
7440-47-3	Chromium	13.6			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	70.3	B		P
7439-92-1	Lead	4.6			P
7439-95-4	Magnesium	9940			P
7439-96-5	Manganese	1.5	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6110			P
7782-49-2	Selenium	4.2	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	16600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	20.4	B		P
7440-66-6	Zinc	4.6	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: NOT VALIDATED 2/1/94 [illegible]

3

9713512.2429

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099L7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K7

Matrix (soil/water): WATER Lab Sample ID: 10080-03S

Level (low/med): LOW Date Received: 10/11/93

% 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	21.0	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.9	B		P
7440-39-3	Barium	32.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	43000			P
7440-47-3	Chromium	9.7	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	36.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	10500			P
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4320	B		P
7782-49-2	Selenium	3.3	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	8350			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	7.2	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: NOT VALIDATED 2/1/94

4

9713512.2430

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B099K8

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K8

Matrix (soil/water): WATER Lab Sample ID: 10081-01S

Level (low/med): LOW Date Received: 10/11/93

% 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	27.8	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.6	B		P
7440-39-3	Barium	8.3	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	32000			P
7440-47-3	Chromium	22.4			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	72.2	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9750			P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6860			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	14900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	27.3	B		P
7440-66-6	Zinc	4.8	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: NOT VALIDATED 2/1/94 [illegible]

2

9713512.2451

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099L2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K8

Matrix (soil/water): WATER Lab Sample ID: 10081-02S

Level (low/med): LOW Date Received: 10/11/93

% 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	17.2	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.2	B		P
7440-39-3	Barium	14.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	34300			P
7440-47-3	Chromium	13.0			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	28.5	B		P
7439-92-1	Lead	4.1			P
7439-95-4	Magnesium	9640			P
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6220			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	16800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	18.7	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: NOT VALIDATED 2/1/94

3

9713512.2432

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099L8

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-023SAS No.: SDG No.: B099K8

Matrix (soil/water): WATER Lab Sample ID: 10081-03S

Level (low/med): LOW Date Received: 10/11/93

% 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	29.5	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.0	B		P
7440-39-3	Barium	32.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	42100			P
7440-47-3	Chromium	8.2	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	3.3	B		P
7439-89-6	Iron	14.4	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	10300			P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4430	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	8600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.6	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: NOT VALIDATED 2/1/94 [illegible]

4

9713512.2433

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099H2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: B099H2

Matrix (soil/water): WATER Lab Sample ID: 10202-01S

Level (low/med): LOW Date Received: 10/20/93

% 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	16.2	B		P	U
7440-36-0	Antimony	9.2	U		P	
7440-38-2	Arsenic	3.4	B		P	
7440-39-3	Barium	25.7	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	51200			P	
7440-47-3	Chromium	7.5	B		P	J
7440-48-4	Cobalt	3.0	U		P	
7440-50-8	Copper	2.9	U		P	
7439-89-6	Iron	9.2	U		P	J
7439-92-1	Lead	2.9	U	*	P	
7439-95-4	Magnesium	7890			P	
7439-96-5	Manganese	1.8	B		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.9	U		P	
7440-09-7	Potassium	4560	B		P	
7782-49-2	Selenium	3.1	B		P	
7440-22-4	Silver	3.7	U		P	
7440-23-5	Sodium	11400			P	
7440-28-0	Thallium	1.7	B		P	J
7440-62-2	Vanadium	8.8	B		P	
7440-66-6	Zinc	8.5	U		P	
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture: NMS 1-12-94

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

1/19/94 JM

FORM I - IN ILM02.1

9713512.2434

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 8099J2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: 8099H2

Matrix (soil/water): WATER Lab Sample ID: 10202-02S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.5	U		P	
7440-36-0	Antimony	9.2	U		P	
7440-38-2	Arsenic	2.7	B		P	
7440-39-3	Barium	28.2	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	44100			P	
7440-47-3	Chromium	60.2			P	
7440-48-4	Cobalt	3.0	U		P	
7440-50-8	Copper	2.9	U		P	
7439-89-6	Iron	9.2	U		P	J
7439-92-1	Lead	2.9	U	*	P	
7439-95-4	Magnesium	8130			P	
7439-96-5	Manganese	2.2	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.9	U		P	
7440-09-7	Potassium	4750	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	3.7	U		P	
7440-23-5	Sodium	10200			P	
7440-28-0	Thallium	2.2	B		P	J
7440-62-2	Vanadium	7.5	B		P	
7440-66-6	Zinc	8.5	U		P	
	Cyanide				NR	

HWS 1-12-94

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1/19/94 JM

3

9713512.2435

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

8099J8

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: 8099H2

Matrix (soil/water): WATER Lab Sample ID: 10202-03S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.5	U		P	
7440-36-0	Antimony	9.2	U		P	
7440-38-2	Arsenic	6.1	B		P	
7440-39-3	Barium	7.4	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	43800			P	
7440-47-3	Chromium	13.5			P	
7440-48-4	Cobalt	3.0	U		P	
7440-50-8	Copper	2.9	U		P	
7439-89-6	Iron	9.2	U		P	J
7439-92-1	Lead	2.9	U	*	P	
7439-95-4	Magnesium	9600			P	
7439-96-5	Manganese	2.7	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.9	U		P	
7440-09-7	Potassium	6120			P	
7782-49-2	Selenium	3.0	B		P	
7440-22-4	Silver	3.7	U		P	
7440-23-5	Sodium	12600			P	
7440-28-0	Thallium	2.3	~~B~~		P	J
7440-62-2	Vanadium	10.8	B		P	
7440-66-6	Zinc	8.5	U		P	
	Cyanide				NR	

RWB 1-12-94

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1/19/94 JW

4

FORM I - IN ILM02.1

9713512.2436

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099N0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: B099H2

Matrix (soil/water): WATER Lab Sample ID: 10202-04S

Level (low/med): LOW Date Received: 10/20/93

% 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	22.8	~~B~~		P	U
7440-36-0	Antimony	9.2	U		P	
7440-38-2	Arsenic	2.8	B		P	
7440-39-3	Barium	29.4	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	45100			P	
7440-47-3	Chromium	60.2			P	
7440-48-4	Cobalt	3.0	U		P	
7440-50-8	Copper	2.9	U		P	
7439-89-6	Iron	9.2	U		P	J
7439-92-1	Lead	2.9	U	*	P	
7439-95-4	Magnesium	8320			P	
7439-96-5	Manganese	2.0	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.9	U		P	
7440-09-7	Potassium	4840	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	3.7	U		P	
7440-23-5	Sodium	10300			P	
7440-28-0	Thallium	1.6	U		P	J
7440-62-2	Vanadium	6.5	B		P	
7440-66-6	Zinc	8.5	U		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1-12-94

1/19/94

5

FORM I - IN ILM02.1

9713512.2437

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099H1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: B099H1

Matrix (soil/water): WATER Lab Sample ID: 10201-01S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	4.8	B		P
7440-39-3	Barium	25.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	50900			P
7440-47-3	Chromium	4.1	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	9.2	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	7810			P
7439-96-5	Manganese	1.8	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	4650	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	11500			P
7440-28-0	Thallium	3.9	B		P
7440-62-2	Vanadium	8.2	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

J

J

U

U

1/20/94 JM

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

1-11-94

Comments:

FORM I - IN ILM02.1

02

9713512.2438

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099J1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: B099H1

Matrix (soil/water): WATER Lab Sample ID: 10201-02S

Level (low/med): LOW Date Received: 10/20/93

% 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	856			P	
7440-36-0	Antimony	9.2	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	36.8	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	45200			P	
7440-47-3	Chromium	57.2			P	
7440-48-4	Cobalt	3.0	U		P	
7440-50-8	Copper	2.9	U		P	
7439-89-6	Iron	37.2	B		P	J
7439-92-1	Lead	2.9	U		P	
7439-95-4	Magnesium	8250			P	
7439-96-5	Manganese	27.4			P	
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.9	U		P	
7440-09-7	Potassium	4900	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	3.7	U		P	
7440-23-5	Sodium	10500			P	
7440-28-0	Thallium	1.6	U		P	J
7440-62-2	Vanadium	6.9	B		P	
7440-66-6	Zinc	8.5	U		P	
	Cyanide				NR	

1/20/94 dm

1-11-94

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

03

9713512.2439

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

8099J7

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: 8099H1

Matrix (soil/water): WATER Lab Sample ID: 10201-03S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.5	U		P	
7440-36-0	Antimony	9.2	U		P	
7440-38-2	Arsenic	5.9	B		P	
7440-39-3	Barium	7.4	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	43000			P	
7440-47-3	Chromium	12.8			P	
7440-48-4	Cobalt	3.0	U		P	
7440-50-8	Copper	2.9	U		P	
7439-89-6	Iron	9.2	U		P	J
7439-92-1	Lead	2.9	U		P	
7439-95-4	Magnesium	9420			P	
7439-96-5	Manganese	2.0	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.9	U		P	
7440-09-7	Potassium	6170			P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	3.7	U		P	
7440-23-5	Sodium	12400			P	
7440-28-0	Thallium	1.6	U		P	J
7440-62-2	Vanadium	10.3	B		P	
7440-66-6	Zinc	8.5	U		P	
	Cyanide				NR	

1/20/94 RW

1-11-94

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

04

9713512.2440

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099M9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-066SAS No.: SDG No.: B099H1

Matrix (soil/water): WATER Lab Sample ID: 10201-04S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.7	~~U~~		P	U
7440-36-0	Antimony	9.2	U		P	
7440-38-2	Arsenic	2.5	B		P	
7440-39-3	Barium	31.9	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	44000			P	
7440-47-3	Chromium	55.7			P	
7440-48-4	Cobalt	3.0	U		P	
7440-50-8	Copper	2.9	U		P	
7439-89-6	Iron	9.2	U		P	J
7439-92-1	Lead	2.9	U		P	
7439-95-4	Magnesium	8130			P	
7439-96-5	Manganese	2.2	~~B~~		P	U
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.9	U		P	
7440-09-7	Potassium	4760	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	3.7	U		P	
7440-23-5	Sodium	10100			P	
7440-28-0	Thallium	1.6	U		P	J
7440-62-2	Vanadium	6.4	B		P	
7440-66-6	Zinc	8.5	U		P	
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

KMS 1-11-9

Comments:

05

9713512.2441

WESTINGHOUSE/HANFORD

SAMPLE NUMBER:

B099H4

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-05S

Level (low/med): LOW Date Received: 10/20/93

% 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	20.4	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	5.3	B		P
7440-39-3	Barium	14.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	47600			P
7440-47-3	Chromium	9.8	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	26.4	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	8660			P
7439-96-5	Manganese	1.7	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5490			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.6	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

NW 1-13-94 SC

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After. CLEAR Artifacts:

Comments:

2

9713512.2442

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 8099H6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: 8099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-06S

Level (low/med): LOW Date Received: 10/20/93

% 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	38.9	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	5.5	B		P
7440-39-3	Barium	17.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	49400			P
7440-47-3	Chromium	9.8	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	56.3	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	7660			P
7439-96-5	Manganese	1.9	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5140			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11400			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

NW 1-139456

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9713512.2443

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099J4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-01S

Level (low/med): LOW Date Received: 10/20/93

% 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	15.3	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	5.0	B		P
7440-39-3	Barium	32.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	55700			P
7440-47-3	Chromium	10.8			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	52.4	B		P
7439-92-1	Lead	2.9	U	*	P
7439-95-4	Magnesium	6900			P
7439-96-5	Manganese	0.81	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5070			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

NV 1-13-94 SC

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

9713512.2444

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099J6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-02S

Level (low/med): LOW Date Received: 10/20/93

% 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	16.6	B		P
7440-36-0	Antimony	14.8	B		P
7440-38-2	Arsenic	5.2	B		P
7440-39-3	Barium	12.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	34900			P
7440-47-3	Chromium	11.9			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	18.4	B		P
7439-92-1	Lead	3.4		*	P
7439-95-4	Magnesium	8680			P
7439-96-5	Manganese	0.93	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	5310			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	9730			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	8.4	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

NV 1-13-94SC

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

5

9713512.2445

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

8099M0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: 8099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-03S

Level (low/med): LOW Date Received: 10/20/93

% 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	35.6	B	J	P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U	J	P
7440-47-3	Chromium	2.1	U	J	P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	31.6	B	U	P
7439-92-1	Lead	2.9	U	J	P
7439-95-4	Magnesium	22.9	U		P
7439-96-5	Manganese	0.81	B	U	P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	68.5	U	J	P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	114	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

1-13-94SC

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

6

9713512.2446

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099M2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H4

Matrix (soil/water): WATER Lab Sample ID: 10206-04S

Level (low/med): LOW Date Received: 10/20/93

% 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	14.8	B	J	P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U	J	P
7440-47-3	Chromium	2.1	U	J	P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	27.2	B	U	P
7439-92-1	Lead	2.9	U	~~J~~	P
7439-95-4	Magnesium	22.9	U		P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	68.5	U	J	P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	114	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

1-13-94 JC

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

7

9713512.2447

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099H3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-05S

Level (low/med): LOW Date Received: 10/20/93

% 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	22.3	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	5.5	B		P
7440-39-3	Barium	15.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	47800		E	P
7440-47-3	Chromium	30.8			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	73.2	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8750			P
7439-96-5	Manganese	2.8	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	13.3	B		P
7440-09-7	Potassium	5430			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.1	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

NV 1/13/94

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9713512.2448

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099H5

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-06S

Level (low/med): LOW Date Received: 10/20/93

% 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	17.7	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.4	B		P
7440-39-3	Barium	16.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	50300		E	P
7440-47-3	Chromium	25.4			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	47.9	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	7760			P
7439-96-5	Manganese	2.0	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	10.0	B		P
7440-09-7	Potassium	5150			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

NV 1/13/94 SC

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9713512.2449

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099J3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-01S

Level (low/med): LOW Date Received: 10/20/93

% 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	29.2	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.8	B		P
7440-39-3	Barium	32.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.4	B		P
7440-70-2	Calcium	54000		E	P
7440-47-3	Chromium	11.0			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	3.6	B		P
7439-89-6	Iron	5.3	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	6680			P
7439-96-5	Manganese	0.84	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	6.1	B		P
7440-09-7	Potassium	4880	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	11300			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.3	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

NV
1/13/94 SC

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

9713512.2450

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B099J5

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-02S

Level (low/med): LOW Date Received: 10/20/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.3	B		P
7440-39-3	Barium	11.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	33200		E	P
7440-47-3	Chromium	13.0			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	5.3	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8280			P
7439-96-5	Manganese	1.8	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4960	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	9210			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	7.4	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

NV
1/13/94 SB

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

5

9713512.2451

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 8099L9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: 8099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-03S

Level (low/med): LOW Date Received: 10/20/93

% 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	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U	~~E~~ J	P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	5.3	U	J	P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	22.9	U		P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	68.5	U		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	114	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

1/13/94 SC

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

6

9713512.2452

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B099M1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-088SAS No.: SDG No.: B099H3

Matrix (soil/water): WATER Lab Sample ID: 10205-04S

Level (low/med): LOW Date Received: 10/20/93

% 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	318			P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	259	B	~~E~~ J	P
7440-47-3	Chromium	2.1	U		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	5.9	B	J	P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	54.3	B		P
7439-96-5	Manganese	9.9	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	68.5	U		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	137	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

1/14/94 SC

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: