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WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

METALS & HEXAVALENT CHROMIUM
Case No. N3-04-050
(TMA/SKINNER & SHERMAN W.O. # S3-04-136 & S3-04-137)

April 29, 1993

TMA Master Work Order N3-04-050

NOV 1996

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

April 26, 1993

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

Quality Control Narrative

Scope
Twelve (12) soil samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on April 13, 1993 from TMA/NORCAL. The samples were analyzed for the USEPA CLP ICP metals only. The analysis was performed under Skinner and Sherman work order S304137.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.1

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

The antimony digestion spike recovery 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.

David N. Peterson
Assistant Laboratory Manager

SAMPLE NUMBER:

B01980

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68 D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-015

Level (low/med): LOW Date Received: 04/13/93

% Solids: 93.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	50.1			P
7440-36-0	Antimony	3.8	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	0.30	B		P
7440-41-7	Beryllium	0.06	U		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	19.3	U		P
7440-47-3	Chromium	0.68	U		P
7440-48-4	Cobalt	0.60	U		P
7440-50-8	Copper	2.3	B		P
7439-89-6	Iron	256			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	6.9	B		P
7439-96-5	Manganese	0.25	B		P
7439-97-6	Mercury				NR
7440-02-0	Nickel	0.86	U		P
7440-09-7	Potassium	23.8	B		P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.68	U		P
7440-23-5	Sodium	15.6	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	0.44	B		P
7440-66-6	Zinc	2.9	B		P
	Cyanide				NR

Color Before: WHITE Clarity Before: Texture: FINE

Color After: WHITE Clarity After: Artifacts:

Comments:

02

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 801981

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No. N3-04-050SAS No.: SDG No.: 001000

Matrix (soil/water): SOIL Lab Sample ID: 04177-025

Level (low/med): LOW Date Received: 04/13/93

% Solids: 91.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8360			P
7440-36-0	Antimony	3.9	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	141			P
7440-41-7	Beryllium	0.30	B		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	4320			P
7440-47-3	Chromium	29.6			P
7440-48-4	Cobalt	18.3			P
7440-50-8	Copper	144			P
7439-89-6	Iron	61800			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4400			P
7439-96-5	Manganese	592			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	42.2			P
7440-09-7	Potassium	1690			P
7782-49-2	Selenium				NR
7440-22-4	Silver	4.5			P
7440-23-5	Sodium	910	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	37.6			P
7440-66-6	Zinc	247			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS, METAL

03

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01982

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050 SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-02

Level (low/med): LOW Date Received: 04/13/93

% Solids: 91.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8160			P
7440-36-0	Antimony	3.9	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	89.3			P
7440-41-7	Beryllium	0.32	B		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	4450			P
7440-47-3	Chromium	16.4			P
7440-48-4	Cobalt	9.2	B		P
7440-50-8	Copper	31.4			P
7439-89-6	Iron	20300			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4070			P
7439-96-5	Manganese	345			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	12.8			P
7440-09-7	Potassium	1730			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.85	B		P
7440-23-5	Sodium	196	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	40.8			P
7440-66-6	Zinc	90.3			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

04

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B01983

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-04S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 91.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8010			P
7440-36-0	Antimony	3.8	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	89.2			P
7440-41-7	Beryllium	0.28	B		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	5890			P
7440-47-3	Chromium	16.8			P
7440-48-4	Cobalt	8.7	B		P
7440-50-8	Copper	37.5			P
7439-89-6	Iron	21200			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4550			P
7439-96-5	Manganese	328			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	13.3			P
7440-09-7	Potassium	1560			P
7782-49-2	Selenium				NR
7440-22-4	Silver	1.3	B		P
7440-23-5	Sodium	382	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	40.5			P
7440-66-6	Zinc	145			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

05

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01984

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-05C

Level (low/med): LOW Date Received: 04/13/93

% Solids: 91.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7070			P
7440-36-0	Antimony	3.9	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	72.0			P
7440-41-7	Beryllium	0.27	B		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	4550			P
7440-47-3	Chromium	16.5			P
7440-48-4	Cobalt	8.0	B		P
7440-50-8	Copper	17.9			P
7439-89-6	Iron	17600			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4310			P
7439-96-5	Manganese	277			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	10.4			P
7440-09-7	Potassium	1520			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.86	B		P
7440-23-5	Sodium	256	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	37.1			P
7440-66-6	Zinc	61.6			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

06

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01985

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0100

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-06S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 89.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7300			P
7440-36-0	Antimony	4.1	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	81.5			P
7440-41-7	Beryllium	0.34	B		P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	4570			P
7440-47-3	Chromium	16.2			P
7440-48-4	Cobalt	8.6	B		P
7440-50-8	Copper	20.7			P
7439-89-6	Iron	19700			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4340			P
7439-96-5	Manganese	307			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	11.3			P
7440-09-7	Potassium	1590			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.73	B		P
7440-23-5	Sodium	263	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	39.9			P
7440-66-6	Zinc	83.4			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS, ROOTS

07

SAMPLE NUMBER:

B01936

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04127-07S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 89.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6930			P
7440-36-0	Antimony	3.9	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	75.8			P
7440-41-7	Beryllium	0.30	B		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	4470			P
7440-47-3	Chromium	11.6			P
7440-48-4	Cobalt	7.6	B		P
7440-50-8	Copper	15.0			P
7439-89-6	Iron	16100			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4120			P
7439-96-5	Manganese	283			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	9.6			P
7440-09-7	Potassium	1540			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.68	U		P
7440-23-5	Sodium	254	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	35.3			P
7440-66-6	Zinc	50.7			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

08

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01987

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-088

Level (low/med): LOW Date Received: 04/13/93

% Solids: 90.1

Concentration Units (ug/L or mg/Kg dry weight). MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6660			P
7440-36-0	Antimony	3.8	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	68.3			P
7440-41-7	Beryllium	0.31	B		P
7440-43-9	Cadmium	0.09	U		P
7440-70-2	Calcium	4460			P
7440-47-3	Chromium	15.6			P
7440-48-4	Cobalt	7.5	B		P
7440-50-8	Copper	13.0			P
7439-89-6	Iron	16000			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4150			P
7439-96-5	Manganese	259			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	10.1			P
7440-09-7	Potassium	1470			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.67	U		P
7440-23-5	Sodium	195	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	34.9			P
7440-66-6	Zinc	46.0			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

09

SAMPLE NUMBER:

B01988

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01988

Matrix (soil/water): SOIL Lab Sample ID: 04137-09

Level (low/med): LOW Date Received: 04/13/93

% Solids: 89.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7170			P
7440-36-0	Antimony	6.1	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	69.0			P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	7030			P
7440-47-3	Chromium	17.1			P
7440-48-4	Cobalt	7.8	B		P
7440-50-8	Copper	13.8			P
7439-89-6	Iron	16800			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4300			P
7439-96-5	Manganese	269			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	10.3			P
7440-09-7	Potassium	1560			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.73	U		P
7440-23-5	Sodium	213	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	38.5			P
7440-66-6	Zinc	38.1			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01989

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-105

Level (low/med): LOW Date Received: 04/13/93

% Solids: 89.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7620			P
7440-36-0	Antimony	4.1	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	77.1			P
7440-41-7	Beryllium	0.28	B		P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	4780			P
7440-47-3	Chromium	17.7			P
7440-48-4	Cobalt	7.8	B		P
7440-50-8	Copper	12.7			P
7439-89-6	Iron	17300			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4450			P
7439-96-5	Manganese	279			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	11.2			P
7440-09-7	Potassium	1620			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.72	U		P
7440-23-5	Sodium	227	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	38.1			P
7440-66-6	Zinc	28.1			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

11

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01991

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-115

Level (low/med): LOW Date Received: 04/13/93

% Solids: 92.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6120			P
7440-36-0	Antimony	4.0	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	61.3			P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	5200			P
7440-47-3	Chromium	10.0			P
7440-48-4	Cobalt	7.4	B		P
7440-50-8	Copper	11.9			P
7439-89-6	Iron	15200			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4290			P
7439-96-5	Manganese	250			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	10.2			P
7440-09-7	Potassium	1210			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.71	U		P
7440-23-5	Sodium	202	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	35.8			P
7440-66-6	Zinc	35.1			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After Artifacts: YES

Comments:
ROCKS

12

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01992

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-125

Level (low/med): LOW Date Received: 04/13/93

% Solids: 92.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7720			P
7440-36-0	Antimony	3.0	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	75.0			P
7440-41-7	Beryllium	0.32	B		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	5190			P
7440-47-3	Chromium	12.3			P
7440-48-4	Cobalt	8.3	B		P
7440-50-8	Copper	12.1			P
7439-89-6	Iron	18200			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4310			P
7439-96-5	Manganese	286			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	10.5			P
7440-09-7	Potassium	1640			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.70	U		P
7440-23-5	Sodium	270	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	40.0			P
7440-66-6	Zinc	36.4			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01980

Lab Name: SKINNER & SHERMAN LABS. Contract: 68 D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-01

Level (low/med): LOW Date Received: 04/13/93

% Solids: 93.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	50.1			P
7440-36-0	Antimony	3.8	U	N	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	0.30	B		P
7440-41-7	Beryllium	0.06	U		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	19.3	U		P
7440-47-3	Chromium	0.68	U		P
7440-48-4	Cobalt	0.60	U		P
7440-50-8	Copper	2.3	B		P
7439-89-6	Iron	256			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	6.9	B		P
7439-96-5	Manganese	0.25	B		P
7439-97-6	Mercury				NR
7440-02-0	Nickel	0.86	U		P
7440-09-7	Potassium	23.8	B		P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.68	U		P
7440-23-5	Sodium	15.6	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	0.44	B		P
7440-66-6	Zinc	2.9	B		P
	Cyanide				NR

Color Before: WHITE Clarity Before: Texture: FINE

Color After: WHITE Clarity After: Artifacts:

Comments:

02

Rush ! Due 4/22/93

TMA/Skinner & Sherman Labs SAMPLE LOG-IN
WORKORDER S304137 CLIENT Hanford Nuc No. SAMPLES:
PROTCL CLP TURNARND 11 Days 12
COOLER TEMP: 2 oC, or NA (Soil) (Water) (Specify Other)
CUSTODIAN B Brown SDG/BATCH N/A
CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304050
SHIPER & # Fed Ex PO/CONTRACT# 1
TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D Sanchez
CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

SAMPLE CONTAINERS-INTACT/BROKEN COMMENTS

CLIENT COMMENT? YES/NO
SAMPLE LABELS AGREE WITH CHAIN OF CUSTODY INFO? YES/NO (COMMENT)
CLIENT PAPERWORK AGREES WITH SAMPLES & COC? YES/NO (COMMENT)

SHIPMENT DATES 4/13/93
LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

N/A

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B01980	Soil	4/13/93	N/A	IC20.S	
2	B01981					
3	B01982					
4	B01983					
5	B01984					
6	B01985					
7	B01986					
8	B01987					
9	B01988					
10	B01989					
11	B01991					
12	B01992				D.S	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						

Samples are from site known to have Rad-Contamination: YES ✓ NO
Samples have detectable amounts of Radioactive Material: YES NO ✓

SUBCONTRACT: YES/NO, TO: DATE: 4/13/93 BP

REVIEWED

complete

* EPA/CLP required Rev 1.6 PAGE: 21

RCVD: 04/12/93 DUE: 04/22/93 04/12/93 12:44:22 KEEP 07/21/9 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: 5U and CATEGORY		
01A-S	B01980	S&S	WH001	WH002	WH175
02A-S	B01981	S&S	WH001	WH002	WH175
03A-S	B01982	S&S	WH001	WH002	WH175
04A-S	B01983	S&S	WH001	WH002	WH175
05A-S	B01984	S&S	WH001	WH002	WH175
06A-S	B01985	S&S	WH001	WH002	WH175
07A-S	B01986	S&S	WH001	WH002	WH175
08A-S	B01987	S&S	WH001	WH002	WH175
09A-S	B01988	S&S	WH001	WH002	WH175
10A-S	B01989	S&S	WH001	WH002	WH175
11A-S	B01991	S&S	WH001	WH002	WH175
12A-S	B01992	S&S	WH001	WH002	WH175
12B-S	B01992 MS	S&S	WH001	WH002	WH175
12C-S	B01992 DUP	S&S	WH001	WH002	WH175
12D-S	L C S	S&S	WH001	WH002	WH175

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Yamamoto	4-12-93	Skinner	4-12-93	Bank Pouse	4/13/93

N3-01-050

Westinghouse Hanford Company	CHAIN OF CUSTODY	004195

Custody Form Initiator S.M.STEELE

Company Contact R.C.SMITH/C.E.HEIDEN

Telephone 509-376-2640

Project Designation/Sampling Locations SAF#930045,ERA,SODIUM DICHROMATE SITE

Collection Date 4/8/93

Ice Chest No.

Field Logbook No. WHC-N-205-22

Bill of Lading/Airbill No.

Offsite Property No.

Method of Shipment BURLINGTON AIR EXPRESS OVERNIGHT

Shipped to TMA/NORCAL, RICHMOND CA.

Possible Sample Hazards/Remarks HAZARDS UNKNOWN, PRIORITY TURNAROUND, RCRA PROTOCOL, SEE SAMPLE ANALYSIS REQUEST FOR INDIVIDUAL BOTTLES AND ANALYSIS.

Sample Identification

B01980 (3)BOTTLES
B01981 (3)BOTTLES
B01982 (3)BOTTLES
B01983 (3)BOTTLES
B01984 (3)BOTTLES
B01985 (3)BOTTLES
B01986 (3)BOTTLES
B01987 (3)BOTTLES
B01988 (3)BOTTLES
B01989 (3)BOTTLES
B01991 (3)BOTTLES
B01992 (3)BOTTLES

PRIORITY TURNAROUND

[ ] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
SM Steele	4-9-93	1000	[illegible]	4-12-93 *	13:55

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

* Received 4-10-93 ; opened 4-12-93 @ TMA/NORCAL - KB

A-6000-407 (12/92) WEF061

85A

COC# 004195 pg 1 of 2

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector S.M.STEELE Date 4-8-93

Company Contact R.C.SMITH/C.E.HEIDEN Telephone (509) 376-2640

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B01980	S	4-8-93	0955	250 ml g /Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals,inc.Total Chrome CLP
				1000 ml p/ Gamma Spec. RC-30
B01981	S	4-8-93	1025	250 ml g /Chromium VI SW-846 7197
				250 ml g /ICP, GFAA Metals, inc. Total Chrome CLP
				1000 ml p/ Gamma Spec. RC-30
B01982	S	4-8-93	1035	250 ml g / Chromium VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p/Gamma Spec. RC-30
B01983	S	4-8-93	1105	250 ml g/ Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
				1000 ml p/Gamma Spec. RC-30
B01984	S	4-8-93	1115	250 ml g / Chromiun VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p/Gamma Spec. RC-30
B01985	S	4-8-93	1135	250 ml g / Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30
B01986	S	4-8-93	1140	250 ml g /Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30
B01987	S	4-8-93	1155	250 ml g / Chromium VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc.Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30

*Type of Sample

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

Field Information SAF 93-045 SAMPLES ARE PRIORITY TURNAROUND

Special Handling and/or Storage SAMPLES TO BE KEPT AT 4 DEGREE C UNTIL ANALYSIS

Possible Sample Hazards UNKNOWN

PRIORITY TURNAROUND

A-6000-406 (06/91) WEF060

85B

COC# 004195 pg 2 of 7

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector S.M.STEELE Date 4-8-93

Company Contact R.C.SMITH/C.E.HEIDEN Telephone (509) 376-2640

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B01988	S	4-8-93	1210	✓250 ml g /Chromium VI SW-846 7197
				✓250 ml g/ICP,GFAA Metals,inc.Total Chrome CLP
				✓1000 ml p/ Gamma Spec. RC-30
B01989	S	4-8-93	1210	✓250 ml g /Chromium VI SW-846 7197
				✓250 ml g /ICP, GFAA Metals, inc. Total Chrome CLP
				✓1000 ml p/ Gamma Spec. RC-30
B01991	S	4-8-93	1225	✓250 ml g / Chromium VI SW-846 7197
				✓250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				✓1000 ml p/Gamma Spec. RC-30
B01992	S	4-8-93	1240	✓250 ml g/ Chromium VI SW-846 7197
				✓250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
				✓1000 ml p/Gamma Spec. RC-30
	S			250 ml g / Chromiun VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p/Gamma Spec. RC-30
	S			250 ml g / Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30
	S			250 ml g /Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30
	S			250 ml g / Chromium VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc.Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30

SMS 4-8-93

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

Field Information SAF 93-045 SAMPLES ARE PRIORITY TURNAROUND

Special Handling and/or Storage SAMPLES TO BE KEPT AT 4 DEGREE C UNTIL ANALYSIS

Possible Sample Hazards UNKNOWN

PRIORITY TURNAROUND

A-6000-406 (06/91) WEF060

85C

Received: 04/13/93 04/26/93 16:47:35

REPORT TMA/NORCAL
TO 2030 Wright Avenue
Richmond, CA 94804

ATTEN Dan Steurmer

PREPARED TMA / Skinner & Sherman Labs.
BY 300 Second Avenue
P.O. Box 521
Waltham, MA 02254

ATTEN Client Services
PHONE (617) 890-7200

CERTIFIED BY

CONTACT DP

CLIENT HANFORD NOR SAMPLES 13
COMPANY TMA/NORCAL Hanford
FACILITY Richmond, CA

WORK ID N3-04-050 RUSH!!! DUE 4/22/93
TAKEN By Client
TRANS Fed Ex
TYPE Soil
P.O. # N3-04-050
INVOICE under separate cover

SAMPLE IDENTIFICATION		
01	B01980	
02	B01981	
03	B01982	
04	B01983	
05	B01984	
06	B01985	
07	B01986	
08	B01987	
09	B01988	
10	B01989	
11	B01991	
12	B01992	
12	B01992	DUPL
12	B01992	SPIKE
13	LCSS	

TEST CODES and NAMES used on this workorder

CRHEXS Hexavalent Chromium/Soil

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.
300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

Received: 04/13/93

Results by Sample

SAMPLE ID B01980 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01981 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01982 SAMPLE # 03 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01983 SAMPLE # 04 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01984 SAMPLE # 05 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01985 SAMPLE # 06 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01986 SAMPLE # 07 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

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TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.
300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

Received: 04/13/93

Results by Sample

SAMPLE ID B01987 SAMPLE # 08 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01988 SAMPLE # 09 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01989 SAMPLE # 10 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01991 SAMPLE # 11 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01992 SAMPLE # 12 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01992 DUPL SAMPLE # 12 FRACTIONS: B
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50
mg/kg

SAMPLE ID B01992 SPIKE SAMPLE # 12 FRACTIONS: C
Date & Time Collected 04/08/93 Category SOIL

CRHEXS 0.50
mg/kg

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TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.
300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

Received: 04/13/93

Results by Sample

SAMPLE ID LCSS SAMPLE # 13 FRACTIONS: A

Date & Time Collected not specified Category SOIL

CRMEXS 19.8
ug/L

TMA
Thermo Analytical Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

Skinner & Sherman Laboratories Inc. 300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

Test Methodology

TEST CODE CRHEXS NAME Hexavalent Chromium/Soil

The soil was digested in accordance with EPA Method 3020 and subsequently analyzed by for hexavalent chromium by EPA Method 7197.

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

Rush Due 4/22/93

TMA/Skinner & Sherman Labs SAMPLE LOG-IN

WORKORDER 5304136 CLIENT Hanford NOR No. SAMPLES:

PROTCL CLP TURNARND 11 Day 12 (Soil) (Water) (Specify Other)

COOLER TEMP: 2 oC, or NA

CUSTODIAN B Prouk SDG/BATCH NA

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304050

SHIPER & # Fed EX PO/CONTRACT# 1

TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D. Snuckiz

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

SAMPLE CONTAINERS-INTACT/BROKEN COMMENTS

CLIENT COMMENT? YES/NO

SAMPLE LABELS AGREE WITH CHAIN OF CUSTODY INFO? YES/NO (COMMENT)

CLIENT PAPERWORK AGREES WITH SAMPLES & COC? YES /NO (COMMENT)

SHIPMENT DATES 4/13/93

LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

N/A

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B01980	Soil	4/13/93	N/A	CR Hexs	
2	B01981					
3	B01982					
4	B01983					
5	B01984					
6	B01985					
7	B01986					
8	B01987					
9	B01988					
10	B01989					
11	B01991					
12	B01992				DS	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						

Samples are from site known to have Rad-Contamination: YES ✓ NO

Samples have detectable amounts of Radioactive Material: YES NO ✓

SUBCONTRACT: YES/NO TO: DATE:

REVIEWED Complete BP 4/13/93

* EPA/CLP required Rev 1.6 PAGE: 20

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # N3-04-050

RCVD: 04/12/93 DUE: 04/22/93 04/12/93 12:44:22 KEEP: 07/21/93 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY		
01A-S	B01980	S&S	WH001	WH002	WH175
02A-S	B01981	S&S	WH001	WH002	WH175
03A-S	B01982	S&S	WH001	WH002	WH175
04A-S	B01983	S&S	WH001	WH002	WH175
05A-S	B01984	S&S	WH001	WH002	WH175
06A-S	B01985	S&S	WH001	WH002	WH175
07A-S	B01986	S&S	WH001	WH002	WH175
08A-S	B01987	S&S	WH001	WH002	WH175
09A-S	B01988	S&S	WH001	WH002	WH175
10A-S	B01989	S&S	WH001	WH002	WH175
11A-S	B01991	S&S	WH001	WH002	WH175
12A-S	B01992	S&S	WH001	WH002	WH175
12B-S	B01992 MS	S&S	WH001	WH002	WH175
12C-S	B01992 DUP	S&S	WH001	WH002	WH175
12D-S	L C S	S&S	WH001	WH002	WH175

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Yamamoto	4-12-93	Kinney	4-12-93	Bank Power	4/13/93

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01980

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-01S

evel (low/med): LOW Date Received: 04/13/93

Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	0.45	U		F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	0.33	B		F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.64	U		F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.50	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: WHITE Clarity Before: Texture: COARSE

olor After: WHITE Clarity After: Artifacts:

omments:

002

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B01981

ıb Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ıb Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

ıtrix (soil/water): SOIL Lab Sample ID: 05052-02S

ɜvel (low/med): LOW Date Received: 04/13/93

Solids: 95.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.1			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	58.7			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.67	U	W	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.53	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: BROWN Clarity Before: Texture: COARSE

olor After: BROWN Clarity After: Artifacts:

omments:

003

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01982

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-03S

evel (low/med): LOW Date Received: 04/13/93

Solids: 96.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.5			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	17.5			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.90	B	S	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.51	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: BROWN Clarity Before: Texture: COARSE

olor After: BROWN Clarity After: Artifacts:

omments:

004

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01983

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-04S

evel (low/med): LOW Date Received: 04/13/93

Solids: 96.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.5			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	18.3			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.67	U		F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.53	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: BROWN Clarity Before: Texture: COARSE

olor After: BROWN Clarity After: Artifacts:

omments:

005

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B01984

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-05S

evel (low/med): LOW Date Received: 04/13/93

Solids: 97.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.1			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	9.1			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.67	U		F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.53	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: BROWN Clarity Before: Texture: COARSE

olor After: BROWN Clarity After: Artifacts:

omments:

006

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01985

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-06S

evel (low/med): LOW Date Received: 04/13/93

Solids: 94.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.8			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	11.7			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.69	U		F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.55	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: BROWN Clarity Before: Texture: COARSE

olor After: BROWN Clarity After: Artifacts:

omments:

007

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01986

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-07S

evel (low/med): LOW Date Received: 04/13/93

Solids: 94.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.5			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	8.2			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.66	U		F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.52	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: BROWN Clarity Before: Texture: COARSE

olor After: BROWN Clarity After: Artifacts:

omments:

008

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01987

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-08S

evel (low/med): LOW Date Received: 04/13/93

Solids: 94.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.3			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	16.8			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.69	U		F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.55	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: BROWN Clarity Before: Texture: COARSE

olor After: BROWN Clarity After: Artifacts:

omments:

009

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B01988

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-09S

evel (low/med): LOW Date Received: 04/13/93

Solids: 95.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.3			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	5.0			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.65	U		F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.51	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: BROWN Clarity Before: Texture: COARSE

olor After: BROWN Clarity After: Artifacts:

omments:

010

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B01989

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-10S

evel (low/med): LOW Date Received: 04/13/93

Solids: 90.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.4			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	5.2			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.71	U		F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.56	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: BROWN Clarity Before: Texture: COARSE

olor After: BROWN Clarity After: Artifacts:

omments:

011

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B01991

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-11S

evel (low/med): LOW Date Received: 04/13/93

Solids: 93.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.2			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	3.4			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.68	U		F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.53	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: BROWN Clarity Before: Texture: COARSE

olor After: BROWN Clarity After: Artifacts:

omments:

012

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01992

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-12S

evel (low/med): LOW Date Received: 04/13/93

Solids: 92.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.2			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	4.2			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.68	U		F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.53	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

olor Before: BROWN Clarity Before: Texture: COARSE

olor After: BROWN Clarity After: Artifacts:

omments:

013

TMA/Skinner & Sherman Labs **SAMPLE LOG-IN**

WORKORDER S305052 CLIENT HANFORD NOC No. SAMPLES:

PROTCL CLP **TURNARND** 14 DAY 12

COOLER TEMP: 2 oC, or NA (Soil) (Water) (Specify Other)

CUSTODIAN B. Prouix SDG/BATCH N/A

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304050

SHIPER & # Fed Ex PO/CONTRACT# ↓

TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D. Sanchez

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

SAMPLE CONTAINERS-INTACT/BROKEN COMMENTS

CLIENT COMMENT? YES/NO

SAMPLE LABELS AGREE WITH CHAIN OF CUSTODY INFO? YES/NO (COMMENT)

CLIENT PAPERWORK AGREES WITH SAMPLES & COC? YES /NO (COMMENT)

SHIPMENT DATES 4/13/93

LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

N/A

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B01980	Soil	4/13/93	N/A	As, Se, Pb, Tl by AA	
2	B01981	↓	↓	↓	↓	
3	B01982					
4	B01983					
5	B01984					
6	B01985					
7	B01986					
8	B01987					
9	B01988					
10	B01989					
11	B01991					
12	B01992	↓	↓	↓	DS ↓	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						039
27						

Samples are from site known to have Rad-Contamination: YES ___ NO ✓

Samples have detectable amounts of Radioactive Material: YES ___ NO ✓

SUBCONTRACT: YES/NO, TO: _____ DATE: _____

REVIEWED _____ Computer 5/6/93 SP

* EPA/CLP required Rev 1.6 PAGE: 3

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # NO-04-050

RCVD: 04/12/93 DUE: 04/22/93 04/12/93 12:44:22 KEEP: 07/21/93 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY		
01A-S	B01980	S&S	WH001	WH002	WH175
02A-S	B01981	S&S	WH001	WH002	WH175
03A-S	B01982	S&S	WH001	WH002	WH175
04A-S	B01983	S&S	WH001	WH002	WH175
05A-S	B01984	S&S	WH001	WH002	WH175
06A-S	B01985	S&S	WH001	WH002	WH175
07A-S	B01986	S&S	WH001	WH002	WH175
08A-S	B01987	S&S	WH001	WH002	WH175
09A-S	B01988	S&S	WH001	WH002	WH175
10A-S	B01989	S&S	WH001	WH002	WH175
11A-S	B01991	S&S	WH001	WH002	WH175
12A-S	B01992	S&S	WH001	WH002	WH175
12B-S	B01992 MS	S&S	WH001	WH002	WH175
12C-S	B01992 DUP	S&S	WH001	WH002	WH175
12D-S	L C S	S&S	WH001	WH002	WH175

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Yamamoto	4-12-93	Skinner	4-12-93	Bank Turner	4/13/93

090

N3-01-050

Westinghouse Hanford Company	CHAIN OF CUSTODY	004195

Custody Form Initiator S.M.STEELE

Company Contact R.C.SMITH/C.E.HEIDEN

Telephone 509-376-2640

Project Designation/Sampling Locations SAF#930045,ERA,SODIUM DICHROMATE SITE

Collection Date 4/8/93

Ice Chest No.

Field Logbook No. WHC-N-205-22

Bill of Lading/Airbill No.

Offsite Property No.

Method of Shipment BURLINGTON AIR EXPRESS OVERNIGHT

Shipped to TMA/NORCAL, RICHMOND CA.

Possible Sample Hazards/Remarks HAZARDS UNKNOWN, PRIORITY TURNAROUND, RCRA PROTOCOL, SEE SAMPLE ANALYSIS REQUEST FOR INDIVIDUAL BOTTLES AND ANALYSIS.

Sample Identification

B01980 (3)BOTTLES
B01981 (3)BOTTLES
B01982 (3)BOTTLES
B01983 (3)BOTTLES
B01984 (3)BOTTLES
B01985 (3)BOTTLES
B01986 (3)BOTTLES
B01987 (3)BOTTLES
B01988 (3)BOTTLES
B01989 (3)BOTTLES
B01991 (3)BOTTLES
B01992 (3)BOTTLES

PRIORITY TURNAROUND

[ ] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
SM Steele SMSteele	4-8-93	1000	Yvonne Mata	4-12-93 *	13:55

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

* Received 4-10-93 ; opened 4-12-93 @ TMA/NORCAL - KB

A-6000-407 (12/92) WEF061

90A

COC# 004195 pg 1 of 2

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector S.M.STEELE Date 4-8-93

Company Contact R.C.SMITH/C.E.HEIDEN Telephone (509) 376-2640

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B01980	S	4-8-93	0955	250 ml g /Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals,inc.Total Chrome CLP
				1000 ml p/ Gamma Spec. RC-30
B01981	S	4-8-93	1025	250 ml g /Chromium VI SW-846 7197
				250 ml g /ICP, GFAA Metals, inc. Total Chrome CLP
				1000 ml p/ Gamma Spec. RC-30
B01982	S	4-8-93	1035	250 ml g / Chromium VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p/Gamma Spec. RC-30
B01983	S	4-8-93	1105	250 ml g/ Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
				1000 ml p/Gamma Spec. RC-30
B01984	S	4-8-93	1115	250 ml g / Chromiun VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p/Gamma Spec. RC-30
B01985	S	4-8-93	1135	250 ml g / Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30
B01986	S	4-8-93	1140	250 ml g /Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30
B01987	S	4-8-93	1155	250 ml g / Chromium VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc.Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30

*Type of Sample

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

Field Information SAF 93-045 SAMPLES ARE PRIORITY TURNAROUND

Special Handling and/or Storage SAMPLES TO BE KEPT AT 4 DEGREE C UNTIL ANALYSIS

Possible Sample Hazards UNKNOWN

PRIORITY TURNAROUND

A-6000-406 (06/91) WEF060

90B

COC# 004195 pg 2 of 2

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector S.M.STEELE Date 4-8-93

Company Contact R.C.SMITH/C.E.HEIDEN Telephone (509) 376-2640

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B01988	S	4-8-93	1210	✓250 ml g /Chromium VI SW-846 7197
				✓250 ml g/ICP,GFAA Metals,inc.Total Chrome CLP
				✓1000 ml p/ Gamma Spec. RC-30
B01989	S	4-8-93	1210	✓250 ml g /Chromium VI SW-846 7197
				✓250 ml g /ICP, GFAA Metals, inc. Total Chrome CLP
				✓1000 ml p/ Gamma Spec. RC-30
B01991	S	4-8-93	1225	✓250 ml g / Chromium VI SW-846 7197
				✓250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				✓1000 ml p/Gamma Spec. RC-30
B01992	S	4-8-93	1240	✓250 ml g/ Chromium VI SW-846 7197
				✓250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
				✓1000 ml p/Gamma Spec. RC-30
	S			250 ml g / Chromiun VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p/Gamma Spec. RC-30
	S			250 ml g / Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30
	S	4-8-93		250 ml g /Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30
	S			250 ml g / Chromium VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc.Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30

*Type of Sample A = Air; DL = Drum Liquids; DS = Drum Solids; L = Liquid; O = Oil; S = Soil; SE = Sediment; SL = Sludge; SO = Solid; T = Tissue; W = Water; WI = Wipe; X = Other

Field Information SAF 93-045 SAMPLES ARE PRIORITY TURNAROUND

Special Handling and/or Storage SAMPLES TO BE KEPT AT 4 DEGREE C UNTIL ANALYSIS

Possible Sample Hazards UNKNOWN

PRIORITY TURNAROUND

A-6000-406 (06/91) WEF060

99C

SDG	7180		Client	Westinghouse Hanford
Contact	Dinkar P. Kharkar		Contract	MBH-SVV-069262

CASE NARRATIVE

1.0 GENERAL

Soil sample results from SAF #930045 ERA, Sodium Dichromate Location (TMA/Norcal Group 7180) are provided in this report. TMA/Norcal Group 7180 is comprised of the twelve samples listed on the Chain-of-Custody documents below which are identified as samples 1 through 12.

1.1 CHAINS-OF-CUSTODY

This report includes data from samples delivered under Chain-of-Custody documents Field Logbook No. WHC-N-205-22.

1.2 SAMPLE VOLUME

One L plastic bottles containing the samples were received for the analyses.

1.3 MISSING SAMPLES

All samples were accounted for in an undamaged condition.

1.4 HOLDING TIMES

Samples were collected on 4/08/93 and sample processing was initiated within 180 days of collection.

2.0 QUALITY CONTROL

The internal quality control consisted of one sample each of a laboratory control, a blank, and a replicate. All original analyses were performed with QC samples 7180-13 through 7180-15.

The QC samples were prepared and labelled by the quality control officer. Copies of The QC notebook pages are included in the data package.

2.1 LABORATORY CONTROL SAMPLES

The MDA's of the result for for all of the gamma nuclides met the RDL requirements. The LCS recoveries for all samples were satisfactory.

2.2 BLANKS

The MDA's of the results for all gamma nuclides met the RDL requirements.

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar P. Kharkar	Contract	MBH-SVV-069262

CASE NARRATIVE

2.1 LABORATORY CONTROL SAMPLES (cont'd)

2.3 REPLICATES

Results were satisfactory for all replicate analyses. The MDA's of the results for gamma nuclides for the replicate of sample number B01980 were higher than RDL due to the small aliquot available for analysis.

3.0 ANALYTICAL NOTES

3.1 Gamma Scan Analyses: Gamma scan analysis did not find positive concentration of gamma nuclides in any of the samples analyzed except for ^{137}Cs in sample numbers B01981, B01983, B01985, and B01987.

N304052-01

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01980

SDG 7180
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304052-01
Dept sample id 7180-001
Received 04/12/93
% moisture 0.3
Client sample id B01980
Matrix SOIL
Collected 04/08/93
Chain of custody id 004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	0.29	0.24				GAM
Iron 59	14596-12-4	U		0.03	0.05	U	GAM
Chromium 51	14392-02-0	U		0.2		U	GAM
Cobalt 60	10198-40-0	U		0.03	0.05	U	GAM
Zinc 65	13982-39-3	U		0.05		U	GAM
Ruthenium 106	13967-48-1	U		0.2		U	GAM
Cesium 134	13967-70-9	U		0.02		U	GAM
Cesium 137	10045-97-3	U		0.02	0.05	U	GAM
Cerium 144	14762-78-8	U		0.1		U	GAM
Europium 152	14683-23-9	U		0.04	0.1	U	GAM
Europium 154	15585-10-1	U		0.03	0.1	U	GAM
Radium 226	13982-63-3	0.11	0.035				GAM
Thorium 228	14274-82-9	0.18	0.041				GAM
Thorium 232	7440-29-1	U		0.2		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 04/16/93

N304052-02

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01981

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-02	Client sample id	B01981
Dept sample id	7180-002	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	9.3	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	14	1.2				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.06	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.07		U	GAM
Cesium 137	10045-97-3	0.16	0.057		0.05		GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.07	0.1	U	GAM
Radium 226	13982-63-3	0.66	0.11				GAM
Thorium 228	14274-82-9	0.82	0.070				GAM
Thorium 232	7440-29-1	1.0	0.27				GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-03

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01982

SDG 7180
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304052-03
Dept sample id 7180-003
Received 04/12/93
% moisture 8.3

Client sample id B01982
Matrix SOIL
Collected 04/08/93
Chain of custody id 004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	13	1.0				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.4		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.06		U	GAM
Cesium 137	10045-97-3	U		0.06	0.05	U	GAM
Cerium 144	14762-78-8	U		0.3		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.07	0.1	U	GAM
Radium 226	13982-63-3	0.70	0.13				GAM
Thorium 228	14274-82-9	1.2	0.10				GAM
Thorium 232	7440-29-1	0.75	0.20				GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 04/16/93

N304052-04

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01983

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-04	Client sample id	B01983
Dept sample id	7180-004	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	8.8	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	14	1.0				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.05		U	GAM
Cesium 137	10045-97-3	0.072	0.043		0.05		GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.09	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.53	0.10				GAM
Thorium 228	14274-82-9	0.68	0.057				GAM
Thorium 232	7440-29-1	0.87	0.21				GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-05

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01984

SDG 7180
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304052-05
Dept sample id 7180-005
Received 04/12/93
% moisture 7.8
Client sample id B01984
Matrix SOIL
Collected 04/08/93
Chain of custody id 004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	14	1.0				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.3		U	GAM
Cesium 134	13967-70-9	U		0.06		U	GAM
Cesium 137	10045-97-3	U		0.05	0.05	U	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.09	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.57	0.093				GAM
Thorium 228	14274-82-9	0.70	0.056				GAM
Thorium 232	7440-29-1	0.75	0.21				GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 04/16/93

N304052-06

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01985

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-06	Client sample id	B01985
Dept sample id	7180-006	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	10.6	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	15	1.0				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.4		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.07		U	GAM
Cesium 137	10045-97-3	0.091	0.057		0.05		GAM
Cerium 144	14762-78-8	U		0.3		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.54	0.086				GAM
Thorium 228	14274-82-9	1.0	0.10				GAM
Thorium 232	7440-29-1	0.67	0.24				GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-07

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01986

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-07	Client sample id	B01986
Dept sample id	7180-007	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	10.9	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	13	1.0				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.3		U	GAM
Cesium 134	13967-70-9	U		0.04		U	GAM
Cesium 137	10045-97-3	0.040	0.026		0.05	J	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.54	0.089				GAM
Thorium 228	14274-82-9	0.85	0.081				GAM
Thorium 232	7440-29-1	0.83	0.20				GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-08

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01987

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-08	Client sample id	B01987
Dept sample id	7180-008	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	9.9	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	14	1.1				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.05		U	GAM
Cesium 137	10045-97-3	0.053	0.044		0.05		GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.09	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.52	0.090				GAM
Thorium 228	14274-82-9	0.75	0.056				GAM
Thorium 232	7440-29-1	0.82	0.21				GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-09

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01988

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-09	Client sample id	B01988
Dept sample id	7180-009	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	7.0	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	13	0.92				GAM
Iron 59	14596-12-4	U		0.09	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.05		U	GAM
Cesium 137	10045-97-3	0.044	0.023		0.05	J	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.09	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.54	0.099				GAM
Thorium 228	14274-82-9	0.92	0.093				GAM
Thorium 232	7440-29-1	1.0	0.20				GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-10

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01989

SDG 7180
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304052-10
Dept sample id 7180-010
Received 04/12/93
% moisture 11.1
Client sample id B01989
Matrix SOIL
Collected 04/08/93
Chain of custody id 004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	14	1.0				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.04	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.3		U	GAM
Cesium 134	13967-70-9	U		0.05		U	GAM
Cesium 137	10045-97-3	0.049	0.041		0.05	J	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.52	0.11				GAM
Thorium 228	14274-82-9	0.94	0.084				GAM
Thorium 232	7440-29-1	0.62	0.17				GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 04/16/93

N304052-11

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01991

SDG 7180
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304052-11
Dept sample id 7180-011
Received 04/12/93
% moisture 7.5
Client sample id B01991
Matrix SOIL
Collected 04/08/93
Chain of custody id 004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	14	1.0				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.04	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.3		U	GAM
Cesium 134	13967-70-9	U		0.05		U	GAM
Cesium 137	10045-97-3	U		0.04	0.05	U	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.08	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.51	0.091				GAM
Thorium 228	14274-82-9	0.68	0.054				GAM
Thorium 232	7440-29-1	0.75	0.23				GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 04/16/93

N304052-12

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01992

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-12	Client sample id	B01992
Dept sample id	7180-012	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	8.0	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	13	1.0				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.04	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.06		U	GAM
Cesium 137	10045-97-3	U		0.05	0.05	U	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.58	0.098				GAM
Thorium 228	14274-82-9	1.0	0.093				GAM
Thorium 232	7440-29-1	0.84	0.22				GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

Westinghouse Hanford Company	CHAIN OF CUSTODY	004195

Custody Form Initiator S.M.STEELE

Company Contact R.C.SMITH/C.E.HEIDEN

Telephone 509-376-2640

Project Designation/Sampling Locations SAF#930045,ERA,SODIUM DICHROMATE SITE

Collection Date 4/8/93

Ice Chest No.

Field Logbook No. WHC-N-205-22

Bill of Lading/Airbill No.

Offsite Property No.

Method of Shipment BURLINGTON AIR EXPRESS OVERNIGHT

Shipped to TMA/NORCAL, RICHMOND CA.

Possible Sample Hazards/Remarks HAZARDS UNKNOWN, PRIORITY TURNAROUND, RCRA PROTOCOL, SEE SAMPLE ANALYSIS REQUEST FOR INDIVIDUAL BOTTLES AND ANALYSIS.

Sample Identification

B01980 (3)BOTTLES
B01981 (3)BOTTLES
B01982 (3)BOTTLES
B01983 (3)BOTTLES
B01984 (3)BOTTLES
B01985 (3)BOTTLES
B01986 (3)BOTTLES
B01987 (3)BOTTLES
B01988 (3)BOTTLES
B01989 (3)BOTTLES
B01991 (3)BOTTLES
B01992 (3)BOTTLES

PRIORITY TURNAROUND

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
SM Steele SMSteele	4-8-93	1000	[illegible]	4-12-93 *	

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

* Received 4-10-93 ; opened 4-12-93 @ TMA/NORCAL - KB

A-6000-407 (12/92) WEF061

COC# 004195 pg 1 of 2

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector S.M.STEELE Date 4/-8-93

Company Contact R.C.SMITH/C.E.HEIDEN Telephone (509) 376-2640

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B01980	S	4-8-93	0955	✓250 ml g /Chromium VI SW-846 7197
				✓250 ml g/ICP,GFAA Metals,inc.Total Chrome CLP
				✓1000 ml p/ Gamma Spec. RC-30
B01981	S	4-8-93	1025	✓250 ml g /Chromium VI SW-846 7197
				✓250 ml g /ICP, GFAA Metals, inc. Total Chrome CLP
				✓1000 ml p/ Gamma Spec. RC-30
B01982	S	4-8-93	1035	✓250 ml g / Chromium VI SW-846 7197
				✓250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				✓1000 ml p/Gamma Spec. RC-30
B01983	S	4-8-93	1105	✓250 ml g/ Chromium VI SW-846 7197
				✓250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
				✓1000 ml p/Gamma Spec. RC-30
B01984	S	4-8-93	1115	✓250 ml g / Chromiun VI SW-846 7197
				✓250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				✓1000 ml p/Gamma Spec. RC-30
B01985	S	4-8-93	1135	✓250 ml g / Chromium VI SW-846 7197
				✓250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
				✓1000 ml p / Gamma Spec. RC-30
B01986	S	4-8-93	1140	✓250 ml g /Chromium VI SW-846 7197
				✓250 ml g/ICP,GFAA Metals, inc. Total Chrome CLP
				✓1000 ml p / Gamma Spec. RC-30
B01987	S	4-8-93	1155	✓250 ml g / Chromium VI SW-846 7197
				✓250 ml g /ICP,GFAA Metals, inc.Total Chrome CLP
				✓1000 ml p / Gamma Spec. RC-30

*Type of Sample

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

Field Information SAF 93-045 SAMPLES ARE PRIORITY TURNAROUND

Special Handling and/or Storage SAMPLES TO BE KEPT AT 4 DEGREE C UNTIL ANALYSIS

Possible Sample Hazards UNKNOWN

PRIORITY TURNAROUND

A-6000-406 (06/91) WEF060

COC# 004195 pg 2 of 2

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector S.M.STEELE Date 4-8-93

Company Contact R.C.SMITH/C.E.HEIDEN Telephone (509) 376-2640

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B01988	S	4-8-93	1210	✓250 ml g /Chromium VI SW-846 7197
				✓250 ml g/ICP,GFAA Metals,inc.Total Chrome CLP
				✓1000 ml p/ Gamma Spec. RC-30
B01989	S	4-8-93	1210	✓250 ml g /Chromium VI SW-846 7197
				✓250 ml g /ICP, GFAA Metals, inc. Total Chrome CLP
				✓1000 ml p/ Gamma Spec. RC-30
B01991	S	4-8-93	1225	✓250 ml g / Chromium VI SW-846 7197
				✓250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				✓1000 ml p/Gamma Spec. RC-30
B01992	S	4-8-93	1240	✓250 ml g/ Chromium VI SW-846 7197
				✓250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
				✓1000 ml p/Gamma Spec. RC-30
	S			250 ml g / Chromiun VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p/Gamma Spec. RC-30
	S			250 ml g / Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc.Total Chrome CLP
		SMS 4-8-93		1000 ml p / Gamma Spec. RC-30
	S			250 ml g /Chromium VI SW-846 7197
				250 ml g/ICP,GFAA Metals, inc. Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30
	S			250 ml g / Chromium VI SW-846 7197
				250 ml g /ICP,GFAA Metals, inc.Total Chrome CLP
				1000 ml p / Gamma Spec. RC-30

*Type of Sample

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

Field Information SAF 93-045 SAMPLES ARE PRIORITY TURNAROUND

Special Handling and/or Storage SAMPLES TO BE KEPT AT 4 DEGREE C UNTIL ANALYSIS

Possible Sample Hazards UNKNOWN

PRIORITY TURNAROUND

A-6000-406 (06/91) WEF060

Westinghouse Hanford Company

NONCONFORMANCE REPORT

1. Page 1 of 1

2. Preprinted No. 050040

QA Log No. EQA-93-069

3. P. O., W. O., or Job Control No.	4. System/End Use	5. Item/Material	6. Dwg./Spec./Other No.	7. Rev
N/A	ERA	SAMPLES	RCJ 4/12/93 ~~B088~~ 801980	N/A

8. Program/Project/Other	9. Safety Class	10. ASME Code Items
SODIUM DICHROMATE BARREL ERA / 93-045	N/A	☐ Yes ☒ No (If yes, notify authorized inspector)

11. Supplier Name/Address	12. Notification of Potential Occurence Require
ENVIRONMENTAL FIELD SAMPLING SERVICES	☐ Yes ☒ No

13. Code: Lot/Heat/Serial	14. Lot Size	15. Sample	16. Qty. Acc.	17. Inspection Criteria
N/A	1	1	0	☐ Dwg. ☐ Spec. ☐ Insp. Plan ☒ Other EII 510, Sec 6.1

18. Item	19. Description of Nonconformance (list serial no. where applicable)	22. Disposition, Justification, and Instructions
	HELS NUMBER 801980 WAS ASSIGNED TO TWO DISTINCT SAMPLES. EACH SAMPLE MUST BE ASSIGNED A UNIQUE HELS SAMPLE NUMBER.	INTERIM DISPOSITION: ENVIRONMENTAL DATA MANAGEMENT shall review this NON-CONFORMING CONDITION. If practical, the Samples involved shall be reassigned unique HELS numbers provided TRACEABILITY can be MAINTAINED. EDM shall provide EMHR Q.A. A letter identifying what will be or has been done regarding these sample numbers. FINAL DISPOSITION: USE AS IS (81360-93-TCL-011) attached. PJ Valeich 7-19-93 (P.J. Valeich) Gary L Corrigan 7-19-93 (G.S. Corrigan)

20. Originator's Signature	Date	23. Design Document Change Required?
R.C. SMITH RC Smith	4/12/93	☐ Yes, Doc. No. ☒ No

21. Cognizant QA Manager's Signature	Date	24. Corrective Action Required?
JK Dunnum	4/12/93	☐ Yes, No. ☒ No

Disp. App.	25. Cognizant Engineer	Date	26. Technical Rep.	Date	Signature/Org.	Date
	PJ VALEICH PJ Valeich	4/23/93	N/A		N/A	
	QA Engineer	Date	Signature/Org.	Date	Signature/Org.	Date
	~~R.L. HAND~~ G.S. Corrigan	4-23-93				

Close	27.
	Accept ✓ (1) Reject N/A Follow on NCR N/A — Gary Corrigan (G.S. Corrigan) 7-19- QA/C Personnel Date

A-7310-104 (10/9

Westinghouse Hanford Company | **Internal Memo**

From: Environmental Data Management 81360-93-TCL-011
Phone: 376-5889
Date: July 13, 1993
Subject: RESOLUTION NCR NUMBER 050040 SAMPLE NUMBERS B01980 & B01980A

To: G.C. Henckel H6-04
P.J. Valcich H6-02

cc: B.M. Colley H4-19
G.S. Corrigan H4-16
T.L. Bennington H4-16
R.D. Fox H6-07
J.G. Paetel H4-23
K.N. Pool H4-23
M.R. Schwab H6-07
R.C. Smith H4-23
R.T. Winward H4-16
wpdata\terri\81360-93-tcl-011

Nonconformance Report 050040 dated 04/12/93 R.C. Smith, Chain-of-Custody 003650 dated 04/06/93, and Chain-of-Custody 004195 dated 04/12/93.

DESCRIPTION OF PROBLEM: A soil sample for Project 100-IU-4 was collected on 04/02/93 and assigned HEIS sample number B01980. Another soil sample for the same project was collected on 04/08/93 and inadvertently assigned the same sample number B01980. Both of the samples were reported on separate Sample Analysis Request forms and Chains-of-Custody.

The sample collected on 04/02/93 was received by the TMA/Norcal laboratory on 04/06/93. The sample collected on 04/08/93 was assigned an "interim" HEIS number of B01980A. This sample was received by the TMA/Norcal Laboratory on 04/10/93.

Traceability of samples was maintained by the separate Sample Analysis Request forms and Chains-of-Custody. Traceability was also maintained due to the fact the second sample was taken after the date the Laboratory received the first sample.

RECOMMENDED SOLUTION: HEIS has assigned a new Sample Number as per Desk Instruction 5.10. Revise the following to reflect the Sample Number changes: SamTrac, Chain-of-Custody, Sample Analysis Request forms.

PREVIOUSLY ASSIGNED	NEWLY ASSIGNED
B01980A	B08XH9

Terri C. Longwell System Analyst
Environmental Data Management

Briana M. Colley Data Management Admin.
Hanford Analytical Services Management

QUALITY ASSURANCE

NONCONFORMANCE REPORT DISTRIBUTION

1. FROM:	2. MSIN:	3. DATE:
Environmental Quality Assurance	H4-16	April 23, 1993

4. NCR No.:	5. Initiation, Disposition, or Closure (I, D, C):
050040/EQA-93-069	I C

	6. TO:	MSIN	I	D	C
Cognizant Engineer	P. J. Valcich	H6-04			
Cognizant Quality Engineer	G. S. Corrigan	H4-16			
Originator	R. C. Smith	H4-23			
Q. A. Manager	NA	NA			
Cognizant QE Manager	T. L. Bennington	H4-16			
Facility Manager	NA	NA			
Engineering Records	L. M. McDaniel	H6-08			
Safety	NA	NA			
QSDM	D. P. Trott	L4-86			
Other: JCS Package	NA	NA			
Q. C.	NA	NA			
Buyer (Procurement)	S. M. Steele	S3-90			
P.O. File (Procurement)	M. R. Schwab	H6-07			
Vendor File (Procurement)	B. M. Colley	H4-19			
	EQA File	H4-16			
	P. H. Butcher	H6-06			
	J. H. Kessner	H4-23			

7. QST Codes

Subject:	Cause:	Contr. Factor:	PPG:
AD-08	PN-002		NA

8. Responsible Action Party:	Org Code:
P. J. Valcich	81351

A-6000-816 (09/91)

VALIDATION SUMMARY

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

1/6/94 WHC Memo

SAMPLE NUMBER: B08XH9 ~~B01980~~

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-045-050 SAS No.: SDG No.: ~~B01980~~ B08XH

Matrix (soil/water): SOIL Lab Sample ID: 04137-01S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 93.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	50.1			P
7440-36-0	Antimony	3.8	U	NJ	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	0.30	~~B~~	U	P
7440-41-7	Beryllium	0.06	U		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	19.3	U		P
7440-47-3	Chromium	0.68	U		P
7440-48-4	Cobalt	0.60	U		P
7440-50-8	Copper	2.3	~~B~~	U	P
7439-89-6	Iron	256			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	6.0	~~B~~	U	P
7439-96-5	Manganese	0.25	~~B~~	U	P
7439-97-6	Mercury				NR
7440-02-0	Nickel	0.86	U		P
7440-09-7	Potassium	23.8	~~B~~	U	P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.68	U		P
7440-23-5	Sodium	15.6	~~B~~	U	P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	0.44	~~B~~	U	P
7440-66-6	Zinc	2.9	~~B~~	U	P
	Cyanide				NR

Color Before: WHITE Clarity Before: Texture: FINE

Color After: WHITE Clarity After: Artifacts:

Comments: 1/21/94 MH

02

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

WHC Memo 1/6/94

SAMPLE NUMBER: B02XH9 ~~B01980~~

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 05052-01S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	0.45	U		F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	0.33	B		F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.64	U	J	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.50	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: WHITE Clarity Before: Texture: COARSE

Color After: WHITE Clarity After: Artifacts:

Comments:

002

FORM I - IN 1/20/94 MH ILM02.1

SAMPLE NUMBER:

B01981

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-02S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 91.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8360			P
7440-36-0	Antimony	3.9	U	NJ	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	142			P
7440-41-7	Beryllium	0.30	B	U	P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	4320			P
7440-47-3	Chromium	29.6			P
7440-48-4	Cobalt	18.3			P
7440-50-8	Copper	144			P
7439-89-6	Iron	61800			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4400			P
7439-96-5	Manganese	592			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	42.2			P
7440-09-7	Potassium	1690			P
7782-49-2	Selenium				NR
7440-22-4	Silver	4.5			P
7440-23-5	Sodium	910	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	37.6			P
7440-66-6	Zinc	247			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS, METAL

1/30/94 NV

03

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01981

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 05052-02S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 95.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.1			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	58.7			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.67	U	WJ	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.53	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

003

FORM I - IN 1/20/94 MH ILM02.1

SAMPLE NUMBER:

B01982

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-03S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 91.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8160			P
7440-36-0	Antimony	3.9	U	NJ	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	89.3			P
7440-41-7	Beryllium	0.32	~~B~~ U		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	4450			P
7440-47-3	Chromium	16.4			P
7440-48-4	Cobalt	9.2	B		P
7440-50-8	Copper	31.4			P
7439-89-6	Iron	20300			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4670			P
7439-96-5	Manganese	345			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	12.8			P
7440-09-7	Potassium	1730			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.85	B		P
7440-23-5	Sodium	196	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	40.8			P
7440-66-6	Zinc	90.3			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

11/21/94 MH

04

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01982

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

latrix (soil/water): SOIL Lab Sample ID: 05052-03S

.evel (low/med): LOW Date Received: 04/13/93

; Solids: 96.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.5			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	17.5			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.90	B	S	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.51	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

004

SAMPLE NUMBER:

B01983

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-04S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 91.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8010			P
7440-36-0	Antimony	3.8	U	NJ	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	89.2			P
7440-41-7	Beryllium	0.28	~~B~~ U		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	5890			P
7440-47-3	Chromium	16.8			P
7440-48-4	Cobalt	8.7	B		P
7440-50-8	Copper	37.5			P
7439-89-6	Iron	21200			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4550			P
7439-96-5	Manganese	323			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	13.3			P
7440-09-7	Potassium	1560			P
7782-49-2	Selenium				NR
7440-22-4	Silver	1.3	B		P
7440-23-5	Sodium	382	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	40.5			P
7440-66-6	Zinc	145			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

1/21/94 MH

05

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01983

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 05052-04S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 96.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.5			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	18.3			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.67	U	J	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.53	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

005

SAMPLE NUMBER:

B01984

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-056

Level (low/med): LOW Date Received: 04/13/93

% Solids: 91.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7070			P
7440-36-0	Antimony	3.9	U	NJ	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	72.0			P
7440-41-7	Beryllium	0.27	B	U	P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	4550			P
7440-47-3	Chromium	16.5			P
7440-48-4	Cobalt	8.0	B		P
7440-50-8	Copper	17.9		U	P
7439-89-6	Iron	17600			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4310			P
7439-96-5	Manganese	277			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	10.4			P
7440-09-7	Potassium	1520			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.86	B		P
7440-23-5	Sodium	236	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	37.1			P
7440-66-6	Zinc	61.6			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

1/21/94 MH

06

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01984

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 05052-05S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 97.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.1			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	9.1			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.67	U	J	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.53	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

006

1/20/94 MH

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01985

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0103

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-06S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 89.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7800			P
7440-36-0	Antimony	4.1	U	NJ	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	81.5			P
7440-41-7	Beryllium	0.34	B	U	P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	4570			P
7440-47-3	Chromium	16.2			P
7440-48-4	Cobalt	8.6	B		P
7440-50-8	Copper	20.7			P
7439-89-6	Iron	19700			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4340			P
7439-96-5	Manganese	307			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	11.3			P
7440-09-7	Potassium	1590			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.73	B		P
7440-23-5	Sodium	263	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	39.9			P
7440-66-6	Zinc	83.4			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS, ROOTS

1/21/94 MH

07

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01985

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 05052-06S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 94.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.8			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	11.7			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.69	U	J	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.55	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

007

1/20/94 MH

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

801986

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: 801980

Matrix (soil/water): SOIL Lab Sample ID: 04137-07S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 89.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6930			P
7440-36-0	Antimony	3.9	U	NJ	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	75.8			P
7440-41-7	Beryllium	0.30	B	U	P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	4470			P
7440-47-3	Chromium	11.6			P
7440-48-4	Cobalt	7.6	B		P
7440-50-8	Copper	15.0		U	P
7439-89-6	Iron	16100			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4120			P
7439-96-5	Manganese	283			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	9.6			P
7440-09-7	Potassium	1540			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.68	U		P
7440-23-5	Sodium	254	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	35.3			P
7440-66-6	Zinc	50.7			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

08

FORM I - IN 1/21/94 MH ILM02.1

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01986

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 05052-07S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 94.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.5			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	8.2			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.66	U	J	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.52	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

008

FORM I - IN 1/20/94 MH ILM02.1

SAMPLE NUMBER:

B01987

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-08S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 90.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6660			P
7440-36-0	Antimony	3.8	U	NJ	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	68.3			P
7440-41-7	Beryllium	0.31	B	U	P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	4460			P
7440-47-3	Chromium	15.6			P
7440-48-4	Cobalt	7.5	B		P
7440-50-8	Copper	13.0		U	P
7439-89-6	Iron	16000			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4150			P
7439-96-5	Manganese	269			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	10.1			P
7440-09-7	Potassium	1470			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.67	U		P
7440-23-5	Sodium	195	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	34.9			P
7440-66-6	Zinc	46.0			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

09

FORM I - IN 11/21/94 MH ILM02.1

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B01987

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 05052-08S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 94.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.3			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	16.8			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.69	U	J	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.55	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

009

FORM I - IN 11/20/94 MH ILM02.1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01988

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-099

Level (low/med): LOW Date Received: 04/13/93

% Solids: 89.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7170			P
7440-36-0	Antimony	4.1	U	NJ	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	69.0			P
7440-41-7	Beryllium	0.26	~~B~~	U	P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	7030			P
7440-47-3	Chromium	17.1			P
7440-48-4	Cobalt	7.8	B		P
7440-50-8	Copper	13.8		U	P
7439-89-6	Iron	16800			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4300			P
7439-96-5	Manganese	269			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	10.3			P
7440-09-7	Potassium	1560			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.73	U		P
7440-23-5	Sodium	213	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	38.5			P
7440-66-6	Zinc	38.1			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

10

FORM I - IN 1/21/94 MH ILM02.1

SAMPLE NUMBER:

B01988

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 05052-09S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 95.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.3			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	5.0			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.65	U	J	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.51	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

010

FORM I - IN 1/20/94 MH ILM02.1

SAMPLE NUMBER:

B01989

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-105

Level (low/med): LOW Date Received: 04/13/93

% Solids: 89.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7620			P
7440-36-0	Antimony	4.1	U	NJ	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	77.1			P
7440-41-7	Beryllium	0.28	B	U	P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	4780			P
7440-47-3	Chromium	17.7			P
7440-48-4	Cobalt	7.8	B		P
7440-50-8	Copper	12.7		U	P
7439-89-6	Iron	17300			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4450			P
7439-96-5	Manganese	279			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	11.2			P
7440-09-7	Potassium	1620			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.72	U		P
7440-23-5	Sodium	227	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	38.1			P
7440-66-6	Zinc	38.1			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

11

FORM I - IN 1/21/94 MH ILM02.1

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01989

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

ab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

atrix (soil/water): SOIL Lab Sample ID: 05052-10S

evel (low/med): LOW Date Received: 04/13/93

Solids: 90.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.4			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	5.2			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.71	U	J	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.56	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

011

FORM I - IN 1/20/94 MH ILM02.1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01991

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-11S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 92.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6120			P
7440-36-0	Antimony	4.0	U	N J	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	61.3			P
7440-41-7	Beryllium	0.26	B	U	P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	5200			P
7440-47-3	Chromium	10.0			P
7440-48-4	Cobalt	7.4	B		P
7440-50-8	Copper	11.9		U	P
7439-89-6	Iron	15200			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4290			P
7439-96-5	Manganese	250			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	10.2			P
7440-09-7	Potassium	1210			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.71	U		P
7440-23-5	Sodium	202	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	35.8			P
7440-66-6	Zinc	35.1			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

1/21/94 MH

12

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01991

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 05052-11S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 93.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.2			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	3.4			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.68	U	J	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.53	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

012

SAMPLE NUMBER:

B01992

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 04137-12S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 92.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7720			P
7440-36-0	Antimony	3.9	U	N J	P
7440-38-2	Arsenic				NR
7440-39-3	Barium	75.0			P
7440-41-7	Beryllium	0.32	B	U	P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	5190			P
7440-47-3	Chromium	12.3			P
7440-48-4	Cobalt	8.3	B		P
7440-50-8	Copper	12.1		U	P
7439-89-6	Iron	18200			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4310			P
7439-96-5	Manganese	286			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	10.5			P
7440-09-7	Potassium	1640			P
7782-49-2	Selenium				NR
7440-22-4	Silver	0.70	U		P
7440-23-5	Sodium	270	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	40.0			P
7440-66-6	Zinc	36.4			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

13

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01992

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-04-050SAS No.: SDG No.: B01980

Matrix (soil/water): SOIL Lab Sample ID: 05052-12S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 92.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	2.2			F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	4.2			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.68	U	J	F
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.53	U		F
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

013

1/20/94 MH

Received: 04/13/93 WHC-memo 1/6/94 Results by Sample

1/21/94 fio

SAMPLE ID B01980 B08XH9 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL
CRHEXS <0.50 = 0.54 UJ
mg/kg

SAMPLE ID B01981 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL
CRHEXS <0.50 = 0.55 UJ
mg/kg

SAMPLE ID B01982 SAMPLE # 03 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL
CRHEXS <0.50 = 0.54 UJ
mg/kg

SAMPLE ID B01983 SAMPLE # 04 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL
CRHEXS <0.50 = 0.55 UJ
mg/kg

SAMPLE ID B01984 SAMPLE # 05 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL
CRHEXS <0.50 = 0.54 UJ
mg/kg

SAMPLE ID B01985 SAMPLE # 06 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL
CRHEXS <0.50 = 0.56 UJ
mg/kg

SAMPLE ID B01986 SAMPLE # 07 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL
CRHEXS <0.50 = 0.56 UJ
mg/kg

Received: 04/13/93 Results by Sample

SAMPLE ID B01987 SAMPLE # 08 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50 = 0.55 UJ
mg/kg

1/21/94 JM

SAMPLE ID B01988 SAMPLE # 09 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50 = 0.56 UJ
mg/kg

SAMPLE ID B01989 SAMPLE # 10 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50 0.56 UJ
mg/kg

SAMPLE ID B01991 SAMPLE # 11 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50 = 0.54 UJ
mg/kg

SAMPLE ID B01992 SAMPLE # 12 FRACTIONS: A
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50 = 0.54 UJ
mg/kg

SAMPLE ID B01992 DUPL SAMPLE # 12 FRACTIONS: B
Date & Time Collected 04/08/93 Category SOIL

CRHEXS <0.50 = 0.54 UJ
mg/kg

SAMPLE ID B01992 SPIKE SAMPLE # 12 FRACTIONS: C
Date & Time Collected 04/08/93 Category SOIL

CRHEXS 0.50 = 0.54
mg/kg

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc. assumes no liability [illegible] associated submitted invoices is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of the intended [illegible] was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and counseling fees if our services are subpoenaed by litigants or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and [illegible] parameters. Samples are analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes [illegible] insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if [illegible]

TMA Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc. 300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-720
1-800-4 LAB TEST FAX (617) 890-3883

B08XH9 (16/94 menin)

N304052-01

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

~~B01980~~

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-01	Client sample id	B01980
Dept sample id	7180-001	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	0.3	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES						R	
Potassium 40	13966-00-2	0.29	0.24				GAM
Iron 59	14596-12-4	U		0.03	0.05	U	GAM
Chromium 51	14392-02-0	U		0.2		U	GAM
Cobalt 60	10198-40-0	U		0.03	0.05	U	GAM
Zinc 65	13982-39-3	U		0.05		U	GAM
Ruthenium 106	13967-48-1	U		0.2		U	GAM
Cesium 134	13967-70-9	U		0.02		U	GAM
Cesium 137	10045-97-3	U		0.02	0.05	U	GAM
Cerium 144	14762-78-8	U		0.1		U	GAM
Europium 152	14683-23-9	U		0.04	0.1	U	GAM
Europium 154	15585-10-1	U		0.03	0.1	U	GAM
Radium 226	13982-63-3	0.11	0.035				GAM
Thorium 228	14274-82-9	0.18	0.041				GAM
Thorium 232	7440-29-1	U		0.2		U	GAM

RJS
12.30.93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-02

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01981

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-02	Client sample id	B01981
Dept sample id	7180-002	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	9.3	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES						R	
Potassium 40	13966-00-2	14	1.2				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.06	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.07		U	GAM
Cesium 137	10045-97-3	0.16	0.057		0.05		GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.07	0.1	U	GAM
Radium 226	13982-63-3	0.66	0.11				GAM
Thorium 228	14274-82-9	0.82	0.070				GAM
Thorium 232	7440-29-1	1.0	0.27				GAM

RJS
12-30-93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-03

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01982

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-03	Client sample id	B01982
Dept sample id	7180-003	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	8.3	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	13	1.0			R	GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.4		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.06		U	GAM
Cesium 137	10045-97-3	U		0.06	0.05	U	GAM
Cerium 144	14762-78-8	U		0.3		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.07	0.1	U	GAM
Radium 226	13982-63-3	0.70	0.13				GAM
Thorium 228	14274-82-9	1.2	0.10				GAM
Thorium 232	7440-29-1	0.75	0.20				GAM

RJS
12-30-93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-04

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01983

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-04	Client sample id	B01983
Dept sample id	7180-004	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	8.8	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	14	1.0			R	GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.05		U	GAM
Cesium 137	10045-97-3	0.072	0.043		0.05		GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.09	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.53	0.10				GAM
Thorium 228	14274-82-9	0.68	0.057				GAM
Thorium 232	7440-29-1	0.87	0.21				GAM

RJS
12.30.93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-05

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01984

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-05	Client sample id	B01984
Dept sample id	7180-005	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	7.8	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	14	1.0			R	GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.3		U	GAM
Cesium 134	13967-70-9	U		0.06		U	GAM
Cesium 137	10045-97-3	U		0.05	0.05	U	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.09	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.57	0.093				GAM
Thorium 228	14274-82-9	0.70	0.056				GAM
Thorium 232	7440-29-1	0.75	0.21				GAM

RJS
12.30.93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-06

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01985

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-06	Client sample id	B01985
Dept sample id	7180-006	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	10.6	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	15	1.0			R	GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.4		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.07		U	GAM
Cesium 137	10045-97-3	0.091	0.057		0.05		GAM
Cerium 144	14762-78-8	U		0.3		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.54	0.086				GAM
Thorium 228	14274-82-9	1.0	0.10				GAM
Thorium 232	7440-29-1	0.67	0.24				GAM

RJS
12.30.93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-07

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01986

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-07	Client sample id	B01986
Dept sample id	7180-007	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	10.9	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	13	1.0			R	GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.3		U	GAM
Cesium 134	13967-70-9	U		0.04		U	GAM
Cesium 137	10045-97-3	0.040	0.026		0.05	J	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.54	0.089				GAM
Thorium 228	14274-82-9	0.85	0.081				GAM
Thorium 232	7440-29-1	0.83	0.20				GAM

RJS
12·30·93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-08

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01987

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-08	Client sample id	B01987
Dept sample id	7180-008	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	9.9	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	14	1.1			R	GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.05		U	GAM
Cesium 137	10045-97-3	0.053	0.044		0.05		GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.09	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.52	0.090				GAM
Thorium 228	14274-82-9	0.75	0.056				GAM
Thorium 232	7440-29-1	0.82	0.21				GAM

RJS
12-30-93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-09

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01988

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-09	Client sample id	B01988
Dept sample id	7180-009	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	7.0	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES						R	
Potassium 40	13966-00-2	13	0.92				GAM
Iron 59	14596-12-4	U		0.09	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.05	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.05		U	GAM
Cesium 137	10045-97-3	0.044	0.023		0.05	J	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.09	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.54	0.099				GAM
Thorium 228	14274-82-9	0.92	0.093				GAM
Thorium 232	7440-29-1	1.0	0.20				GAM

RJS
12-30-93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-10

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01989

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-10	Client sample id	B01989
Dept sample id	7180-010	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	11.1	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES						R	
Potassium 40	13966-00-2	14	1.0				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.04	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.3		U	GAM
Cesium 134	13967-70-9	U		0.05		U	GAM
Cesium 137	10045-97-3	0.049	0.041		0.05	J	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.52	0.11				GAM
Thorium 228	14274-82-9	0.94	0.084				GAM
Thorium 232	7440-29-1	0.62	0.17				GAM

RJS
12.30.93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-11

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01991

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-11	Client sample id	B01991
Dept sample id	7180-011	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	7.5	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES						R	
Potassium 40	13966-00-2	14	1.0				GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.04	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.3		U	GAM
Cesium 134	13967-70-9	U		0.05		U	GAM
Cesium 137	10045-97-3	U		0.04	0.05	U	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.08	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.51	0.091				GAM
Thorium 228	14274-82-9	0.68	0.054				GAM
Thorium 232	7440-29-1	0.75	0.23				GAM

RJS
12.30.93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93

N304052-12

TMA NORCAL
REPORTING GROUP 7180

DATA SHEET

B01992

SDG	7180	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304052-12	Client sample id	B01992
Dept sample id	7180-012	Matrix	SOIL
Received	04/12/93	Collected	04/08/93
% moisture	8.0	Chain of custody id	004195

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	13	1.0			R	GAM
Iron 59	14596-12-4	U		0.1	0.05	U	GAM
Chromium 51	14392-02-0	U		0.3		U	GAM
Cobalt 60	10198-40-0	U		0.04	0.05	U	GAM
Zinc 65	13982-39-3	U		0.1		U	GAM
Ruthenium 106	13967-48-1	U		0.4		U	GAM
Cesium 134	13967-70-9	U		0.06		U	GAM
Cesium 137	10045-97-3	U		0.05	0.05	U	GAM
Cerium 144	14762-78-8	U		0.2		U	GAM
Europium 152	14683-23-9	U		0.1	0.1	U	GAM
Europium 154	15585-10-1	U		0.06	0.1	U	GAM
Radium 226	13982-63-3	0.58	0.098				GAM
Thorium 228	14274-82-9	1.0	0.093				GAM
Thorium 232	7440-29-1	0.84	0.22				GAM

RJS
12.20.93

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	04/16/93