START 9713506.2235

B09BR4-TMA-1641

TMA

0045866

RECORD COPY

JAN 1994 RECEIVED 30LA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS
Case No. 11-042
(TMA/ARLI W.O. No. A3-11-042)

METALS
Case No. N3-11-058
(TMA/Skinner & Sherman W.O. No. S3-11-107)

January 7, 1994

NOV 1996 RECEIVED EDMC

TMA Master Work Order N3-11-058

7/8/96 KDC

9713506.2236

OFFICE OF SAMPLE MANAGEMENT

RECORD OF DISPOSITION

ROD-94-0003
Record of Disposition No.

DATE: 1/6/94	LABORATORY: TMA
PROJECT TITLE/NO.: 300-FF-1 Soil Wash	NCR NO.: N/A

SAMPLE IDENTIFICATION NUMBERS:

B09BS0

DESCRIPTION OF EVENT:

The sample identification number required clarification for TMA.

DISPOSITION OF SAMPLES:

Report the sample identification number as B09BS0 in the data deliverables.

APPROVAL SIGNATURES:

W. E. Strohben/ W. E. Strohben — 1/6/94
OSM Project Coordinator (Print/Sign Name) — Date

F. W. Gustafson/ F. W. Gustafson — 1/10/94
Technical Representative (Print/Sign Name) — Date

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

9713506.2237

OFFICE OF SAMPLE MANAGEMENT

RECORD OF DISPOSITION

ROD-94-0028
Record of Disposition No.

DATE: 2/15/94	LABORATORY: TMA
PROJECT TITLE/NO.: 300-FF-1/SAF# 93-321	NCR NO.: N/A

SAMPLE IDENTIFICATION NUMBERS:

B09BR4, B09BR5, B09BR6, B09BR7, B09BR8, B09BR9 and B09BS0

DESCRIPTION OF EVENT:

The Technical Representative, R. D. Belden, requested that the samples be analyzed for Isotopic Uranium in addition to the analyses previously requested on the chain-of-custody/sample analysis request. Sufficient sample volume was determined to remain for the samples and contain the correct preservation (nitric acid).

DISPOSITION OF SAMPLES:

With consent from the Technical Representative, analyze the above samples for Isotopic Uranium on a priority basis.

Priority Turnaround requirements are to begin on 2/11/94.

APPROVAL SIGNATURES:

W. E. Strohben/ W. E. Strohben — 2/15/94
OSM Project Coordinator (Print/Sign Name) — Date

R. D. Belden/ R. D. Belden — 2/17/94
Technical Representative (Print/Sign Name) — Date

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

9713506.2238

000002

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # M3-11-058

RCVD: 11/09/93 DUE: 12/14/93 11/09/93 15:58:55 KEEP: 12/14/94 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY	
01A-W	B09BR6	ARLI	WH018	WH019
02A-W	B09BR7	ARLI	WH018	WH019
03A-W	B09BR8	ARLI	WH018	WH019
04A-W	B09BR9	ARLI	WH018	WH019
05A-W	B09BS0	ARLI	WH018	WH019
05C-W	B09BS0 MS	ARLI	WH018	WH019
05D-W	B09BS0 MSD	ARLI	WH018	WH019
06A-W	B09BW5	ARLI	WH018	
07A-W	B09BW8	ARLI	WH018	

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
[illegible]	11-9-93	ARLI	11-9-93	C. Harris	11/10/93

9713596.2239

000002A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 300-FF-1

Collection Date 11/4/93

Ice Chest No. GAB

Field Logbook No. NA

Bill of Lading/Airbill No. 2519010373

Offsite Property No. W44-0-0001-38

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09BR6

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/MERCURY (HNO3 pH<2.0)
~~1~~, 1L, P, WATER; GAMMA SCAN, Cs-137, Co-60 (HNO3 pH<2)

B09BW5

~~3~~, 40ml, Gs, WATER; CLP-VOA

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	11/4/93	1200	L. Sweeney / L. Sweeney	11-8-93	0800
L. Sweeney / L. Sweeney	11-8-93	1100	[illegible] / H. Narciso	11-9-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 11/4/93 at 1200

A-6000-407 (12/92) WEF061

9713506.2290

0000D2E

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON, K. TRAPP Date Sampled 11/4/93 Time 1000 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09B R6	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB'S/PEST (pH 5-9)
	1; 1L; P	WATER	CLP-ICP METALS; ARSENIC; Pb; Hg (HNO3 pH<2)
	1; 1L; P	WATER	GAMMA SCAN; Cs-137; Co-60 (HNO3 pH<2)
B09B W5	3; 40mL; Gs	WATER	CLP-VOA

Field Information** TASK #: 93-321 BOL #: 25190103 73 OPC #: 1W94-0-0001-38

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CENTER TECHNICIAN Date 11-09-93

Analysis Required

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

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

A-6000-406(05/90)

9713506.2291

DDDDD2C

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 300-FF-1

Collection Date 11/4/93

Ice Chest No. 3PHL-A

Field Logbook No. NA

Bill of Lading/Airbill No. 2519010373

Offsite Property No. W94-0-0001-38

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09BR7

~~3,~~ 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1,~~ 2L & ~~1,~~ 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1,~~ 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/MERCURY (HNO3 pH<2.0)
~~1,~~ 1L, P, WATER; GAMMA SCAN, Cs-137, Co-60 (HNO3 pH<2)

~~B09B~~

~~3, 40ml, Gs, WATER; CLP-VOA~~ KT 11/4/93

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

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	11/4/93	1200	L Sweeney / L Sweeney	11-8-93	0800
L Sweeney / L Sweeney	11-8-93	1100	[illegible] A. Narciso	11-09-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 11/4/93 at 1200

A-6000-407 (12/92) WEF061

9715506.2232 0000020

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON, K. TRAPP Date Sampled 11/4/93 Time 1000 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09B A7	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB'S/PEST (pH 5-9)
	1; 1L; P	WATER	CLP-ICP METALS; ARSENIC; Pb; Hg (HNO3 pH<2)
	1; 1L; P	WATER	GAMMA SCAN; Cs-137; Co-60 (HNO3 pH<2)
~~B09B~~	~~3; 40mL; Gs~~	~~WATER~~	~~CLP-VOA~~ KT 11/4/93

Field Information** TASK #: 93-321 BOL #: 2519010373 OPC #: W94-0-0001-38

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-09-93

Analysis Required

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

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

A-6000-406(05/90)

9715506.2235

0000026

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 300-FF-1

Collection Date 11/4/93

Ice Chest No. GAB

Field Logbook No. NA

Bill of Lading/Airbill No. 2519010373

Offsite Property No. W94-0-0001-38

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09BK8

~~3~~ 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/MERCURY (HNO3 pH<2.0)
~~1~~, 1L, P, WATER; GAMMA SCAN, Cs-137, Co-60 (HNO3 pH<2)

B09BW8

~~3~~ 40ml, Gs, WATER; CLP-VOA

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
~~Set in~~ KF 11/5/93 K. Trapp/K. Trapp	11/5/93	1030	L. Sweeney L. Sweeney	11-8-93	0800
L. Sweeney L. Sweeney	11-8-93	1100	[illegible]/H. NARCISO	11-09-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 11/5/93 at 1030

A-6000-407 (12/92) WEF061

9713506.2294

000002

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON, K. TRAPP Date Sampled 11/4/93 Time 1430 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09B A8	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB'S/PEST (pH 5-9)
	1; 1L; P	WATER	CLP-ICP METALS; ARSENIC; Pb; Hg (HNO3 pH<2)
	1; 1L; P	WATER	GAMMA SCAN; Cs-137; Co-60 (HNO3 pH<2)
B09B W8	3; 40mL; Gs	WATER	CLP-VOA

Field Information** TASK #: 93-321 BOL #: 2519016373 OPC #: 1194-0-0001-38

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-09-93

Analysis Required

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

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

A-6000-406(05/90)

9713506.2295

0000026

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 300-FF-1

Collection Date 11/4/93

Ice Chest No. GAB

Field Logbook No. NA

Bill of Lading/Airbill No. 2519010373

Offsite Property No. W94-0-0007-38

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09BR9

~~3,~~ 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1,~~ 2L & ~~1,~~ 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1,~~ 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/MERCURY (HNO3 pH<2.0)
~~1,~~ 1L, P, WATER; GAMMA SCAN, Cs-137, Co-60 (HNO3 pH<2)

~~B09B~~
~~3, 40ml, Gs, WATER; CLP-VOA~~ KT 11/4/93

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

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	11/5/93	1030	L Sweeney / L Sweeney	11-8-93	0800
L Sweeney / L Sweeney	11-8-93	1100	[illegible] / H. Hazelton	11-9-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 11/5/93 at 1030

A-6000-407 (12/92) WEF061

9713506.2236

000002N

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON, K. TRAPP Date Sampled 11/4/93 Time 1430 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09B B09	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB'S/PEST (pH 5-9)
	1; 1L; P	WATER	CLP-ICP METALS; ARSENIC; Pb; Hg (HNO3 pH<2)
	1; 1L; P	WATER	GAMMA SCAN; Cs-137; Co-60 (HNO3 pH<2)
~~B09B~~	~~3; 40mL; Gs~~	~~WATER~~	~~CLP-VOA~~ KT 11/4/93

Field Information** TASK #: 93-321 BOL #: 251901 0373 OPC #: W94-0-0001-38

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-09-93

Analysis Required

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

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

A-6000-406(05/90)

9713506.2297

000002I

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 300-FF-1

Collection Date 11/4/93

Ice Chest No. 3PHL-A

Field Logbook No. NA

Bill of Lading/Airbill No. 2519010373

Offsite Property No. W94-0-0001-38

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09B 50

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/MERCURY (HNO3 pH<2.0)
~~1~~, 1L, P, WATER; GAMMA SCAN, Cs-137, Co-60 (HNO3 pH<2)

~~B09B~~
~~3, 40ml, Gs, WATER; CLP-VOA~~ KT 11/4/93

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	11/5/93	1030	L. Sweeney / L. Sweeney	11-8-93	0800
L. Sweeney / L. Sweeney	11-8-93	1100	[illegible] / H. Narciso	11-09-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 11/5/93 at 1030

A-6000-407 (12/92) WEF061

9713506.2298

000002J

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON, K. TRAPP Date Sampled 11/4/93 Time 1430 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09B 50	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB'S/PEST (pH 5-9)
	1; 1L; P	WATER	CLP-ICP METALS; ARSENIC; Pb; Hg (HNO3 pH<2)
	1; 1L; P	WATER	GAMMA SCAN; Cs-137; Co-60 (HNO3 pH<2)
~~B09B~~	~~3; 40mL; Gs~~	~~WATER~~	~~CLP-VOA~~ KT 11/4/93

Field Information** TASK #: 93-321 BOL #: 251 9010373 OPC #: W94-0-0001-38

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-09-93

Analysis Required

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

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

A-6000-406(05

9713506.2299

000003

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): PAYAM SHADI

LOG-IN-DATE : 11/10/93

RECEIVED BY (SIGNATURE): Payam Shadi

ICE CHEST NO. SML-435

REMARKS:

1. Custody Seal(s) — Present / Absent* — Intact / Broken
2. Custody Seal Nos: _____
3. Chain of Custody Records — Present / Absent*
4. Traffic Reports or Packing List — Present / Absent*
5. Airbill — Airbill / Sticker Present / Absent*
6. Airbill No.: 7289155285
7. Sample Tags — Present / Absent*
8. Sample Tag Numbers — Listed / Not Listed on Chain of Custody
9. Sample Condition: — Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? — Yes / No*
11. Date Recieved at Lab: 11/10/93
12. Temp of ice chest: 4 °C
13. Time Recieved: 10:00

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09BR8	A311042	
	B09BW8	A311042	
	B09BR6	A311042	
	B09BW5	A311042	
	B09B50	A311042	
	B09BR7	A311042	
	B09BR9	A311042	

SAMPLE TRANSFER

Fraction: _____

Area #: _____

By: _____

On: _____

* Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM OC-1

000001

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 7287155285

7287155285

30968

RECIPIENT'S COPY

1 Date 11-09-93

From (Your Name) Please Print: SAMPLE CONTROL

Your Phone Number (Very Important): 818-235-2011

Company:

Department/Floor No.:

Street Address: 2[illegible] BRIGHT AVE

City: [illegible] State: CA ZIP Required: 9[illegible]

2 To (Recipient's Name) Please Print: CARLE HARRIS

Recipient's Phone Number (Very Important): (818) 357-3247

Company: TMA/ARLI

Department/Floor No.:

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 160 TAYLOR STREET

City: MONROVIA, State: CA. ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address
City State ZIP Required

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)
11 [X] OTHER PACKAGING
16 [ ] FEDEX LETTER*
12 [ ] FEDEX PAK*
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
51 [ ] OTHER PACKAGING
56 [ ] FEDEX LETTER*
52 [ ] FEDEX PAK*
53 [ ] FEDEX BOX
54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
30 [ ] ECONOMY**
** Economy Letter rate not available. Minimum charge: One pound economy rate.

Government Overnight (Restricted for authorized users only)
46 [ ] GOVT LETTER
41 [ ] GOVT PACKAGE

Freight Service (for packages over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
80 [ ] TWO-DAY FREIGHT**
† Delivery commitment may be later in some areas.
*Declared Value Limit $500.
**Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) [ ] (Not available to all locations)
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN 1845 X kg. 904 III
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
[ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
Total 4	Total 302	Total

DIM SHIPMENT (Chargeable Weight) [ ] lbs
L x W x H

Received At
1 [X] Regular Stop 3 [ ] Drop Box
2 [ ] On-Call Stop 4 [ ] B S C 5 [ ] Station

7 Release Signature:

Emp. No. Date
[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold
Street Address
City State Zip
Received By: X
Date/Time Received FedEx Employee Number

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 11/92
PART #137204 FXEM 3/93
FORMAT #166
155
© 1992-93 FEDEX PRINTED IN U.S.A.

97 1506 2300

9713506.2301

000005

TMA/ARU
Thermo Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 11/10/93 COMPANY TMA/NORCAL OTHER ORD # 7289155285

Surveyor's Name MARK S. McCray

Model No. HP-210 / ESP-1 Model No. AC-2-7 / ESP-1

Serial No. 210289 / 02619 Serial No. 407726 / 02628

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.192

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-2-7 CPM	AC-2-7 Factor	AC-2-7 DPM	Surface or Smear?	Activity pCi/gram or DPM
Background		29.0			1.0				
Consistency		7,450	0.2876		5,030	0.1849			
Smear SML 353		31.0			3.0			None	
Jerry		52.0			5.0			None	
HAPPY-2		38.0			4.0			None	
SML 435		38.0			1.0			None	
Reported WHC (34) samples each <50pCi/gram									

Comments

All OK ✓ Approved MSM

Not OK Date 11/10/93

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 11-042

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : November 9, 1993

1.0 DESCRIPTION OF CASE :

Seven water samples were analyzed for TCL Organics - Volatiles and Pesticides/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B09BR6	A3-11-042-01A	V	WATER	0
B09BR6	A3-11-042-01B	P	WATER	
B09BR6 DL	A3-11-042-01B	P	WATER	
B09BR6 MS	A3-11-042-01C	P	WATER	
B09BR6 MSD	A3-11-042-01D	P	WATER	
B09BW5	A3-11-042-02A	V	WATER	7
B09BW5 MS	A3-11-042-02B	V	WATER	7
B09BW5 MSD	A3-11-042-02C	V	WATER	7
B09BR7	A3-11-042-03A	V	WATER	0
B09BR7	A3-11-042-03B	P	WATER	
B09BR7 DL	A3-11-042-03B	P	WATER	
B09BR8	A3-11-042-04A	V	WATER	0
B09BR8	A3-11-042-04B	P	WATER	
B09BW8	A3-11-042-05A	V	WATER	7
B09BR9	A3-11-042-06A	V	WATER	0
B09BW9	A3-11-042-06B	P	WATER	
B09BS0	A3-11-042-07A	V	WATER	0
B09BS0	A3-11-042-07B	P	WATER	

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes are injected directly into the GC/MS instrument.

3.2.2 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 11/25/93 and was analyzed according to the USEPA CLP SOW. The sequence was analyzed by single injection into a dual column system.

On the DB-608 column, the %RSD for all of the analytes were within the QC limits. However, on the DB-1701 column the %RSD for alpha-BHC and gamma-BHC exceeded 20% but were less than the 30% limit.

All of the other QC criteria were within the limits specified by the EPA CLP SOW.

The chromatograms are presented in the manner consistent with the capabilities of the Nelson 2700 Turbochrome Data System which normalizes the largest peak to scale.

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times.

Heptachlor was detected in concentrations above the CRQL in all of the samples associated with this case. Beta-BHC was also detected in sample B09BR4 above the CRQL. No other TCL analytes were detected in the samples. The pesticides detected in the samples and could not be confirmed by GCMS since their concentrations were below the GCMS detection limit.

Samples B09BR6, B09BR6MS and B09BR6MSD had percent differences (%D) between the two GC columns that exceeded the 25% limit for beta-BHC. Sample B09BR8 had a %D for Heptachlor above 25%. Therefore, these results were "P" qualified.

Sample B09BR6MSD had a matrix spike recovery for Heptachlor below the QC limit. As a result of the low MSD recovery, the %RPD for Heptachlor exceeded the QC limit. In accordance with the protocol, no further action was taken.

All of the other QC results were within the limits specified by CLP SOW.

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth
Nicole Roth 12/23/93
CLP Program Manager

Maureen Parrish
Maureen Parrish 12/23/93
Project Manager

9713506.2305

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000010
EPA SAMPLE NO.

B09BS0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-07A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M05

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

9713506.2506
IE

000011
EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09BS0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-07A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M05

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713506.2307

000012

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09BR6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M03

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

9713506.2308

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000013 SF 0128

EPA SAMPLE NO.

B09BR6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M03

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09BR7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31111M25

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/11/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

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

9713506.2310

1E

000015

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09BR7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31111M25

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/11/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9213506.2311

000016

EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B09BR8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31111M29

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/11/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

9713506.2312

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000017
EPA SAMPLE NO.

B09BR8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31111M29

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/11/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713506.2313

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000018

EPA SAMPLE NO.

B09BR9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M04

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09BR9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M04

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713506.2315

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000020
EPA SAMPLE NO.

B09BW5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31111M26

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/11/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09BW5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31111M26

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/11/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713506.2517

UUUU22

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B09BW8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31111M30

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/11/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	16	
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

EPA SAMPLE NO.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09BW8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31111M30

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/11/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713506.2319
1D

000024
EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

B09BS0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-07B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/11/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/29/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.97	
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713506.2320

000025

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

B09BR6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/11/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/29/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.11	P
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	1.8	
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713506.2321

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09BR6DL

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-01BD

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/11/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/30/93

Injection Volume: 1.00 (uL) Dilution Factor: 2.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.10	U
319-85-7	beta-BHC	0.10	U
319-86-8	delta-BHC	0.10	U
58-89-9	gamma-BHC (Lindane)	0.10	U
76-44-8	Heptachlor	1.6	D
309-00-2	Aldrin	0.10	U
1024-57-3	Heptachlor epoxide	0.10	U
959-98-8	Endosulfan I	0.10	U
60-57-1	Dieldrin	0.20	U
72-55-9	4,4'-DDE	0.20	U
72-20-8	Endrin	0.20	U
33213-65-9	Endosulfan II	0.20	U
72-54-8	4,4'-DDD	0.20	U
1031-07-8	Endosulfan sulfate	0.20	U
50-29-3	4,4'-DDT	0.20	U
72-43-5	Methoxychlor	1.0	U
53494-70-5	Endrin ketone	0.20	U
7421-36-3	Endrin aldehyde	0.20	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.10	U
8001-35-2	Toxaphene	10	U
12674-11-2	Aroclor-1016	2.0	U
11104-28-2	Aroclor-1221	4.0	U
11141-16-5	Aroclor-1232	2.0	U
53469-21-9	Aroclor-1242	2.0	U
12672-29-6	Aroclor-1248	2.0	U
11097-69-1	Aroclor-1254	2.0	U
11096-82-5	Aroclor-1260	2.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09BR7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-03B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/11/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/29/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.82	
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9715506.2323

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

000028
EPA SAMPLE NO.

B09BR7DL

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-03BD

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/11/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/01/93

Injection Volume: 1.00 (uL) Dilution Factor: 2.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.10	U
319-85-7	beta-BHC	0.10	U
319-86-8	delta-BHC	0.10	U
58-89-9	gamma-BHC (Lindane)	0.10	U
76-44-8	Heptachlor	0.74	D
309-00-2	Aldrin	0.10	U
1024-57-3	Heptachlor epoxide	0.10	U
959-98-8	Endosulfan I	0.10	U
60-57-1	Dieldrin	0.20	U
72-55-9	4,4'-DDE	0.20	U
72-20-8	Endrin	0.20	U
33213-65-9	Endosulfan II	0.20	U
72-54-8	4,4'-DDD	0.20	U
1031-07-8	Endosulfan sulfate	0.20	U
50-29-3	4,4'-DDT	0.20	U
72-43-5	Methoxychlor	1.0	U
53494-70-5	Endrin ketone	0.20	U
7421-36-3	Endrin aldehyde	0.20	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.10	U
8001-35-2	Toxaphene	10	U
12674-11-2	Aroclor-1016	2.0	U
11104-28-2	Aroclor-1221	4.0	U
11141-16-5	Aroclor-1232	2.0	U
53469-21-9	Aroclor-1242	2.0	U
12672-29-6	Aroclor-1248	2.0	U
11097-69-1	Aroclor-1254	2.0	U
11096-82-5	Aroclor-1260	2.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09BR8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-04B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/11/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/29/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.096	P
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713506.2325

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09BR9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11042 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311042-06B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/11/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/29/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.61	
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713506.2326

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

JAN 1994
RECEIVED
SDLA

RECORD COPY

December 20, 1993

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

Quality Control Narrative

Scope
Five (5) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 10, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S311107.

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

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

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

9713506.2327

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B09BR6

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: SKINER Case No.: N3-11-058SAS No.: SDG No.: B09BR6

Matrix (soil/water): WATER Lab Sample ID: 11107-01S

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

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	42.2	B		P
7440-36-0	Antimony	21.8	B		P
7440-38-2	Arsenic	2.2	B		P
7440-39-3	Barium	61.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	2.6	B		P
7440-70-2	Calcium	19800			P
7440-47-3	Chromium	4.1	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	13.8	B		P
7439-89-6	Iron	549			P
7439-92-1	Lead	6.4			P
7439-95-4	Magnesium	4680	B		P
7439-96-5	Manganese	83.2			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	11.9	B		P
7440-09-7	Potassium	1680	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	22700			P
7440-28-0	Thallium	2.8	B		P
7440-62-2	Vanadium	2.6	U		P
7440-66-6	Zinc	199			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

02

9713506.2328

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809BR7

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

Lab Code: SKINER Case No.: N3-11-058SAS No.: SDG No.: 809BR6

Matrix (soil/water): WATER Lab Sample ID: 11107-02S

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

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	291			P
7440-36-0	Antimony	12.3	B		P
7440-38-2	Arsenic	4.6	B		P
7440-39-3	Barium	69.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	20700			P
7440-47-3	Chromium	7.7	B		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	252			P
7439-89-6	Iron	47800			P
7439-92-1	Lead	62.8			P
7439-95-4	Magnesium	4620	B		P
7439-96-5	Manganese	269			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	34.4	B		P
7440-09-7	Potassium	1860	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	5.6	B		P
7440-23-5	Sodium	22400			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	3.2	B		P
7440-66-6	Zinc	1200			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

03

9713506.2329

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09BR8

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

Lab Code: SKINER Case No.: N3-11-058SAS No.: SDG No.: B09BR6

Matrix (soil/water): WATER Lab Sample ID: 11107-03S

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

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	104	B		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	34.3	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	9790			P
7440-47-3	Chromium	4.1	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	13.1	B		P
7439-89-6	Iron	762			P
7439-92-1	Lead	4.3			P
7439-95-4	Magnesium	3020	B		P
7439-96-5	Manganese	15.7			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	1900	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	38200			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	2.6	U		P
7440-66-6	Zinc	83.9			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

04

9713506.2330

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09BR9

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

Lab Code: SKINER Case No.: N3-11-058SAS No.: SDG No.: B09BR6

Matrix (soil/water): WATER Lab Sample ID: 11107-04S

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

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	103	B		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.7	B		P
7440-39-3	Barium	53.3	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.9	B		P
7440-70-2	Calcium	15500			P
7440-47-3	Chromium	4.1	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	38.9			P
7439-89-6	Iron	4520			P
7439-92-1	Lead	6.6			P
7439-95-4	Magnesium	3820	B		P
7439-96-5	Manganese	121			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	13.6	B		P
7440-09-7	Potassium	1670	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	29700			P
7440-28-0	Thallium	2.1	B		P
7440-62-2	Vanadium	2.6	U		P
7440-66-6	Zinc	232			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

05

9713506.2331

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809BS0

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

Lab Code: SKINER Case No.: N3-11-058SAS No.: SDG No.: B09BR6

Matrix (soil/water): WATER Lab Sample ID: 11107-05S

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

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	78.0	B		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	53.3	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.6	B		P
7440-70-2	Calcium	15100			P
7440-47-3	Chromium	4.1	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	34.1			P
7439-89-6	Iron	3330			P
7439-92-1	Lead	4.8			P
7439-95-4	Magnesium	3740	B		P
7439-96-5	Manganese	118			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	12.6	B		P
7440-09-7	Potassium	1710	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	29000			P
7440-28-0	Thallium	2.3	B		P
7440-62-2	Vanadium	2.6	U		P
7440-66-6	Zinc	353			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

06

9713506.2352

TMA/Skinner & Sherman Laboratories
Sample Login Sheet

Workorder 53-11-107 Client Hanford-NOI Number/Type of Samples 5 waters
Protocol CLP Turnaround 33 days Cooler Temp: 4 °C or N/A Cooler Yes/No
Custodian: Benney, A. Shipper & # Fedex SDG/Batch# N/A
Custody Seal: Present/Absent/Intact/Not Client Case# N3-11-058
Purchase Order/Contract# N3-11-058 Client Contact D. Sanchez
Tag#: Present/Absent/NA (See COC) Chain of Custody: Present/Absent/NA,#

Sample Containers - Intact/Broken Comment:
Client Comment? Yes/No
Sample labels agree with Chain of Custody Information? Yes/No (Comment)
Client paperwork agrees with samples and Chain of Custody? Yes/No (Comment)
Shipment Dates: 11/10/93
List any date with paperwork/shipment problems & specify the problem:

N/A

	Client ID	Matrix	Received	pH*	Test(s) & QC	Holding Times
1	B09BR6	WATER	11-10-93	1.79	TM	
2	R7			1.80		
3	R8			1.79		
4	R9			1.83		
5	50			1.81	D,S	
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

COMPLETE 11/10/93 KSB

These samples are from a site known to have Radioactive Contamination: Yes ✓ No
These samples have detectable amounts of Radioactive Material: Yes No ✓

Subcontract: Yes/No To: Date:

Reviewed Date

* EPA/CLP required

Rev 1.7

PAGE 1 TMA/Norfa1 9213506.2333 CHAIN OF CUSTODY ORD # N3-11-058

RCVD: 11/09/93 DUE: 12/14/93 11/09/93 15:11:55 KEEP: 12/14/94 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY		
01B-W	B09BR6	S&S	WH007	WH008	WH010
02B-W	B09BR7	S&S	WH007	WH009	WH010
03B-W	B09BR8	S&S	WH007	WH008	WH010
04B-W	B09BR9	S&S	WH007	WH008	WH010
05B-W	B09BS0	S&S	WH007	WH008	WH010
05E-W	B09BS0 MS	S&S	WH007	WH008	WH010
05F-W	B09BS0 DUP	S&S	WH007	WH008	WH010
05G-W	L C S	S&S	WH007	WH008	WH010

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Neil Mitchell	11-9-93	S&S	11-9-93	[illegible]	11/10/93

9713506.2334

TMA
Thermo Analytical Inc.

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

JAN 1994
RECEIVED
SDLA

January 6, 1994

Ref: TMA/Norcal N3-11-038-7293

RECORD COPY

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

Dear Ms. Colley:

Enclosed is the data report for the seven water samples received November 4 through 9, 1993 from location 300-FF-1. Results are given for gamma scan analyses. The data package is paginated 1 through 163..

Please call if you have any questions concerning this data.

Sincerely,

D.P. Kharkar

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

DPK/ss

Enclosure: Data Package

SDG: 7293
Contact: Dinkar Kharkar

TMA NORCAL
REPORTING GROUP 7293

Client: Westinghouse Hanford
Contract: MBH-SVV-069262

CASE NARRATIVE

GENERAL

TMA/Norcal Sample Delivery Group 7293 is comprised of seven samples from location 300-FF-1. Field Log Book identification and Chain-of-Custody numbers were not provided.

Sufficient sample volumes were received for the requested analyses.

ANALYSIS NOTES

Gamma Scan Analyses

The iron-59 MDA's for samples BO9BR4, BO9BR5, and BO9BR6 are higher than the RDL due to the short half-life of iron-59.

Isotopic uranium found in the gamma scan analyses is not reported due to high counting errors.

9713506.2336

N311038-01

TMA NORCAL
REPORTING GROUP 7293

DATA SHEET

B09BR4

SDG	7293	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N311038-01	Client sample id	B09BR4
Dept sample id	7293-001	Location/Matrix	300-FF-1 LIQUID
Received	11/04/93	Collected	11/02/93
		Chain of custody id	NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		9		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		90		U	GAM
Tin 113	13966-06-8	U		10		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		40	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	01/04/94

9715506.2357

N311038-02

TMA NORCAL
REPORTING GROUP 7293

DATA SHEET

B09BR5

SDG 7293 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N311038-02 Client sample id B09BR5
Dept sample id 7293-002 Location/Matrix 300-FF-1 LIQUID
Received 11/04/93 Collected 11/02/93
Chain of custody id NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		50	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		20		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		70		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		40	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/04/94

9713506.2338

N311038-03

TMA NORCAL
REPORTING GROUP 7293

DATA SHEET

B09BR6

SDG 7293 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N311038-03 Client sample id B09BR6
Dept sample id 7293-003 Location/Matrix 300-FF-1 LIQUID
Received 11/09/93 Collected 11/04/93
Chain of custody id NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		9		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		50		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/04/94

9713506.2339

N311038-04

TMA NORCAL
REPORTING GROUP 7293

DATA SHEET

B09BR7

SDG 7293 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N311038-04 Client sample id B09BR7
Dept sample id 7293-004 Location/Matrix 300-FF-1 LIQUID
Received 11/09/93 Collected 11/04/93
Chain of custody id NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		8		U	GAM
Potassium 40	13966-00-2	U		100		U	GAM
Manganese 54	13966-31-9	U		8		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		7		U	GAM
Ruthenium 103	13968-53-1	U		10		U	GAM
Ruthenium 106	13967-48-1	U		70		U	GAM
Tin 113	13966-06-8	U		10		U	GAM
Cesium 134	13967-70-9	U		9		U	GAM
Cesium 137	10045-97-3	U		8	20	U	GAM
Cerium 144	14762-78-8	U		40		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Europium 155	14391-16-3	U		20	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		30		U	GAM
Thorium 228	14274-82-9	U		10		U	GAM
Thorium 232	7440-29-1	U		30		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/04/94

9713506.2340

N311038-05

TMA NORCAL
REPORTING GROUP 7293

DATA SHEET

B09BR8

SDG 7293 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N311038-05 Client sample id B09BR8
Dept sample id 7293-005 Location/Matrix 300-FF-1 LIQUID
Received 11/09/93 Collected 11/04/93
Chain of custody id NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		9		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		10		U	GAM
Ruthenium 106	13967-48-1	U		80		U	GAM
Tin 113	13966-06-8	U		10		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	9.1	6.9		20	J	GAM
Cerium 144	14762-78-8	U		50		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		40		U	GAM
Thorium 228	14274-82-9	U		10		U	GAM
Thorium 232	7440-29-1	U		40		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/04/94

9713506.2341

N311038-06

TMA NORCAL
REPORTING GROUP 7293

DATA SHEET

B09BR9

SDG 7293 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N311038-06 Client sample id B09BR9
Dept sample id 7293-006 Location/Matrix 300-FF-1 LIQUID
Received 11/09/93 Collected 11/04/93
Chain of custody id NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		9		U	GAM
Potassium 40	13966-00-2	U		100		U	GAM
Manganese 54	13966-31-9	U		8		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		8	20	U	GAM
Niobium 94	14681-63-1	U		7		U	GAM
Ruthenium 103	13968-53-1	U		10		U	GAM
Ruthenium 106	13967-48-1	U		70		U	GAM
Tin 113	13966-06-8	U		10		U	GAM
Cesium 134	13967-70-9	U		9		U	GAM
Cesium 137	10045-97-3	U		9	20	U	GAM
Cerium 144	14762-78-8	U		40		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Europium 155	14391-16-3	U		20	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		30		U	GAM
Thorium 228	14274-82-9	U		10		U	GAM
Thorium 232	7440-29-1	U		30		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/04/94

9713506.2342

N311038-07

TMA NORCAL
REPORTING GROUP 7293

DATA SHEET

B09BS0

SDG 7293
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N311038-07
Dept sample id 7293-007
Received 11/09/93
Client sample id B09BS0
Location/Matrix 300-FF-1 LIQUID
Collected 11/04/93
Chain of custody id NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		300		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		30		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		20	20	U	GAM
Cerium 144	14762-78-8	U		80		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		40	40	U	GAM
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/04/94

9713506.2343

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 300-FF-1

Collection Date 11/2/93

Ice Chest No. IT 8

Field Logbook No. NA

Bill of Lading/Airbill No. 2519010329

Offsite Property No. W94-0-0001-35

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09BF4

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/MERCURY (HNO3 pH<2.0)
~~1~~, 1L, P, WATER; GAMMA SCAN, Cs-137, Co-60 (HNO3 pH<2)

~~B09BW1~~

3, 40ml, Gs, ~~WATER; CLP-VOA~~ KT 11/2/93

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

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp/K. Trapp	11/2/93	1630	T. Sweeney/Sweeney	11-3-93	0730
T. Sweeney/Sweeney	11/3/93	1605	[illegible]/H. HARLISS	11-4-93	10:55

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 11/2/93 at 1630.

A-6000-407 (12/92) WEF061

9713506.2344

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON, K. TRAPP Date Sampled 11/2/93 Time 1525 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09B R4	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB'S/PEST (pH 5-9)
	1; 1L; P	WATER	CLP-ICP METALS; ARSENIC; Pb; Hg (HNO3 pH<2)
	1; 1L; P	WATER	GAMMA SCAN; Cs-137; Co-60 (HNO3 pH<2)
~~B09B W1~~	~~3; 40mL; Gs~~	~~WATER~~	~~CLP VOA~~ KT 11/2/93

Field Information** TASK #: 93-321 BOL #: 7519010329 OPC #: 6050-C 0001-35

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [illegible] Title Sample Control Technician Date 11-4-93

Analysis Required

0 44

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

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

A-6000-406(05/90)

9713506.2345

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 300-FF-1

Collection Date 11/2/93

Ice Chest No. IT8

Field Logbook No. NA

Bill of Lading/Airbill No. 3519010329

Offsite Property No. W94-000001-35

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09BR5

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/MERCURY (HNO3 pH<2.0)
~~1~~, 1L, P, WATER; GAMMA SCAN, Cs-137, Co-60 (HNO3 pH<2)

B09BW2

~~3~~, 40ml, Gs, WATER; CLP-VOA

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

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	11/2/93	1630	L Sweeney / Sweeney	11-3-93	0730
L Sweeney / L Sweeney	11-3-93	1000	[illegible] / H. NARCISO	11-4-93	10:55

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: K. Trapp / K. Trapp: SPT in Frig 7 on 11/2/93 at 1630

0 45

A-6000-407 (12/92) WEF061

9713506.2346

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON, K. TRAPP Date Sampled 11/2/93 Time 1535 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09BR5	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB'S/PEST (pH 5-9)
	1; 1L; P	WATER	CLP-ICP METALS; ARSENIC; Pb; Hg (HNO3 pH<2)
	1; 1L; P	WATER	GAMMA SCAN; Cs-137; Co-60 (HNO3 pH<2)
B09BW2	3; 40mL; Gs	WATER	CLP-VOA

Field Information** TASK #: 93-321 BOL #: 2519010325 OPC #: U94-0-6-001-35

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-04-93 TIME 7:10:55 AM

Analysis Required

0 46

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

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

A-6000-406(05/90)

Overnight Delivery 9713506.2347

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
MB		WAM - 0 - 0001 - 38

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
[illegible]	[illegible]	[illegible]

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

Routing [illegible] ☐ Contractor ☐ Vendor

Shipped to	Off-site Custodian
[illegible] Wright [illegible] Richmond, CA [illegible]	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 Box	Sample [illegible] Cooler ID: [illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 Box	Sample #: [illegible] Cooler ID: [illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling equipment RCRA used in the 300 area.

BEST AVAILABLE COPY

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

RM Clearance for Public Release	RM Survey No	Date
—	—	[illegible]

Location of Property (Area & Bldg.)	Contact	Phone
300 [illegible]	[illegible]	[illegible] 376 5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
11/3/93	[illegible] F 315H	NA

Originated By	Date	Authorized By	Date
[illegible]	[illegible]	[illegible]	11/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	11/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible] 11-[illegible]	0 57			
Date				

DISTRIBUTION

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

54-3000-479 (09/89)

9713506.2348

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit

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

Routing ☐ Contractor ☐ Vendor

Shipped to	Off-site Custodian
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1	Sample [illegible] Cooler [illegible] Polyvinyl [illegible] groundwater samples packed in wet ice and vermiculite	N/A
1	Sample [illegible] Cooler [illegible] Polyvinyl [illegible] groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

[illegible]

BEST AVAILABLE COPY

[illegible]

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

RM Clearance for Public Release	RM Survey No	Date

Location of Property (Area & Bldg.)	Contact	Phone
	[illegible] Dutcher	[illegible]

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
	[illegible]	

Originated By	Date	Authorized By	Date
		[illegible]	11 3 92

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	11/3/92

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Date	0 58			

DISTRIBUTION

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

54-3000-479 (09/89)

9713506.2349

TMA

RECORD COPY

JAN 1994
RECEIVED
SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS
Case No. 11-027
(TMA/ARLI W.O. No. A3-11-027)

METALS
Case No. N3-11-036
(TMA/Skinner & Sherman W.O. No. S3-11-084)

January 5, 1994

TMA Master Work Order N3-11-036

7/8/96 KDO

000001A

PAGE 1 TMA/CA. CHAIN OF CUSTODY ORD # NO. 036
RCVD: 11/04/93 DUE: 12/09/93 11/04/93 12:44:17 KEEP: 12/09/94 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY	
01A-W	B09BR4	ARLI	WH018	WH019
02A-W	B09BR5	ARLI	WH018	WH019
02C-W	B09BR5 HS	ARLI	WH018	WH019
02D-W	B09BR5 HSD	ARLI	WH018	WH019
03A-W	B09BW2	ARLI	WH018	

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
tyamamoto	11/4/93	ARLI	11/4/93	C. Harris	11/5/93

9715506.2351

000001B

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 300-FF-1

Collection Date 11/2/93

Ice Chest No. IT 8

Field Logbook No. NA

Bill of Lading/Airbill No. 2519010329

Offsite Property No. W94-0-0001-35

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09BR4

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/MERCURY (HNO3 pH<2.0)
~~1~~, 1L, P, WATER; GAMMA SCAN, Cs-137, Co-60 (HNO3 pH<2)

~~B09BW1~~

3, 40ml, Gs, ~~WATER; CLP-VOA~~ KT 11/2/93

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

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp/K. Trapp	11/2/93	1630	L Sweeney/Sweeney	11-3-93	0730
L Sweeney/Sweeney	11/3/93	1000	[illegible]/H. HARRISO	11-4-93	10:55

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Set in Frig 3 on 11/2/93 at 1630.

A-6000-407 (12/92) WEF061

9713506.2352

000001C

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON, K. TRAPP Date Sampled 11/2/93 Time 1525 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09BR4	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB'S/PEST (pH 5-9)
	1; 1L; P	WATER	CLP-ICP METALS; ARSENIC; Pb; Hg (HNO3 pH<2)
	1; 1L; P	WATER	GAMMA SCAN; Cs-137; Co-60 (HNO3 pH<2)
~~B09B W1~~	3; 40mL; Gs	~~WATER~~	~~CLP VOA~~ KT 11/2/93

Field Information** TASK #: 93-321 BOL #: 2519010329 OPC #: W94-0-0001-35

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-4-93

Analysis Required

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

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

A-6000-406(05/90)

9713506.2353

000001A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 300-FF-1

Collection Date 11/2/93

Ice Chest No. IT8

Field Logbook No. NA

Bill of Lading/Airbill No. 2519010329

Offsite Property No. W94-0-0001-35

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09BR5

~~5~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/MERCURY (HNO3 pH<2.0)
~~1~~, 1L, P, WATER; GAMMA SCAN, Cs-137, Co-60 (HNO3 pH<2)

B09BW2

~~5~~, 40ml, Gs, WATER; CLP-VOA

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

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	11/2/93	1630	L Sweeney / Sweeney	11-3-93	0730
L Sweeney / L Sweeney	11-3-93	1000	[illegible] / H. NARCISO	11-4-93	10:55

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: K. Trapp / K. Trapp. SPT in Frig 3 on 11/2/93 at 1630

A-6000-407 (12/92) WEF061

9715506.2354

000001E

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON, K. TRAPP Date Sampled 11/2/93 Time 1535 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09BR5	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB'S/PEST (pH 5-9)
	1; 1L; P	WATER	CLP-ICP METALS; ARSENIC; Pb; Hg (HNO3 pH<2)
	1; 1L; P	WATER	GAMMA SCAN; Cs-137; Co-60 (HNO3 pH<2)
B09BW2	3; 40mL; Gs	WATER	CLP-VOA

Field Information** TASK #: 93-321 BOL #: 2519010329 OPC #: W94-0-0001-35

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-04-93 TIME 10:55 AM

Analysis Required

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

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

A-6000-406(05/90)

000001F

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): Carole Harris

LOG-IN-DATE : 11/5/93

RECEIVED BY (SIGNATURE): Carole Harris

ICE CHEST NO. SML 185

		EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT,ETC
REMARKS:					
1. Custody Seal(s)	Present / Absent* Intact / Broken		B09BD2	A31027	
2. Custody Seal Nos:			B09BD5	A31027	
3. Chain of Custody Records	Present / Absent*		B09BD4	A31027	
4. Traffic Reports or Packing List	Present / Absent*				
5. Airbill	Airbill / Sticker Present / Absent*				
6. Airbill No.:	7289153491				
7. Sample Tags	Present / Absent*				
8. Sample Tag Numbers	Listed / Not Listed on Chain of Custody				
9. Sample Condition:	Intact / Broken* / Leaking				
10. Does information on custody records, traffic reports, and sample tags agree?	Yes / No*				
11. Date Recieved at Lab:	11/5/93				
12. Temp of ice chest	4 °C				
13. Time Recieved:	9:30				
SAMPLE TRANSFER					
Fraction:					
Area #:					
By:					
On:					

* Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM OC-1

000001G

BEST AVAILABLE COPY

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 7289153491

7289153491

RECIPIENT'S COPY

Date 11-04-93

From (Your Name) Please Print: SAMPLE CONTROL
Your Phone Number (Very Important): ( ) 35-2633
Company:
Department/Floor No.:
Street Address:
City:
State:
ZIP Required:

To (Recipients Name) Please Print: CAROLE HARRIS
Recipient's Phone Number (Very Important): (818) 357 3247
Company: TMA/ARLI
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 160 TAYLOR STREET
City: MONROVIA
State: CA.
ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice): 2340-6406

IF HOLD FOR PICK-UP, Print FedEx Address Here
Street Address:
City:
State:
ZIP Required:

PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning)
11 [ ] OTHER PACKAGING
16 [ ] FEDEX LETTER*
12 [ ] FEDEX PAK*
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon for Saturday delivery)
51 [ ] OTHER PACKAGING
56 [ ] FEDEX LETTER*
52 [ ] FEDEX PAK*
53 [ ] FEDEX BOX
54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day)
30 [ ] ECONOMY**
*Economy Letter rate not available. Minimum charge: One pound economy rate.

Government Overnight (Restricted for select US users only)
48 [ ] GOV'T LETTER
41 [ ] GOV'T PACKAGE

Freight Service (for packages over 150 lb.)
70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
80 [ ] TWO-DAY FREIGHT**
†Delivery commitment may be later in some areas.
**Declared Value Limit $500. Call for delivery schedule.

DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 [ ] DELIVER SATURDAY (Extra charge) (Not available to all locations)
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE (Dangerous Goods Shipper's Declaration not required)
Dry Ice $ (UN 1845) X ___ lb. = $ ___
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
[ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

PACKAGES | WEIGHT in Pounds Only | YOUR DECLARED VALUE (See right)
Total | Total | Total

CIM SHIPMENT (Chargeable Weight) [ ] lbs. X X

Received At
[ ] Regular Stop
[ ] Drop Box
[ ] On-Call Stop
[ ] Station

Emp. No.
Date
[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Dist. [ ] Chg. To Hold
Street Address
City
State
Zip
Received By: X
Date/Time Received
FedEx Employee Number

Release Signature:

Federal Express Use
Total Charges
Other 1
Other 2
Total Charges

REVISION DATE 11/92
PART #137204 FXEM 3/93
FORMAT 3155
155
©1992 FEDEX
PRINTED IN U.S.A.

000001H

PMA/ARU
Thermo Analytical Inc

RADIATION DOSE RATE SURVEY FORM

Date 11/05/93 COMPANY TMA/NORCAL OTHER ORD # 728915349 1

Surveyor's Name MARK S. McCray

Model No. HP-210 / ESP-1 Model No. AC-9 / ESP-1

Serial No. [illegible] / [illegible] Serial No. [illegible] / [illegible]

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.192

Sample	Location	HP-210 CPM	HP-210 Rate	HP-210 DPM	AC-9 CPM	AC-9 Rate	AC-9 DPM	Surface of Package	Radio Iso. Sample
Background		41.0			1.0				
Container		7,180	0.2772		4,090	0.1503			
Sample SML 185		33.0			3.0			None	
Reported WHC (5) Samples each <50pCi/gram									

Comments

All OK ✓ Approved [illegible]

Not OK Date 11/05/93

R=95%

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 11-027

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : November 4, 1993

1.0 DESCRIPTION OF CASE :

Three water samples were analyzed for TCL Organics - Volatiles and Pesticides/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B09BR4	A3-11-027-01A	V	WATER	0
B09BR4	A3-11-027-01B	P	WATER	
B09BR4 MS	A3-11-027-01C	P	WATER	
B09BR4 MSD	A3-11-027-01D	P	WATER	
B09BR5	A3-11-027-02A	V	WATER	0
B09BR5 MS	A3-11-027-02B	V	WATER	0
B09BR5 MSD	A3-11-027-02C	V	WATER	0
B09BR5	A3-11-027-02D	P	WATER	
B09BW2	A3-11-027-03A	V	WATER	7

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes are injected directly into the GC/MS instrument.

3.2.2 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 11/25/93 and was analyzed according to the USEPA CLP SOW. The sequence was analyzed by single injection into a dual column system.

On the DB-608 column, the %RSD for all of the analytes were within the QC limits. However, on the DB-1701 column the %RSD for alpha-BHC and gamma-BHC exceeded 20% but were less than the 30% limit.

INDBM03 analyzed on 11/27/93 at 11:09 had a %RPD above 25% on the DB-1701 column for TCX and DCB. However, since TCX and DCB were quantitated against the INDA mix, which met the %RPD, the sequence was continued. On the DB-608 column, INDBM03 exceeded the 25% RPD limit for alpha-Chlordane. Since there were no alpha-Chlordane peaks detected, the sequence was continued and met the remaining requirements.

All of the other QC criteria were within the limits specified by the EPA CLP SOW.

The chromatograms are presented in the manner consistent with the capabilities of the Nelson 2700 Turbochrome Data System which normalizes the largest peak to scale.

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. Samples B09BR5 and B09BR4MS has DCB surrogate recoveries below the advisory QC limit on both GC columns.

Heptachlor was detected in concentrations above the CRQL in samples B09BR4 and B09BR5. Beta-BHC was also detected in sample B09BR4 above the CRQL. No other TCL analytes were detected in the samples. The pesticides detected in samples B09BR4 and B09BR5 could not be confirmed by GCMS since their concentrations were below the GCMS detection limit.

Samples B09BR4, B09BR4MS and B09BR4MSD had percent differences (%D) between the two GC columns that exceeded the 25% limit for beta-BHC. Therefore, beta-BHC was "P" qualified.

All of the QC results were within the limits specified by CLP SOW.

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth

Nicole Roth 12/23/93
CLP Program Manager

Maureen Parrish

Maureen Parrish 12/23/93
Project Manager

9713506.2361

000005

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09BR4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11027 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311027-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B13

Level: (low/med) LOW Date Received: 11/04/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

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

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09BR4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11027 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311027-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B13

Level: (low/med) LOW Date Received: 11/04/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09BR5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11027 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311027-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B10

Level: (low/med) LOW Date Received: 11/04/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

9713506.2364

000008

EPA SAMPLE NO.

B09BR5

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11027 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311027-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B10

Level: (low/med) LOW Date Received: 11/04/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09BW2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11027 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311027-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B14

Level: (low/med) LOW Date Received: 11/04/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

9713506.2366

000010

EPA SAMPLE NO.

B09BW2

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11027 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311027-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B14

Level: (low/med) LOW Date Received: 11/04/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09BR4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11027 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311027-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/04/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/05/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/27/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.10	P
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.26	
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713506.2368

000012

EPA SAMPLE NO.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

B09BR5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11027 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311027-02D

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/04/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/05/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/27/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.38	
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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

9713506.2369

RECORD COPY

JAN 1994
RECEIVED
SDLA

December 20, 1993

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

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 5, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S311084.

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

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

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

9713506.2370

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09BR4

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

Lab Code: SKINER Case No.: N3-11-036SAS No.: SDG No.: B09BR4

Matrix (soil/water): WATER Lab Sample ID: 11084-01S

Level (low/med): LOW Date Received: 11/05/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1340			P
7440-36-0	Antimony	23.0	B		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	87.3	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	19300			P
7440-47-3	Chromium	6.1	B		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	345			P
7439-89-6	Iron	42100			P
7439-92-1	Lead	216			P
7439-95-4	Magnesium	4770	B		P
7439-96-5	Manganese	220			P
7439-97-6	Mercury	0.32			AV
7440-02-0	Nickel	44.3			P
7440-09-7	Potassium	1840	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	5.0	B		P
7440-23-5	Sodium	21900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	4.0	B		P
7440-66-6	Zinc	1220			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

2

9713506.2371

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B098R5

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

Lab Code: SKINER Case No.: N3-11-036SAS No.: SDG No.: B098R4

Matrix (soil/water): WATER Lab Sample ID: 11084-02S

Level (low/med): LOW Date Received: 11/05/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	155	B		P
7440-36-0	Antimony	29.8	B		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	62.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	19500			P
7440-47-3	Chromium	4.1	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	160			P
7439-89-6	Iron	41400			P
7439-92-1	Lead	56.2			P
7439-95-4	Magnesium	4430	B		P
7439-96-5	Manganese	218			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	27.2	B		P
7440-09-7	Potassium	1770	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	5.0	B		P
7440-23-5	Sodium	22000			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	2.6	U		P
7440-66-6	Zinc	1720			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9715506.2372

TMA/Skinner & Sherman Laboratories
Sample Login Sheet

Workorder 53-11-084 Client Hanford-NCI Number/Type of Samples 2 water
Protocol _____ Turnaround 33 days Cooler Temp: 4 °C, or N/A Cooler Yes/No
Custodian: Benney, A. Shipper & # Fedex SDG/Batch# N/A
Custody Seal: Present/Absent/Intact/Not Client Case# N3-11-036
Purchase Order/Contract# N3-11-036 Client Contact D. Sanchez
Tag#: Present/Absent/NA/(See COC) Chain of Custody: Present/Absent/NA,# _____

Sample Containers - Intact/Broken Comment: _____
Client Comment? Yes/No _____
Sample labels agree with Chain of Custody Information? Yes/No (Comment)
Client paperwork agrees with samples and Chain of Custody? Yes/No (Comment)
Shipment Dates: 11/5/93
List any date with paperwork/shipment problems & specify the problem:

N/A

	Client ID	Matrix	Received	pH*	Test(s) & QC	Holding Times
1	B09BR4	WATER	11/5/93	1.88	TM	
2	↓ R5	↓	↓	1.87	D.5 ↓	
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

These samples are from a site known to have Radioactive Contamination: Yes ✓ No ___
These samples have detectable amounts of Radioactive Material: Yes ___ No ___

Subcontract: Yes/No, To: _____ Date: _____

Reviewed _____ Date _____

* EPA/CLP required

Rev 1.7

9713506.2373

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # N3-11-036

RCVD: 11/04/93 DUE: 12/09/93 11/04/93 12:44:23 KEEP: 12/09/94 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SV and CATEGORY		
01B-W	B09BR4	S&E	WH007	WH008	WH010
02B-W	B09BR5	S&E	WH007	WH008	WH010
02E-W	B09BR5 MS	S&E	WH007	WH008	WH010
02F-W	B09BR5 DUP	S&E	WH007	WH008	WH010
02G-W	L C S	S&E	WH007	WH008	WH010

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
tyamamoto	11/4/93	Skinner	11/4/93	[illegible]	11/5/93

BEST AVAILABLE COPY

9715506.2374

TMA
Thermo Analytical Inc.

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

RECORD COPY

MAR 1994
RECEIVED
SOLA

March 2, 1994

Ref: TMA/Norcal N4-02-039-7326

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

Dear Ms. Colley:

Enclosed is the data report for six water samples received November 4, 1993 through November 9, 1993 from location 300-FF-1. Results are given for isotopic uranium analyses.

The data package is paginated 1, 1A through 142.

Please call if you have any questions concerning this data.

Sincerely,

Julie D. Wose
Manager, Nuclear Programs
TMA/Norcal

JDW/ss

Enclosure: Data Package

TMA/Norcal

Report N4-02-039-7326
Sample Delivery Group 7326

Westinghouse Hanford Company
P.O. MBH-SVV-069262

Case Narrative

March 2, 1994

1.0 GENERAL

TMA/Norcal Sample Delivery Group 7326 is comprised of six samples from location 300-FF-1. Chain-of-Custody numbers were not provided. One liter plastic bottles of each sample were received for analysis.

2.0 ANALYSIS NOTES

2.1 Uranium-233/234, 235 and 238 Analyses

Sample BO9BR6 was lost during the first analysis. There was no sample available for reanalysis. High uranium activity in the samples necessitated that a smaller than nominal aliquot be analyzed. The uranium MDA's of all the samples are larger than the RDL due to the small aliquots. Because all the samples contain positive uranium activity, the high MDA's do not affect the validity of the data. The MDA's of the LCS were also greater than the RDL's, but since the LCS contained uranium activity at levels much greater than the both MDA's and RDL's, the high MDA's are of little concern. Sample three was lost during the first analysis.

9713506.2376

TMA NORCAL
REPORTING GROUP 7326

N402039-01

DATA SHEET

B09BR4

SDG	7326	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N402039-01	Client sample id	B09BR4
Dept sample id	7326-001	Location/Matrix	300-FF-1 LIQUID
Received	11/04/93	Collected	11/02/93
		Chain of custody id	NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Uranium 233/234		1600	360	100	0.2		U
Uranium 235	15117-96-1	110	86	100	0.2		U
Uranium 238		2000	410	90	0.2		U

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	03/02/94

9713506.2377

N402039-02

TMA NORCAL
REPORTING GROUP 7326

DATA SHEET

B09BR5

SDG	7326	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N402039-02	Client sample id	B09BR5
Dept sample id	7326-002	Location/Matrix	300-FF-1 LIQUID
Received	11/04/93	Collected	11/02/93
		Chain of custody id	NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Uranium 233/234		1800	320	90	0.2		U
Uranium 235	15117-96-1	160	80	70	0.2		U
Uranium 238		1400	260	80	0.2		U

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	03/02/94

N402039-04

TMA NORCAL
REPORTING GROUP 7326

DATA SHEET

B09BR7

SDG	7326	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N402039-04	Client sample id	B09BR7
Dept sample id	7326-004	Location/Matrix	300-FF-1 LIQUID
Received	11/09/93	Collected	11/04/93
		Chain of custody id	NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Uranium 233/234		1600	280	80	0.2		U
Uranium 235	15117-96-1	100	58	70	0.2		U
Uranium 238		1500	280	80	0.2		U

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	03/02/94

9713506.2379

N402039-05

TMA NORCAL
REPORTING GROUP 7326

DATA SHEET

B09BR8

SDG	7326	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N402039-05	Client sample id	B09BR8
Dept sample id	7326-005	Location/Matrix	300-FF-1 LIQUID
Received	11/09/93	Collected	11/04/93
		Chain of custody id	NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Uranium 233/234		1000	220	80	0.2		U
Uranium 235	15117-96-1	51	41	80	0.2	U	U
Uranium 238		900	200	60	0.2		U

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	03/02/94

9713506.2390

N402039-06

TMA NORCAL
REPORTING GROUP 7326

DATA SHEET

B09BR9

SDG	7326	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N402039-06	Client sample id	B09BR9
Dept sample id	7326-006	Location/Matrix	300-FF-1 LIQUID
Received	11/09/93	Collected	11/04/93
		Chain of custody id	NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Uranium 233/234		600	160	70	0.2		U
Uranium 235	15117-96-1	22	22	80	0.2	U	U
Uranium 238		580	160	70	0.2		U

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	03/02/94

TMA NORCAL
REPORTING GROUP 7326

DATA SHEET

N402039-07

B09BS0

SDG	7326	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N402039-07	Client sample id	B09BS0
Dept sample id	7326-007	Location/Matrix	300-FF-1 LIQUID
Received	11/09/93	Collected	11/04/93
		Chain of custody id	NA

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Uranium 233/234		500	140	90	0.2		U
Uranium 235	15117-96-1	65	56	70	0.2	U	U
Uranium 238		460	130	60	0.2		U

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	03/02/94

9213506.2332

02/04/94 09:06 ☎509 372 2106 WHC HASM 345HLS ☑001

Westinghouse Hanford Company
Hanford Analytical Services Management

P.O. Box 1970
Richland, Washington 99352

Commercial FAX # (509) 372-2106

Company Name: TMA

Contact Name: DOLORES SANCHEZ

FAX Number: 510-235-0438 | **Telephone Number:** 510-235-2633

Sender: Bill Strohben (509) 372-3695

Comments: SAMPLES REQUESTED TO BE ANALYZED FOR TOTAL / ISOTOPIC U:

B09BR4, B09BR5, B09BR6, B09BR7, B09BR8, B09BR9, B09BS0

11037, 11059 (7293) → WHC

Number of Pages (Including Coversheet): 1

Date Sent: 2/4/94 41

If there are any problems with this transmission, please call sending party on (509) 372-2227.

971506.2303

104

FORM OF PAYMENT

☐ GBL ☐ FCCOD ☐

☒ Bill to Consignee ☐ Third Party Billing ☐

EMERY WORLDWIDE — A CF Company

SERVICES **

UNITED STATES / CANADA: ☐ Same Day (Extra Charges) ☐ ☒ AM ☐ PM ☐ Second Day ☐ Saturday Delivery

INTERNATIONAL: Express ☐ Standard Plus ☐ Preferred ☐ Standard ☐ Business Documents ☐ Customs Clearance ☐ Delivery ☐

Shipper's Account Number: 50281585

Date: 11-08-93 | Origin: PSC | 251901037 3

To:

TINGHOUSE SHIPPING DEPT (509) 376-6665
. DEPARTMENT OF ENERGY C/O
TINGHOUSE HANFORD
BLDG 1163
5 STEVENS DRIVE
HLAND WA ☐ Canada

TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA ☐ Canada

Hold for Pick Up ☐

Tariff Dest. | Gateway

Check to Shipper $

EMERY WORLDWIDE will accept Consignee check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentati

Customer's Reference Numbers: 232 E215A W94-0-0001#38 | 99352

Consignee's Account Number: E 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight
BUTCHER OOLER ID: SPHL-A . GAL 92 LBS ER SAMPLES	2				2	160

FOR INFORMATION OR RATES CALL 1-800 44 EMERY

Declared Value $

251901037 3

Remarks: NIGHT DELIVERY IATURE SECURITY SERVICE

Zip Ship ☐ — For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 ☐ Urgent Pack 10X15 ☐

International Shipments: Free Domicile ☐ | Commodity Code

Third Party Account Number mandatory for Third Party Billing. | Third Party Account Number: E

International Customs Value | International Insurance

Charge

Total Transportation Charges | Other Charges/Advance at Origin ☐ OC/AO- $

1-OAK-A

Terms and Conditions on Back

00 56

FORM OF PAYMENT

Check ☐ GBL ☐ FCCOQ ☐

Bill to Shipper [X] Bill to Consignee ☐ Third Party Billing ☐

E Shipper's Account Number 850281585

EMERY WORLDWIDE — A CF Company

SERVICES **

UNITED STATES / CANADA: Same Day (Extra Charges) ☐; AM ☐; PM ☐; [X] Second Day ☐; Saturday Delivery ☐

INTERNATIONAL: Express ☐; Standard Plus ☐; Preferred ☐; Standard ☐; Business Documents ☐; Customs Clearance ☐; Delivery ☐

Date	Origin	Shipment Number
1-03-93	PSC	251901032 9

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD
BLDG 1163
2355 STEVENS DRIVE
RICHLAND WA
Canada ☐

To:
TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA
Hold for Pick Up ☐
Canada ☐

Tariff Dest. | Gateway

Check to Shipper $

EMERY WORLDWIDE will accept Consignee's check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation.

Customer's Reference Numbers: W81232 P215A W94-0-0001 #35 PH BUTCHER

Zip: 99352

E Consignee's Account Number: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (in Lbs.)
1 COOLER ID: IT 8 WATER SAMPLES	1	24	16	17	1	55

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

2 5 1 9 0 1 0 3 2 9

Remarks: OVERNIGHT DELIVERY SIGNATURE SECURITY SERVICE

Shipper's Signature 1145

Zip Ship ☐
For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 [X]; Urgent Pack 12X15 [X]

International Shipments: Free Domicile ☐; Commodity Code

Third Party Account Number mandatory for Third Party Billing. E Third Party Account Number

International Customs Value | International Insurance

Base Charge

Total Transportation Charges | Other Charges/Advance at Origin ☐ OC/AO- $

1-OAK-A

Terms and Conditions on Back

57

97150b.2384

Quickwash Delivery

Signature Security Service

Contractor WHC	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W94-0-0001-35

PART I – TO BE COMPLETED BY ORIGINATOR

Department Env. Eng. & Tech.	Section Geosciences	Unit Geochem. & Hydrochem

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 55 lbs	Sample #: B09BR4, B09BR5, B09BW2 Cooler ID: IT 8 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 [illegible] lbs	Sample #: [illegible] Cooler ID: [illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sample for support RI/FS work in the [illegible]

Bill of Lading [illegible]

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIALS DELIVERED TO SHIPPING

RM Clearance for Public Release	RM Survey No	Date

Location of Property (Area & Bldg.)	Contact	Phone
[illegible]	[illegible] Butcher	(509) 376-[illegible]

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property Will be Returned
11/[illegible]/93	W81282/PD [illegible]	[illegible]

Originated By	Date	Authorized By	Date
[illegible]	11/[illegible]/93	[illegible]	11/[illegible]/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	11/[illegible]/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No	Date Issued	Purchase Order No	Date Issued
[illegible]	0 58			
Date [illegible]				

DISTRIBUTION

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

54-3000-479 (05 89)

9715506.2336

Overnight Delivery

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
UNC		[illegible] 38

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
[illegible]	[illegible]	
1 lbs.	Sample #: B0 9BR9, B0 9BR8, B0 9BR7, B0 9BR6, B0 9BR5 Cooler ID: GRE Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

[illegible]

BEST AVAILABLE COPY

Bill of Lading # [illegible]

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

RM Clearance for Public Release	RM Survey No	Date
—	—	[illegible]

Location of Property (Area & Bldg.)	Contact	Phone
300 FF-1	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
11/8/93	WB1232/E 01SH	NA

Originated By	Date	Authorized By	Date
P.H. Butcher	11/8/93	[illegible]	11/8/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		W. Hankel	11/8/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
11-8-93	59			
Date				

DISTRIBUTION

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

SA 2000-470 (00/00)