0044326
3044-SC4

MAXWELL
S-CUBED Division

NARRATIVE

July 16, 1992

Narrative Project:	Site Wide Soil III
Reference No.:	32359-31
Client:	WHC
SDG No.:	3044

METALS

The samples were analyzed according to SW-846 Methods 6010 and the 7000 series for the CLP list plus Mo. There were no difficulties with the analyses. Several analytes of interest were detected in the samples.

The quality control results were generally acceptable. Several MS recoveries and serial dilution %D values were outside criteria due to matrix effects. The sample exhibited acceptable reproducibility. All soil LCS recoveries are within advisory ranges.

ANIONS

The samples were analyzed according to EPA Method 300.0 for Cl, PO4, SO4. Nine grams of soil was leached into 45 ml DI Type II water prior to analysis on the IC. Low levels were detected in the sample. The quality control results were acceptable.

NO2/NO3

The samples were analyzed according to EPA Method 353.3 for NO2/NO3. Ten grams of sample was leached into 50 ml DI Type II water prior to analysis. The analyte was detected in the sample. The quality control results were acceptable.

TOTAL ALKALINITY

The samples were analyzed according to EPA Method 310.1 for total alkalinity. 10 grams of soil sample was leached into 50 ml DI Type II water prior to analysis. The analyte was detected in the sample. The quality control results were acceptable.

FEB 1996
RECEIVED

1a

MAXWELL
S-CUBED Division

NARRATIVE

SULFIDE

The samples were analyzed according to EPA Method 9030 for sulfide. 10 grams of soil was leached into 50 ml DI Type II water prior to analysis. The analyte was detected in the samples. The quality control results were acceptable.

TOC/TC

The samples were analyzed according to EPA Method 9060 for total organic carbon and total carbon in soil. Significant levels were detected in the sample. The QC results were acceptable.

Marie O'Meherty

John DeWald
Project Manager

enclosures

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SDG Memo/Sample Summary

Client Name:	WESTINGHOUSE HANFORD CO.	**Date:**	16 Jul 1992
Project Name:	SITE WIDE III	**Update No.:**	0
SDG No.:	3044	**Work Order No.:**	32359-31
Project Manager:	J. DEWALD		
Mail Date:			

Client Samp No.	S-Cubed Samp No.	Date Rcvd	Date Samp	Matrix	ANIONS	FURN7000	HG7000	ICP6010	NO3/NO2	S	TALK	TC	TOC
BO6J89	3044-01	6-18-1992	6-16-1992	SOIL	X	X	X	X	X	X	X	X	X
BO6J89MS	3044-01MS	6-18-1992	6-16-1992	SOIL	X	X	X	X	X	X	X	X	X
BO6J89REP	3044-01REP	6-18-1992	6-16-1992	SOIL	X	X	X	X	X	X	X		

Westinghouse Hanford Company	CHAIN OF CUSTODY	53Lot # 30441

Custody Form Initiator: Chris Kramer

Company Contact: Jon Lucas — Telephone: 376-2789

Project Designation/Sampling Locations: Yakima Barricade — Collection Date: 6-16-92

Borehole # 699-48-96 (~~430~~ 429 FT level) CK 6/16/92 — Site wide Background Project

Ice Chest No.: RM# 35 — Field Logbook No.: EFL-1023

Bill of Lading/Airbill No.: 2509868405 — Offsite Property No.: W92-0-0436 #7

Method of Shipment: Emery

Shipped to: S-Cubed San Diego, CA

Possible Sample Hazards/Remarks: None

Sample Identification

B06JB9 - Soil (1) 250 ml aG

☐ Field Transfer of Custody — CHAIN OF POSSESSION — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Chris Kramer	Jonathan G. Lucas	6-16-92 1335 HRS
Relinquished by: Jonathan G. Lucas	Received by: Joaquin R. Lopez	Date/Time: 6/18/92 11:30 AM
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90)

1c

S3Lot# 3044

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector Chris Kramer Date Sampled 6-16-92 Time 1205 hours

Company Contact J. G. Lucas Telephone (509) 376-2789

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B06JB9	1-250ml a G	Soil	ICP/AA metals (including Hg)- 6010, 7000 series, 7471
			Anions (SO_4, PO_4, Cl, NO_2, NO_3)- EPA 300.0 & 353.2
			Alkalinity - EPA 310.1
			Total Carbon - 9060M
			Sulfide - 9030
			TOC - 9060

Field Information** —

Special Handling and/or Storage 4°C

Possible Sample Hazards —

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

6/18/92 11:30AM

A-6000-406 (05/90)

1d

S3Lot #3044 "Next Day Delivery" "Signature Security"

Contractor Westinghouse Hanford Co.	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W92-0-0436 #7

PART I – TO BE COMPLETED BY ORIGINATOR

Department Environ. Rest. Eng.	Section Environ. Remedial Act.	Unit
The following items are to be shipped from	☒ Contractor	☐ Vendor
Routing Emery	☒ Contractor	☐ Vendor

Shipped to	Off-site Custodian
S-Cubed 3398 Carmel Mt. Rd. San Diego, CA 92121-1095	John Dewald Full Title —

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 17 lbs	Poly ice chest (RM#35) containing glass sample container of soil packed in blue ice and vermiculite. Sample # – B06JB9	

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

Necessity for the Off-Site Use of this Property

Program not available on site.
Bill of Lading # 2509868405

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
Felipe Daza	6-17-92 910680	6-17-92

Location of Property (Area & Bldg.)	Contact	Phone
– 429 FT Yakima Barricade Borehole #699-48-92	J.G. Lucas	376-2789

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
6-17-92	PKIBB 81225	—

Originated By	Date	Authorized By	Date
J.G. Lucas	6-17-92	[signature]	6/17/92

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[signature]	6/17/92

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
J Demarest Date 6-17-92 11:35				

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

1e 54-3000-479 (09/89)

FORM OF PAYMENT

Check ☐ GBL ☐ CCOD ☐

Bill to Shipper ☒ Bill to Consignee ☐ Third Party Billing ☐

EMERY WORLDWIDE

A CF Company

UNITED STATES / CANADA: ☐ Same Day ☐ ☒ AM ☐ PM ☐ Second Day ☐ Saturday Delivery

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

Shipper's Account Number: E 850281585

Date: 06-17-92 | Origin: PSC | Shipment Number: 250986840 5

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U S DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD
BLDG 1163
2359 STEVENS DRIVE
RICHLAND WA

Canada ☐ ☐

To:
JOHN DEWALD
S-CUBED
3398 CARMEL MT. ROAD
SAN DIEGO CA

100

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: W81224 PK1BB W92-0-0436#7 | 99352

E Consignee's Account Number: 3 | Zip: 92121-1095

Description	Dimensions Pcs.	L	W	H	Total Pieces	Total Weight (in Lbs)
1 IDE CHEST RM#35 SOIL SAMPLES B06Jb9	1				1	17

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

Declared Value $

Remarks: OVERNIGHT DELIVERY SIGNATURE SECURITY SERVIC

Shipper's Signature X

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

Mark if Emery Packaging is used: Urgent Letter 9X12 ☒ Urgent Pack 12X15 ☒

6/18/92 11:30AM

250986840 5

SAN-A

Terms and Conditions on Back

International Shipments: Free Domicile ☐ Commodity Code

Third Party Account Number mandatory for Third Party Billing. E

Third Party Account Number

International Customs Value | International Insurance

Base Charge

Total Transportation Charges

Other Charges/Advance at Origin ☐ OC/AO $

1F

MAXWELL
S-CUBED Division

Lot No. 3044

Sample Log-In Sheet
DC No._____-___-____

Date Received: 6-18-1992 Date Sampled: 6-16-1992 Client Code: WHC

Time Received: 11:30

Received by (Sig): _____ Custody Seals Present/Intact (Y) N Reporting Level: FULL CLP

Airbill No. 2509866840 Chain of Custody Present/Intact (Y) N Turnaround Required: 30 DAY

Charge No. 32359-31 Client Forms Present (Y) N Quality Control Reqd'd: Level 3 (RCRA)

Case No./Project Code: SITE WIDE III SDG No.: 3044

S-Cubed Sample No.	Sample Identification	Samp. Type	No. Cont.	Samp Cond	Samp Stor.	ANIONS	FURN7000	HG7000	ICP6010	NO3/NO2	S	TALK	TC	TOC	All Info Agree	Notes
3044-01	BO6JB9	SOIL	0/1	OK	WA	X	X	X	X	X	X	X	X	X		
3044-01MS	BO6JB9MS	SOIL	↓	↓	↓	X	X	X	X	X	X	X	X	X		
3044-01REP	BO6JB9REP	SOIL	↓	↓	↓	X	X	X	X	X	X	X				

Container Types

Water _____

Soil _____

Soil = Soil/Sediment/Sludge
Water = Aqueous
NAL = Non-Aqueous Liquid
NSS = Non-Soil Solid

Water MS,MSD_____
Soil MS,MSD_____
SDG Complete (Y) N

Review JD 6/18

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LABORATORY: S-CUBED
CLIENT: WHC
PROJECT: SITE WIDE III
LOT #: 3044
FILE #: ANI3044
DISK #: ANI0511
METHOD NO.: 300.0

UNIT: MG/KG

DATA REVIEWER: CW 7/10
PROJECT REVIEWER:
CHARGE #: 32359-31
DATE SAMPLED 06/16/92
DATE RECEIVE 06/18/92
PREP DATE: 06/24/92
DATE ANALYZE 06/24/92

SAMPLE TYPE: SOIL

LAB ID	CL	PO4	SO4
3044 -01	3.92 ~~3.90~~ KP	1.48 ~~1.50~~ KP	5.80

Nine gm of soil sample was leached into 45 mL DI type II water. All QC check standard, prep blank, LCS, RPD and MS were met the QC requirement.

LABORATORY: S-CUBED
ANALYST: MT
CHARGE # 32359-31

LOT #: 3044
FILE #: ANI3044
DISK #: ANI0511

UNIT: MG/KG

SAMPLE TYPE: SOIL

SULFATE RESULTS

LAB ID	% MOISTURE	SAMPLE WT. (GM)	SAMPLE VOL ML	DIL. FACTOR	CONC. FOUND MG/L	FINAL CONC. MG/KG	ANALYSIS DATE	PREPARATION DATE	METHOD DETECTION MG/L	METHOD DETECTION MG/KG	%REC.	%RPD
3044 -01	10.34	9	45	1	1.040	5.800	06/24/92	06/24/92	0.1	0.56		
3044 -01R	10.34	9	45	1	1.020	5.688	06/24/92	06/24/92	0.1	0.56		1.9
3044 -01S	10.34	9	45	1	5.560	31.006	06/24/92	06/24/92	0.1	0.56	90	

S - CUBED

Trace Inorganics Report

Client: WHC
Project: SITE WIDE III
Sampling Date: 06/16/92

Analyst: PA
Review : CN 7/9
Receipt. Date: 06/18/92

Analyte: NO2/NO3

S - CUBED Sample No.	MT	UN	Client Sample ID	Concentration	MDL
3044-01	S	A	B06JB9	~~5156.76~~ 5160	~~1394.156~~ 1400

Method Detection Limit: 1.000 mg/L
Preparation Method: 353.3
Analytical Method: 353.3
Preparation Date: 06/23/92
Analysis Date: 06/23/92

UN = Units = (A=mg/kg B=ug/L C=mg/L) MT = Matrix = (S=Soil W=Water)

Comments: ~~Ten~~ Ten gm of sample was leached into 50 mL DI-type II H_2O prior to analysis. All QC checks lab blank, LCS, replicate and MS were within the control limit.

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S - CUBED

Trace Inorganics

Laboratory Control Sample Summary

Client: WHC
Project: SITE WIDE III

Units: mg/L Analyte: NO2/NO3

LCS ID	Control Limit	True Value	Value Found	% Recovery
LCS0623	80%-120%	2.50	2.940	117.60

Comments:

S - CUBED

Trace Inorganics

Calibration Verification Summary

Client: WHC
Project: SITE WIDE III

Units: mg/L Analyte: NO2/NO3

ICV/CCV	Control Limit	True Value	Value Found	% Recovery
ICV	90%-110%	5.00	4.610	92.20
CCV-1	90%-110%	5.00	5.380	107.60

Comments:

S - CUBED

Standards Page

Standards ID	Absorbance	Concentration
1	0.000	0.00
2	0.006	1.00
3	0.015	2.50
4	0.032	5.00
5	0.060	10.00
6	0.132	20.00

Cor. Cof. (r): 0.99897
Slope: 0.0066
Y Intercept: -0.0013

Conc. Units: mg/L

S - CUBED

Trace Inorganics Report

Client: WHC
Project: SITE WIDE III
Sampling Date: 06/16/92

Analyst: WA
Review : WN 7/9
Receipt. Date: 06/18/92

Analyte: TALK

S - CUBED Sample No.	MT	UN	Client Sample ID	Concentration	MDL
3044-01	S	A	B06JB9	~~223.06~~ 223	~~55.766~~ 60

Method Detection Limit: 10.000 mg/L
Preparation Method: 310.1
Analytical Method: 310.1
Preparation Date: 06/24/92
Analysis Date: 06/24/92

UN = Units = (A=mg/kg B=ug/L C=mg/L) MT = Matrix = (S=Soil W=Water)

205

Comments: 10 gm of soil samples were leached into 50 mL DI type II water prior to analysis. All qc requirement were met

S - CUBED

Trace Inorganics

Laboratory Control Sample Summary

Client: WHC
Project: SITE WIDE III

Units: mg/L Analyte: TALK

LCS ID	Control Limit	True Value	Value Found	% Recovery
LCS0624	80%-120%	40.00	44.000	110.00

Comments:

S - CUBED

Trace Inorganics Report

Client: WHC
Project: SITE WIDE III
Sampling Date: 06/16/92

Analyst: EA
Review : [illegible] 6/29
Receipt. Date: 06/18/92

Analyte: S

S - CUBED Sample No.	MT	UN	Client Sample ID	Concentration	MDL
3044-01	S	A	B06JB9	2.80	1.000

Method Detection Limit: 1.000 mg/L
Preparation Method: 9030
Analytical Method: 9030
Preparation Date: 06/23/92
Analysis Date: 06/23/92

UN = Units = (A=mg/kg B=ug/L C=mg/L) MT = Matrix = (S=Soil W=Water

Comments: Sample was leached 10 gm into 50 mL DI H_2O.
All QC requirement were met.

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S - CUBED

Trace Inorganics

Laboratory Control Sample Summary

Client: WHC
Project: SITE WIDE III

Units: mg/L Analyte: S

LCS ID	Control Limit	True Value	Value Found	% Recovery
LCS0623	80%-120%	40.00	41.600	104.00

Comments:

MAXWELL
S-CUBED

					QC SUMMARY				
ANALYTE:	TOC	CALIBRATION			CONC	OBSERVED	%REC.	ACCEPT.	
METHOD REF.:	9060	STD 2000ppm	1986	M S	10	10.82	108.2	80-120	TOC
DATE:	6/19/92	STD 400ppm	398.7	L C S	2000	2086	104.3	80-120	
ANALYST:	CAC	STD 10ppm	10.03						
MATRIX:	Soil	CAL BLANK	1.5						

TOC CONC.=(TOC READING/2000)*(0.08mg/0.00001kg)*DIL.FACTOR
FINAL CONC.=TOC CONC./1-(%MOIST.*0.01)

SAMPLE ID. (S3)	TOC READING	DIL. FACTOR	TOC CONC. (mg/kg)	%MOIS	FINAL CONC (mg/kg)	CLIENT SAMP.ID		
EBS0619	6.4	1	25.6		30			
LCSS0619	2086	1	8344		8340			
3044-01	31.63	10	1265.2	10.34	1410	BO6JB9	TOC	
3044-01MS	42.45	10	1698	10.34	1890	BO6JB9MS	TOC,10PPM	108.2%
3044-01	35.42	10	1416.8	10.34	1580	BO6JB9	TC	
3044-01MS	135.1	10	5404	10.34	6030	BO6JB9MS	TC,100PPM	99.7%

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