MAXWELL
S-CUBED Division

SORRENTO VALLEY OFFICE
3398 Carmel Mountain Road, San Diego, CA 92121-1095
P.O. Box 1620, La Jolla, CA 92038-1620

NARRATIVE

DATE: November 7, 1991
REFERENCE NO.: 32359-04, SDG 2630

NOV 1991
RECEIVED
OSM DMO

CLP METALS + LI, TI, ZR

The samples were analyzed according to the 2/88 CLP Inorganics Statement of Work. GFAA dilutions were required for samples 2630-1 through 2630-15 at a dilution factor of 11 for As, Se, Pb, and Tl. The Li IDL for the analytical run used for this SDG is 300 ug/L. The Li IDL is subject to fluctuations due to the wavelength required for analysis. There were significant levels of several analytes detected in the samples.

The quality control results were generally acceptable. A wider window of 80-120% is accepted for Li CCV percent recoveries due to the characteristics of the wavelength required for Li analysis on the ICP. The Se was diluted out of the matrix spike sample during analysis, thus no recovery. Sb, Mn, Hg, and Ag show low recoveries for the matrix spike but are within windows for the post-digestion spike analysis for the ICP metals. Li, Ti, and Cr recovery is high for the matrix spike but within windows for the post-digestion spike. These matrix spike anomolies are matrix-associated. Pb recovery is low for the matrix spike due to matrix effects. Duplicate results for several analytes are out of criteria due to soil matrix.

NOV 1996
RECEIVED
DMC

Westinghouse Hanford Company

Hanford Operations and Engineering Contractor for the US Department of Energy
P.O. Box 1970 Richland, WA 99352

NONCONFORMANCE REPORT

Page 1 of ____

No. B 06175

1. MFR/ORG: MAXWELL S-CUBED DIVISION

ITEM/MATERIAL NAME: EWIR SAMPLE
PART NO.: N/A
DRAWING/SPEC. NO.:
REV.: N/A
PROGRAM/PROJECT: SITE-WIDE BACKGROUND
P.O./W.O. NO.:
SYSTEM/END USE:
DATE: 01/28/92

UNUSUAL OCCURRENCE REPORT REQUIRED: ☒ YES ☒ NO

2. DESCRIPTION OF NONCONFORMANCE

LABORATORY IS PERFORMING INORGANIC ANALYSIS (SOIL) WITHOUT UTILIZING A SOLID MATRIX LCS FOR CLP METALS ANALYSIS.

EXAMPLES: SDG # 2630 & 2633

NOTE: THE LAB INDICATES THAT ALL METAL ANALYSIS (CLP) HAVE BEEN PERFORMED WITHOUT A SOIL LCS.

3. REQUIREMENT VIOLATED: "ONE SOLID LCS MUST BE PREPARED & ANALYZED FOR EVERY GROUP OF SOLID SAMPLES IN A SAMPLE DELIVERY GROUP....."

DOCUMENT	REV	ZONE/PARA
CLP SOW INORGANICS	2/88	PART E, SECTION V, ITEM #8

ORIGINATOR: M.A. Beck
ORGANIZATION: 12500/05M
DATE: 01/28/92

4. ASME CODE ITEM(s) ☐ NO ☐ YES. NOTIFY AUTHORIZED INSPECTOR.

WHC QAR

5. CAUSE OF NONCONFORMANCE
☐ PROCEDURES ☐ PERSONNEL ☐ MATERIALS
☐ EQUIPMENT ☒ OTHERS

REMARKS: See 8A

PR-07, EQ-001-007

6. CORRECTIVE ACTION TO ELIMINATE CAUSE

- S³ has obtained and is currently using a solid LCS sample for the QC requirement (see S³ Letter to T. Washington 3/2

INITIATION DATE
SERIAL NO.
RESPONSIBLE ORG. REP.
TITLE
DATE

7. RECOMMENDED DISPOSITION ☒ ACCEPT ☐ REJECT ☐ REPAIR ☐ REWORK ☐ OTHER

8A. DISPOSITION JUSTIFICATION AND INSTRUCTIONS

S³ did perform the LCS at the required frequency using an aqueous standard prior to receiving and testing the solid LCS. The aqueous LCS results were evaluated in the applicable data packages and performance was documented with the validation paperwork.

8. ADDITIONAL REVIEWS REQUIRED (WHC ONLY) ☐ YES ☒ NO
IF YES, IDENTIFY:

9. SUPPLIER ENG.
SUPPLIER QA

10. DISPOSITION APPROVAL (WHC ONLY)
☒ APPROVED ☐ DISAPPROVED
☐ OTHER (SEE CONTINUATION SHEET)

J. Hoover — COGNIZANT ENGINEER — DATE 5/21/92
LW VANCE — COGNIZANT QA ENGINEER — DATE 5/21/92
NA — AUTHORIZED INSPECTOR REVIEW — DATE

11. ADDITIONAL APPROVALS

NAME	TITLE	DATE	NAME	TITLE	DATE

12. DISPOSITION ACTION COMPLETE

NAME: L.W. Vance
DATE: 5/21/92
QTY. ACCEPT: NA
QTY. REJ.: NA
FOLLOW ON NCR

QA LOG NO. 3A-92-013

The issuance and acceptance of this request in no way limits or affects the warranty provisions of the order. This request shall not establish a precedent or obligation to accept similar conditions in the future.

FOLLOW-UP LEVEL A ☐ B ☐ C ☐

219-104 (9-87)

MAXWELL
S-CUBED Division

SORRENTO VALLEY OFFI
3398 Carmel Mountain Road., San Diego, CA 92121-1C
P.O. Box 1620, La Jolla, CA 92038-16

March 27, 1992

Ted Washington
MSIN: T6-08
Office of Sample Management
Westinghouse Hanford Company
2355 Stevens Drive
Richland, WA 99352

Dear Mr. Washington:

We have recently been able to validate and confirm true values for the ERA solid LCS source using the CLP method. The validation study was performed by preparing and analyzing ten solid LCS samples using the CLP method and determining the average value obtained for each analyte and the appropriate windows of acceptability. This validation study was required by the solid LCS source since the certified true value determinations were based on the method 3050, SW-846 (see attached sheet).

Prior to the availability of validated solid LCS for CLP soil analysis, EPA-approved aqueous LCS spike solution was spiked into a clean, empty beaker and then prepared and analyzed by the CLP soil method. Thus quality control requirements for preparation and analysis are acceptable and confirm the reliability and validity of the associated samples using the available LCS at that time.

Sincerely,

Wipawan Nisamaneepong

Wipawan Nisamaneepong, Ph.D.
Inorganics Laboratory Manager

Telephone (619) 453-0060 • FAX (619) 755-0474 • Division Office

Instructions for the use of

PriorityPollutnT™/CLP Quality Control Standards

Inorganics in Soil **Caution:** Read instructions carefully before opening PriorityPollutnT™/CLP standards.

PriorityPollutnT™/CLP Quality Control Standards are designed to test your complete inorganic priority pollutant and CLP analysis procedure. The Trace Metals solid standard contains 24 trace metals (refer to the back of this sheet for a complete list). The Cyanide solid standard is designed for cyanide analysis, either a simple or a complex cyanide, or both, may be present.

I. Standard Preparation

The standards must be prepared by the following directions before analysis.

A. Trace Metals

Digest the standard using Method 3050, SW-846. This digestion is essentially a hot acid leach of the standard and is not a total digestion. The standard should then be analyzed by ICP and/or atomic absorption. Results different from the certified values will be obtained if a total digestion using hydrofluoric acid, perchloric acid or fusion is employed. Digest and analyze the sample for mercury using Method 7471, SW-846.

B. Cyanide

Prepare the standard using Method 9010 or 9012, SW-846. The preparation quoted is intended for use with an aqueous waste. The only required modification is to place 10 grams of the soil standard into the appropriate aliquot of water in the distillation flask (step 7.2.1). All other preparation steps should be followed. The digestate obtained is then analyzed for cyanide using Method 9010 (manual) or 9012 (automated), SW-846.

II. Standard Storage

Store the standards in a cool, dark place. The stability and certified values are unconditionally guaranteed for one year. Due to possible sample contamination, the guarantee is void after the standards are opened.

III. Standard Analysis

Remember ... PriorityPollutnT™/CLP standards are designed to help you evaluate the accuracy of your routine laboratory procedures. Therefore, analyze PriorityPollutnT™/CLP standards using your regular methods.

IV. Certified Results

The ERA certified and advisory range of values are included. The advisory range is the range of values that an experienced laboratory can expect to attain using the most precise methods and equipment. Certified and advisory values for ERA inorganic quality control standards are based on analytical results from applicable EPA reference methods. Certified values represent 100% recoveries for the analyses. Since many inorganic analytical methods do not yield 100% recoveries, especially for soil samples, ERA advisory ranges reflect typical recoveries from samples for the applicable EPA methodologies. The advisory ranges for these standards are wider than for ERA aqueous standards due to the variability of the SW-846 preparation methods.

Inorganics in Soil has been prepared using a cleaned, dried and sieved topsoil substrate. The final product was digested by a variety of methods, including the recommended 3050 (SW-846), to evaluate the effect of digestion variability on the results the laboratory should obtain. The certified values and advisory ranges shown on the accompanying certification sheet were arrived at after extensive evaluation of the experimental results. It should be noted that antimony and molybdenum are especially difficult to quantitatively recover using Method 3050. Low recoveries may also be experienced for arsenic, selenium, silver, thallium and vanadium. The advisory ranges for these elements have been adjusted to reflect this fact.

Experiments conducted by ERA using a "weak acid" digestion with only hydrochloric acid significantly improved the recovery of antimony. Digestion of Inorganics in Soil by a closed vessel microwave methodology also decreased the recovery of silver to <10% of the certified value. High recoveries of the metals native to the soil matrix (e.g. aluminum, calcium, manganese, iron and magnesium) indicate a too vigorous digestion procedure. In general, it should be noted that Method 3050 is not an extremely rugged methodology and close attention should be paid to the procedure to insure recovery of the listed elements within the advisory ranges. ERA stresses that it is the responsibility of the individual laboratory to determine acceptable levels of performance for a particular analytical result depending on the intended use of the data.

V. Safety

ERA products may be hazardous and are intended for use by professional laboratory personnel trained in the competent handling of such materials. Responsibility for the safe use of these products rests entirely with the buyer and/or user. If you need a Material Safety Data Sheet for any ERA product, please call toll-free at 1-800-ERA-0122.

MAXWELL
S-CUBED Division

FAX

TO:	M. Beck
FROM:	J. Goodin
DATE:	January 22, 1992
FAX NO:	(509) 373-3992
Pages to follow:	0

At S-Cubed, we do not have access to the EPA's solid LCS sample described in the CLP protocols because we are not currently under CLP contract with them for inorganic analysis. It might be possible to obtain some other solid reference material, but we have not yet found one containing all or even most of the metals. In the Quality Assurance Project Plan for Westinghouse Hanford Company, no solid LCS is specified and no solid LCS is discussed in the SW-846 (RCRA) methods. The LCS is used to determine laboratory consistency, for which purpose the liquid LCS is sufficient and allows us to monitor all of the metals of interest. We have recently analyzed a purchased solid reference standard, containing five of the metals, and would be glad to furnish you with these results. I hope that this explanation will satisfy your client. If you have any other questions or comments, please call me at (619) 587-8409.

CORRESPONDENCE DISTRIBUTION COVERSHEET

To: Distribution

From: Environmental Quality Assurance
H4-16 / 6-8557 / 6-9490

Subject: DISTRIBUTION OF NCR #B06175 (EQA-92-013)

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		M. A. Beck	T6-08	
		J. H. Kessner	T6-08	
		J. D. Hoover	H4-57	
		L. W. Vance	H4-16	
		APA	B5-20	
		QUEST	L4-86	
		EQA File	H4-16	

Jeanette
Jerry
Ford
Jeff

MAY 1992
RECEIVED
J.H. KESSNER

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator C.E. Heiden

Company Contact Chris Kramer Telephone 376-4186

Project Designation/Sampling Locations Site Wide Background Collection Date 10-1-91

Ice Chest No. RM #36 Field Logbook No.

Bill of Lading/Airbill No. 247 425 341 9 Offsite Property No. W92-0-0014 #2

Method of Shipment Emery

Shipped to S-Cubed San Diego, CA

Possible Sample Hazards/Remarks —

Sample Identification

B01438
B01439
B01442
B01443
B01444
B01445 } Soil (3-120 ml jars)
B01446
B01447
B01448
B01449

B01450
B01451
B01452
B01453 } Soil (3-120 ml jars)
B01456

☐ Field Transfer of Custody	CHAIN OF POSSESSION	(Sign and Print Names)
Relinquished by: C.E. HEIDEN C.E. Heiden	Received by: T. Dixon 10/8/91 3pm	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: All OK

A-6000-407 (12/90)

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

Project No. 91-075

PART I: FIELD SECTION

Collector C. Kramer / J. Lucas / C. Holden Date Sampled 10-1-91 Time — hours

Company Contact Chris Kramer Telephone (509) 376-4186

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B01438	3 - 120 ml jars	Soil	See attached Tables A-1, A-2.
B01439			Each sample is to be analyzed
B01442			for all analytes by the method
B01443			shown except for fluoride.
B01444			Fluoride may be done by
B01445			ion chromatography.
B01446			
B01447			
B01448			
B01449			
B01450			
B01451			
B01452			
B01453			
B01456			
B014H3	Ø containers	None	Additional prep. blank for all analyses.
			This sample number is provided to report
			and track this request. Contact Mark
			Beck - WHC OSM (509) 373-4369 if
			there are questions.

Field Information** Background Sites 13 ~~14~~.

Special Handling and/or Storage Sieve samples. Use the less-than 2mm size fraction in analytical aliquots. Exclude stones, etc larger than 2mm.

Possible Sample Hazards None

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406 (05/90)

MAXWELL S-CUBED Division

Lot No. 2630

Sample Log-In Sheet

DC No. ____-____-____

Date Received 10/8/91 Date Sampled 10/1/91

Client Code WHC

Time Received 3pm

Received by (Sig.) G. Durbin

Custody Seals Present/Intact (Y) N

Reporting Format: Summ. CLP Summ. (Full CLP) Disk

Airbill No. 247425341-9

Chain of Custody Present (Y) N

Turnaround Req'd: 45d (30d) 21d 14d 48hr Other ~~10d~~

Charge No. 32359-04

Client Forms Present (Y) N

Quality Control Req'd: Level 1(Low) (2(CLP)) 3(RCRA) 4(Other)

Case No./Proj. Code Site Wide Soil SDG No. 2630

S-Cubed No.	Sample Identification	Samp. Type	No. Cont.	Samp. Cond.	Samp. Stor.	A	B	C	D	E	F				All Info Agree	Notes
2630-1	B01438	S	0/3	WA		X	X	X	X	X	X					
MS 2	1439															
3	1442															
4	1443															
5	1444															
6	1445															
7	1446															
8	1447															F ALK
9	1448															E N-NH3
10	1449															D ANIONS
11	1450															C HGCLP
12	1451															B FURNCLP
13	1452															A ICPCLP + extra
14	1453															
15	1456															
16																Eqm Blank

Container Types BG14 H3

Water 30 x 120ml

Soil

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

Water MS, MSD ____

Soil MS, MSD 2630-2

SDG Complete (Y) N

Review JO 10/8

SC-03, Rev. 7/91

FORM OF PAYMENT

CASH ☐ GBL CBL ☐ FCCOD ☐

PPD XXX ☐ COL ☐ OTH ☐ COMAT ☐

Shipper's Account Number: E 850281585

EMERY WORLDWIDE

A GF Company

SERVICES

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

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

Date: 10-07-91 | Origin: PSC | Shipment Number: 247425341 9

PULL FOR SHPT. NO. TAB

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

To:
JOHN DEWALD
S-CUBED
3398 CARMEL MT. ROAD
SAN DIEGO CA
Hold for Pick Up ☐ Canada ☐

Tariff Dest. | Gateway

Check to Shipper $

EMERY WORLDWIDE will collect consignee's check made payable only to the shipper for the value of the goods in the amount shown above.

Customer's Reference Numbers: W81223 PK1BB W92-0-0014#2 | Zip: 99352

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

Description	Pcs	Dimensions L	W	H	Total Pieces	Total Weight (In Lbs)
1 ICE CHEST RM#36 SOIL SAMPLES W92-0-0014#2	1				1	60

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

Declared Value $

2 4 7 4 2 5 3 4 1 9

TODSR ☐ Haz Mat ☐ Edit ☐ A B C D E F G H I J K

1 2 3 4 5 6
7 8 9 0 1 2

Envelope 9X12 ☐ Pack 12X15 ☐

OVERNIGHT DELIVERY
SIGNATURE SECURITY SERVICE

Shipper's Signature X

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

Base Charge

Total Transportation Charges | Other Charges/Advance at Origin: ☐ OCAO $

SAN-A

Terms and Conditions on Back

CONSIGNEE — PACKAGE COPY — 4

EMERY WORLDWIDE — A CF Company

SIGNATURE AND TALLY RECORD

80029-46 (8/89) Litho USA

DATE: 10-07-91 SHIPMENT NO.: W92-0-001442
SHIPPER: WESTINGHOUSE SHIPPING DEPT (509) 376-6665
REFERENCE NO.: W92-0-001442

SHIPPER NAME AND ADDRESS	CONSIGNEE NAME AND ADDRESS
WESTINGHOUSE SHIPPING DEPT (509) 376-6665 ~~WESTINGHOUSE SHIPPING DEPT (509) 376-6665~~ G2-06 US DEPARTMENT OF ENERGY C/O WESTINGHOUSE HANFORD COMPANY 2355 STEVENS DRIVE 1163 BUILDING PO BOX 1970 RICHLAND WA 99352	JOHN DEWALD S-CUBED 3398 CARMEL MT. ROAD SAN DIEGO CA 92121-1095

Pieces	Weight	Description/Marks	Emery Authorization No.
1	60 LBS	W92-0-001442 ICE CHEST RM436 SOIL SAMPLES	

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW

Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1. JOYCE DEMAREST WESTINGHOUSE SHIPPING 1167/1100	RICHLAND WA		/10-07-91
2.			
3.			
4.			
5.			0330 10/8
6. J. PRICE	SAN		1230/00
7.			1 14:15
8. John Dixon S-Cubed	SAN		10/8/91 3pm

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-1

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-1

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9500			P
7440-36-0	Antimony	5.8	U	N	P
7440-38-2	Arsenic	4.7			F
7440-39-3	Barium	121		*	P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	10300		*	P
7440-47-3	Chromium	11.2		N	P
7440-48-4	Cobalt	14.0		*	P
7440-50-8	Copper	12.9		*	P
7439-89-6	Iron	28500			P
7439-92-1	Lead	6.2		N	F
7439-95-4	Magnesium	5990			P
7439-96-5	Manganese	439		*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	12.0		*	P
7440-09-7	Potassium	1820			P
7782-49-2	Selenium	4.5	U	N	F
7440-22-4	Silver	1.2		N	P
7440-23-5	Sodium	349	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	66.4			P
7440-66-6	Zinc	65.7			P

Color Before: BLACK Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO_1438

FORM I - IN

7/88

002

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-1

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-1

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	36.3		N	P
7440-32-6	Titanium	2060			P
7440-67-7	Zirconium	18.2			P

Color Before: BLACK Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1438

FORM I - IN

7/88

003

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-2

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-2

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7230			P
7440-36-0	Antimony	5.8	U	N	P
7440-38-2	Arsenic	4.7			F
7440-39-3	Barium	116		*	P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	13500		*	P
7440-47-3	Chromium	7.6		N	P
7440-48-4	Cobalt	9.9		*	P
7440-50-8	Copper	13.9		*	P
7439-89-6	Iron	22400			P
7439-92-1	Lead	6.9		N	F
7439-95-4	Magnesium	3950			P
7439-96-5	Manganese	355		*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	9.9		*	P
7440-09-7	Potassium	1160			P
7782-49-2	Selenium	4.6	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	336	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	48.8			P
7440-66-6	Zinc	49.5			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO 1439

FORM I - IN

7/88

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-2

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-2

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.1

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	31.2	U	N	P
7440-32-6	Titanium	1300			P
7440-67-7	Zirconium	20.2			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1439

FORM I - IN

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-3

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-3

Level (low/med): LOW Date Received: 10/08/91

% Solids: 97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8140			P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	4.3			F
7440-39-3	Barium	107		*	P
7440-41-7	Beryllium	1.3			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	39500		*	P
7440-47-3	Chromium	8.7		N	P
7440-48-4	Cobalt	8.5		*	P
7440-50-8	Copper	13.6		*	P
7439-89-6	Iron	18900			P
7439-92-1	Lead	8.0		N	F
7439-95-4	Magnesium	4250			P
7439-96-5	Manganese	211		*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	8.8		*	P
7440-09-7	Potassium	1240			P
7782-49-2	Selenium	4.5	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	464	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	40.4			P
7440-66-6	Zinc	50.2			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1442

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-3

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-3

Level (low/med): LOW Date Received: 10/08/91

% Solids: 97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	30.8		N	P
7440-32-6	Titanium	945			P
7440-67-7	Zirconium	14.8			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO 1442

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-4

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-4

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7750			P
7440-36-0	Antimony	5.8	U	N	P
7440-38-2	Arsenic	7.0			F
7440-39-3	Barium	66.8		*	P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	14800		*	P
7440-47-3	Chromium	9.6		N	P
7440-48-4	Cobalt	9.7		*	P
7440-50-8	Copper	13.4		*	P
7439-89-6	Iron	21600			P
7439-92-1	Lead	5.8		N	F
7439-95-4	Magnesium	4810			P
7439-96-5	Manganese	277		*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	10.9		*	P
7440-09-7	Potassium	1370			P
7782-49-2	Selenium	4.6	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	433	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	50.3			P
7440-66-6	Zinc	48.3			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-4

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-4

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.6

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	33.3		N	P
7440-32-6	Titanium	1310			P
7440-67-7	Zirconium	16.5			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO 1443

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-5

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-5

Level (low/med): LOW Date Received: 10/08/91

% Solids: 94.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9380			P
7440-36-0	Antimony	5.9	U	N	P
7440-38-2	Arsenic	5.1			F
7440-39-3	Barium	134		*	P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	0.32	U		F
7440-70-2	Calcium	27500		*	P
7440-47-3	Chromium	13.1		N	P
7440-48-4	Cobalt	10.1		*	P
7440-50-8	Copper	16.3		*	P
7439-89-6	Iron	21000			P
7439-92-1	Lead	7.1		N	F
7439-95-4	Magnesium	4890			P
7439-96-5	Manganese	412		*	P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	13.4		*	P
7440-09-7	Potassium	1130			P
7782-49-2	Selenium	4.7	U	N	F
7440-22-4	Silver	1.1	U	N	P
7440-23-5	Sodium	446	B		P
7440-28-0	Thallium	3.5	U		F
7440-62-2	Vanadium	43.8			P
7440-66-6	Zinc	51.9			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1444

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-5

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-5

Level (low/med): LOW Date Received: 10/08/91

% Solids: 94.6

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	34.9		N	P
7440-32-6	Titanium	925			P
7440-67-7	Zirconium	10.6	U		P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO_1444

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-6

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-6

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9120			P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	2.6			F
7440-39-3	Barium	111		*	P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	4280		*	P
7440-47-3	Chromium	11.7		N	P
7440-48-4	Cobalt	9.8		*	P
7440-50-8	Copper	11.9		*	P
7439-89-6	Iron	20900			P
7439-92-1	Lead	6.7		N	F
7439-95-4	Magnesium	5120			P
7439-96-5	Manganese	404		*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	12.4		*	P
7440-09-7	Potassium	2260			P
7782-49-2	Selenium	4.5	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	244	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	41.7			P
7440-66-6	Zinc	55.1			P

Color Before: BLACK Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO_1445

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-6

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-6

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.5

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	35.5		N	P
7440-32-6	Titanium	1350			P
7440-67-7	Zirconium	15.2			P

Color Before: BLACK Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1445

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-7

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-7

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8100			P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	3.7			F
7440-39-3	Barium	113		*	P
7440-41-7	Beryllium	1.3			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	10900		*	P
7440-47-3	Chromium	9.7		N	P
7440-48-4	Cobalt	13.6		*	P
7440-50-8	Copper	13.0		*	P
7439-89-6	Iron	26900			P
7439-92-1	Lead	8.1		N	F
7439-95-4	Magnesium	5870			P
7439-96-5	Manganese	443		*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	12.9		*	P
7440-09-7	Potassium	1590			P
7782-49-2	Selenium	4.5	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	268	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	60.7			P
7440-66-6	Zinc	55.2			P

Color Before: GREY Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO_1446

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-7

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-7

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	34.1		N	P
7440-32-6	Titanium	1830			P
7440-67-7	Zirconium	18.0			P

Color Before: GREY Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1446

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-8

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-8

Level (low/med): LOW Date Received: 10/08/91

% Solids: 95.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5040			P
7440-36-0	Antimony	5.9	U	N	P
7440-38-2	Arsenic	4.1			F
7440-39-3	Barium	114		*	P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	6870		*	P
7440-47-3	Chromium	5.7		N	P
7440-48-4	Cobalt	10.2		*	P
7440-50-8	Copper	10.0		*	P
7439-89-6	Iron	21400			P
7439-92-1	Lead	5.5		N	F
7439-95-4	Magnesium	3940			P
7439-96-5	Manganese	371		*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	8.9		*	P
7440-09-7	Potassium	996			P
7782-49-2	Selenium	4.6	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	226	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	51.3			P
7440-66-6	Zinc	47.3			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO 1447

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-8

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-8

Level (low/med): LOW Date Received: 10/08/91

% Solids: 95.7

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	31.3	U	N	P
7440-32-6	Titanium	1600			P
7440-67-7	Zirconium	17.3			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO 1447

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-9

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-9

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11500			P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	7.5			F
7440-39-3	Barium	118		*	P
7440-41-7	Beryllium	1.6			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	13800		*	P
7440-47-3	Chromium	14.3		N	P
7440-48-4	Cobalt	13.7		*	P
7440-50-8	Copper	20.2		*	P
7439-89-6	Iron	28400			P
7439-92-1	Lead	12.3		N	F
7439-95-4	Magnesium	7610			P
7439-96-5	Manganese	410		*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	16.7		*	P
7440-09-7	Potassium	2380			P
7782-49-2	Selenium	4.5	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	296	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	52.5			P
7440-66-6	Zinc	70.8			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO 1448

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-9

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-9

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	38.2		N	P
7440-32-6	Titanium	1530			P
7440-67-7	Zirconium	21.9			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1448

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-10

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-10

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8490			P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	3.6			F
7440-39-3	Barium	149		*	P
7440-41-7	Beryllium	1.6			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	13100		*	P
7440-47-3	Chromium	6.7		N	P
7440-48-4	Cobalt	15.2		*	P
7440-50-8	Copper	18.6		*	P
7439-89-6	Iron	32000			P
7439-92-1	Lead	7.2		N	F
7439-95-4	Magnesium	4280			P
7439-96-5	Manganese	322		*	P
7439-97-6	Mercury	0.26		N	CV
7440-02-0	Nickel	10.6		*	P
7440-09-7	Potassium	1300			P
7782-49-2	Selenium	4.5	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	430	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	79.6			P
7440-66-6	Zinc	70.4			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO_1449

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020

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-10

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-10

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	30.5	U	N	P
7440-32-6	Titanium	2400			P
7440-67-7	Zirconium	39.4			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

80 1449

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021

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-11

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-11

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6120			P
7440-36-0	Antimony	5.8	U	N	P
7440-38-2	Arsenic	7.0			F
7440-39-3	Barium	88.1		*	P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	21600		*	P
7440-47-3	Chromium	3.6		N	P
7440-48-4	Cobalt	12.2		*	P
7440-50-8	Copper	17.6		*	P
7439-89-6	Iron	27500			P
7439-92-1	Lead	7.8		N	F
7439-95-4	Magnesium	3420			P
7439-96-5	Manganese	309		*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	8.0		*	P
7440-09-7	Potassium	855			P
7782-49-2	Selenium	4.5	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	306	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	48.5			P
7440-66-6	Zinc	58.0			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO_1450

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-11

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-11

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.8

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	31.0	U	N	P
7440-32-6	Titanium	1380			P
7440-67-7	Zirconium	32.5			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

80 1450

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-12

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-12

Level (low/med): LOW Date Received: 10/08/91

% Solids: 97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7470			P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	5.3			F
7440-39-3	Barium	68.8		*	P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	8540		*	P
7440-47-3	Chromium	9.5		N	P
7440-48-4	Cobalt	11.2		*	P
7440-50-8	Copper	16.0		*	P
7439-89-6	Iron	22900			P
7439-92-1	Lead	5.0		N	F
7439-95-4	Magnesium	4760			P
7439-96-5	Manganese	348		*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	10.8		*	P
7440-09-7	Potassium	1450			P
7782-49-2	Selenium	4.5	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	376	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	49.2			P
7440-66-6	Zinc	55.8			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1451

FORM I - IN

7/88

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-12

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-12

Level (low/med): LOW Date Received: 10/08/91

% Solids: 97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	30.6	U	N	P
7440-32-6	Titanium	1580			P
7440-67-7	Zirconium	18.2			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1451

FORM I - IN

7/88

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-13

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-13

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3940			P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	3.0			F
7440-39-3	Barium	45.2		*	P
7440-41-7	Beryllium	0.81			P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	5600		*	P
7440-47-3	Chromium	4.0		N	P
7440-48-4	Cobalt	7.3		*	P
7440-50-8	Copper	14.0		*	P
7439-89-6	Iron	16000			P
7439-92-1	Lead	4.9		N	F
7439-95-4	Magnesium	2930			P
7439-96-5	Manganese	196		*	P
7439-97-6	Mercury	0.33		N	CV
7440-02-0	Nickel	6.3		*	P
7440-09-7	Potassium	805			P
7782-49-2	Selenium	4.5	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	309	B		P
7440-28-0	Thallium	3.3	U		F
7440-62-2	Vanadium	28.7			P
7440-66-6	Zinc	44.1			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1452

FORM I - IN

7/88

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-13

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-13

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	30.4	U	N	P
7440-32-6	Titanium	972			P
7440-67-7	Zirconium	13.9			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO_1452

FORM I - IN

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-14

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-14

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4930			P
7440-36-0	Antimony	5.8	U	N	P
7440-38-2	Arsenic	2.8			F
7440-39-3	Barium	52.5		*	P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	5870		*	P
7440-47-3	Chromium	5.2		N	P
7440-48-4	Cobalt	10.4		*	P
7440-50-8	Copper	16.2		*	P
7439-89-6	Iron	22800			P
7439-92-1	Lead	4.7		N	F
7439-95-4	Magnesium	3620			P
7439-96-5	Manganese	253		*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	7.7		*	P
7440-09-7	Potassium	939			P
7782-49-2	Selenium	4.6	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	341	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	48.1			P
7440-66-6	Zinc	47.6			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO 1453

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-14

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-14

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.4

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	31.1	U	N	P
7440-32-6	Titanium	1570			P
7440-67-7	Zirconium	17.9			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO 1453

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02

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-15

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-15

Level (low/med): LOW Date Received: 10/08/91

% Solids: 94.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6440			P
7440-36-0	Antimony	5.9	U	N	P
7440-38-2	Arsenic	2.3	U		F
7440-39-3	Barium	122		*	P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.32	U		P
7440-70-2	Calcium	11100		*	P
7440-47-3	Chromium	6.7		N	P
7440-48-4	Cobalt	11.7		*	P
7440-50-8	Copper	15.9		*	P
7439-89-6	Iron	23400			P
7439-92-1	Lead	4.8		N	F
7439-95-4	Magnesium	4650			P
7439-96-5	Manganese	594		*	P
7439-97-6	Mercury	0.23		N	CV
7440-02-0	Nickel	9.4		*	P
7440-09-7	Potassium	1180			P
7782-49-2	Selenium	4.6	U	N	F
7440-22-4	Silver	1.1	U	N	P
7440-23-5	Sodium	308	B		P
7440-28-0	Thallium	3.5	U		F
7440-62-2	Vanadium	52.1			P
7440-66-6	Zinc	53.0			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1456

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-15

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-15

Level (low/med): LOW Date Received: 10/08/91

% Solids: 94.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	31.6	U	N	P
7440-32-6	Titanium	1680			P
7440-67-7	Zirconium	21.4			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1456

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-16

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-16

Level (low/med): LOW Date Received: 10/08/91

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7.2	U		P
7440-36-0	Antimony	5.6	U	N	P
7440-38-2	Arsenic	0.20	U		F
7440-39-3	Barium	4.1	U	*	P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	107	U	*	P
7440-47-3	Chromium	0.70	U	N	P
7440-48-4	Cobalt	1.6	U	*	P
7440-50-8	Copper	1.8	U	*	P
7439-89-6	Iron	14.4			P
7439-92-1	Lead	0.14	B	N	F
7439-95-4	Magnesium	249	U		P
7439-96-5	Manganese	0.60	U	*	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	3.2	U	*	P
7440-09-7	Potassium	130	U		P
7782-49-2	Selenium	0.40	U	N	F
7440-22-4	Silver	1.0	U	N	P
7440-23-5	Sodium	98.7	U		P
7440-28-0	Thallium	0.30	U		F
7440-62-2	Vanadium	2.0	U		P
7440-66-6	Zinc	5.0	U		P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 14A3

EXTRA PREP BLANK

FORM I - IN

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-16

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-16

Level (low/med): LOW Date Received: 10/08/91

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	30.0	U	N	P
7440-32-6	Titanium	1.0	U		P
7440-67-7	Zirconium	10.0	U		P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_14A3

EXTRA PREP BLANK

FORM I - IN

7/88

MAXWELL
S-CUBED Division

SORRENTO VALLEY OFFICE
3398 Carmel Mountain Road., San Diego, CA 92121-1095
P.O. Box 1620, La Jolla, CA 92038-1620

NARRATIVE

NOV 1991
RECEIVED
OSM DMO

DATE: November 7, 1991
REFERENCE NO.: 32359-04, SDG 2630

SILICA

The samples were analyzed according to Method 370.1 for dissolved silica. There were no difficulties with the analysis. There were low levels detected in the samples.

The quality control results were acceptable.

AMMONIA

The samples were analyzed according to Method 350.3. There were no difficulties with the analysis. There were low levels detected in the samples.

The quality control results were acceptable.

ALKALINITY

The samples were analyzed according to Method 310.1. There were no difficulties with the analysis. There were significant levels detected in the samples.

The quality control results were acceptable.

ANIONS

The samples were analyzed according to the method. There were no difficulties with the analysis. Dilutions were necessary for several analytes for the analysis of Cl, NO3, and SO4. There were moderate levels detected in the samples.

The quality control results were acceptable

Telephone (619) 453-0060 - FAX (619) 755-0474 - Division Office

SAMPLE SUMMARY

S-Cubed Reference No. 32359-04, SDG No. 2630, Project Name: Site Wide Soil

Sample ID	S-Cubed Sample #	Date Received	Sample Type	Analysis									
				A	B	C	D	E	F	G	H	I	J
BO 1438	2630-1	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1439	2630-2	10/8/91	SOIL	3	3	3		3	3	3	3	3	3
BO 1442	2630-3	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1443	2630-4	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1444	2630-5	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1445	2630-6	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1446	2630-7	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1447	2630-8	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1448	2630-9	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1449	2630-10	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1450	2630-11	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1451	2630-12	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1452	2630-13	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1453	2630-14	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1456	2630-15	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 14A3	2630-16	10/8/91	SOIL	1	1	1		1	1	1	1	1	1

Analysis Key:

A=Si
B=Ti
C=Zr
D=TOC
E=ICPCLP-M
F=FURNCLP
G=HGCLP
H=ANIONS
I=N-NH3
J=ALK

11b 11-28-94

SILICA ANALYSIS

LABORATORY:	S-CUBED	DATA REVIEWER:	aw 11/5/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIPE SOIL	CHARGE #:	32359-04
LOT #:	2630	DATE RECEIVED:	10/08/91
FILE#:	SI1008	DATE PREP:	10/17/91
DISK:	SI1023	DATE ANALYZED:	10/17/91
METHOD NO.	370.1	MATRIX:	SOIL

RESULTS: UNIT AS MG/KG DRY WEIGHT

LAB ID	CONCENTRATION
2630 -1	14.9
2630 -2	10.3
2630 -2R	10.3
2630 -2S	32.6
2630 -3	21.4
2630 -4	7.71
2630 -5	14.0
2630 -6	20.4
2630 -7	20.9
2630 -8	17.1
2630 -9	16.5
2630 -10	32.4
2630 -11	15.7
2630 -12	26.3
2630 -13	27.6
2630 -14	24.3
2630 -15	20.3
2630 -16	< 5 **

Comment:

** Extra lab blank is calculated from

$$\frac{\text{Method detection limit (mg/L)} \times 0.05\ \text{L (Leaching Volume)}}{0.01\ \text{kg (Sample weight)}}$$

AMMONIA ANALYSIS

LABORATORY:	S-CUBED	DATA REVIEWER:	CLN 11/5/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIPE SOIL	CHARGE #:	32359-04
LOT #:	2630	DATE RECEIVED:	10/08/91
FILE#:	NH31008	DATE PREP:	10/31/91
DISK:	NH31024	DATE ANALYZED:	10/31/91
METHOD NO.	350.3	MATRIX:	Soil

RESULTS: UNIT AS MG/KG DRY WEIGHT

LAB ID	CONCENTRATION
2630 -1	8.67
2630 -2	12.0
2630 -3	1.58
2630 -4	1.88
2630 -5	2.04
2630 -6	1.13
2630 -7	< 0.1
2630 -8	< 0.1
2630 -9	25.6
2630 -10	26.4
2630 -11	1.31
2630 -12	16.2
2630 -13	19.0
2630 -14	19.0
2630 -15	15.0
2630 -16	< 0.1 **

Comments:

** Extra lab blank is calculated from:

$$\frac{\text{Method Detection Limit (mg/L)} \times 0.05\,\text{L (Leaching Volume)}}{0.01\,\text{Kg (Sample Weight)}}$$

ALKALINITY ANALYSIS

LAB:	S-CUBED	DATA REVIEWER:	WW 11/5/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIPE SOIL	CHARGE #:	32359-04
LOT #:	2630	DATE RECIEVED:	10-08-91
FILE #:	ALK1008	DATE PREP:	10-15/30-91
DISK #:	ALK1016	DATE ANALYZED:	10-15/30-91
METHOD NO.:	EPA 310.1	MATRIX:	SOIL

RESULTS: RESULTS AS DRY WEIGHT - MG/KG

LAB ID	CONCENTRATION
2630 - 1	2030
2630 - 2	31.0
2630 - 3	691
2630 - 4	2040
2630 - 5	22100
2630 - 6	1090
2630 - 7	3530
2630 - 8	3410
2630 - 9	25900
2630 - 10	1200
2630 - 11	288
2630 - 12	22800
2630 - 13	1090
2630 - 14	2250
2630 - 15	1240
2630 - 16	< 5 **

COMMENTS:

** Extra lab blank is calculated from:

$$\frac{\text{Method Detection Limit (mg/L) X 0.05 L (Leaching Volume)}}{\text{0.01 kg (Sample Weight)}}$$

ANIONS ANALYSIS

LABORATORY:	S-CUBED	DATA REVIEWER:	UN 11/6/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIPE SOIL	CHARGE #:	32359-04
LOT #:	2630	DATE RECEIVED:	10/08/91
FILE#:	ANI1008	DATE PREP:	10-18/21/22-91
DISK:	ANI1017	DATE ANALYZED:	10-18/21/22-91
METHOD NO.	300.0	MATRIX:	SOIL

RESULTS: UNIT AS MG/KG DRY WEIGHT

LAB ID	F	CL	NO2	NO3	PO4	SO4
2630 -1	1.64	4.83	< 0.21	5.08	< 0.52	14.2
2630 -2	1.44	25.1	< 0.21	14.0	< 0.52	22.6
2630 -3	1.03	26.0	< 0.2	17.6	< 0.51	61.3
2630 -4	1.84	146	< 0.21	2.94	1.28	590
2630 -5	1.84	169	< 0.21	7.24	< 0.53	229
2630 -6	2.91	0.87	< 0.2	2.40	1.82	4.38
2630 -7	1.41	19.8	< 0.2	4.17	< 0.51	59.6
2630 -8	0.92	25.0	< 0.21	8.10	< 0.52	104
2630 -9	1.78	2.42	< 0.2	2.35	< 0.51	46.7
2630 -10	0.76	1.63	< 0.2	4.61	1.50	40.7
2630 -11	0.77	0.80	< 0.21	62.5	< 0.52	11.7
2630 -12	0.80	1.71	< 0.2	31.1	< 0.51	18.1
2630 -13	0.75	18.3	< 0.2	538	< 0.51	266
2630 -14	0.29	2.44	< 0.21	4.14	< 0.52	20.8
2630 -15	0.45	36.4	< 0.21	6.90	< 0.53	38.9
** 2628 -16	< 0.1	< 0.1	< 0.2	< 0.5	< 0.5	< 0.5

COMMENTS:

** Extra lab blank is calculated from:

$$\frac{\text{Method Detection Limit (mg/L) X 0.02 L (Leaching Volume)}}{\text{0.004 kg (Sample Weight)}}$$

PERCENT MOISTURE

LABORATORY: S-CUBED
ANALYST: PQ

LOT #: 2630
MATRIX: SOIL

LAB ID	% MOISTURE	% SOLID
2630 -1	3.12	96.88
2630 -2	3.93	96.07
2630 -2R	3.93	96.07
2630 -2S	3.93	96.07
2630 -3	2.09	97.91
2630 -4	3.38	96.62
2630 -5	5.41	94.59
2630 -6	1.53	98.47
2630 -7	1.83	98.17
2630 -8	4.30	95.7
2630 -9	1.79	98.21
2630 -10	1.80	98.2
2630 -11	3.20	96.8
2630 -12	2.08	97.92
2630 -13	1.41	98.59
2630 -14	3.55	96.45
2630 -15	5.06	94.94

VALIDATION SUMMARY

OSM INORGANIC DATA ASSESSMENT

DATE 1/24/92 mgs

REVIEWED BY Mark A. Beck

LABORATORY S-Cubed

CASE # Site Wide Soil

SDG # 2630

SAMPLES/MATRIX all soil

B01438	B01439	B01442
B01443	B01444	B01445
B01446	B01447	B01448
B01449	B01450	B01451
B01452	B01453	B01456
B01463		

DATA ASSESSMENT SUMMARY

	ICP	AA	Hg	CN
1. Calibrations (Form II)	O	O	O	
2. Blanks (III)	O	X	O	
3. ICS (IV)	O			
4. Matrix Spike (V)	M	X	X	
5. Duplicate Analysis (VI)	X	O	O	
6. LCS (VII)	~~X~~ M mgs	~~X~~ M mgs.		
7. Serial Dilution (IX)	O			
8. GFAA		M		
9. Holding Times (XIV)	O	O	O	
10. Other QC	O	X	O	

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSMENT: The data qualified for reasons of matrix spike performance are especially suspect. All other data are acceptable with attached qualifiers.

NOTES: "ICP metals" in the documentation should be taken to include CLP Target Analyte List ICP metals and Li, Zr, Ti.

HEIS numbers for samples can be found in the lower left-hand corner of the Form Is (results).

o Refer to the corresponding attachments for explanation of any problems.

INORGANIC QC - Calibrations

Name Mark A Beck Date 1/24/92 MAB

COMMENTS: ICP - initial calibration was performed with an acceptable number of blanks and standards, all ICV and CCV performed appropriately, and were within QC limits. - AA - stds all AA metals had appropriate numbers of blanks and standards performed. all AA initial and continuing calibration verification standards had acceptable recoveries. Mercury - Initial calibration was performed with an appropriate number of blanks and standards. all ICV and CCV had acceptable recoveries. The mercury calibration curve correlation coefficient was acceptable.

ACTION: none - none required.

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - Blanks

Name Mark A. Beck Date 1/24/92 MAB.

COMMENTS: Antimony and mercury were found in continuing calibration blanks (CCB) as negative values whose absolute value was greater than (Sb) or equal to (Hg) the IDL. Cadmium was found in a CCB at a value equal to the IDL. Lead was found in a preparation (soil) blank.

Cd CCB $3.0 \frac{ug}{L} \times \frac{100 L}{1 g soil} \times 5 = 1.5 \frac{ug}{g soil} \approx 1.5 \frac{mg}{kg}$

ACTION: One sample has lead result qualified U since the value was <5x that found in the blank. No cadmium results qualified as there are no detects (possible false positive results). Mercury results not qualified as the |negative value blank| = IDL. Only those antimony results from samples run between CCV2 and CCV4 are qualified UJ.

sample #	constituent	value/qual	sample #	constituent	value/qual
B014A3	Pb Lead	U			
B01438 B01439 B01442 B01443 B01444 B01445 B01446 B01447	Sb antimony	UJ			

INORGANIC QC - ICS

Name Mark U. Beck Date 1/24/92 m.ab.

COMMENTS: All analytes had acceptable recoveries in all ICS run. ~~This includes all methods.~~ ICS's were run appropriately.

ACTION: none - none required.

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - Matrix Spike

Name Mark A. Beck Date 1/24/92 M.A.B.

COMMENTS: Antimony, lead, mercury, selenium, manganese and silver had low recoveries. Chromium recovery was biased high, as was lithium and titanium. Due to an apparent error in spiking levels, chromium spike was not above the IDL. Selenium analytical (post digest) spike were acceptable. All other analytes had acceptable matrix spike recoveries. No control limits apply to Ti, as the sample level is 75x the spike level.

ACTION: All antimony results rejected. All selenium results qualified estimated (UJ). Lead, mercury, manganese and silver results qualified estimated UJ or J for all samples. No qualification of Titanium results necessary. All lithium and chromium results below the IDL are free from qualification; if greater than IDL, qualified J estimated.

sample #	constituent	value/qual
all	Sb antimony	R
all	Se selenium	UJ
all except B0143A	Pb	J
		UJ
all except B0143A	Mn	J
		UJ

sample #	constituent	value/qual
all except B01449 B01452 B01456	Hg	UJ
		J
B01438	~~Ag~~ Ag	J
all others in SDG	Silver	UJ
all except B01439 B01447 B01449 B01450 B01451 B01452 B01453 B01456 B01443	~~Ag~~ Li	J
		~~UJ~~ not qualified
	Cr	J
all except B01443		no qualification

INORGANIC QC - Duplicate Analysis

Name Mark A. Beck Date 1/24/92 MAB.

COMMENTS: Barium, calcium, cobalt, copper, manganese and nickel all had RPD's outside the control limit. All sample ~~set~~ results were greater than 5X the CRDL and so the ±20% RPD criterion was applied.

CRDL (µg/L) × $\frac{.10 L \text{ soil}}{1 g \text{ wet sample}}$ $\frac{1 g \text{ wet sample}}{.961 g \text{ dry sample}}$ = (CRDL) ppm

CRDL ppm × 5 = limit for ±20% RPD criterion

ACTION: Qualify all ~~to~~ barium, calcium, cobalt, copper, manganese and nickel results estimated (UJ or J) for all samples in this SDG.

sample #	constituent	value/qual
all except B014A3	Ba Barium	J UJ
all except B014A3	Ca Calcium	J UJ
all except B014A3	Co ~~Cobat~~ cobalt	J UJ
all except B014A3	Cu Copper	J UJ
all except B014A3	Man Manganese	J UJ
all except B014A3	Ni Nickel	J UJ

INORGANIC QC - LCS

Name Mark A Beck Date 1/24/92 MAB

COMMENTS: all aqueous LCS ~~data~~ analytes had recoveries within acceptable limits, except lithium. No solid LCS was performed or spiked. Those analyte qualified due to inadequate matrix spike performance are affected by the lack of solid LCS. No additional qualification added because of the generally acceptable aqueous LCS results.

ACTION: The ~~fact~~ determination has been made by the reviewer to emphasize the detrimental effect that a lack of a solid LCS has on analytes qualified for poor matrix spike performance, but no qualification beyond estimated (UJ or J) will be added.

sample #	constituent	value/qual	sample #	constituent	value/qual
See matrix spike qualifications					

INORGANIC QC - Serial Dilution

Name Mark A Beck Date 1/24/92 MAB

COMMENTS: All analytes either met the ± 10% criterion or ~~too~~ were exempt from control limits (if the sample concentration was less than x10 IDL).

ACTION: none none required.

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - GFAA

Name Mark A. Beck Date 1/24/92 MAB.

COMMENTS: Due to large dilutions required because of "high Al and Fe values" (lab explanation), a number of samples had excessively high %RSD values when the corrected (for dilution) value was greater than the CRQL. Selenium (in all samples), lead (sample), arsenic and thallium not acceptable had analytical spike (post digest) recoveries that were out of controls, and biased low.

ACTION: Qualify as estimated J for those samples whose %RSD value was >20%, and ~~was~~ whose analyte value was greater than the CRQL. Qualify all samples and analyte whose analytical spike was out of control as estimated (J or UJ).

sample #	constituent	value/qual
B01437	Se	J
~~B01443~~	~~Se~~	~~J~~
↖ reran at a later analytical run		
B01445	Se	J
B01448	selenium	
~~B~~		
B01439	As	J
B01442	arsenic	or
B01446		UJ
~~B01446~~	B01444	
B01449	B01445	
B01451	B01448	
B01456	B01447	
B01438		
B01443		

sample #	constituent	value/qual
B01442	~~Pb~~	
B01438	Tl	
B01439	Thallium	J or UJ
~~B01443~~		
B01456	B01445 B01446	
all	Se	UJ
But	selenium	
B01443	B01451	
B01449	B01452	
	B01453	
	B01456	
B01438	Pb	~~UJ~~ J
B01447	Th	UJ or J
B01448	Thallium	
B01449	B01443	
B01450		
B01451		

RCRA QC

Name Mark A. Beck Date 1/24/92 mdh

QC Check: Holding Times

COMMENTS: Silica - no holding time requirement has been established for this analyte. Ammonia - This analyte missed the holding time requirement for water matrices, as this ~~and~~ SD consists of soil samples, these requirements do not necessarily apply. Some alkalinity samples were missed holding times, but to some extent this applies to these analyses

ACTION: Qualify these samples and ~~ate~~ analyte results that were analyzed past the water holding time, as estimated (UJ or J). Nitrite and nitrate in the analyses not effected. All other analytes past holding time missed by one day at the most.

sample #	constituent	value/qual	sample #	constituent	value/qual
all	ammonia	UJ or J			
B01453	alkalinity	J			
B01456		J			
B014A3		UJ			
all	anions	UJ			
	nitrite	or			
	nitrate	J			
	orthophosphate				

___ of ___

OSM RCRA DATA ASSESSMENT

all soil

DATE 1/24/92

SAMPLES/MATRIX B01438 B01439 B01442 B01443 B01444 B01445 B01446 B01447 B01448 B01449 B01450 B01451 B01452 B01453 B01456 B01463

REVIEWED BY Mark A. Beckmeyer

LABORATORY Maxwell - S-Cubed

CASE # Site Wide Soil

SDG # 2630

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	silica 370.1 Ammonia 350.3	alkalinity 310.1	Anions 300.0
1. Holding times		X	X	X
2. Blanks		O	O	O
3. Matrix Spikes		O	O	O
4. Duplicate Analyses		O	O	O
5. Calibrations/LCS		O	O	O
6. Other		O	O	O
7.				
8.				
9.				
10.				

O = data had no problems
X = minor problems, data may be qualified
M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSSMENT: The data are acceptable with the attached qualifiers.

NOTES: Anions by 300.0 includes: fluoride, chloride nitrate nitrite, ortho phosphate (HPO_4^{--}) and sulfate

o Refer to the corresponding attachments for explanation of any problems.

RCRA QC

Name Mark A. Beck Date 1/24/12 mab.

QC Check: Blanks

COMMENTS: No contamination was detected in the blanks for silica, ammonia, alkalinity, or any anions. Appropriate blanks were run.

ACTION: none, none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA QC

Name Mark A. Beck Date 1/24/92 MAB.

QC Check: Matrix Spikes

COMMENTS: All analyses and all analytes had appropriate matrix spikes performed. All analytes matrix spikes were within control limits

ACTION: none, none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA QC

Name Mark A. Beck Date 1/21/92 mab

QC Check: Duplicate Analyses

COMMENTS: All analyses (silica, ammonia, alkalinity, aluminum) had duplicate analyses run appropriately. All duplicate analyses were within control limits for TSKS

ACTION: none - none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA QC

Name Mark A. Beck Date 1/24/92 mab.

QC Check: Calibrations/Laboratory Check samples (LCS)

COMMENTS: Silica - appropriate initial startup calibration, ICV, and CCV were performed. All ICV, CCV, and LCS were within control limits. The above was also true for ammonia alkalinity, and anions.

ACTION: none - none needed

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA QC

Name Mark A. Beck Date 1/24/92 mab

QC Check: Other

COMMENTS: none.

ACTION: none, none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

MAXWELL
S-CUBED Division

SORRENTO VALLEY OFF
3398 Carmel Mountain Road., San Diego, CA 92121-1
P.O. Box 1620, La Jolla, CA 92038-1

NOV 1991
RECEIVED
OSM DMO

NARRATIVE

DATE: November 7, 1991
REFERENCE NO.: 32359-04, SDG 2630

SILICA

The samples were analyzed according to Method 370.1 for dissolved silica. There were no difficulties with the analysis. There were low levels detected in the samples.

The quality control results were acceptable.

AMMONIA

The samples were analyzed according to Method 350.3. There were no difficulties with the analysis. There were low levels detected in the samples.

The quality control results were acceptable.

ALKALINITY

The samples were analyzed according to Method 310.1. There were no difficulties with the analysis. There were significant levels detected in the samples.

The quality control results were acceptable.

ANIONS

The samples were analyzed according to the method. There were no difficulties with the analysis. Dilutions were necessary for several analytes for the analysis of Cl, NO3, and SO4. There were moderate levels detected in the samples.

The quality control results were acceptable.

SAMPLE SUMMARY

S-Cubed Reference No. 32359-04, SDG No. 2630, Project Name: Site Wide Soil

Sample ID	S-Cubed Sample #	Date Received	Sample Type	Analysis									
				A	B	C	D	E	F	G	H	I	J
BO 1438	2630-1	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1439	2630-2	10/8/91	SOIL	3	3	3		3	3	3	3	3	3
BO 1442	2630-3	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1443	2630-4	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1444	2630-5	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1445	2630-6	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1446	2630-7	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1447	2630-8	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1448	2630-9	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1449	2630-10	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1450	2630-11	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1451	2630-12	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1452	2630-13	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1453	2630-14	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 1456	2630-15	10/8/91	SOIL	1	1	1		1	1	1	1	1	1
BO 14A3	2630-16	10/8/91	SOIL	1	1	1		1	1	1	1	1	1

Analysis Key:

A=Si
B=Ti
C=Zr
D=TOC
E=ICPCLP-M
F=FURNCLP
G=HGCLP
H=ANIONS
I=N-NH3
J=ALK

SILICA ANALYSIS

LABORATORY:	S-CUBED	DATA REVIEWER:	aN 11/5/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIPE SOIL	CHARGE #:	32359-04
LOT #:	2630	DATE RECEIVED:	10/08/91
FILE#:	SI1008	DATE PREP:	10/17/91
DISK:	SI1023	DATE ANALYZED:	10/17/91
METHOD NO.	370.1	MATRIX:	SOIL

RESULTS: UNIT AS MG/KG DRY WEIGHT

LAB ID	CONCENTRATION
2630 -1	14.9
2630 -2	10.3
2630 -2R	10.3
2630 -2S	32.6
2630 -3	21.4
2630 -4	7.71
2630 -5	14.0
2630 -6	20.4
2630 -7	20.9
2630 -8	17.1
2630 -9	16.5
2630 -10	32.4
2630 -11	15.7
2630 -12	26.3
2630 -13	27.6
2630 -14	24.3
2630 -15	20.3
2630 -16	< 5 **

Comment:

** Extra lab blank is calculated from

$$\frac{\text{Method detection limit (mg/L)} \times 0.05\ \text{L (Leaching Volume)}}{0.01\ \text{kg (Sample weight)}}$$

AMMONIA ANALYSIS

LABORATORY:	S-CUBED	DATA REVIEWER:	LN 11/5/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIPE SOIL	CHARGE #:	32359-04
LOT #:	2630	DATE RECEIVED:	10/08/91
FILE#:	NH31008	DATE PREP:	10/31/91
DISK:	NH31024	DATE ANALYZED:	10/31/91
METHOD NO.	350.3	MATRIX:	Soil

RESULTS: UNIT AS MG/KG DRY WEIGHT

LAB ID	CONCENTRATION
2630 -1	8.67 J
2630 -2	12.0 J
2630 -3	1.58 J
2630 -4	1.88 J
2630 -5	2.04 J
2630 -6	1.13 J
2630 -7	< 0.1 UJ
2630 -8	< 0.1 UJ
2630 -9	25.6 J
2630 -10	26.4 J
2630 -11	1.31 J
2630 -12	16.2 J
2630 -13	19.0 J
2630 -14	19.0 J
2630 -15	15.0 J
2630 -16	< 0.1 ** UJ

Comments:

** Extra lab blank is calculated from:

$$\frac{\text{Method Detection Limit (mg/L)} \times 0.05\,\text{L (Leaching Volume)}}{0.01\,\text{Kg (Sample Weight)}}$$

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ALKALINITY ANALYSIS

LAB:	S-CUBED	DATA REVIEWER:	ww 11/5/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIPE SOIL	CHARGE #:	32359-04
LOT #:	2630	DATE RECIEVED:	10-08-91
FILE #:	ALK1008	DATE PREP:	10-15/30-91
DISK #:	ALK1016	DATE ANALYZED:	10-15/30-91
METHOD NO.:	EPA 310.1	MATRIX:	SOIL

RESULTS: RESULTS AS DRY WEIGHT - MG/KG

LAB ID	CONCENTRATION
2630 - 1	2030
2630 - 2	31.0
2630 - 3	691
2630 - 4	2040
2630 - 5	22100
2630 - 6	1090
2630 - 7	3530
2630 - 8	3410
2630 - 9	25900
2630 - 10	1200
2630 - 11	288
2630 - 12	22800
2630 - 13	1090
2630 - 14	2250 J
2630 - 15	1240 J
2630 - 16	< 5 ** uJ

COMMENTS:

** Extra lab blank is calculated from:

$$\frac{\text{Method Detection Limit (mg/L) X 0.05 L (Leaching Volume)}}{\text{0.01 kg (Sample Weight)}}$$

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ANIONS ANALYSIS

LABORATORY:	S-CUBED	DATA REVIEWER:	UN 11/6/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIPE SOIL	CHARGE #:	32359-04
LOT #:	2630	DATE RECEIVED:	10/08/91
FILE#:	ANI1008	DATE PREP:	10-18/21/22-91
DISK:	ANI1017	DATE ANALYZED:	10-18/21/22-91
METHOD NO.	300.0	MATRIX:	SOIL

RESULTS: UNIT AS MG/KG DRY WEIGHT

	LAB ID	F	CL	NO2	NO3	PO4	SO4
	2630 -1	1.64	4.83	< 0.21 UJ	5.08 J	< 0.52 UJ	14.2
	2630 -2	1.44	25.1	< 0.21 UJ	14.0	< 0.52 UJ	22.6
	2630 -3	1.03	26.0	< 0.2 UJ	17.6	< 0.51 UJ	61.3
	2630 -4	1.84	146	< 0.21	2.94	1.28 J	590
	2630 -5	1.84	169	< 0.21	7.24	< 0.53 UJ	229
	2630 -6	2.91	0.87	< 0.2	2.40	1.82 J	4.38
	2630 -7	1.41	19.8	< 0.2	4.17	< 0.51 UJ	59.6
	2630 -8	0.92	25.0	< 0.21	8.10	< 0.52 UJ	104
	2630 -9	1.78	2.42	< 0.2	2.35	< 0.51 UJ	46.7
	2630 -10	0.76	1.63	< 0.2	4.61	1.50 J	40.7
	2630 -11	0.77	0.80	< 0.21	62.5	< 0.52 UJ	11.7
	2630 -12	0.80	1.71	< 0.2	31.1	< 0.51	18.1
	2630 -13	0.75	18.3	< 0.2	538	< 0.51	266
	2630 -14	0.29	2.44	< 0.21	4.14	< 0.52	20.8
	2630 -15	0.45	36.4	< 0.21	6.90 J	< 0.53	38.9
**	2628 -16	< 0.1	< 0.1	< 0.2 UJ	< 0.5 UJ	< 0.5 UJ	< 0.5

COMMENTS:

** Extra lab blank is calculated from:

$$\frac{\text{Method Detection Limit (mg/L) X 0.02 L (Leaching Volume)}}{\text{0.004 kg (Sample Weight)}}$$

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QC SUMMARY OF SILICA ANALYSIS

LABORATORY:	S-CUBED	DATA REVIEWER:	CWN 11/5/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIPE SOIL	CHARGE #:	32359-04
LOT #:	2630	DATE RECEIVED:	10/08/91
FILE#:	SI1008	DATE PREP:	10/17/91
DISK:	SI1023	DATE ANALYZED:	10/17/91
METHOD NO.	370.1	MATRIX:	SOIL

BLANK SUMMARY: UNIT: MG/L

BLANK	CONCENTRATION
ICB	< 1.0
CCB-1	< 1.0
CCB-2	< 1.0
CCB-3	< 1.0
CCB-4	< 1.0
CCB-5	< 1.0
CCB-6	< 1.0
CCB-7	< 1.0

LAB CONTROL SPIKE (LCS): UNIT: MG/L
CONTROL LIMIT: 80 - 120 % RECOVERY

LAB ID	TRUE VALUE	VALUE FOUND	% RECOVERY
LCSI017	2	2.22	111.0

QC SUMMARY OF SILICA ANALYSIS

LABORATORY:	S-CUBED	DATA REVIEWER:	ww 11/5/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIPE SOIL	CHARGE #:	32359-04
LOT #:	2630	DATE RECEIVED:	10/08/91
FILE#:	SI1008	DATE PREP:	10/17/91
DISK:	SI1023	DATE ANALYZED:	10/17/91
METHOD NO.	370.1	MATRIX:	SOIL

DUPLICATE SUMMARY:

UNIT: MG/KG
CONTROL LIMIT: +/- 20

LAB ID	SAMPLE RESULT	DUP. SAMPLE RESULT	% RSD
2630-2	10.3	10.3	0

MATRIX SPIKE SUMMARY:

UNITS: MG/KG CONTROL LIMIT: 75 - 125

LAB ID	SPIKED SAMPLE RESULT	SAMPLE RESULT	AMOUNT SPIKED	% RECOVERY
2630-2	32.6	10.3	26.02	85.7

QC SUMMARY OF AMMONIA ANALYSIS

LABORATORY: S-CUBED
LOT #: 2630
METHOD NO. 350.3

DATA REVIEWER: WN 11/5/91
PROJECT REVIEWER:
MATRIX: SOIL

BLANK SUMMARY:

UNIT: MG/KG

BLANK	CONCENTRATION
ICB1031	< 0.03
CCB-1	< 0.03

LAB CONTROL SPIKE (LCS): UNIT: MG/L
CONTROL LIMIT: 80 - 120 % RECOVERY

	TRUE VALUE	VALUE FOUND	% RECOVERY
LCS1031	2.5	2.36	94.4

QC SUMMARY OF AMMONIA ANALYSIS

LABORATORY: S-CUBED
LOT #: 2630
METHOD NO. 350.3

DATA REVIEWER: WN 11/5/91
PROJECT REVIEWER:
MATRIX: SOIL

DUPLICATE RESULTS:

UNIT: MG/KG

SAMPLE ID: 2630-2

SAMPLE ID	CONTROL LIMIT	ORIGINAL RESULT	DUPLICATE RESULT	% RSD
2630-2	+/- 20	11.97	13.84	14.5

MATRIX SPIKE RECOVERY

CONTROL LIMIT: 80 - 120
UNIT: MG/KG

SAMPLE ID	SPIKE RESULT	SAMPLE RESULT	AMOUNT SPIKED	% RECOVERY
2630-2	23.78	11.97	13.01	90.8

QA/QC SUMMARY OF ALKALINITY

LAB: S-CUBED DATA REVIEWER: uw 11/5/91
LOT #: 2630 PROJECT REVIEWER:

BLANK SUMMARY: PBS -- PREPARATION BLANK SOIL

	CONCENTRATION, MG/L
PBS1015-1	< 1.0
PBS1015-2	< 1.0
PBS1015-3	< 1.0
PBS1030-1	< 1.0
PBS1030-2	< 1.0
PBS1030-3	< 1.0

LAB CONTROL SPIKE SUMMARY UNIT: MG/L

LAB ID	CONTROL LIMIT	TRUE VALUE	VALUE FOUND	%RECOVERY
LCS1015	80 - 120	50	51.34	102.7
LCS1030	80 - 120	50	48.60	97.2

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QC OF ALKALINITY ANALYSIS

LAB: S-CUBED
LOT #: 2630

DATA REVIEWER: WN 11/5/91
PROJECT REVIEWER:

REPLICATE SUMMARY
UNIT: MG/KG

LAB ID	CONTROL LIMIT	ORIGINAL SAMPLE RESULT	REPLICATE SAMPLE RESULT	%RPD
2630-1	+/- 20	31.0	31.0	0

MATRIX SPIKE SUMMARY UNIT: MG/KG

LAB ID	CONTROL LIMIT	SPIKED SAMPLE RESULT	SAMPLE RESULT	AMOUNT SPIKED	%RECOVERY
2630-1	75 - 125	2780	31.0	2600	105.7

LABORATORY: S-CUBED
LOT #: 2630
METHOD NO. 300.0
FILE#/DISK: AN11008/AN11017

DATA REVIEWER: CWN 11/6/91
PROJECT REVIEWER:
MATRIX: SOIL
UNIT: MG/L

BLANK SUMMARY:

BLANK	F	CL	NO2	NO3	O-PO4	SO4
ICB1018	< 0.02	< 0.02	< 0.04	< 0.1	< 0.1	< 0.1
CCB-1	< 0.02	< 0.02	< 0.04	< 0.1	< 0.1	< 0.1
CCB-2	< 0.02	< 0.02	< 0.04	< 0.1	< 0.1	< 0.1
CCB-3	< 0.02	< 0.02	< 0.04	< 0.1	< 0.1	< 0.1
ICB1021	< 0.02	< 0.02	< 0.04	< 0.1	< 0.1	< 0.1
CCB-1	< 0.02	< 0.02	< 0.04	< 0.1	< 0.1	< 0.1
ICB1022	< 0.02	< 0.02	< 0.04	< 0.1	< 0.1	< 0.1
CCB-1	< 0.02	< 0.02	< 0.04	< 0.1	< 0.1	< 0.1
CCB-2	< 0.02	< 0.02	< 0.04	< 0.1	< 0.1	< 0.1

LAB CONTROL SPIKE (LCS): UNIT: MG/L
CONTROL LIMIT: 80 - 120 % RECOVERY

LCS1018	TRUE VALUE	VALUE FOUND	% RECOVERY
F	1	1.05	105
CL	1	1.05	105
NO2	1	1.05	105
NO3	1	1.2	120
O-PO4	1	1.05	105
SO4	1	1.11	111

LCS1021	TRUE VALUE	VALUE FOUND	% RECOVERY
F	1	1.04	104
CL	1	1.09	109
NO2	1	1.09	109
NO3	1	1.03	103
O-PO4	1	1.14	114
SO4	1	1.1	110

LCS1022	TRUE VALUE	VALUE FOUND	% RECOVERY
F	1	1.09	109
CL	1	1.1	110
NO2	1	1.07	107
NO3	1	1.09	109
O-PO4	1	1.04	104
SO4	1	1.1	110

QC SUMMARY OF ANIONS ANALYSIS

LABORATORY: S-CUBED
LOT #: 2630
METHOD NO. 300.0
FILE#/DISK: ANI1008/ANI1017

DATA REVIEWER: AN 11/6/91
PROJECT REVIEWER:
MATRIX: SOIL
UNIT: MG/KG

DUPLICATE RESULTS:

SAMPLE ID: 2630-2

ANALYTE	CONTROL LIMIT	ORIGINAL RESULT	DUPLICATE RESULT	%RSD
F	+/- 20	1.44	1.23	16
CL	+/- 20	25.09	24.88	1
NO2	+/- 20	< 0.2	< 0.2	NC
NO3	+/- 20	14	14.31	2
O-PO4	+/- 20	< 0.5	< 0.5	NC
SO4	+/- 20	22.59	22.74	0.7

MATRIX SPIKE RECOVERY

SAMPLE ID: 2630-2

CONTROL LIMIT: 75 - 125
UNIT: MG/KG

ANALYTE	SPIKE RESULT	SAMPLE RESULT	AMOUNT SPIKED	% RECOVERY
F	6.3	1.44	5.20	93.5
CL	71.25	25.09	52.00	88.8
NO2	4.45	< 0.2	5.20	85.6
NO3	35.60	14	26.00	83.1
O-PO4	21.86	< 0.5	26.00	84.1
SO4	44.03	22.59	26.00	82.5

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator C.E. Heiden

Company Contact Chris Kramer Telephone 376-4186

Project Designation/Sampling Locations Site Wide Background Collection Date 10-1-91

Ice Chest No. RM #36 Field Logbook No.

Bill of Lading/Airbill No. 247 425 341 9 Offsite Property No. W92-0-0014 #2

Method of Shipment Emery

Shipped to S-Cubed San Diego, CA

Possible Sample Hazards/Remarks —

Sample Identification

B01438	✓	B01450	✓
B01439	✓	B01451	✓
B01442	✓	B01452	✓
B01443	✓	B01453	✓ Soil (3-120 ml ja
B01444	✓	B01456	✓
B01445	✓ Soil (3-120 ml jars)		
B01446	✓		
B01447	✓		
B01448	✓		
B01449	✓		

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

Relinquished by:	Received by:	Date/Time:
C.E. HEIDEN C.E. Heiden	T. Dixon 10/8/91 3pm	
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: All OK

A-6000-407 (12/90

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

Project No. 91-075

PART I: FIELD SECTION

Collector C. Kramer / J. Lucas / C. Heldon Date Sampled 10-1-91 Time — hours

Company Contact Chris Kramer Telephone (509) 376-4186

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B01438	3 - 120 ml jars	Soil	See attached Tables A-1, A-2.
B01439			Each sample is to be analyzed
B01442			for all analytes by the method
B01443			shown except for fluoride.
B01444			Fluoride may be done by
B01445			ion chromatography.
B01446			
B01447			
B01448			
B01449			
B01450			
B01451			
B01452			
B01453			
B01456			
B014H3	Ø containers	None	Additional prep. blank for all analyses.
			This sample number is provided to report
			and track this request. Contact Mark
			Beck - WHC OSM (509) 373-4369 if
			there are questions.

Field Information** Background Sites 13 & 14.

Special Handling and/or Storage Sieve samples. Use the less-than 2mm size fraction in analytical aliquots. Exclude stones, etc larger than 2mm.

Possible Sample Hazards None

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406 (05/90

FORM OF PAYMENT

CASH ☐ GBL/CBL ☐ FCCOD ☐

PRP ☒ COL ☐ OTH ☐ COMAT ☐

EMERY WORLDWIDE

A CF Company

SERVICES

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

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

PULL FOR SHPT. NO. TAB

E Shipper's Account Number: 850281585

Date: 10-07-91 | Origin: PSC | Shipment Number: 247425341 9

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

To:
JOHN DEWALD
S-CUBED
3398 CARMEL MT. ROAD
SAN DIEGO CA
Hold for Pick Up ☐ Canada ☐

Tariff Dest. | Gateway

Check to Shipper $

EMERY WORLDWIDE will collect consignee's check made payable only to the shipper for the value of the goods in the amount shown above.

Customer's Reference Numbers: W81223 PK1BB W92-0-0014#2 | Zip: 99352

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

Description	Pcs	L	W	H	Total Pieces	Total Weight (In Lbs)
1 ICE CHEST RM#36 SOIL SAMPLES W92-0-0014#2	1				1	60

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

Declared Value $

247425341 9

TODSR ☐ Haz Mat ☐ Bdt ☐ A B C D E F G H I J K

1 2 3 4 5 6 .7 8 9 0 1 2

OVERNIGHT DELIVERY
SIGNATURE SECURITY SERVICE

Envelope 9X12 ☒ Pack 12X15 ☒

Shipper's Signature X

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

Base Charge

Total Transportation Charges | Other Charges/Advance at Origin: OCA/O- $

SAN-A

Terms and Conditions on Back

CONSIGNEE — PACKAGE COPY — 4

EMERY WORLDWIDE — A CF Company

SIGNATURE AND TALLY RECORD

60028-46 (8/88) Litho USA

DATE: 10-07-91 SHIPMENT NO.: W92-0-001442
SHIPPER: WESTINGHOUSE SHIPPING DEPT (509) 376-6665
REFERENCE NO.: W92-0-001442

SHIPPER NAME AND ADDRESS

WESTINGHOUSE SHIPPING DEPT (509) 376-6665
~~WESTINGHOUSE SHIPPING DEPT (509) 376-6665~~
G2-06 US DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD COMPANY
2355 STEVENS DRIVE 1163 BUILDING
PO BOX 1970
RICHLAND WA 99352

CONSIGNEE NAME AND ADDRESS

JOHN DEWALD
S-CUBED
3398 CARMEL MT. ROAD
SAN DIEGO CA 92121-1095

Pieces	Weight	Description/Marks	Emery Authorization No.
1	60 LBS	W92-0-001442 ICE CHEST RM836 SOIL SAMPLES	

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW

Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1. JOYCE DEMAREST WESTINGHOUSE SHIPPING 1167/1100	RICHLAND WA		/10-07-91
2.			
3.			
4.			
5.			
6. J. PRICE	SAN		1230/00
7.			1 14.15
8. John Dixon S-Cuben	SAN	J. Dixon	10/8/91 3pm

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

MAXWELL
S-CUBED Division

Lot No. 2630

Sample Log-In Sheet

DC No. ____-___-___

Date Received 10/8/91 Date Sampled 10/1/91 Client Code WHC

Time Received 3pm

Received by (Sig.) [illegible] Custody Seals Present/Intact (Y) N Reporting Format: Summ. CLP Summ. (Full CLP) Disk

Airbill No. 247425341-9 Chain of Custody Present (Y) N Turnaround Req'd: 45d (30d) 21d 14d 48hr Other ~~10d~~

Charge No. 32359-04 Client Forms Present (Y) N Quality Control Req'd: Level 1(Low) (2(CLP)) 3(RCRA) 4(Other)

Case No./Proj. Code Site Wide Soil SDG No. 2630

S-Cubed No.	Sample Identification	Samp. Type	No. Cont.	Samp. Cond.	Samp. Stor.	A	B	C	D	E	F				All Info Agree	Notes
2630-1	B01438	S	0/3	WA		X	X	X	X	X	X					
MS 2	1439															
3	1442															
4	1443															
5	1444															
6	1445															
7	1446															
8	1447															F ALK
9	1448															E N-NO3
10	1449															D ANIONS
11	1450															C HGCLP
12	1451															B FURNCLP
13	1452															A ICPCLP + extra
14	1453															
15	1456															
16																Extra Blank

Container Types BG14A3

Water 30 x 120ml

Soil

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

Water MS, MSD

Soil MS, MSD 2630-2

Review JO 10/8

INORGANIC QC - Holding Times

Name Mark G. Beck Date 1/24/92 MGB

COMMENTS: All metals — (including mercury) met the holding time acceptance criteria.

ACTION: none - none required

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - other

Name [illegible] Date 1/24/92 M.90

COMMENTS: The analytical spike %RSD's were often higher than that of the samples, despite the spike being much concentration.

ACTION: as there are no formal requirements for data qualification on this the above point, the above documentation of the fact observed will suffice.

sample #	constituent	value/qual	sample #	constituent	value/qual

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-1

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-1

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9500			P
7440-36-0	Antimony	5.8	~~U~~	~~N~~ ~~UJ~~	P
7440-38-2	Arsenic	4.7		J	F
7440-39-3	Barium	121		~~*~~ J	P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	10300		~~*~~ J	P
7440-47-3	Chromium	11.2		~~N~~ J	P
7440-48-4	Cobalt	14.0		~~*~~ J	P
7440-50-8	Copper	12.9		~~*~~ J	P
7439-89-6	Iron	28500			P
7439-92-1	Lead	6.2		~~N~~ J	F
7439-95-4	Magnesium	5990			P
7439-96-5	Manganese	439		~~*~~ J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ ~~UJ~~	CV
7440-02-0	Nickel	12.0		~~*~~ J	P
7440-09-7	Potassium	1820			P
7782-49-2	Selenium	4.5	~~U~~	~~N~~ ~~UJ~~	F
7440-22-4	Silver	1.2		~~N~~ J	P
7440-23-5	Sodium	349	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	66.4			P
7440-66-6	Zinc	65.7			P

Color Before: BLACK Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1438

FORM I - IN

1/24/92 MUB

7/88

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-1

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-1

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	36.3		~~N~~ J	P
7440-32-6	Titanium	2060			P
7440-67-7	Zirconium	18.2			P

Color Before: BLACK Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1438

FORM I - IN

1/24/92

7/88

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-2

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-2

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7230			P
7440-36-0	Antimony	5.8	~~U~~	~~N UJ~~	P
7440-38-2	Arsenic	4.7		J	F
7440-39-3	Barium	116		~~*~~ J	P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	13500		~~*~~ J	P
7440-47-3	Chromium	7.6		~~N~~ J	P
7440-48-4	Cobalt	9.9		~~*~~ J	P
7440-50-8	Copper	13.9		~~*~~ J	P
7439-89-6	Iron	22400			P
7439-92-1	Lead	6.9		N	F
7439-95-4	Magnesium	3950			P
7439-96-5	Manganese	355		~~*~~ J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	9.9		~~*~~ J	P
7440-09-7	Potassium	1160			P
7782-49-2	Selenium	4.6	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	336	B		P
7440-28-0	Thallium	3.4	~~U~~	UJ	F
7440-62-2	Vanadium	48.8			P
7440-66-6	Zinc	49.5			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1439

FORM I - IN

1/24/92

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-2

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-2

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.1

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	31.2	~~U~~	~~N~~	P
7440-32-6	Titanium	1300			P
7440-67-7	Zirconium	20.2			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1439

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-3

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: _____ SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-3

Level (low/med): LOW Date Received: 10/08/91

% Solids: 97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8140			P
7440-36-0	Antimony	5.7	~~U~~	~~N UJ~~	P
7440-38-2	Arsenic	4.3		J	F
7440-39-3	Barium	107		~~*~~ J	P
7440-41-7	Beryllium	1.3			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	39500		~~*~~ J	P
7440-47-3	Chromium	8.7		~~N~~ J	P
7440-48-4	Cobalt	8.5		~~*~~ J	P
7440-50-8	Copper	13.6		~~*~~ J	P
7439-89-6	Iron	18900			P
7439-92-1	Lead	8.0		N	F
7439-95-4	Magnesium	4250			P
7439-96-5	Manganese	211		~~*~~ J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	8.8		~~*~~ J	P
7440-09-7	Potassium	1240			P
7782-49-2	Selenium	4.5	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	464	B		P
7440-28-0	Thallium	3.4	~~U~~	UJ	F
7440-62-2	Vanadium	40.4			P
7440-66-6	Zinc	50.2			P

—rejected

Color Before: GREY Clarity Before: _____ Texture: COARSE

Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:

BO_1442

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-3

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-3

Level (low/med): LOW Date Received: 10/08/91

% Solids: 97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	30.8		~~N~~ J	P
7440-32-6	Titanium	945			P
7440-67-7	Zirconium	14.8			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-4

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-4

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7750			P
7440-36-0	Antimony	5.8	~~U~~	~~N UJ~~	P
7440-38-2	Arsenic	7.0			F
7440-39-3	Barium	66.8		~~*~~ J	P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	14800		~~*~~ J	P
7440-47-3	Chromium	9.6		~~N~~ J	P
7440-48-4	Cobalt	9.7		~~*~~ J	P
7440-50-8	Copper	13.4		~~*~~ J	P
7439-89-6	Iron	21600			P
7439-92-1	Lead	5.8		N	F
7439-95-4	Magnesium	4810			P
7439-96-5	Manganese	277		~~*~~ J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	10.9		~~*~~ J	P
7440-09-7	Potassium	1370			P
7782-49-2	Selenium	4.6	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	433	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	50.3			P
7440-66-6	Zinc	48.3			P

Rejected

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1443

FORM I - IN

1/24/92

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-4

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-4

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.6

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	33.3		~~N~~ J	P
7440-32-6	Titanium	1310			P
7440-67-7	Zirconium	16.5			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1443

FORM I - IN

7/88

1/24/92

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-5

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-5

Level (low/med): LOW Date Received: 10/08/91

% Solids: 94.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9380			P
7440-36-0	Antimony	5.9	~~U~~	~~N UJ~~	P
7440-38-2	Arsenic	5.1		J	F
7440-39-3	Barium	134		* J	P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	0.32	U		P
7440-70-2	Calcium	27500		* J	P
7440-47-3	Chromium	13.1		N J	P
7440-48-4	Cobalt	10.1		* J	P
7440-50-8	Copper	16.3		* J	P
7439-89-6	Iron	21000			P
7439-92-1	Lead	7.1		N	F
7439-95-4	Magnesium	4890			P
7439-96-5	Manganese	412		* J	P
7439-97-6	Mercury	0.11	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	13.4		* J	P
7440-09-7	Potassium	1130			P
7782-49-2	Selenium	4.7	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.1	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	446	B		P
7440-28-0	Thallium	3.5	U		F
7440-62-2	Vanadium	43.8			P
7440-66-6	Zinc	51.9			P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1444

FORM I - IN

1/24/92

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-5

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-5

Level (low/med): LOW Date Received: 10/08/91

% Solids: 94.6

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	34.9		~~N~~ J	P
7440-32-6	Titanium	925			P
7440-67-7	Zirconium	10.6	U		P

Color Before: GREY Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1444

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-6

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-6

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9120			P
7440-36-0	Antimony	5.7	~~U~~	~~N~~ UJ	P R
7440-38-2	Arsenic	2.6		J	F
7440-39-3	Barium	111		~~*~~ J	P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	4280		~~*~~ J	P
7440-47-3	Chromium	11.7		~~N~~ J	P
7440-48-4	Cobalt	9.8		~~*~~ J	P
7440-50-8	Copper	11.9		~~*~~ J	P
7439-89-6	Iron	20900			P
7439-92-1	Lead	6.7		N	F
7439-95-4	Magnesium	5120			P
7439-96-5	Manganese	404		~~*~~ J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	12.4		~~*~~ J	P
7440-09-7	Potassium	2260			P
7782-49-2	Selenium	4.5	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	244	B		P
7440-28-0	Thallium	3.4	~~U~~	UJ	F
7440-62-2	Vanadium	41.7			P
7440-66-6	Zinc	55.1			P

Color Before: BLACK Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1445

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-6

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-6

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.5

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	35.5		~~N~~ J	P
7440-32-6	Titanium	1350			P
7440-67-7	Zirconium	15.2			P

Color Before: BLACK Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1445

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-7

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-7

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8100			P
7440-36-0	Antimony	5.7	~~U~~	~~N~~ ~~UJ~~	P
7440-38-2	Arsenic	3.7		J	F
7440-39-3	Barium	113		~~*~~ J	P
7440-41-7	Beryllium	1.3			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	10900		~~*~~ J	P
7440-47-3	Chromium	9.7		~~N~~ J	P
7440-48-4	Cobalt	13.6		~~*~~ J	P
7440-50-8	Copper	13.0		~~*~~ J	P
7439-89-6	Iron	26900			P
7439-92-1	Lead	8.1		N	F
7439-95-4	Magnesium	5870			P
7439-96-5	Manganese	443		~~*~~ J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	12.9		~~*~~ J	P
7440-09-7	Potassium	1590			P
7782-49-2	Selenium	4.5	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	268	B		P
7440-28-0	Thallium	3.4	~~U~~	UJ	F
7440-62-2	Vanadium	60.7			P
7440-66-6	Zinc	55.2			P

Color Before: GREY Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1446

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-7

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-7

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	34.1		~~N~~ J	P
7440-32-6	Titanium	1830			P
7440-67-7	Zirconium	18.0			P

Color Before: GREY Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1446

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-8

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-8

Level (low/med): LOW Date Received: 10/08/91

% Solids: 95.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5040			P
7440-36-0	Antimony	5.9	U	~~N~~ UJ	P
7440-38-2	Arsenic	4.1		J	F
7440-39-3	Barium	114		* J	P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	6870		* J	P
7440-47-3	Chromium	5.7		N J	P
7440-48-4	Cobalt	10.2		* J	P
7440-50-8	Copper	10.0		* J	P
7439-89-6	Iron	21400			P
7439-92-1	Lead	5.5		N	F
7439-95-4	Magnesium	3940			P
7439-96-5	Manganese	371		* J	P
7439-97-6	Mercury	0.10	U	~~N~~ UJ	CV
7440-02-0	Nickel	8.9		* J	P
7440-09-7	Potassium	996			P
7782-49-2	Selenium	4.6	U	~~N~~ UJ	F
7440-22-4	Silver	1.0	U	~~N~~ UJ	P
7440-23-5	Sodium	226	B		P
7440-28-0	Thallium	3.4	U	UJ	F
7440-62-2	Vanadium	51.3			P
7440-66-6	Zinc	47.3			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1447

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-8

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-8

Level (low/med): LOW Date Received: 10/08/91

% Solids: 95.7

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	31.3	U	N	P
7440-32-6	Titanium	1600			P
7440-67-7	Zirconium	17.3			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO 1447

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-9

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-9

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11500			P
7440-36-0	Antimony	5.7	~~U~~	~~N~~ R	P
7440-38-2	Arsenic	7.5		J	F
7440-39-3	Barium	118		~~*~~ J	P
7440-41-7	Beryllium	1.6			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	13800		~~*~~ J	P
7440-47-3	Chromium	14.3		~~N~~ J	P
7440-48-4	Cobalt	13.7		~~*~~ J	P
7440-50-8	Copper	20.2		~~*~~ J	P
7439-89-6	Iron	28400			P
7439-92-1	Lead	12.3		N	F
7439-95-4	Magnesium	7610			P
7439-96-5	Manganese	410		~~*~~ J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	16.7		~~*~~ J	P
7440-09-7	Potassium	2380			P
7782-49-2	Selenium	4.5	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	296	B		P
7440-28-0	Thallium	3.4	~~U~~	UJ	F
7440-62-2	Vanadium	52.5			P
7440-66-6	Zinc	70.8			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1448

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-9

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-9

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	38.2		N	P
7440-32-6	Titanium	1530			P
7440-67-7	Zirconium	21.9			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1448

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-10

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-10

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8490			P
7440-36-0	Antimony	5.7	~~U~~	~~N~~ R	P
7440-38-2	Arsenic	3.6		J	F
7440-39-3	Barium	149		~~*~~ J	P
7440-41-7	Beryllium	1.6			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	13100		~~*~~ J	P
7440-47-3	Chromium	6.7		~~N~~ J	P
7440-48-4	Cobalt	15.2		~~*~~ J	P
7440-50-8	Copper	18.6		~~*~~ J	P
7439-89-6	Iron	32000			P
7439-92-1	Lead	7.2		N	F
7439-95-4	Magnesium	4280			P
7439-96-5	Manganese	322		~~*~~ J	P
7439-97-6	Mercury	0.26		~~N~~ J	CV
7440-02-0	Nickel	10.6		~~*~~ J	P
7440-09-7	Potassium	1300			P
7782-49-2	Selenium	4.5	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	430	B		P
7440-28-0	Thallium	3.4	~~U~~	UJ	F
7440-62-2	Vanadium	79.6			P
7440-66-6	Zinc	70.4			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1449

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-10

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-10

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.2

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	30.5	U	N	P
7440-32-6	Titanium	2400			P
7440-67-7	Zirconium	39.4			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1449

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-11

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-11

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6120			P
7440-36-0	Antimony	5.8	~~U~~	~~N~~ R	P
7440-38-2	Arsenic	7.0		J	F
7440-39-3	Barium	88.1		~~*~~ J	P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	21600		~~*~~ J	P
7440-47-3	Chromium	3.6		~~N~~ J	P
7440-48-4	Cobalt	12.2		~~*~~ J	P
7440-50-8	Copper	17.6		~~*~~ J	P
7439-89-6	Iron	27500			P
7439-92-1	Lead	7.8		N	F
7439-95-4	Magnesium	3420			P
7439-96-5	Manganese	309		~~*~~ J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	8.0		~~*~~ J	P
7440-09-7	Potassium	855			P
7782-49-2	Selenium	4.5	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	306	B		P
7440-28-0	Thallium	3.4	~~U~~	UJ	F
7440-62-2	Vanadium	48.5			P
7440-66-6	Zinc	58.0			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1450

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-11

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-11

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.8

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	31.0	U	N	P
7440-32-6	Titanium	1380			P
7440-67-7	Zirconium	32.5			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1450

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-12

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-12

Level (low/med): LOW Date Received: 10/08/91

% Solids: 97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7470			P
7440-36-0	Antimony	5.7	~~U~~	~~N~~ R	P
7440-38-2	Arsenic	5.3		J	F
7440-39-3	Barium	68.8		~~*~~ J	P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	8540		~~*~~ J	P
7440-47-3	Chromium	9.5		~~N~~ J	P
7440-48-4	Cobalt	11.2		~~*~~ J	P
7440-50-8	Copper	16.0		~~*~~ J	P
7439-89-6	Iron	22900			P
7439-92-1	Lead	5.0		N	F
7439-95-4	Magnesium	4760			P
7439-96-5	Manganese	348		~~*~~ J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	10.8		* J	P
7440-09-7	Potassium	1450			P
7782-49-2	Selenium	4.5	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	376	B		P
7440-28-0	Thallium	3.4	~~U~~	UJ	F
7440-62-2	Vanadium	49.2			P
7440-66-6	Zinc	55.8			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1451

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-12

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-12

Level (low/med): LOW Date Received: 10/08/91

% Solids: 97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	30.6	U	N	P
7440-32-6	Titanium	1580			P
7440-67-7	Zirconium	18.2			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-13

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-13

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3940			P
7440-36-0	Antimony	5.7	~~U~~	~~N~~ R	P
7440-38-2	Arsenic	3.0			F
7440-39-3	Barium	45.2		~~*~~ J	P
7440-41-7	Beryllium	0.81			P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	5600		~~*~~ J	P
7440-47-3	Chromium	4.0		~~N~~ J	P
7440-48-4	Cobalt	7.3		~~*~~ J	P
7440-50-8	Copper	14.0		~~*~~ J	P
7439-89-6	Iron	16000			P
7439-92-1	Lead	4.9		N	F
7439-95-4	Magnesium	2930			P
7439-96-5	Manganese	196		~~*~~ J	P
7439-97-6	Mercury	0.33		N	CV
7440-02-0	Nickel	6.3		~~*~~ J	P
7440-09-7	Potassium	805			P
7782-49-2	Selenium	4.5	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	309	B		P
7440-28-0	Thallium	3.3	U		F
7440-62-2	Vanadium	28.7			P
7440-66-6	Zinc	44.1			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-13

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-13

Level (low/med): LOW Date Received: 10/08/91

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	30.4	U	N	P
7440-32-6	Titanium	972			P
7440-67-7	Zirconium	13.9			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_1452

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-14

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-14

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4930			P
7440-36-0	Antimony	5.8	~~U~~	~~N~~ R	P
7440-38-2	Arsenic	2.8			F
7440-39-3	Barium	52.5		~~*~~ J	P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	5870		~~*~~ J	P
7440-47-3	Chromium	5.2		~~N~~ J	P
7440-48-4	Cobalt	10.4		~~*~~ J	P
7440-50-8	Copper	16.2		~~*~~ J	P
7439-89-6	Iron	22800			P
7439-92-1	Lead	4.7		N	F
7439-95-4	Magnesium	3620			P
7439-96-5	Manganese	253		~~*~~ J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	7.7		~~*~~ J	P
7440-09-7	Potassium	939			P
7782-49-2	Selenium	4.6	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	341	B		P
7440-28-0	Thallium	3.4	U		F
7440-62-2	Vanadium	48.1			P
7440-66-6	Zinc	47.6			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1453

FORM I - IN

1/24/92

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02

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-14

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-14

Level (low/med): LOW Date Received: 10/08/91

% Solids: 96.4

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	31.1	U	N	P
7440-32-6	Titanium	1570			P
7440-67-7	Zirconium	17.9			P

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1453

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-15

Lab Name: S.CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-15

Level (low/med): LOW Date Received: 10/08/91

% Solids: 94.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6440			P
7440-36-0	Antimony	5.9	~~U~~	~~N~~ R	P
7440-38-2	Arsenic	2.3	~~U~~	UJ	F
7440-39-3	Barium	122		~~*~~ J	P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.32	U		P
7440-70-2	Calcium	11100		~~*~~ J	P
7440-47-3	Chromium	6.7		~~N~~ J	P
7440-48-4	Cobalt	11.7		~~*~~ J	P
7440-50-8	Copper	15.9		~~*~~ J	P
7439-89-6	Iron	23400			P
7439-92-1	Lead	4.8		N	F
7439-95-4	Magnesium	4650			P
7439-96-5	Manganese	594		~~*~~ J	P
7439-97-6	Mercury	0.23		~~N~~ J	CV
7440-02-0	Nickel	9.4		~~*~~ J	P
7440-09-7	Potassium	1180			P
7782-49-2	Selenium	4.6	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.1	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	308	B		P
7440-28-0	Thallium	3.5	U		F
7440-62-2	Vanadium	52.1			P
7440-66-6	Zinc	53.0			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1456

1/24/92

FORM I - IN

7/88

030

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-15

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-15

Level (low/med): LOW Date Received: 10/08/91

% Solids: 94.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	31.6	U	N	P
7440-32-6	Titanium	1680			P
7440-67-7	Zirconium	21.4			P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 1456

12/4/92

FORM I - IN

031

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-16

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL Lab Sample ID: 2630-16

Level (low/med): LOW Date Received: 10/08/91

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7.2	U		P
7440-36-0	Antimony	5.6	~~U~~	~~N~~ R	P
7440-38-2	Arsenic	0.20	U		F
7440-39-3	Barium	4.1	U	~~*~~ UJ	P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	107	U	~~*~~ UJ	P
7440-47-3	Chromium	0.70	U	N	P
7440-48-4	Cobalt	1.6	U	~~*~~ UJ	P
7440-50-8	Copper	1.8	U	~~*~~ UJ	P
7439-89-6	Iron	14.4			P
7439-92-1	Lead	0.14	~~B~~	~~N~~ UJ	F
7439-95-4	Magnesium	249	U		P
7439-96-5	Manganese	0.60	U	~~*~~ UJ	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	3.2	U	~~*~~ UJ	P
7440-09-7	Potassium	130	U		P
7782-49-2	Selenium	0.40	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	~~U~~	~~N~~ UJ	P
7440-23-5	Sodium	98.7	U		P
7440-28-0	Thallium	0.30	~~U~~	UJ	F
7440-62-2	Vanadium	2.0	U		P
7440-66-6	Zinc	5.0	U		P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO 14A3

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1/24/92

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7/88

03

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2630-16

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE_ SAS No.: SDG No.: 2630

Matrix (soil/water): SOIL_ Lab Sample ID: 2630-16

Level (low/med): LOW Date Received: 10/08/91

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium	30.0	U	N	P
7440-32-6	Titanium	1.0	U		P
7440-67-7	Zirconium	10.0	U		P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

BO_14A3

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