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International Specialists in the Environment

MEMORANDUM

DATE: June 8, 1989

FOR: Rhonda Wreggelsworth, RSCC, USEPA, Region X

THRU: Jeffrey Villnow, FIT-OM, E & E, Seattle

FROM: David A. Ikeda, Chemist, E & E, Seattle
Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 11739 (Inorganics)
Magnum Salvage/Horizon Vehicles

REF: F10-8904-007
PAN F10Z094QA

CC: John Osborn, PO, USEPA, Region X
Bruce Woods, ESD, USEPA, Region X
Gerald Muth, DPO, USEPA, Region X
Keith Schwab, DPO, USEPA, Region VIII
Deborah Flood, HWD-SM, USEPA, Region X
Joseph Hunt, FIT-PD, E & E. Seattle
Mark Ader, FIT-PM, E & E, Seattle

The Quality Assurance review of 17 samples, Case 11739, collected from Magnum Salvage has been completed. Eleven soil and six water samples were analyzed at low level for TCL Inorganics by Datachem of Salt Lake City, Utah. The samples were numbered:

MJD463 (soil)	MJE126 (water)	MJE132 (soil)
MJD464 (soil)	MJE127 (water)	MJE133 (soil)
MJD465 (soil)	MJE128 (water)	MJE134 (soil)
MJD466 (soil)	MJE129 (water)	MJE135 (soil)
MJD467 (soil)	MJE130 (water)	MJE136 (soil)
MJD125 (water)	MJE131 (soil)	

Samples MJE130 and MJE132 underwent matrix spike analysis and duplicate analysis.

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Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control specifications outlined in IFB WA-87K025-027.

1) Timeliness

Sample Number	Sample Date	Rec'd Date	ICP Anal.	AA Anal.	Hg Anal.
MJD463	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJD464	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJD465	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJD466	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJD467	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE125	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE126	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE127	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE128	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE129	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE130	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE131	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE132	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE133	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE134	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE135	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89
MJE136	04/13/89	04/15/89	05/09/89	05/03/89	04/26/89

All samples met QC holding time criteria.

2) Initial Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace and flame AA results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

3) Continuing Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace and flame AA results fell within the con-

trol limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

4) Instrument Detection Limits

All Instrument Detection Limits (IDL) for ICP, AA, and mercury analyses were equal to or less than the Contract Required Detection Limits (CRDL).

5) Blanks

The following blanks contained elemental contamination above the IDL but below CRDL:

Blank*	Element	Conc. µg/L	IDL µg/L	CRDL µg/L
ICB	Arsenic	2.0	1.5	10
CCB1	Aluminum	26.2	24.0	200
	Beryllium	1.5	1.2	5
	Silver	2.5	2.5	10
CCB2	Beryllium	1.4	1.2	5
CCB3	Beryllium	1.4	1.2	5
	Iron	20.1	13.3	100
	Silver	3.0	2.4	10
CCB4	Beryllium	2.1	1.2	5
	Iron	19.2	13.3	100
	Silver	4.0	2.4	10
PBW	Aluminum	41.8	24.0	200
	Iron	23.1	13.3	100
	Lead	1.3	0.4	5
PBS**	Aluminum	73.7	24.0	200
	Copper	7.4	5.0	25
	Iron	37.2	13.3	100
	Lead	0.67	0.4	5

* ICB = Initial Calibration Blank; CCB = Continuing Calibration Blank; and PB = Preparation Blank.

** The concentration values were transcribed from the raw data; therefore, these results were reported as µg/L.

Sample results below five times the highest analyte level reported in the blanks were flagged UJ (not detected, adjusted quantitation limit).

6) ICP Interference Check

All parameters for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

7) Laboratory Control Sample

The Recoveries for all parameters for both ICP and AA analysis were within the control limits required by IFB WA-87K025-027.

8) Duplicate Sample Analysis

The Relative Percent Difference values (RPD) for the duplicate sample analysis were within QC criteria of less than 20 percent for sample values greater than five times the CRDL. For all sample values less than five times the CRDL, the RPD values were within ± the CRDL for water matrix or ± two times the CRDL for soil matrix.

9) Spiked Sample Analysis

The Matrix spike recoveries for the following elements were outside QC limits:

Sample	Matrix	Element	% Recovery	QC Limits
MJE132	Soil	Antimony	36.5	75-125
MJE132	Soil	Arsenic	47.6	75-125

All positive results for the compounds listed above were flagged as estimated (J). For percent recoveries between 30-74 percent, all sample results below IDL were flagged as estimated quantitation limit (UJ).

10) ICP Serial Dilution

The Percent Difference values (%D) for ICP serial dilution analysis were within the QC limits of 10 percent for all parameters.

11) Furnace AA

All furnace AA results met QC criteria.

The following samples were run by the Method of Standard Additions for the indicated parameter(s) with correlation coefficients (r) outside of QC criteria:

Sample	Matrix	Element	r	QC Criteria
MJE135	Soil	Arsenic	0.992	0.995 - 1.0

The reported concentration for this element in sample MJE135 was flagged as estimated (J or UJ).

12) Mercury Analysis

All mercury analyses met QC criteria.

13) Sample Analysis

On Form IX (ICP Serial Dilution) for sample MJE132L, positive sample and serial dilution results were given in µg/L, and negative results were given in µg/kg. NO action was required.

A CRDL sample was run.

Sample results reported that were below CRDL and above IDL were flagged as estimated (J).

14) Laboratory Contact

No laboratory contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (R-582-5-5-01).

Upon consideration of the above comments, the data is ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The associated numerical value is an estimated quantity because quality control criteria were not met or concentrations reported were less than the CRQL.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated sample quantitation limit.

R - Quality Control indicates that data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification.

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJD463

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD463

Matrix (soil/water): SOIL Lab Sample ID: CLP2881

Level (low/med): LOW Date Received: 04/15/89

% Solids: 78.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	33200			
7440-36-0	Antimony	5.9	UJ		
7440-38-2	Arsenic	6.5	UJ		
7440-39-3	Barium	235			
7440-41-7	Beryllium	1.4	UJ		
7440-43-9	Cadmium	2.1			
7440-70-2	Calcium	4560			
7440-47-3	Chromium	32.8			
7440-48-4	Cobalt	22.2			
7440-50-8	Copper	84.4			
7439-89-6	Iron	37300			
7439-92-1	Lead	116			
7439-95-4	Magnesium	4340			
7439-96-5	Manganese	1180			
7439-97-6	Mercury	0.13	U		
7440-02-0	Nickel	22.0			
7440-09-7	Potassium	2470			
7782-49-2	Selenium	0.30	U		
7440-22-4	Silver	0.61	UJ		
7440-23-5	Sodium	244	J		
7440-28-0	Thallium	0.43	U		
7440-62-2	Vanadium	107			
7440-66-6	Zinc	243			
	Cyanide				

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MJD464

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD46

Matrix (soil/water): SOIL Lab Sample ID: CLP2882

Level (low/med): LOW Date Received: 04/15/89

% Solids: 74.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	22400			
7440-36-0	Antimony	6.3	UJ		
7440-38-2	Arsenic	5.3	UJ		
7440-39-3	Barium	183			
7440-41-7	Beryllium	1.2	UJ		
7440-43-9	Cadmium	0.81	U		
7440-70-2	Calcium	3090			
7440-47-3	Chromium	25.4			
7440-48-4	Cobalt	16.3			
7440-50-8	Copper	14.7			
7439-89-6	Iron	27300			
7439-92-1	Lead	9.9			
7439-95-4	Magnesium	2140			
7439-96-5	Manganese	772			
7439-97-6	Mercury	0.13	U		
7440-02-0	Nickel	12.4			
7440-09-7	Potassium	749	J		
7782-49-2	Selenium	0.32	U		
7440-22-4	Silver	0.65	UJ		
7440-23-5	Sodium	293	J		
7440-28-0	Thallium	0.46	U		
7440-62-2	Vanadium	95.7			
7440-66-6	Zinc	37.0			
	Cyanide				

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Comments:
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EPA SAMPLE NO.

MJD465

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD463

Matrix (soil/water): SOIL Lab Sample ID: CLP2883

Level (low/med): LOW Date Received: 04/15/89

% Solids: 76.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	31700			
7440-36-0	Antimony	6.1	uJ		
7440-38-2	Arsenic	3.9	uJ		
7440-39-3	Barium	213			
7440-41-7	Beryllium	1.3	uJ		
7440-43-9	Cadmium	0.79	U		
7440-70-2	Calcium	4600			
7440-47-3	Chromium	31.2			
7440-48-4	Cobalt	17.6			
7440-50-8	Copper	25.5			
7439-89-6	Iron	36600			
7439-92-1	Lead	12.9			
7439-95-4	Magnesium	4740			
7439-96-5	Manganese	822			
7439-97-6	Mercury	0.13	U		
7440-02-0	Nickel	20.0			
7440-09-7	Potassium	1190	J		
7782-49-2	Selenium	0.31	U		
7440-22-4	Silver	0.63	uJ		
7440-23-5	Sodium	303	J		
7440-28-0	Thallium	0.45	U		
7440-62-2	Vanadium	103			
7440-66-6	Zinc	84.3			
	Cyanide				

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJD466

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD46

Matrix (soil/water): SOIL Lab Sample ID: CLP2884

Level (low/med): LOW Date Received: 04/15/89

% Solids: 59.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	45100			
7440-36-0	Antimony	7.9	UJ		
7440-38-2	Arsenic	4.9	UJ		
7440-39-3	Barium	232			
7440-41-7	Beryllium	1.5	UJ		
7440-43-9	Cadmium	1.0	U		
7440-70-2	Calcium	4980			
7440-47-3	Chromium	38.5			
7440-48-4	Cobalt	17.2			
7440-50-8	Copper	26.7			
7439-89-6	Iron	42600			
7439-92-1	Lead	18.5			
7439-95-4	Magnesium	4970			
7439-96-5	Manganese	617			
7439-97-6	Mercury	0.17	U		
7440-02-0	Nickel	20.9			
7440-09-7	Potassium	1270	J		
7782-49-2	Selenium	0.41	UJ		
7440-22-4	Silver	0.81	U		
7440-23-5	Sodium	376	J		
7440-28-0	Thallium	0.58	U		
7440-62-2	Vanadium	120			
7440-66-6	Zinc	90.4			
	Cyanide				

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Color After: GREEN Clarity After: Artifacts: YES

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJD467

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD463

Matrix (soil/water): SOIL Lab Sample ID: CLP2885

Level (low/med): LOW Date Received: 04/15/89

% Solids: 76.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	31900			
7440-36-0	Antimony	6.1	UJ		
7440-38-2	Arsenic	3.6	UJ		
7440-39-3	Barium	233			
7440-41-7	Beryllium	1.3	UJ		
7440-43-9	Cadmium	0.79	U		
7440-70-2	Calcium	4250			
7440-47-3	Chromium	37.6			
7440-48-4	Cobalt	20.9			
7440-50-8	Copper	29.9			
7439-89-6	Iron	39700			
7439-92-1	Lead	27.6			
7439-95-4	Magnesium	4890			
7439-96-5	Manganese	983			
7439-97-6	Mercury	0.13	U		
7440-02-0	Nickel	21.3			
7440-09-7	Potassium	2580			
7782-49-2	Selenium	0.32	U		
7440-22-4	Silver	0.63	UJ		
7440-23-5	Sodium	225	J		
7440-28-0	Thallium	0.45	U		
7440-62-2	Vanadium	119			
7440-66-6	Zinc	94.7			
	Cyanide				

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EPA SAMPLE NO.

MJE125

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD46

Matrix (soil/water): WATER Lab Sample ID: CLP2886

Level (low/med): LOW Date Received: 04/15/89

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	66.6	UJ		
7440-36-0	Antimony	23.3	U		
7440-38-2	Arsenic	2.0	UJ		
7440-39-3	Barium	14.8	U		
7440-41-7	Beryllium	1.2	UJ		
7440-43-9	Cadmium	3.0	U		
7440-70-2	Calcium	321	J		
7440-47-3	Chromium	4.9	U		
7440-48-4	Cobalt	5.9	U		
7440-50-8	Copper	5.0	U		
7439-89-6	Iron	26.4	UJ		
7439-92-1	Lead	0.50	UJ		
7439-95-4	Magnesium	153	U		
7439-96-5	Manganese	3.9	U		
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	20.8	U		
7440-09-7	Potassium	551	U		
7782-49-2	Selenium	1.2	U		
7440-22-4	Silver	2.4	UJ		
7440-23-5	Sodium	523	U		
7440-28-0	Thallium	1.7	U		
7440-62-2	Vanadium	9.0	U		
7440-66-6	Zinc	8.3	U		
	Cyanide				

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MJE126

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD46

Matrix (soil/water): WATER Lab Sample ID: CLP2887

Level (low/med): LOW Date Received: 04/15/89

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	72.9	UJ		
7440-36-0	Antimony	23.3	UJ		
7440-38-2	Arsenic	1.5	U		
7440-39-3	Barium	14.8	U		
7440-41-7	Beryllium	2.2	UJ		
7440-43-9	Cadmium	3.0	U		
7440-70-2	Calcium	354	J		
7440-47-3	Chromium	5.9	J		
7440-48-4	Cobalt	5.9	U		
7440-50-8	Copper	5.0	U		
7439-89-6	Iron	37.7	UJ		
7439-92-1	Lead	1.5	UJ		
7439-95-4	Magnesium	153	U		
7439-96-5	Manganese	3.9	U		
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	20.8	U		
7440-09-7	Potassium	551	U		
7782-49-2	Selenium	1.2	U		
7440-22-4	Silver	2.4	UJ		
7440-23-5	Sodium	523	U		
7440-28-0	Thallium	1.7	U		
7440-62-2	Vanadium	9.0	U		
7440-66-6	Zinc	8.3	U		
	Cyanide				

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EPA SAMPLE NO.

MJE127

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD46

Matrix (soil/water): WATER Lab Sample ID: CLP2888

Level (low/med): LOW Date Received: 04/15/89

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	120	UJ		
7440-36-0	Antimony	23.3	U		
7440-38-2	Arsenic	4.6	UJ		
7440-39-3	Barium	27.9	J		
7440-41-7	Beryllium	1.2	UJ		
7440-43-9	Cadmium	3.0	U		
7440-70-2	Calcium	20900			
7440-47-3	Chromium	4.9	U		
7440-48-4	Cobalt	5.9	U		
7440-50-8	Copper	5.0	U		
7439-89-6	Iron	6090			
7439-92-1	Lead	1.7	UJ		
7439-95-4	Magnesium	9360			
7439-96-5	Manganese	199			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	20.8	U		
7440-09-7	Potassium	912	J		
7782-49-2	Selenium	1.2	U		
7440-22-4	Silver	2.4	UJ		
7440-23-5	Sodium	13100			
7440-28-0	Thallium	1.7	U		
7440-62-2	Vanadium	9.0	U		
7440-66-6	Zinc	44.7			
	Cyanide				

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJE128

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD46

Matrix (soil/water): WATER Lab Sample ID: CLP2889

Level (low/med): LOW Date Received: 04/15/89

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	123	UJ		
7440-36-0	Antimony	23.3	U		
7440-38-2	Arsenic	1.5	UJ		
7440-39-3	Barium	14.8	U		
7440-41-7	Beryllium	1.2	UJ		
7440-43-9	Cadmium	3.0	U		
7440-70-2	Calcium	28700			
7440-47-3	Chromium	4.9	U		
7440-48-4	Cobalt	5.9	U		
7440-50-8	Copper	5.0	U		
7439-89-6	Iron	262			
7439-92-1	Lead	1.7	UJ		
7439-95-4	Magnesium	12100			
7439-96-5	Manganese	54.2			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	20.8	U		
7440-09-7	Potassium	1090	J		
7782-49-2	Selenium	1.2	U		
7440-22-4	Silver	2.4	UJ		
7440-23-5	Sodium	12000			
7440-28-0	Thallium	1.7	U		
7440-62-2	Vanadium	9.0	U		
7440-66-6	Zinc	50.6			
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Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

010

U.S. EPA - CLP

EPA SAMPLE NO.

MJE129

INORGANIC ANALYSIS DATA SHEET

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD46

Matrix (soil/water): WATER Lab Sample ID: CLP2890

Level (low/med): LOW Date Received: 04/15/89

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.6	UJ		
7440-36-0	Antimony	23.3	U		
7440-38-2	Arsenic	1.5	UJ		
7440-39-3	Barium	14.8	U		
7440-41-7	Beryllium	1.2	UJ		
7440-43-9	Cadmium	3.0	U		
7440-70-2	Calcium	11400			
7440-47-3	Chromium	4.9	U		
7440-48-4	Cobalt	5.9	U		
7440-50-8	Copper	5.0	U		
7439-89-6	Iron	342			
7439-92-1	Lead	6.4	UJ		
7439-95-4	Magnesium	5900			
7439-96-5	Manganese	116			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	20.8	U		
7440-09-7	Potassium	1270	J		
7782-49-2	Selenium	1.2	U		
7440-22-4	Silver	2.4	UJ		
7440-23-5	Sodium	14700			
7440-28-0	Thallium	1.7	U		
7440-62-2	Vanadium	9.0	U		
7440-66-6	Zinc	144			
	Cyanide				

5 JUNE 1989

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

011

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U.S. EPA - CLP

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MJE130

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD46

Matrix (soil/water): WATER Lab Sample ID: CLP2891

Level (low/med): LOW Date Received: 04/15/89

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	112	UJ		
7440-36-0	Antimony	23.3	U		
7440-38-2	Arsenic	1.5	UJ		
7440-39-3	Barium	14.8	U		
7440-41-7	Beryllium	1.2	UJ		
7440-43-9	Cadmium	3.0	U		
7440-70-2	Calcium	23100			
7440-47-3	Chromium	4.9	U		
7440-48-4	Cobalt	5.9	U		
7440-50-8	Copper	5.0	U		
7439-89-6	Iron	127			
7439-92-1	Lead	2.2	UJ		
7439-95-4	Magnesium	10300			
7439-96-5	Manganese	5.0	J		
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	20.8	U		
7440-09-7	Potassium	551	U		
7782-49-2	Selenium	1.2	U		
7440-22-4	Silver	2.4	UJ		
7440-23-5	Sodium	10800			
7440-28-0	Thallium	1.7	U		
7440-62-2	Vanadium	9.0	U		
7440-66-6	Zinc	79.4			
	Cyanide				

5 JUNE 1989

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

012

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJE131

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD46A

Matrix (soil/water): SOIL Lab Sample ID: CLP2892

Level (low/med): LOW Date Received: 04/15/89

% Solids: 86.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21400			
7440-36-0	Antimony	5.4	UJ		
7440-38-2	Arsenic	4.9	UJ		
7440-39-3	Barium	94.8			
7440-41-7	Beryllium	0.88	UJ		
7440-43-9	Cadmium	0.70	U		
7440-70-2	Calcium	4820			
7440-47-3	Chromium	17.6			
7440-48-4	Cobalt	10.3	J		
7440-50-8	Copper	28.0			
7439-89-6	Iron	29500			
7439-92-1	Lead	6.8			
7439-95-4	Magnesium	4680			
7439-96-5	Manganese	534			
7439-97-6	Mercury	0.12	U		
7440-02-0	Nickel	13.6			
7440-09-7	Potassium	1130	J		
7782-49-2	Selenium	0.28	U		
7440-22-4	Silver	0.59	UJ		
7440-23-5	Sodium	404	J		
7440-28-0	Thallium	0.39	U		
7440-62-2	Vanadium	72.0			
7440-66-6	Zinc	65.2			
	Cyanide				

SJWE 4/89

Color Before: BROWN Clarity Before: Texture: COURSE

Color After: GREEN Clarity After: Artifacts: YES

Comments:
WOOD, ROOTS, GRASS

013

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJE132

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD46

Matrix (soil/water): SOIL Lab Sample ID: CLP2893

Level (low/med): LOW Date Received: 04/15/89

% Solids: 88.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18300			
7440-36-0	Antimony	5.3	UJ		
7440-38-2	Arsenic	4.8	UJ		
7440-39-3	Barium	84.6			
7440-41-7	Beryllium	0.72	UJ		
7440-43-9	Cadmium	0.68	U		
7440-70-2	Calcium	4780			
7440-47-3	Chromium	15.5			
7440-48-4	Cobalt	10.2	J		
7440-50-8	Copper	21.8			
7439-89-6	Iron	28700			
7439-92-1	Lead	4.8			
7439-95-4	Magnesium	5060			
7439-96-5	Manganese	504			
7439-97-6	Mercury	0.11	U		
7440-02-0	Nickel	12.9			
7440-09-7	Potassium	936	J		
7782-49-2	Selenium	0.27	U		
7440-22-4	Silver	0.54	UJ		
7440-23-5	Sodium	429	J		
7440-28-0	Thallium	0.39	U		
7440-62-2	Vanadium	66.1			
7440-66-6	Zinc	55.1			
	Cyanide				

5 JUNE 1989

Color Before: BROWN Clarity Before: Texture: COURSE

Color After: GREEN Clarity After: Artifacts: YES

Comments:
ROOTS

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MJE133

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD46

Matrix (soil/water): SOIL Lab Sample ID: CLP2891

Level (low/med): LOW Date Received: 04/15/89

% Solids: 91.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13500			
7440-36-0	Antimony	10.4	J		
7440-38-2	Arsenic	7.4	UJ		
7440-39-3	Barium	472			
7440-41-7	Beryllium	0.60	UJ		
7440-43-9	Cadmium	6.6			
7440-70-2	Calcium	7310			
7440-47-3	Chromium	42.0			
7440-48-4	Cobalt	15.1			
7440-50-8	Copper	574			
7439-89-6	Iron	84000			
7439-92-1	Lead	469			
7439-95-4	Magnesium	5530			
7439-96-5	Manganese	589			
7439-97-6	Mercury	0.11	U		
7440-02-0	Nickel	53.5			
7440-09-7	Potassium	782	J		
7782-49-2	Selenium	0.42	J		
7440-22-4	Silver	1.0	UJ		
7440-23-5	Sodium	678	J		
7440-28-0	Thallium	0.42	J		
7440-62-2	Vanadium	89.5			
7440-66-6	Zinc	2510			
	Cyanide				

5 JUNE 1989

Color Before: BROWN Clarity Before: Texture: COURSE

Color After: GREEN Clarity After: Artifacts: YES

Comments:
GLASS

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EPA SAMPLE NO.

MJE134

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD483

Matrix (soil/water): SOIL Lab Sample ID: CLP2895

Level (low/med): LOW Date Received: 04/15/89

% Solids: 94.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11700			
7440-36-0	Antimony	5.2	J		
7440-38-2	Arsenic	9.2	WJ		
7440-39-3	Barium	470			
7440-41-7	Beryllium	0.68	WJ		
7440-43-9	Cadmium	4.0			
7440-70-2	Calcium	5880			
7440-47-3	Chromium	32.0			
7440-48-4	Cobalt	13.7			
7440-50-8	Copper	626			
7439-89-6	Iron	65200			
7439-92-1	Lead	553			
7439-95-4	Magnesium	4640			
7439-96-5	Manganese	515			
7439-97-6	Mercury	0.11	U		
7440-02-0	Nickel	53.0			
7440-09-7	Potassium	740	J		
7782-49-2	Selenium	0.31	J		
7440-22-4	Silver	1.3	WJ		
7440-23-5	Sodium	565	J		
7440-28-0	Thallium	0.36	U		
7440-62-2	Vanadium	78.7			
7440-66-6	Zinc	1420			
	Cyanide				

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Color Before: BROWN Clarity Before: Texture: COURSE

Color After: GREEN Clarity After: Artifacts: YES

Comments:
GLASS

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MJE135

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD48

Matrix (soil/water): SOIL Lab Sample ID: CLP2898

Level (low/med): LOW Date Received: 04/15/89

% Solids: 92.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11600			
7440-36-0	Antimony	7.7	J		
7440-38-2	Arsenic	10.7	J		
7440-39-3	Barium	317			
7440-41-7	Beryllium	0.77	UJ		
7440-43-9	Cadmium	3.4			
7440-70-2	Calcium	5540			
7440-47-3	Chromium	29.2			
7440-48-4	Cobalt	13.5			
7440-50-8	Copper	468			
7439-89-6	Iron	65100			
7439-92-1	Lead	441			
7439-95-4	Magnesium	4910			
7439-96-5	Manganese	535			
7439-97-6	Mercury	0.11	U		
7440-02-0	Nickel	45.6			
7440-09-7	Potassium	749	J		
7782-49-2	Selenium	0.31	J		
7440-22-4	Silver	0.52	UJ		
7440-23-5	Sodium	620	J		
7440-28-0	Thallium	0.37	U		
7440-62-2	Vanadium	82.1			
7440-66-6	Zinc	407			
	Cyanide				

5 JUNE 1989

Color Before: BROWN Clarity Before: Texture: COURSE

Color After: GREEN Clarity After: Artifacts:

Comments:

017

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MJE136

Lab Name: DATACHEM Contract: 68-W8-0015

Lab Code: DATAC Case No.: 11739 SAS No.: SDG No.: MJD463

Matrix (soil/water): SOIL Lab Sample ID: CLP2897

Level (low/med): LOW Date Received: 04/15/89

% Solids: 74.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	22900			
7440-36-0	Antimony	23.0	J		
7440-38-2	Arsenic	7.5	UJ		
7440-39-3	Barium	805			
7440-41-7	Beryllium	0.89	UJ		
7440-43-9	Cadmium	22.7			
7440-70-2	Calcium	12000			
7440-47-3	Chromium	60.6			
7440-48-4	Cobalt	16.4			
7440-50-8	Copper	2630			
7439-89-6	Iron	49600			
7439-92-1	Lead	1120			
7439-95-4	Magnesium	4570			
7439-96-5	Manganese	737			
7439-97-6	Mercury	0.13	U		
7440-02-0	Nickel	50.8			
7440-09-7	Potassium	1750			
7782-49-2	Selenium	0.32	U		
7440-22-4	Silver	5.6			
7440-23-5	Sodium	983	J		
7440-28-0	Thallium	0.46	U		
7440-62-2	Vanadium	93.2			
7440-66-6	Zinc	4400			
	Cyanide				

SJUNE 1989

Color Before: BROWN Clarity Before: Texture: COURSE

Color After: GREEN Clarity After: Artifacts: YES

Comments:
GLASS, ROOTS, GLASS, PLASTIC