ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276, 217-782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601, 312-814-6026

ROD R. BLAGOJEVICH, GOVERNOR RENEE CIPRIANO, DIRECTOR

Date: April 1, 2004

To: Bureau of Land File

From: Lance L. Range LLR

Re: LPC 089 040 0003– Kane County
Hennessy/Kedzie - Gilberts
ILN 000 509 118 SF/Tech

Past operations at the Gilberts/Kedzie/Hennessy site included acid battery recycling that resulted in significantly elevated levels of lead in the soil. A Seal Order was issued for the site in February to prevent access to the site. On March 10-12, 2004, Illinois Environmental Protection Agency conducted a reconnaissance and collected samples from an area of suspected lead contamination, known as the Gilberts/Kedzie site in Gilberts, Illinois. During this reconnaissance, X-ray Fluorescence machine was used to collect data to determine if a hazard existed on the site. Upon arriving at the site, it was discovered that residents in the area were utilizing the site as a recreational area. This are was clear of vegetation and battery casings could be seen over a portion of the site. XRF results indicated that high levels of lead existed in the surface soils. Four confirmation samples were collected and analyzed. Based on these findings, the Illinois EPA determined that the site posed an immediate threat to the area and have decided to ask for an immediate removal to take place at the Gilberts/Kedzie site.

Sampling activities at the site revealed levels of lead in the soils in excess of 200,000 parts per million in some areas. The area of contamination is devoid of most vegetation and is littered with cracked battery casings. Numerous trails lead to and from the site. Local children and adults use the trails, either by foot, bike or all-terrain vehicles.

Due to the elevated levels of lead discovered at the site and the accessibility of the site to the public, it was determined that an emergency removal action was needed to prevent access to the site. This emergency removal action called for the construction of a fence to prevent access. U.S.EPA contractors began clearing brush and debris from the site on April 1, 2004. The projected time line for completion of the fence is April 10, 2004. After the fence is complete OSE will continue to coordinate with U.S. EPA by providing assistance to U.S. EPA and their contractors in conducting a time–critical removal assessment.

Attached are the XRF results, analytical data package.

RELEASABLE
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REVIEWER MD

X-RAY FLUORESCENCE LEAD DATA
GILBERTS/KEDZIE (HENNESSY)
MARCH 10 - 11, 2004
(XRF 1 - XRF 36)

XRF Number	Date/Time	Lead (ppm)
XRF 1	3/10/2004 12:09	46782.27
XRF 2	3/10/2004 12:17	16631.83
XRF 3	3/10/2004 12:20	2276.59
XRF 4	3/10/2004 12:23	9180.44
XRF 5	3/10/2004 12:28	40004.41
XRF 6	3/10/2004 12:32	104677.2
XRF 7	3/10/2004 12:35	24367.23
XRF 8	3/10/2004 12:39	26130.48
XRF 9	3/10/2004 12:43	21378.27
XRF 10	3/10/2004 12:46	105908.76
XRF 11	3/10/2004 12:53	57557.54
XRF 12	3/10/2004 12:56	51020.95
XRF 13	3/10/2004 12:59	13271.29
XRF 14	3/10/2004 13:02	35662.92
XRF 15	3/10/2004 13:06	19708.33
XRF 16 (surf)	3/10/2004 13:37	63960.29
XRF 16 (6 in.)	3/10/2004 13:42	470.21
XRF 16 (8 in.)	3/10/2004 13:44	5523.59
XRF 16 (4 in.)	3/10/2004 13:46	215.51
XRF 17 (surf)	3/10/2004 13:54	38808.11
XRF 17 (4 in.)	3/10/2004 13:58	46367.12
XRF 17 (8 in.)	3/10/2004 14:00	87910.2
XRF 17 (12 in.)	3/10/2004 14:02	28265.72
XRF 17 (16 in.)	3/10/2004 14:06	742.11
XRF 17 (18 in.)	3/10/2004 14:09	878.75
XRF 18 (surf)	3/10/2004 14:13	60809.58
XRF 18 (4 in.)	3/10/2004 14:16	1346.5
XRF 18 (8 in.)	3/10/2004 14:19	7215.69
XRF 18 (12 in.)	3/10/2004 14:21	384
XRF 18 (16 in.)	3/10/2004 14:23	281.9
XRF 19 (surf)	3/10/2004 14:26	40023.05

XRF Number	Date/Time	Lead (ppm)
XRF 19 (4 in.)	3/10/2004 14:29	10917.07
XRF 19 (8 in.)	3/10/2004 14:31	4959.09
XRF 19 (12 in.)	3/10/2004 14:33	3528.26
XRF 19 (8 in.)	3/10/2004 14:36	2166.22
XRF 19 (16 in.)	3/10/2004 14:39	1496.5
XRF 19 (20 in.)	3/10/2004 14:42	1639.94
XRF 19 (24 in.)	3/10/2004 14:44	1860.38
XRF 19 (28 in.)	3/10/2004 14:47	1094.82
XRF 19 (32 in.)	3/10/2004 14:50	1876.99
XRF 19 (36 in.)	3/10/2004 14:53	1004.89
XRF 20 (surf)	3/10/2004 15:15	27376.62
XRF 20 (4 in.)	3/10/2004 15:18	120.83
XRF 20 (8 in.)	3/10/2004 15:20	134.94
XRF 20 (12 in.)	3/10/2004 15:23	434.56
XRF 20 (16 in.)	3/10/2004 15:26	992.98
XRF 20 (20 in.)	3/10/2004 15:29	724.49
XRF 21	3/10/2004 15:33	28014.92
XRF 22	3/10/2004 15:35	11161.21
XRF 23	3/10/2004 15:39	74493.88
XRF 24	3/10/2004 15:42	34183.91
XRF 25	3/10/2004 15:44	225919.72
XRF 26	3/10/2004 15:49	404.54
XRF 27	3/10/2004 15:52	305.99
XRF 28	3/10/2004 15:55	1322.26
XRF 29	3/10/2004 15:57	407
XRF 30	3/10/2004 16:00	7158.11
XRF 31	3/10/2004 16:02	17067.21
XRF 32	3/10/2004 16:06	10672.27
XRF 33	3/10/2004 16:08	2603.69
XRF 34	3/10/2004 16:10	9600.86
XRF 35	3/10/2004 16:13	4546.05
XRF 36	3/10/2004 16:15	4666.86

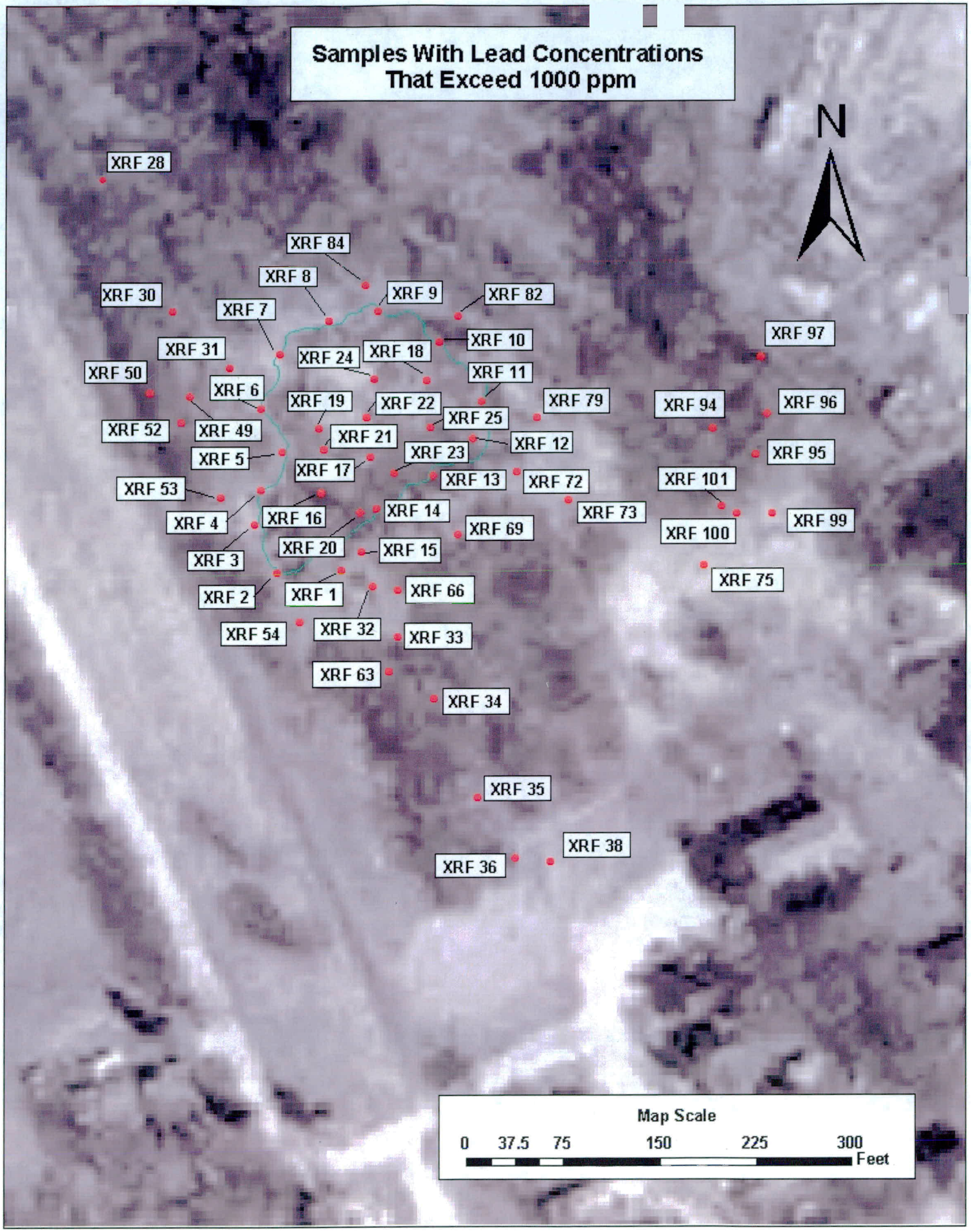
*** all shaded areas denote lead levels exceeding 1000 ppm**
*** all samples were collected at the surface unless otherwise noted**

X-RAY FLUORESCENCE LEAD DATA
GILBERTS/KEDZIE (HENNESSY)
MARCH 10 - 11, 2004
(XRF 37 - XRF 103)

XRF Number	Date/Time	Lead (ppm)
XRF 37	3/10/2004 16:18	394.44
XRF 38	3/10/2004 16:24	3881.63
XRF 39	3/10/2004 16:27	241.3
XRF 40	3/10/2004 16:41	142.94
XRF 41	3/10/2004 16:44	86.65
XRF 42	3/10/2004 16:48	45.13
XRF 43	3/10/2004 16:51	133.14
XRF 44	3/10/2004 16:53	115.06
XRF 45	3/10/2004 16:56	86.68
XRF 46	3/10/2004 17:00	646
XRF 47	3/10/2004 17:03	780.74
XRF 48	3/10/2004 17:05	111.65
XRF 49	3/10/2004 17:09	1581.1
XRF 50	3/10/2004 17:12	16005.86
XRF 51	3/10/2004 17:14	419.15
XRF 52	3/10/2004 17:17	1009.96
XRF 53	3/10/2004 17:22	1799.34
XRF 54	3/10/2004 17:25	8298.04
XRF 55	3/10/2004 17:29	145.63
XRF 56	3/10/2004 17:32	120.67
XRF 57	3/10/2004 17:35	175.81
XRF 58	3/10/2004 17:38	140.55
XRF 59	3/10/2004 17:41	148.72
XRF 60	3/10/2004 17:44	385.45
XRF 61	3/10/2004 17:46	283.84
XRF 62	3/10/2004 17:49	120.05
XRF 63	3/11/2004 9:49	1015.95
XRF 64	3/11/2004 9:52	142.95
XRF 65	3/11/2004 9:55	173.35
XRF 66	3/11/2004 9:59	27679.16
XRF 67	3/11/2004 10:02	830.33
XRF 68	3/11/2004 10:06	154.58
XRF 69	3/11/2004 10:10	1925.39

XRF Number	Date/Time	Lead (ppm)
XRF 70	3/11/2004 10:14	163.03
XRF 71	3/11/2004 10:20	227.04
XRF 72	3/11/2004 10:22	16840.94
XRF 73	3/11/2004 10:25	6535.13
XRF 74	3/11/2004 10:34	520.21
XRF 75	3/11/2004 10:36	1418.37
XRF 76	3/11/2004 10:38	196.32
XRF 77	3/11/2004 10:40	155.23
XRF 78	3/11/2004 10:44	74.37
XRF 79	3/11/2004 10:47	20338.67
XRF 80	3/11/2004 10:50	873.59
XRF 81	3/11/2004 10:53	62.16
XRF 82	3/11/2004 10:55	2479.42
XRF 83	3/11/2004 10:58	275.72
XRF 84	3/11/2004 11:00	13996.58
XRF 85	3/11/2004 11:03	57.24
XRF 86	3/11/2004 11:09	57.73
XRF 87	3/11/2004 11:15	77.88
XRF 88	3/11/2004 11:18	51.02
XRF 89	3/11/2004 11:23	115.61
XRF 90	3/11/2004 11:27	200.63
XRF 91	3/11/2004 11:31	804.14
XRF 92	3/11/2004 11:34	392.27
XRF 93	3/11/2004 11:37	478
XRF 94	3/11/2004 11:40	1297.79
XRF 95	3/11/2004 11:43	4599.8
XRF 96	3/11/2004 11:46	2543.97
XRF 97	3/11/2004 12:00	1440.71
XRF 98	3/11/2004 12:21	354.94
XRF 99	3/11/2004 12:24	1599.35
XRF 100	3/11/2004 12:27	7300.92
XRF 101	3/11/2004 12:29	3101.07
XRF 102	3/11/2004 12:31	6732.49
XRF 103 (bkgnd)	3/11/2004 13:12	250.34

*** all shaded areas denote lead levels exceeding 1000 ppm**
*** all samples were collected at the surface unless otherwise noted**


Samples With Lead Concentrations
That Exceed 1000 ppm
N
XRF 28
XRF 84
XRF 8
XRF 30
XRF 9
XRF 82
XRF 7
XRF 10
XRF 97
XRF 31
XRF 24
XRF 18
XRF 50
XRF 11
XRF 6
XRF 19
XRF 22
XRF 79
XRF 94
XRF 96
XRF 52
XRF 49
XRF 25
XRF 21
XRF 12
XRF 5
XRF 23
XRF 95
XRF 17
XRF 13
XRF 72
XRF 101
XRF 53
XRF 4
XRF 16
XRF 14
XRF 73
XRF 99
XRF 69
XRF 100
XRF 3
XRF 20
XRF 15
XRF 75
XRF 2
XRF 1
XRF 66
XRF 54
XRF 32
XRF 33
XRF 63
XRF 34
XRF 35
XRF 38
XRF 36
Map Scale
0 37.5 75 150 225 300
Feet

X-Ray Fluorescence Lead Data
Gilberts/Kedzie (Hennessy)
N
LEGEND
Lead Concentrations Less than 1000 ppm
Lead Concentrations Greater than 1000 ppm
Map Scale
0 65 130 260 390 520
Feet

Confirmation Samples
March 2004

0 40 80 160 240 320

Feet

N

An Analytical
Testing Laboratory

Prairie Analytical Systems, INCORPORATED

1265 Capital Airport Drive
Springfield, IL 62707-8490

Phone: 217-753-1148
FAX: 217-753-1152

March 23, 2004

Mr. James Shaw
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, IL 62794-9276

RE: Work Order Number: **0403076**
Site Name: **IEPA Hennessey**
Project Manager: **Bruce Everetts**

Dear Mr. Shaw,

This report contains the analytical results for **IEPA Hennessey** samples received under chain of custody by Prairie Analytical Systems, Inc. on March 12, 2004.

All applicable quality control procedures met method specific acceptance criteria.

This report shall not be reproduced, except in full, without the prior written consent of Prairie Analytical Systems, Inc.

If you have any questions, please feel free to call me at (217) 753-1148.

Sincerely,

Jean-Pierre Rouanet
Laboratory Director

CC: Project File

RECEIVED
MAR 24 2004
IEPA LABORATORIES
Manager's Office

Prairie Analytical Systems, INCORPORATED

Index of Sheets

Laboratory Name: Prairie Analytical Systems, Inc.
Contract No.: HWA-4303
Site Name: IEPA Hennessey (0403076)

Cover Letter

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Chain of Custody (Original)

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Illinois Environmental Protection Agency Chain of Custody

Preservative Codes	Container Description: Soil	Container Description: Aqueous
1. None	VOC - 2 oz. glass (2)	VOC - 40 mL glass (2)
2. VOA - HCl	SVOC - 8 oz. glass (1)	SVOC, Pest/PCB - 80 oz amber glass (1)*
3. Metals - HNO3	Pest/PCB - 8 oz. glass (1)	Inorganics - 1 qt. plastic (1)
4. Cyanide - NaOH	Inorganics - 16 oz. glass (1)	* duplicate 1 out of 10
5. Other:		
6. Other		

Fund:	LPC#:	Locality:	Cooler Initially Sealed By:	Date Initially Sealed
PR 41 000	089 040 0003	Gilberts	LLR	3/12/04

Section:	Site Name:	Project Manager:	Phone Number:	Initial Cooler Seal #
BOL/OSE	Hennessey	Bruce Everetts	524-1663	89301

Lab Sample No.	Parameter Group: Inorganic	Field Sample Number	Matrix	No. of Bottles	Date Collected	Time Collected (24 hr clock)	Sampler's Initials	Special Notations	Legal Hold Y or N
	X	X301	Soil	1	3/11/04	1140	BE		
	X	X302	Soil	1	3/11/04	1150	BE		
	X	X303	Soil	1	3/11/04	1200	BE		
	X	X304	Soil	1	3/11/04	1210	BE		

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION V
OFFICIAL SEAL
№ 89301

Opener: I certify that I received the sample shipping container with the shipping container sealed and intact.

Cooler Opened by:	Seal No:	Date:	Time:	Intact
				Y-N
Kristen Potter	89301	3/12/04	3:47pm	Y-N

I certify that I received the cooler containing the above samples with the seal(s) intact.

Received for Lab by:	Seal No:	Date:	Time:	Intact:
				Y-N

Lab Comments: 10.2°C

Supervisor Releasing Results: Date:

Sealer : I certify that the samples listed above were collected in my presence and sealed by me.

Cooler Sealed By:	Seal No.:	Date:	Time:
[signature]	89301	3/12/04	1200

Sample Courier: Hand delivered

Turnaround Time Requested: 7 day

Samplers: Bruce Everetts

Non-conformance Memo

Work Order Number: **0403076**

Samples were received at 10.2 °C.

The samples were received out of temperature compliance.

There are no other anomalies associated with this report.

Case Narrative

Work Order Number: **0403076**

Inorganic Metals Form 5 (pages 15 through 17):

The matrix spike recovery for antimony, chromium, copper, and mercury do not meet the acceptance criteria. This was confirmed by the matrix spike duplicate. However, the criteria are met by the post-digestion spike.

The matrix spike recovery for beryllium and thallium do not meet the acceptance criteria. This was confirmed by the matrix spike duplicate. The post-digestion spike does not meet the criteria due to matrix interferences.

The sample results for aluminum, barium, calcium, iron, lead, magnesium, manganese, and zinc are greater than 4x the spiking concentration

Inorganic Metals Form 6 (pages 18 and 19):

Due to sample non-homogeneity, the sample/sample duplicate RPD values do not meet the acceptance criteria for several metals. This was confirmed by the matrix spike/matrix spike duplicate.

Inorganic Metals Form 9 (page 22):

The % difference for antimony, arsenic, boron, chromium, iron, lead, manganese, sodium, and zinc do not meet the acceptance criteria. For these metals, the initial sample results are greater than 50x the MDL value.

The serial dilution result for silver is less than the quantitation limit.

Inorganic Metals Form 10 (page 37):

In the 'Analyte' table, the 'Wavelength' column indicates the atomic mass.

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Prairie Analytical Systems, Inc. Contract: HWA-4303

Lab Code: PRAIRIE Case No.: SAS No.: SDG No.: 0403076

SOW No.: ILM04.1

EPA Sample No.	Lab Sample ID.
X301	0403076-001
X302	0403076-002
X303	0403076-003
X304	0403076-004
X304D	0403076-004DUP
X304S	0403076-004MS
X304SD	0403076-004MSD
X304L	0403076-004SD

Were ICP interelement corrections applied? Yes/No NA

Were ICP background corrections applied? Yes/No NA

If yes-were raw data generated before application of background corrections? Yes/No NA

Comments:

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

Signature: Name: Jean-Pierre Rouanet

Date: 3-23-04 Title: Laboratory Director

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO

MBW-2263

Lab Name: Prairie Analytical Systems, Inc. Contract: HWA-4303

Lab Code: PRAIRIE Case No.: SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: MBW-2263

Level (low/med): LOW Date Received:

% Solids: 100

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	0.12	J		P
7440-36-0	Antimony	0.25	U		P
7440-38-2	Arsenic	0.25	U		P
7440-39-3	Barium	0.25	U		P
7440-41-7	Beryllium	0.25	U		P
7440-42-8	Boron	5.0	U		P
7440-43-9	Cadmium	0.25	U		P
7440-70-2	Calcium	40.0	U		P
7440-47-3	Chromium	0.25	U		P
7440-48-4	Cobalt	0.25	U		P
7440-50-8	Copper	0.50	U		P
7439-89-6	Iron	5.0	U		P
7439-92-1	Lead	0.05	U		P
7439-95-4	Magnesium	40.0	U		P
7439-96-5	Manganese	0.25	U		P
7439-97-6	Mercury	0.05	U		P
7440-02-0	Nickel	0.25	U		P
7440-09-7	Potassium	50.0	U		P
7782-49-2	Selenium	0.25	U		P
7440-22-4	Silver	0.25	U		P
7440-23-5	Sodium	25.0	U		P
7440-28-0	Thallium	0.25	U		P
7440-62-2	Vanadium	0.25	U		P
7440-66-6	Zinc	0.50	U		P

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

X301

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: 0403076-001

Level (low/med): LOW Date Received: 3/12/2004

% Solids: 82.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1210		D	P
7440-36-0	Antimony	461		D	P
7440-38-2	Arsenic	50.6		D	P
7440-39-3	Barium	45.8		D	P
7440-41-7	Beryllium	0.56	J	D	P
7440-42-8	Boron	13.1		D	P
7440-43-9	Cadmium	3.6		D	P
7440-70-2	Calcium	2520		D	P
7440-47-3	Chromium	12.0		D	P
7440-48-4	Cobalt	2.2		D	P
7440-50-8	Copper	428		D	P
7439-89-6	Iron	10800		D	P
7439-92-1	Lead	105000		D	P
7439-95-4	Magnesium	816		D	P
7439-96-5	Manganese	121		D	P
7439-97-6	Mercury	0.04	J	D	P
7440-02-0	Nickel	8.1		D	P
7440-09-7	Potassium	219		D	P
7782-49-2	Selenium	1.3		D	P
7440-22-4	Silver	3.1		D	P
7440-23-5	Sodium	137		D	P
7440-28-0	Thallium	1.1		D	P
7440-62-2	Vanadium	4.2		D	P
7440-66-6	Zinc	239		D	P

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

X302

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: 0403076-002

Level (low/med): LOW Date Received: 3/12/2004

% Solids: 78.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2520		D	P
7440-36-0	Antimony	326		D	P
7440-38-2	Arsenic	67.1		D	P
7440-39-3	Barium	25.1		D	P
7440-41-7	Beryllium	1.2		D	P
7440-42-8	Boron	32.8		D	P
7440-43-9	Cadmium	4.5		D	P
7440-70-2	Calcium	3530		D	P
7440-47-3	Chromium	28.8		D	P
7440-48-4	Cobalt	3.7		D	P
7440-50-8	Copper	251		D	P
7439-89-6	Iron	19100		D	P
7439-92-1	Lead	113000		D	P
7439-95-4	Magnesium	1620		D	P
7439-96-5	Manganese	184		D	P
7439-97-6	Mercury	0.04	J	D	P
7440-02-0	Nickel	26.7		D	P
7440-09-7	Potassium	338		D	P
7782-49-2	Selenium	1.7		D	P
7440-22-4	Silver	2.0		D	P
7440-23-5	Sodium	72.2		D	P
7440-28-0	Thallium	0.78		D	P
7440-62-2	Vanadium	10.7		D	P
7440-66-6	Zinc	626		D	P

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

X303

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: 0403076-003

Level (low/med): LOW Date Received: 3/12/2004

% Solids: 81.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1510		D	P
7440-36-0	Antimony	417		D	P
7440-38-2	Arsenic	87.1		D	P
7440-39-3	Barium	29.7		D	P
7440-41-7	Beryllium	0.43		D	P
7440-42-8	Boron	17.7		D	P
7440-43-9	Cadmium	4.9		D	P
7440-70-2	Calcium	1260		D	P
7440-47-3	Chromium	13.8		D	P
7440-48-4	Cobalt	2.5		D	P
7440-50-8	Copper	123		D	P
7439-89-6	Iron	19500		D	P
7439-92-1	Lead	100000		D	P
7439-95-4	Magnesium	452		D	P
7439-96-5	Manganese	190		D	P
7439-97-6	Mercury	0.10		D	P
7440-02-0	Nickel	11.8		D	P
7440-09-7	Potassium	482		D	P
7782-49-2	Selenium	1.0		D	P
7440-22-4	Silver	1.6		D	P
7440-23-5	Sodium	221		D	P
7440-28-0	Thallium	0.13	J	D	P
7440-62-2	Vanadium	6.7		D	P
7440-66-6	Zinc	129		D	P

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

X304

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: 0403076-004

Level (low/med): LOW Date Received: 3/12/2004

% Solids: 77.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6430		D	P
7440-36-0	Antimony	22.5		D	P
7440-38-2	Arsenic	15.9		D	P
7440-39-3	Barium	145		D	P
7440-41-7	Beryllium	0.85		D	P
7440-42-8	Boron	20.5		D	P
7440-43-9	Cadmium	2.9		D	P
7440-70-2	Calcium	42600		D	P
7440-47-3	Chromium	11.4		D	P
7440-48-4	Cobalt	5.6		D	P
7440-50-8	Copper	86.2		D	P
7439-89-6	Iron	16300		D	P
7439-92-1	Lead	27700		D	P
7439-95-4	Magnesium	19000		D	P
7439-96-5	Manganese	234		D	P
7439-97-6	Mercury	0.05	J	D	P
7440-02-0	Nickel	19.6		D	P
7440-09-7	Potassium	670		D	P
7782-49-2	Selenium	2.1		D	P
7440-22-4	Silver	0.37	J	D	P
7440-23-5	Sodium	429		D	P
7440-28-0	Thallium	0.76		D	P
7440-62-2	Vanadium	16.6		D	P
7440-66-6	Zinc	363		D	P

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

X304D

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: 0403076-004

Level (low/med): LOW Date Received: 3/12/2004

% Solids: 77.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6470		D	P
7440-36-0	Antimony	8.6		D	P
7440-38-2	Arsenic	9.3		D	P
7440-39-3	Barium	117		D	P
7440-41-7	Beryllium	0.64		D	P
7440-42-8	Boron	13.6		D	P
7440-43-9	Cadmium	2.0		D	P
7440-70-2	Calcium	48100		D	P
7440-47-3	Chromium	11.3		D	P
7440-48-4	Cobalt	5.8		D	P
7440-50-8	Copper	58.0		D	P
7439-89-6	Iron	16500		D	P
7439-92-1	Lead	18300		D	P
7439-95-4	Magnesium	21900		D	P
7439-96-5	Manganese	199		D	P
7439-97-6	Mercury	0.03	J	D	P
7440-02-0	Nickel	19.3		D	P
7440-09-7	Potassium	611		D	P
7782-49-2	Selenium	1.8		D	P
7440-22-4	Silver	0.22	J	D	P
7440-23-5	Sodium	242		D	P
7440-28-0	Thallium	0.55		D	P
7440-62-2	Vanadium	15.8		D	P
7440-66-6	Zinc	269		D	P

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

X304L

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: 0403076-004

Level (low/med): LOW Date Received: 3/12/2004

% Solids: 77.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5930		D	P
7440-36-0	Antimony	17.8		D	P
7440-38-2	Arsenic	13.6		D	P
7440-39-3	Barium	142		D	P
7440-41-7	Beryllium	1.0	J	D	P
7440-42-8	Boron	23.5	J	D	P
7440-43-9	Cadmium	2.7	J	D	P
7440-70-2	Calcium	38800	J	D	P
7440-47-3	Chromium	12.8		D	P
7440-48-4	Cobalt	6.1		D	P
7440-50-8	Copper	84.7		D	P
7439-89-6	Iron	14000		D	P
7439-92-1	Lead	24200		D	P
7439-95-4	Magnesium	18100	J	D	P
7439-96-5	Manganese	289		D	P
7439-97-6	Mercury	0.16	J	D	P
7440-02-0	Nickel	19.7		D	P
7440-09-7	Potassium	732		D	P
7782-49-2	Selenium	2.4	J	D	P
7440-22-4	Silver	2.8	U	D	P
7440-23-5	Sodium	481		D	P
7440-28-0	Thallium	1.3	J	D	P
7440-62-2	Vanadium	18.0		D	P
7440-66-6	Zinc	276	J	D	P

Comments:

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Initial Calibration Verification Source:

Continuing Calibration Verification Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)		M
Aluminum	50.0	53.26	106.5	100.0	100.60	100.6	101.60	101.6		P
Antimony	50.0	48.75	97.5	100.0	99.22	99.2	99.06	99.1		P
Arsenic	50.0	47.56	95.1	100.0	96.52	96.5	97.33	97.3		P
Barium	50.0	49.08	98.2	100.0	98.65	98.6	98.23	98.2		P
Beryllium	50.0	50.64	101.3	100.0	99.46	99.5	99.42	99.4		P
Boron	50.0	47.76	95.5	100.0	97.77	97.8	98.07	98.1		P
Cadmium	50.0	49.11	98.2	100.0	100.90	100.9	100.30	100.3		P
Calcium	500.0	491.10	98.2	1000.0	1043.00	104.3	1028.00	102.8		P
Chromium	50.0	51.88	103.8	100.0	97.24	97.2	95.57	95.6		P
Cobalt	50.0	45.82	91.6	100.0	99.97	100.0	98.58	98.6		P
Copper	50.0	49.14	98.3	100.0	100.50	100.5	104.00	104.0		P
Iron	500.0	492.00	98.4	1000.0	943.80	94.4	931.00	93.1		P
Lead	50.0	45.14	90.3	100.0	98.83	98.8	92.04	92.0		P
Magnesium	500.0	503.50	100.7	1000.0	974.90	97.5	995.60	99.6		P
Manganese	50.0	50.25	100.5	100.0	97.11	97.1	97.08	97.1		P
Mercury	1.5	1.64	109.5	2.5	2.67	106.8	2.53	101.4		P
Nickel	50.0	47.35	94.7	100.0	101.10	101.1	99.87	99.9		P
Potassium	500.0	506.60	101.3	1000.0	933.80	93.4	921.40	92.1		P
Selenium	50.0	45.49	91.0	100.0	98.68	98.7	99.31	99.3		P
Silver	50.0	47.59	95.2	100.0	99.45	99.5	96.73	96.7		P
Sodium	500.0	474.20	94.8	1000.0	914.40	91.4	908.60	90.9		P
Thallium	50.0	47.89	95.8	100.0	98.39	98.4	97.27	97.3		P
Vanadium	50.0	51.09	102.2	100.0	97.85	97.8	96.44	96.4		P
Zinc	50.0	48.56	97.1	100.0	98.85	98.8	99.69	99.7		P

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Initial Calibration Verification Source:

Continuing Calibration Verification Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)		M
Aluminum				100.0	100.50	100.5	108.10	108.1		P
Antimony				100.0	99.41	99.4	98.95	99.0		P
Arsenic				100.0	95.41	95.4	96.24	96.2		P
Barium				100.0	98.05	98.0	98.83	98.8		P
Beryllium				100.0	104.30	104.3	96.42	96.4		P
Boron				100.0	97.36	97.4	101.40	101.4		P
Cadmium				100.0	100.60	100.6	100.50	100.5		P
Calcium				1000.0	1044.00	104.4	1026.00	102.6		P
Chromium				100.0	95.18	95.2	94.76	94.8		P
Cobalt				100.0	97.16	97.2	109.60	109.6		P
Copper				100.0	97.41	97.4	103.90	103.9		P
Iron				1000.0	945.40	94.5	943.30	94.3		P
Lead				100.0	91.07	91.1				P
Magnesium				1000.0	1039.00	103.9	1056.00	105.6		P
Manganese				100.0	97.69	97.7	97.84	97.8		P
Mercury				2.5	2.58	103.2	2.25	90.1		P
Nickel				100.0	95.69	95.7	104.70	104.7		P
Potassium				1000.0	1003.00	100.3	928.50	92.8		P
Selenium				100.0	94.56	94.6	100.50	100.5		P
Silver				100.0	96.38	96.4	96.53	96.5		P
Sodium				1000.0	909.10	90.9	982.60	98.3		P
Thallium				100.0	95.66	95.7	96.97	97.0		P
Vanadium				100.0	94.37	94.4	93.30	93.3		P
Zinc				100.0	103.10	103.1	103.50	103.5		P

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Initial Calibration Verification Source:

Continuing Calibration Verification Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)		M
Aluminum				100.0	108.90	108.9				P
Antimony				100.0	102.00	102.0				P
Arsenic				100.0	97.43	97.4				P
Barium				100.0	100.00	100.0				P
Beryllium				100.0	97.13	97.1				P
Boron				100.0	100.50	100.5				P
Cadmium				100.0	102.30	102.3				P
Calcium				1000.0	1047.00	104.7				P
Chromium				100.0	97.64	97.6				P
Cobalt				100.0	105.70	105.7				P
Copper				100.0	104.00	104.0				P
Iron				1000.0	984.40	98.4				P
Magnesium				1000.0	1093.00	109.3				P
Manganese				100.0	98.30	98.3				P
Mercury				2.5	2.51	100.2				P
Nickel				100.0	102.50	102.5				P
Potassium				1000.0	963.90	96.4				P
Selenium				100.0	100.00	100.0				P
Silver				100.0	96.87	96.9				P
Sodium				1000.0	990.40	99.0				P
Thallium				100.0	97.69	97.7				P
Vanadium				100.0	98.44	98.4				P
Zinc				100.0	105.80	105.8				P

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

3
BLANKS

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	20.0	U	20.0	U	20.0	U	20.0	U	0.120	J	P
Antimony	2.0	U	0.3	J	0.3	J	0.4	J	0.250	U	P
Arsenic	5.0	U	5.0	U	5.0	U	5.0	U	0.250	U	P
Barium	2.0	U	2.0	U	2.0	U	2.0	U	0.250	U	P
Beryllium	2.0	U	2.0	U	2.0	U	2.0	U	0.250	U	P
Boron	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Cadmium	2.0	U	2.0	U	2.0	U	2.0	U	0.250	U	P
Calcium	100.0	U	100.0	U	100.0	U	100.0	U	40.000	U	P
Chromium	2.0	U	2.0	U	2.0	U	2.0	U	0.250	U	P
Cobalt	2.0	U	2.0	U	2.0	U	2.0	U	0.250	U	P
Copper	2.0	U	2.0	U	2.0	U	2.0	U	0.500	U	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	5.000	U	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	0.050	U	P
Magnesium	50.0	U	50.0	U	50.0	U	50.0	U	40.000	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	0.250	U	P
Mercury	0.1	J	0.1	J	0.2	U	0.2	U	0.050	U	P
Nickel	2.0	U	2.0	U	2.0	U	2.0	U	0.250	U	P
Potassium	100.0	U	100.0	U	100.0	U	100.0	U	50.000	U	P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U	0.250	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	0.250	U	P
Sodium	200.0	U	200.0	U	200.0	U	200.0	U	25.000	U	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	0.250	U	P
Vanadium	2.0	U	2.0	U	2.0	U	2.0	U	0.250	U	P
Zinc	2.0	U	2.0	U	2.0	U	2.0	U	0.500	U	P

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3
BLANKS

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			1.2	J	20.0	U					P
Antimony			0.5	J	0.3	J					P
Arsenic			5.0	U	5.0	U					P
Barium			2.0	U	2.0	U					P
Beryllium			2.0	U	2.0	U					P
Boron			1.6	J	5.0	U					P
Cadmium			2.0	U	2.0	U					P
Calcium			100.0	U	100.0	U					P
Chromium			2.0	U	2.0	U					P
Cobalt			2.0	U	2.0	U					P
Copper			2.0	U	2.0	U					P
Iron			100.0	U	100.0	U					P
Magnesium			50.0	U	50.0	U					P
Manganese			2.0	U	2.0	U					P
Mercury			0.1	J	0.1	J					P
Nickel			2.0	U	2.0	U					P
Potassium			100.0	U	100.0	U					P
Selenium			5.0	U	5.0	U					P
Silver			0.8	J	0.5	J					P
Sodium			200.0	U	200.0	U					P
Thallium			2.0	U	0.1	J					P
Vanadium			2.0	U	2.0	U					P
Zinc			2.0	U	2.0	U					P

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

ICP ID Number: ICPMS1 ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	100000	100000				95400	91780.0	91.8
Antimony	0	0				3	2.5	
Arsenic	0	20				1	21.3	106.5
Barium	0	0				0	0.2	
Beryllium	0	0				0	0.0	
Boron	0	0				3	3.8	
Cadmium	0	10				1	10.1	101.4
Calcium	100000	100000				84130	84270.0	84.3
Chromium	0	20				5	22.8	114.2
Cobalt	0	40				2	36.0	90.1
Copper	0	20				5	23.3	116.4
Iron	100000	100000				88870	90340.0	90.3
Lead	0	0				25	35.2	
Magnesium	100000	100000				88350	89690.0	89.7
Manganese	0	20				5	23.8	118.9
Mercury	0	0				0	0.4	
Molybdenum	2000	2000				1986	1992.0	99.6
Nickel	0	40				4	39.0	97.4
Phosphorus	100000	100000				99390	103000.0	103.0
Potassium	100000	100000				88680	91150.0	91.2
Selenium	0	20				0	0.0	0.0
Silver	0	20				0	15.9	79.5
Sodium	100000	100000				0	0.0	0.0
Thallium	0	0				0	0.2	
Titanium	2000	2000				2050	2085.0	104.3
Vanadium	0	40				0	38.1	95.2
Zinc	0	20				8	25.6	128.0

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO

X304S

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 77.0

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum		8793.2900		6430.6127		35.60			P
Antimony	75-125	47.9893		22.5204		35.60	71.5	J	P
Arsenic	75-125	53.3009		15.8559		35.60	105.2		P
Barium		220.8647		145.2074		35.60			P
Beryllium	75-125	26.6291		0.8460		35.60	72.4	J	P
Boron	75-125	62.4430		20.5232		35.60	117.8		P
Cadmium	75-125	34.0339		2.8942		35.60	87.5		P
Calcium		49028.8221		42558.1216		356.00			P
Chromium	75-125	37.3519		11.3871		35.60	72.9	J	P
Cobalt	75-125	37.2807		5.6064		35.60	89.0		P
Copper	75-125	138.4712		86.1865		35.60	146.9	J	P
Iron		19736.8421		16308.2457		356.00			P
Lead		38918.3185		27695.3293		35.60			P
Magnesium		19850.7633		18956.4047		356.00			P
Manganese		299.6127		233.9207		35.60			P
Mercury	75-125	0.7570		0.0467	J	1.42	49.9	J	P
Nickel	75-125	51.5920		19.5853		35.60	89.9		P
Potassium	75-125	1084.3871		670.0946		356.00	116.4		P
Selenium	75-125	31.5704		2.1053		35.60	82.8		P
Silver	75-125	28.9929		0.3700	J	35.60	80.4		P
Sodium	75-125	832.6213		428.8914		356.00	113.4		P
Thallium	75-125	18.2559		0.7642		35.60	49.1	J	P
Vanadium	75-125	47.7614		16.5951		35.60	87.5		P
Zinc		724.3962		363.4598		35.60			P

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO

X304SD

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 77.0

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum		8124.7636		6430.6127		19.70			P
Antimony	75-125	22.5460		22.5204		19.70	0.1	J	P
Arsenic	75-125	33.4053		15.8559		19.70	89.1		P
Barium		151.5414		145.2074		19.70			P
Beryllium	75-125	14.0588		0.8460		19.70	67.1	J	P
Boron	75-125	46.2820		20.5232		19.70	130.7	J	P
Cadmium	75-125	18.6846		2.8942		19.70	80.1		P
Calcium		36163.4724		42558.1216		197.01			P
Chromium	75-125	21.5452		11.3871		19.70	51.6	J	P
Cobalt	75-125	22.6563		5.6064		19.70	86.5		P
Copper		100.1608		86.1865		19.70			P
Iron		17313.3905		16308.2457		197.01			P
Lead		27258.5424		27695.3293		19.70			P
Magnesium		14184.8443		18956.4047		197.01			P
Manganese		204.4194		233.9207		19.70			P
Mercury	75-125	0.3982		0.0467	J	0.79	44.6	J	P
Nickel	75-125	33.0743		19.5853		19.70	68.5	J	P
Potassium	75-125	749.8266		670.0946		197.01	40.5	J	P
Selenium	75-125	18.6531		2.1053		19.70	84.0		P
Silver	75-125	15.5718		0.3700	J	19.70	77.2		P
Sodium	75-125	525.7849		428.8914		197.01	49.2	J	P
Thallium	75-125	9.1335		0.7642		19.70	42.5	J	P
Vanadium	75-125	28.5352		16.5951		19.70	60.6	J	P
Zinc		407.9719		363.4598		19.70			P

Comments:

U.S. EPA - CLP

5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO

X304A

Lab Name: Prairie Analytical Systems, Inc. Contract: HWA-4303

Lab Code: PRAIRIE Case No.: SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Level (low/med): LOW

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Antimony	75-125	45.73		22.52		27.6	84.1		P
Beryllium	75-125	20.52		0.85		27.6	71.3	J	P
Boron	75-125	41.96		20.52		27.6	77.7		P
Chromium	75-125	32.52		11.39		27.6	76.6		P
Copper	75-125	112.22		86.19		27.6	94.4		P
Nickel	75-125	46.13		19.59		27.6	96.2		P
Potassium	75-125	901.48		670.0946		27.6	83.9		P
Sodium	75-125	655.53		428.89		27.6	82.2		P
Thallium	75-125	14.59		0.76		27.6	50.1	J	P
Vanadium	75-125	38.72		16.60		27.6	80.2		P

Comments:

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO

X304

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 77.0 % Solids for Duplicate: 77.0

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum	20	6430.6127		6470.4526		0.6		P
Antimony	20	22.5204		8.5664		89.8	J	P
Arsenic	20	15.8559		9.3387		51.7	J	P
Barium	20	145.2074		117.1905		21.4	J	P
Beryllium	20	0.8460		0.6367		28.2	J	P
Boron	20	20.5232		13.6018		40.6	J	P
Cadmium	20	2.8942		1.9730		37.9	J	P
Calcium	20	42558.1216		48105.7404		12.2		P
Chromium	20	11.3871		11.3252		0.5		P
Cobalt	20	5.6064		5.7558		2.6		P
Copper	20	86.1865		57.9709		39.1	J	P
Iron	20	16308.2457		16464.3049		1.0		P
Lead	20	27695.3293		18260.5856		41.1	J	P
Magnesium	20	18956.4047		21939.5989		14.6		P
Manganese	20	233.9207		199.0317		16.1		P
Mercury	20	0.0467	J	0.0314	J			P
Nickel	20	19.5853		19.3364		1.3		P
Potassium	20	670.0946		611.4078		9.2		P
Selenium	20	2.1053		1.8453		13.2		P
Silver	20	0.3700	J	0.2167	J			P
Sodium	20	428.8914		241.5853		55.9	J	P
Thallium	20	0.7642		0.5471		33.1	J	P
Vanadium	20	16.5951		15.7727		5.1		P
Zinc	20	363.4598		269.3460		29.7	J	P

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6

DUPLICATES

EPA SAMPLE NO

X304S

Lab Name: Prairie Analytical Systems, Inc. Contract: HWA-4303

Lab Code: PRAIRIE Case No.: SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 77.0 % Solids for Duplicate: 77.0

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

Analyte	Control Limit	Spiked Sample (S)	C	Spiked Sample Duplicate (D)	C	RPD	Q	M
Aluminium	20	8793.2900		8124.7636		7.9		P
Antimony	20	47.9893		22.5460		72.1	J	P
Arsenic	20	53.3009		33.4053		45.9	J	P
Barium	20	220.8647		151.5414		37.2	J	P
Beryllium	20	26.6291		14.0588		61.8	J	P
Boron	20	62.4430		46.2820		29.7	J	P
Cadmium	20	34.0339		18.6846		58.2	J	P
Calcium	20	49028.8221		36163.4724		30.2	J	P
Chromium	20	37.3519		21.5452		53.7	J	P
Cobalt	20	37.2807		22.6563		48.8	J	P
Copper	20	138.4712		100.1608		32.1	J	P
Iron	20	19736.8421		17313.3905		13.1		P
Lead	20	38918.3185		27258.5424		35.2	J	P
Magnesium	20	19850.7633		14184.8443		33.3	J	P
Manganese	20	299.6127		204.4194		37.8	J	P
Mercury	20	0.7570		0.3982		62.1	J	P
Nickel	20	51.5920		33.0743		43.7	J	P
Potassium	20	1084.3871		749.8266		36.5	J	P
Selenium	20	31.5704		18.6531		51.4	J	P
Silver	20	28.9929		15.5718		60.2	J	P
Sodium	20	832.6213		525.7849		45.2	J	P
Thallium	20	18.2559		9.1335		66.6	J	P
Vanadium	20	47.7614		28.5352		50.4	J	P
Zinc	20	724.3962		407.9719		55.9	J	P

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7
LABORATORY CONTROL SAMPLE

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Solid LCS Source:

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				25.0	26.1		20.0	30.0	103.7
Antimony				25.0	24.6		20.0	30.0	98.5
Arsenic				25.0	23.7		20.0	30.0	94.9
Barium				25.0	24.3		20.0	30.0	97.0
Beryllium				25.0	24.1		20.0	30.0	96.2
Boron				25.0	24.6		20.0	30.0	98.3
Cadmium				25.0	23.7		20.0	30.0	94.8
Calcium				250.0	265.3		200.0	300.0	106.1
Chromium				25.0	23.8		20.0	30.0	95.1
Cobalt				25.0	24.3		20.0	30.0	97.0
Copper				25.0	24.3		20.0	30.0	97.0
Iron				250.0	238.0		200.0	300.0	95.2
Lead				25.0	28.2		20.0	30.0	112.7
Magnesium				250.0	252.5		200.0	300.0	101.0
Manganese				25.0	23.9		20.0	30.0	95.8
Mercury				1.0	0.8		0.8	1.2	82.3
Nickel				25.0	24.4		20.0	30.0	97.5
Potassium				250.0	231.5		200.0	300.0	92.6
Selenium				25.0	22.8		20.0	30.0	91.3
Silver				25.0	24.1		20.0	30.0	96.6
Sodium				250.0	238.3		200.0	300.0	95.3
Thallium				25.0	24.8		20.0	30.0	99.3
Vanadium				25.0	23.7		20.0	30.0	94.7
Zinc				25.0	22.6		20.0	30.0	90.2

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LABORATORY CONTROL SAMPLE

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Solid LCS Source:

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				25.0	27.2		20.0	30.0	108.2
Antimony				25.0	25.4		20.0	30.0	101.7
Arsenic				25.0	24.5		20.0	30.0	98.2
Barium				25.0	25.4		20.0	30.0	101.4
Beryllium				25.0	24.4		20.0	30.0	97.6
Boron				25.0	25.7		20.0	30.0	102.8
Cadmium				25.0	24.4		20.0	30.0	97.7
Calcium				250.0	274.2		200.0	300.0	109.7
Chromium				25.0	24.6		20.0	30.0	98.3
Cobalt				25.0	24.9		20.0	30.0	99.6
Copper				25.0	24.4		20.0	30.0	97.5
Iron				250.0	248.9		200.0	300.0	99.6
Lead				25.0	28.3		20.0	30.0	113.0
Magnesium				250.0	265.7		200.0	300.0	106.3
Manganese				25.0	24.5		20.0	30.0	98.0
Mercury				1.0	0.8		0.8	1.2	84.0
Nickel				25.0	24.8		20.0	30.0	99.3
Potassium				250.0	239.8		200.0	300.0	95.9
Selenium				25.0	22.9		20.0	30.0	91.7
Silver				25.0	24.9		20.0	30.0	99.6
Sodium				250.0	253.0		200.0	300.0	101.2
Thallium				25.0	25.8		20.0	30.0	103.2
Vanadium				25.0	25.1		20.0	30.0	100.4
Zinc				25.0	23.4		20.0	30.0	93.5

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9

ICP SERIAL DILUTIONS

EPA SAMPLE NO

X304

Lab Name: Prairie Analytical Systems, Inc. Contract: HWA-4303

Lab Code: PRAIRIE Case No.: SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: MG/KG

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	6430.61		5925.27		7.9		P
Antimony	22.52		17.78		21.0	J	P
Arsenic	15.86		13.58		14.4	J	P
Barium	145.21		141.62		2.5		P
Beryllium	0.85		1.00	J	17.6		P
Boron	20.52		23.51	J	14.6	J	P
Cadmium	2.89		2.73	J	5.5		P
Calcium	42558.12		38839.77	J	8.7		P
Chromium	11.39		12.78		12.2	J	P
Cobalt	5.61		6.08		8.4		P
Copper	86.19		84.82		1.6		P
Iron	16308.25		14040.80		13.9	J	P
Lead	27695.33		24153.48		12.8	J	P
Magnesium	18956.40		18128.90	J	4.4		P
Manganese	233.92		289.31		23.7	J	P
Mercury	0.05	J	0.16	J	220.0		P
Nickel	19.59		19.66		0.4		P
Potassium	670.09		731.56		9.2		P
Selenium	2.11		2.38	J	12.8		P
Silver	0.37	J	2.80	U			P
Sodium	428.89		480.75		12.1	J	P
Thallium	0.76		1.29	J	69.7		P
Vanadium	16.60		18.02		8.6		P
Zinc	363.46		275.69	J	24.1	J	P

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10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

ICP ID Number: ICPMS1 Date: 7/18/2003

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	27.00		20.0	4.3	P
Antimony	123.00		2.0	0.8	P
Arsenic	75.00		5.0	0.4	P
Barium	137.00		2.0	0.0	P
Beryllium	9.00		2.0	0.0	P
Boron	11.00		5.0	0.8	P
Cadmium	111.00		2.0	0.1	P
Calcium	43.00		100.0	4.9	P
Chromium	52.00		2.0	0.1	P
Cobalt	59.00		2.0	0.0	P
Copper	63.00		2.0	0.2	P
Iron	57.00		100.0	8.4	P
Lead	208.00		2.0	0.1	P
Magnesium	24.00		50.0	2.0	P
Manganese	55.00		2.0	0.1	P
Mercury	199.00		2.0	0.1	P
Nickel	60.00		2.0	0.1	P
Potassium	39.00		200.0	2.3	P
Selenium	82.00		5.0	0.6	P
Silver	107.00		2.0	0.2	P
Sodium	23.00		200.0	9.1	P
Thallium	205.00		2.0	0.3	P
Vanadium	51.00		2.0	0.0	P
Zinc	66.00		5.0	0.7	P

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO

MB-2298

Lab Name: Prairie Analytical Systems, Inc. Contract: HWA-4303

Lab Code: PRAIRIE Case No.: SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: MB-2298

Level (low/med): LOW Date Received:

% Solids: 100

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

CAS No.	Analyte	Concentration	C	Q	M
57-12-5	Cyanide	0.25	U		CA

Comments:

FORM I - IN ILM04.1

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

X301

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: 0403076-001

Level (low/med): LOW Date Received: 3/12/2004

% Solids: 82.6

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

CAS No.	Analyte	Concentration	C	Q	M
57-12-5	Cyanide	0.63			CA

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

X302

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: 0403076-002

Level (low/med): LOW Date Received: 3/12/2004

% Solids: 78.7

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

CAS No.	Analyte	Concentration	C	Q	M
57-12-5	Cyanide	0.98			CA

Comments:

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO
X303

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: 0403076-003

Level (low/med): LOW Date Received: 3/12/2004

% Solids: 81.7

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

CAS No.	Analyte	Concentration	C	Q	M
57-12-5	Cyanide	0.29			CA

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

X304

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: 0403076-004

Level (low/med): LOW Date Received: 3/12/2004

% Solids: 77.0

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

CAS No.	Analyte	Concentration	C	Q	M
57-12-5	Cyanide	0.26			CA

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

X304D

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Lab Sample ID: 0403076-004

Level (low/med): LOW Date Received: 3/12/2004

% Solids: 77.0

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

CAS No.	Analyte	Concentration	C	Q	M
57-12-5	Cyanide	0.25	U		CA

Comments:

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Initial Calibration Verification Source:

Continuing Calibration Verification Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)		M
Cyanide	20.0	21.70	108.5	20.0	20.40	102.0				CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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3
BLANKS

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C		Prepa-ration Blank	C		M
Cyanide	5.0	U	5.0	U						0.250	U		CA

FORM III - IN ILM04.1

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO

X304S

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 77.0

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Cyanide	75-125	2.9069		0.2636		3.03	87.1		CA

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO

X304SD

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 77.0

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Cyanide	75-125	3.3217		0.2636		3.12	98.0		CA

Comments:

FORM V (Part 1) - IN ILM04.1

6
DUPLICATES

EPA SAMPLE NO

X304

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 77.0 % Solids for Duplicate: 77.0

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Cyanide	20	0.2636		0.2500	U			CA

U.S. EPA - CLP

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DUPLICATES

EPA SAMPLE NO

X304S

Lab Name: Prairie Analytical Systems, Inc. Contract: HWA-4303

Lab Code: PRAIRIE Case No.: SAS No.: SDG No.: 0403076

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 77.0 % Solids for Duplicate: 77.0

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

Analyte	Control Limit	Spiked Sample (S)	C	Spiked Sample Duplicate (D)	C	RPD	Q	M
Cyanide	20	2.9069		3.3217		13.3		CA

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LABORATORY CONTROL SAMPLE

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Solid LCS Source:

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Cyanide				2.5	2.5		2.1	2.9	101.0

U.S. EPA - CLP

7
LABORATORY CONTROL SAMPLE

Lab Name: Prairie Analytical Systems, In Contract: HWA-4303

Lab Code: PRAIRIE Case No. SAS No.: SDG No.: 0403076

Solid LCS Source:

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Cyanide				2.5	2.4		2.1	2.9	94.6