



July 20, 2006

Minnesota Department of Transportation
Attn: Jai Kalsy
Transportation District 6A
2900 48th Street N.W.
Rochester, MN 55901

RE: TH52 Oronoco Design-Build Project
Sediment Testing Report
A4-A-1

Dear Mr. Kalsy:

Enclosed is URS's summary report for sediment sampling and testing in Lake Shady.

If you have any questions, please feel free to contact me at the Project office or by e-mail at dhonstad@lundaconstruction.com.

Very truly yours,
LHS Constructors

A handwritten signature in black ink, appearing to read 'Doyle Honstad', is written over a light grey rectangular background.

Doyle Honstad
Project Manager

CC: MSP
Encl:



July 10, 2006

Mr. Chad Johnson
LHS Constructors
1530 Highway 52 North
Rochester, Minnesota 55901

**RE: Sediment Testing Results
TH 52 Oronoco Design-Build Project**

Dear Mr. Johnson:

This correspondence has been prepared to summarize the methods and findings related to recent sediment sampling in conjunction with dredging activity within the Trunk Highway (TH) 52 Design-Build Project corridor. URS Corporation (URS) was requested by LHS Constructors (LHS) and the Minnesota Department of Transportation (Mn/DOT) to complete sampling and evaluate the environmental disposition of the sediment prior to beneficial re-use on the project within the TH-52 corridor.

METHODS

URS mobilized to the project corridor to conduct sediment sampling on June 29, 2006. Sediment samples were collected from locations representing two distinct areas of excavation within Lake Shady (Figures 1 and 2). One sample (SP-1) was collected from material previously excavated and contained within a dredge stockpile area. Sampling and quantitative analysis of stockpiled material was limited to one sample from this area due to perceived blending of sediment during excavation and transport from near station 1783+00 (Figure 2). A series of soil samples (SED-2 through SED-5) were collected near station 1802+50 during active sediment excavation (Figure 2). The samples, collected at approximate two-foot vertical intervals, extended from the lake bed surface (at 944 feet National Geodetic Vertical Datum (NGVD)) to the base of the sediment excavation (at 933 feet NGVD). Vertical control of sampling depths was maintained by a global positioning system (GPS) equipped backhoe with Trimble GCS 900 software. Quantitative analysis was performed on three of the five samples collected from the sediment column to evaluate sediment chemistry at and near the lake bed surface (to reflect recent deposition) and the base of the excavation (to characterize the nature of sediment with depth).

Sediment samples consisted of grab samples and were either collected from near surface material at the stockpile (SP-1) or directly from the backhoe bucket (SED-2 through SED-5). Samples were classified in the field in general conformance with American Society for Testing and Materials (ASTM) D2488, immediately placed in laboratory prepared jars and submitted to Environmental Science Corporation (ESC) the same day for quantitative analysis. Target parameters included a suite of metals (including arsenic, cadmium, chromium, copper, lead, nickel, selenium, and zinc) by U.S. Environmental Protection Agency (EPA) method 6010B, hexavalent chromium by EPA method 3060A/71, mercury by EPA method 7471, polychlorinated biphenyls (PCBs) by EPA method 8082, nitrate + nitrite by EPA method 9056, ammonia nitrogen by EPA method 350.1, total Kjeldahl nitrogen (TKN) by EPA method 351.2, total phosphorus by EPA method 9056, oil and grease by EPA method 9071B and total organic carbon (TOC) by the U.S. Department of Agriculture (USDA) loss on ignition (LOI) method. While not specifically requested, ESC added pH, oxygen reduction potential (ORP) and total solids to the parameter list to facilitate reporting of hexavalent chromium in a solid matrix. Table 1 (attached) summarizes the target parameters and results of sediment quantitative analysis. A laboratory report generated from this task is also provided in Attachment A.



Mr. Chad Johnson
 LHS Constructors
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FINDINGS

Sediment samples collected during June 2006 field activities generally consisted of organic silt, clay and fine to medium sand. Sediment became more granular in composition with less organic material deeper in the stratigraphic column. This field observation was confirmed through laboratory analysis, which revealed TOC levels of 24,000 milligrams per kilogram (mg/kg) from samples collected near the lake bed surface opposed to 540 mg/kg in sediment at the base of the excavation (Table 1).

Quantitative analysis of sediment samples for nutrient-type parameters revealed maximum concentrations of ammonia nitrogen at 400 mg/kg (sample SP-1) and TKN at 3,700 mg/kg (sample SED-2) (Table 1). Nitrates, nitrites and total phosphorus were not detected above laboratory detection limits in any of the samples collected during the June 2006, mobilization (Table 1).

Target parameters intended to evaluate “organic” contaminant impacts to sediment were oil and grease and PCBs. Oil and grease was detected in all samples submitted for quantitative analysis, ranging from 120 mg/kg in samples SED-3 and SED-4 to 190 mg/kg in sample SP-1 (Table 1). None of the PCB arochlors were detected above method detected limits in any of the samples collected and submitted for quantitative analysis (Table 1).

Select metals were detected in all sediment samples collected and submitted to the laboratory. Metals analysis results are summarized in tabular form below and also within Table 1.

Laboratory Results - Metals TH 52 Oronoco Design-Build Project

Sample ID	Arsenic	Cadmium	Chromium (Cr ₃)	Chromium (Cr ₆)	Copper	Lead	Mercury	Nickel	Selenium	Zinc
SP-1	2.1	0.18	11	<0.39	4.7	6.6	<0.0021	7.0	<0.021	25
SED-2	4.3	0.33	25	<0.39	13	16	0.16	18	<0.021	76
SED-3	4.3	0.4	25	<0.39	14	15	0.1	20	<0.021	80
SED-5	<0.015	<0.0011	2.4	<0.39	1.3	0.54	<0.0021	3.1	<0.021	8.8
Tier 1 SRV	5	25	44,000	87	11	300	0.5	560	160	8,700
Tier 2 SRV	20	160	100,000	650	9,000	700	135	2,500	1,250	70,000

Notes:

<x = Not detected to method detection limits of x.

Cr₃ = Trivalent Chromium

Cr₆ = Hexavalent Chromium

Laboratory results listed in **bold** text denote a concentration exceeding a MPCA SRV.

All sample results listed in milligrams per kilogram (mg/kg).

Tier 1 SRVs = Tier 1 Soil Reference Values as established by the MPCA, 2006.



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With the exception of copper concentrations in sediment samples SED-2 and SED-3, all metals were either below method detection limits or below their respective Minnesota Pollution Control Agency (MPCA) Tier 1 Soil Reference Values (SRVs)¹. Copper concentrations in samples SED-2 and SED-3 (13 and 14 mg/kg, respectively) slightly exceeded the 11 mg/kg Tier 1 SRV value for this compound but were well below the 9,000 mg/kg Tier 2 SRV value.

CONCLUSIONS

Laboratory analysis of sediment samples collected during the June 2006, sampling event identified the presence of nutrient, organic and metals constituents. However, the results do not appear to preclude the intended re-use of this material within the project corridor. URS understands that LHS intends to blend the sediment with topsoil staged during removal from various locations within the corridor and land apply this material as a final ground/vegetative cover for unpaved areas within the public right-of-way. Our opinion is supported by the following information:

- In its draft *Managing Dredged Materials in the State of Minnesota* guidance document (Waste Water Permits #3.05) the MPCA has linked the suitability of dredged sediment for land application to SRVs established by the Agency.² The MPCA has not established SRV values for nitrate nitrogen and TKN. As such, there appears to be no restriction on land-applying this material with detected ammonia nitrogen and TKN levels.
- Oil and grease was detected in sediment samples at concentrations up to 190 mg/kg. Similar to the treatment of nutrient parameters described above, the MPCA has not established SRVs for oil and grease and, consequently, no regulatory limit on the use of this material applies. Further, the oil and grease method detects not only petroleum compounds, but vegetable and natural oils as well.³ Given the high organic content within the sediment, it is possible the results from this analysis were a measure of natural oils contained in sediments, biota and/or decaying life forms and not indicative of petroleum contamination.
- Of the target metals parameters, only copper was detected at a concentration slightly exceeding the Tier 1 SRV. Based upon a review of the MPCA's April 2006, *Dredged Materials* guidance, this sediment falls within the Tier 2 category for land application. Under this scenario, sediment below Tier 2 SRV values is suitable for land application where the end use is industrial or recreational. The intended use of the sediment within the TH 52 Oronoco corridor appears to be compatible with the slightly restricted Tier 2 end-use. Of note, while copper concentrations exceeded Tier 1 SRVs in several sediment samples, published information indicates these concentrations also fall within naturally occurring background levels. The U.S. National Oceanic and Atmospheric Administration (NOAA) developed Screening Quick Reference Tables (SQuiRTs) for background concentrations and various risk levels of metals in freshwater sediment.⁴ Based on this

¹ Minnesota Pollution Control Agency (MPCA), 2006. *Draft Guidelines, Risk-Based Guidance for the Soil - Human Health Pathway Volume 2. Technical Support Document*, MPCA, January 2006.

² MPCA, 2006. *Managing Dredged Material in the State of Minnesota*, MPCA, April 2006.

³ Irwin, R.J., M. VanMouwerik, L. Stevens, M.D. Seese and W. Basham, 1997. *Environmental Contaminants Encyclopedia*, National Park Service, Water Resources Division, Fort Collins, Colorado. Distributed within the Federal Government as an Electronic Document.

⁴ National Oceanic and Atmospheric Administration (NOAA), 1999. *Screening Quick Reference Tables for Inorganics in Solids*, Office of Response and Restoration, Coastal Protection and Restoration Division.



Mr. Chad Johnson
LHS Constructors
July 10, 2006
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information the maximum copper concentration (13 mg/kg) falls within the referenced background range (10 to 25 mg/kg).

- Contaminants of concern (COCs) were not detected above method detection limits or were identified within expected ranges for the remaining target parameters not specifically mentioned above.

Additional sediment sampling and quantitative analysis does not appear to be warranted in connection with future sediment excavation planned for the TH 52 Oronoco Design-Build project based on the data generated from this initial sampling event. Minor concentration variations were noted between samples collected from the sediment stockpile and active excavation face, and also within the vertical sediment column. Due to a lack of known contaminant sources within the Lake Shady Watershed, further sampling would be expected to yield similar but insignificant variance in laboratory results.

Please feel free to contact me at 612-373-6867 with any questions you may have pertaining to this matter.

Respectfully,
URS Corporation

Todd L. Renville, P.G.
Principal Environmental Scientist

Attachment

FIGURES

TABLES

Table 1
Laboratory Analysis - Sediment
TH 52 - Oronoco Design Build Project
Oronoco, Minnesota

Location	Sample Date					
	SP-1	SED-2	SED-3	SED-5	Tier 1 SRV	Tier 2 SRV
Sample Date	6/29/2006	6/29/2006	6/29/2006	6/29/2006		
Depth	(feet)	944	942	933		
General Chemistry						
Nitrate	(mg/kg)	<0.19	<0.19	<0.19	<0.19	NE
Nitrite	(mg/kg)	<0.26	<0.26	<0.26	<0.26	NE
Ammonia Nitrogen	(mg/kg)	400	140	200	110	NE
ORP	mV	120	110	93	73	NE
pH	su	7.4	7.1	7.1	7.4	NE
Total Phosphorus	(mg/kg)	<0.44	<0.44	<0.44	<0.44	NE
Kjeldahl Nitrogen	(mg/kg)	880	3,000	3,700	49	NE
Total Solids	%	79.1	60.3	60	83.2	NE
Total Organic Carbon	(mg/kg)	8,800	24,000	24,000	540	NE
Organics						
Oil & Grease	(mg/kg)	190	170	120	120	NE
PCBs	(mg/kg)	ND	ND	ND	ND	1.2
Metals						
Arsenic	(mg/kg)	2.1	4.3	4.3	<0.015	5
Cadmium	(mg/kg)	0.18	0.33	0.4	<0.0011	25
Hexavalent Chromium	(mg/kg)	<0.39	<0.39	<0.39	<0.39	87
Trivalent Chromium	(mg/kg)	11	25	25	2.4	44,000
Lead	(mg/kg)	6.6	16	15	0.54	300
Mercury	(mg/kg)	<0.0021	0.16	0.1	<0.0021	135
Selenium	(mg/kg)	<0.021	<0.021	<0.021	<0.021	160
Copper	(mg/kg)	4.7	13	14	1.3	11
Nickel	(mg/kg)	7.0	18	20	3.1	560
Zinc	(mg/kg)	25	76	80	8.8	8,700

NOTES:

- <x = Not detected to method detection limits of x
- NA = Not applicable, sample collected from dredge stockpile.
- ND = All PCB Arochlors below method detection limits.
- NE = Not established for this compound.
- mg/kg = milligrams per kilogram, equivalent to parts per million (ppm)
- mV = Millivolts
- su = Standard Units
- ORP = Oxidation Reduction Potential
- PCBs= Polychlorinated Byphenols
- Tier 1 SRV = Tier 1 Soil Reference Value as established by the Minnesota Pollution Control Agency, 2006.
- Tier 2 SRV = Tier 2 Soil Reference Value as established by the Minnesota Pollution Control Agency, 2006.
- Compound concentrations listed in **bold** are above method detection limits.
- Compound concentrations listed in **red and bold** font are above an applicable standard.
- All elevations reported in feet NGVD.

ATTACHMENT A
LABORATORY REPORT



**ENVIRONMENTAL
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REPORT OF ANALYSIS

June 29, 2006

Todd Renville
URS Corporation - Minneapolis MN
700 3rd Street South
Minneapolis, MN 55415-1199

ESC Sample # : L249989-01

Date Received : June 21, 2006
Description : Sediment Project

Site ID :

Sample ID : SP-1

Project # : 31809974

Collected By : George Beatty
Collection Date : 06/20/06 09:30

Parameter	Dry Result	MDL	RDL	Units	Q	Method	Date	Dil.
Nitrate	U	0.19	1.0	mg/kg		9056	06/22/06	1
Nitrite	U	0.26	1.0	mg/kg		9056	06/22/06	1
Chromium, Hexavalent	U	0.39	2.5	mg/kg	J6	3060A/71	06/22/06	1
Chromium, Trivalent	11.	0.16	2.0	mg/kg		Calc.	06/24/06	1
Ammonia Nitrogen	400	1.6	6.3	mg/kg		350.1	06/23/06	1
ORP	120			mV		2580	06/21/06	1
pH	7.4		7.4 @ 25	su		9045C	06/22/06	1
Oil & Grease (Hexane Extr)	190	33.	100	mg/kg		9071B	06/23/06	1
Phosphorus, Total	U	0.44	1.3	mg/kg		9056	06/22/06	1
Kjeldahl Nitrogen, TKN	880	16.	63.	mg/kg	J5	351.2	06/26/06	1
Total Solids	79.1			%		2540G	06/23/06	1
Mercury	U	0.0021	0.025	mg/kg		7471	06/26/06	1
Arsenic	2.1	0.015	1.3	mg/kg		6010B	06/24/06	1
Cadmium	0.18	0.0011	0.32	mg/kg	J	6010B	06/24/06	1
Chromium	14.	0.0023	0.63	mg/kg		6010B	06/24/06	1
Lead	6.6	0.012	0.32	mg/kg		6010B	06/24/06	1
Selenium	U	0.021	1.3	mg/kg		6010B	06/24/06	1
Copper	4.7	0.33	1.3	mg/kg		6010B	06/28/06	1
Nickel	7.0	0.035	1.3	mg/kg		6010B	06/28/06	1
Zinc	25.	0.0092	1.9	mg/kg		6010B	06/28/06	1
Polychlorinated Biphenyls								
PCB 1016	U	0.0099	0.11	mg/kg	J50	8082	06/22/06	5
PCB 1221	U	0.028	0.11	mg/kg	J50	8082	06/22/06	5
PCB 1232	U	0.036	0.11	mg/kg	J50	8082	06/22/06	5
PCB 1242	U	0.024	0.11	mg/kg	J50	8082	06/22/06	5

Results listed are dry weight basis.

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP), RDL = Reported Detection Limit = LOQ = PQL = EQL

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Note:

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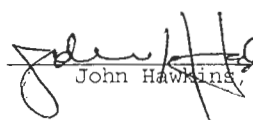
Todd Renville
 URS Corporation - Minneapolis MN
 700 3rd Street South
 Minneapolis, MN 55415-1199

June 29, 2006

Date Received : June 21, 2006
 Description : Sediment Project
 Sample ID : SP-1
 Collected By : George Beatty
 Collection Date : 06/20/06 09:30

ESC Sample # : L249989-01
 Site ID :
 Project # : 31809974

Parameter	Dry Result	MDL	RDL	Units	Q	Method	Date	Dil.
PCB 1248	U	0.028	0.11	mg/kg	J50	8082	06/22/06	5
PCB 1254	U	0.028	0.11	mg/kg	J50	8082	06/22/06	5
PCB 1260	U	0.014	0.11	mg/kg	J50	8082	06/22/06	5
PCBs Surrogates								
Decachlorobiphenyl	75.4			% Rec.		8082	06/22/06	5
Tetrachloro-m-xylene	100.			% Rec.		8082	06/22/06	5


 John Hawkins, ESC Representative

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 KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
 AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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REPORT OF ANALYSIS

Todd Renville
 URS Corporation - Minneapolis MN
 700 3rd Street South
 Minneapolis, MN 55415-1199

June 29, 2006

Date Received : June 21, 2006
 Description : Oronoco
 Sample ID : SED-2 944FT
 Collected By : George Beatty
 Collection Date : 06/20/06 10:30

ESC Sample # : L249989-02
 Site ID :
 Project # : 31809974

Parameter	Dry Result	MDL	RDL	Units	Q	Method	Date	Dil.
Nitrate	U	0.19	1.0	mg/kg		9056	06/22/06	1
Nitrite	U	0.26	1.0	mg/kg		9056	06/22/06	1
Chromium, Hexavalent	U	0.39	3.3	mg/kg		3060A/71	06/22/06	1
Chromium, Trivalent	25.	0.16	3.3	mg/kg		Calc.	06/24/06	1
Ammonia Nitrogen	140	1.6	8.3	mg/kg		350.1	06/23/06	1
ORP	110			mV		2580	06/21/06	1
pH	7.1		7.1 @ 25	su		9045C	06/22/06	1
Oil & Grease (Hexane Extr)	170	33.	100	mg/kg		9071B	06/23/06	1
Phosphorus, Total	U	0.44	1.6	mg/kg		9056	06/22/06	1
Kjeldahl Nitrogen, TKN	3000	160	830	mg/kg		351.2	06/26/06	10
Total Solids	60.3			%		2540G	06/23/06	1
Mercury	0.16	0.0021	0.033	mg/kg		7471	06/26/06	1
Arsenic	4.3	0.015	1.6	mg/kg		6010B	06/24/06	1
Cadmium	0.33	0.0011	0.41	mg/kg	J	6010B	06/24/06	1
Chromium	25.	0.0023	0.83	mg/kg		6010B	06/24/06	1
Lead	16.	0.012	0.41	mg/kg		6010B	06/24/06	1
Selenium	U	0.021	1.6	mg/kg		6010B	06/24/06	1
Copper	13.	0.33	1.6	mg/kg		6010B	06/28/06	1
Nickel	18.	0.035	1.6	mg/kg		6010B	06/28/06	1
Zinc	76.	0.0092	2.5	mg/kg		6010B	06/28/06	1
Polychlorinated Biphenyls								
PCB 1016	U	0.0099	0.14	mg/kg	O	8082	06/26/06	5
PCB 1221	U	0.028	0.14	mg/kg	O	8082	06/26/06	5
PCB 1232	U	0.036	0.14	mg/kg	O	8082	06/26/06	5
PCB 1242	U	0.024	0.14	mg/kg	O	8082	06/26/06	5

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REPORT OF ANALYSIS

Todd Renville
URS Corporation - Minneapolis MN
700 3rd Street South
Minneapolis, MN 55415-1199

June 29, 2006


Date Received : June 21, 2006
Description : Oronoco
Sample ID : SED-2 944FT
Collected By : George Beatty
Collection Date : 06/20/06 10:30

ESC Sample # : L249989-02

Site ID :

Project # : 31809974

Parameter	Dry Result	MDL	RDL	Units	Q	Method	Date	Dil.
PCB 1248	U	0.028	0.14	mg/kg	0	8082	06/26/06	5
PCB 1254	U	0.028	0.14	mg/kg	0	8082	06/26/06	5
PCB 1260	U	0.014	0.14	mg/kg	0	8082	06/26/06	5
PCBs Surrogates								
Decachlorobiphenyl	75.3			% Rec.		8082	06/26/06	5
Tetrachloro-m-xylene	120.			% Rec.		8082	06/26/06	5


John Hawkins, ESC Representative

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KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
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REPORT OF ANALYSIS

June 29, 2006

Todd Renville
URS Corporation - Minneapolis MN
700 3rd Street South
Minneapolis, MN 55415-1199

Date Received : June 21, 2006
Description : Oronoco
Sample ID : SED-3 942FT
Collected By : George Beatty
Collection Date : 06/20/06 10:40

ESC Sample # : L249989-03

Site ID :

Project # : 31809974

Parameter	Dry Result	MDL	RDL	Units	Q	Method	Date	Dil.
Nitrate	U	0.19	1.0	mg/kg		9056	06/22/06	1
Nitrite	U	0.26	1.0	mg/kg		9056	06/22/06	1
Chromium, Hexavalent	U	0.39	3.3	mg/kg		3060A/71	06/22/06	1
Chromium, Trivalent	25.	0.16	3.3	mg/kg		Calc.	06/24/06	1
Ammonia Nitrogen	200	1.6	8.3	mg/kg		350.1	06/23/06	1
ORP	93.			mV		2580	06/21/06	1
pH	7.1		7.1 @ 25	su		9045C	06/22/06	1
Oil & Grease (Hexane Extr)	120	33.	100	mg/kg		9071B	06/23/06	1
Phosphorus, Total	U	0.44	1.7	mg/kg		9056	06/22/06	1
Kjeldahl Nitrogen, TKN	3700	160	830	mg/kg		351.2	06/26/06	10
Total Solids	60.0			%		2540G	06/23/06	1
Mercury	0.10	0.0021	0.033	mg/kg		7471	06/26/06	1
Arsenic	4.3	0.015	1.7	mg/kg		6010B	06/24/06	1
Cadmium	0.40	0.0011	0.42	mg/kg	J	6010B	06/24/06	1
Chromium	25.	0.0023	0.83	mg/kg		6010B	06/24/06	1
Lead	15.	0.012	0.42	mg/kg		6010B	06/24/06	1
Selenium	U	0.021	1.7	mg/kg		6010B	06/24/06	1
Copper	14.	0.33	1.7	mg/kg		6010B	06/28/06	1
Nickel	20.	0.035	1.7	mg/kg		6010B	06/28/06	1
Zinc	80.	0.0092	2.5	mg/kg		6010B	06/28/06	1
Polychlorinated Biphenyls								
PCB 1016	U	0.0099	0.14	mg/kg	O	8082	06/22/06	5
PCB 1221	U	0.028	0.14	mg/kg	O	8082	06/22/06	5
PCB 1232	U	0.036	0.14	mg/kg	O	8082	06/22/06	5
PCB 1242	U	0.024	0.14	mg/kg	O	8082	06/22/06	5

Results listed are dry weight basis.

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL (TRRP), RDL = Reported Detection Limit = LOQ = PQL = EQL
Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS


Todd Renville
URS Corporation - Minneapolis MN
700 3rd Street South
Minneapolis, MN 55415-1199

June 29, 2006

Date Received : June 21, 2006
Description : Oronoco
Sample ID : SED-3 942FT
Collected By : George Beatty
Collection Date : 06/20/06 10:40

ESC Sample # : L249989-03
Site ID :
Project # : 31809974

Parameter	Dry Result	MDL	RDL	Units	Q	Method	Date	Dil.
PCB 1248	U	0.028	0.14	mg/kg	0	8082	06/22/06	5
PCB 1254	U	0.028	0.14	mg/kg	0	8082	06/22/06	5
PCB 1260	U	0.014	0.14	mg/kg	0	8082	06/22/06	5
PCBs Surrogates								
Decachlorobiphenyl	77.1			% Rec.		8082	06/22/06	5
Tetrachloro-m-xylene	99.3			% Rec.		8082	06/22/06	5


John Hawkins, ESC Representative

Results listed are dry weight basis.
U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP), RDL = Reported Detection Limit = LOQ = PQL = EQL
Laboratory Certification Numbers:

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KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

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REPORT OF ANALYSIS

Todd Renville
URS Corporation - Minneapolis MN
700 3rd Street South
Minneapolis, MN 55415-1199

June 29, 2006

Date Received : June 21, 2006
Description : Oronoco
Sample ID : SED-5 933FT
Collected By : George Beatty
Collection Date : 06/20/06 10:55

ESC Sample # : L249989-04
Site ID :
Project # : 31809974

Parameter	Dry Result	MDL	RDL	Units	Q	Method	Date	Dil.
Nitrate	U	0.19	1.0	mg/kg		9056	06/22/06	1
Nitrite	U	0.26	1.0	mg/kg		9056	06/22/06	1
Chromium, Hexavalent	U	0.39	2.4	mg/kg		3060A/71	06/22/06	1
Chromium, Trivalent	2.4	0.16	2.4	mg/kg		Calc.	06/24/06	1
Ammonia Nitrogen	110	1.6	6.0	mg/kg		350.1	06/23/06	1
ORP	73.			mV		2580	06/21/06	1
pH	7.4		7.4 @ 25	su		9045C	06/22/06	1
Oil & Grease (Hexane Extr)	120	33.	100	mg/kg		9071B	06/23/06	1
Phosphorus, Total	U	0.44	1.2	mg/kg		9056	06/22/06	1
Kjeldahl Nitrogen, TKN	49.	16.	60.	mg/kg	J	351.2	06/26/06	1
Total Solids	83.2			%		2540G	06/23/06	1
Mercury	U	0.0021	0.024	mg/kg		7471	06/26/06	1
Arsenic	U	0.015	1.2	mg/kg		6010B	06/24/06	1
Cadmium	U	0.0011	0.30	mg/kg		6010B	06/24/06	1
Chromium	2.4	0.0023	0.60	mg/kg		6010B	06/24/06	1
Lead	0.54	0.012	0.30	mg/kg		6010B	06/24/06	1
Selenium	U	0.021	1.2	mg/kg		6010B	06/24/06	1
Copper	1.3	0.33	1.2	mg/kg		6010B	06/28/06	1
Nickel	3.1	0.035	1.2	mg/kg		6010B	06/28/06	1
Zinc	8.8	0.0092	1.8	mg/kg		6010B	06/28/06	1
Polychlorinated Biphenyls								
PCB 1016	U	0.0099	0.10	mg/kg	O	8082	06/22/06	5
PCB 1221	U	0.028	0.10	mg/kg	O	8082	06/22/06	5
PCB 1232	U	0.036	0.10	mg/kg	O	8082	06/22/06	5
PCB 1242	U	0.024	0.10	mg/kg	O	8082	06/22/06	5

Results listed are dry weight basis.

U = ND (Not Detected)

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REPORT OF ANALYSIS

June 29, 2006

Todd Renville
URS Corporation - Minneapolis MN
700 3rd Street South
Minneapolis, MN 55415-1199

Date Received : June 21, 2006
Description : Oronoco

Sample ID : SED-5 933FT

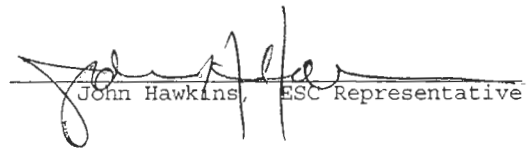
Collected By : George Beatty
Collection Date : 06/20/06 10:55

ESC Sample # : L249989-04

Site ID :

Project # : 31809974

Parameter	Dry Result	MDL	RDL	Units	Q	Method	Date	Dil.
PCB 1248	U	0.028	0.10	mg/kg	O	8082	06/22/06	5
PCB 1254	U	0.028	0.10	mg/kg	O	8082	06/22/06	5
PCB 1260	U	0.014	0.10	mg/kg	O	8082	06/22/06	5
PCBs Surrogates								
Decachlorobiphenyl	75.3			% Rec.		8082	06/22/06	5
Tetrachloro-m-xylene	82.1			% Rec.		8082	06/22/06	5


John Hawkins, ESC Representative

Results listed are dry weight basis.

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = SQL(TRRP), RDL = Reported Detection Limit = LOQ = PQL = EQL
Laboratory Certification Numbers:

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700 3rd Street South
Minneapolis, MN 55415-1199

June 29, 2006

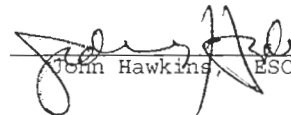
Date Received : June 21, 2006
Description : Oronoco
Sample ID : SP-1
Collected By : George Beatty
Collection Date : 06/20/06 09:30

ESC Sample # : L249989-05

Site ID :

Project # : 31809974

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TOC (Total Organic Carbon)	8800	1.0	mg/kg	USDA LOI	06/26/06	1


John Hawkins, ESC Representative

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910, IL-200008

Note:

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REPORT OF ANALYSIS

Todd Renville
URS Corporation - Minneapolis MN
700 3rd Street South
Minneapolis, MN 55415-1199

June 29, 2006

Date Received : June 21, 2006
Description : Oronoco
Sample ID : SED-2 944FT
Collected By : George Beatty
Collection Date : 06/20/06 10:30

ESC Sample # : L249989-06

Site ID :

Project # : 31809974

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TOC (Total Organic Carbon)	24000	1.0	mg/kg	USDA LOI	06/26/06	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit (PQL)

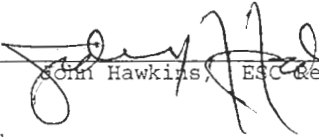
Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910, IL-200008

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REPORT OF ANALYSIS

June 29, 2006

Todd Renville
URS Corporation - Minneapolis MN
700 3rd Street South
Minneapolis, MN 55415-1199

Date Received : June 21, 2006
Description : Oronoco
Sample ID : SED-3 942FT
Collected By : George Beatty
Collection Date : 06/20/06 10:40

ESC Sample # : L249989-07

Site ID :

Project # : 31809974

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TOC (Total Organic Carbon)	24000	1.0	mg/kg	USDA LOI	06/26/06	1


John Hawkins, ESC Representative

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910, IL-200008

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REPORT OF ANALYSIS

June 29, 2006

Todd Renville
URS Corporation - Minneapolis MN
700 3rd Street South
Minneapolis, MN 55415-1199


Date Received : June 21, 2006
Description : Oronoco
Sample ID : SED-5 933FT
Collected By : George Beatty
Collection Date : 06/20/06 10:55

ESC Sample # : L249989-08

Site ID :

Project # : 31809974

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TOC (Total Organic Carbon)	540	1.0	mg/kg	USDA LOI	06/26/06	1


John Hawkins, ESC Representative

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910, IL-200008

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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L249989-01	Cadmium	J
	Chromium, Hexavalent	J6
	Kjeldahl Nitrogen, TKN	J5
	PCB 1016	J50
	PCB 1221	J50
	PCB 1232	J50
	PCB 1242	J50
	PCB 1248	J50
	PCB 1254	J50
	PCB 1260	J50
	L249989-02	Cadmium
PCB 1016		O
PCB 1221		O
PCB 1232		O
PCB 1242		O
PCB 1248		O
PCB 1254		O
PCB 1260		O
L249989-03	Cadmium	J
	PCB 1016	O
	PCB 1221	O
	PCB 1232	O
	PCB 1242	O
	PCB 1248	O
	PCB 1254	O
	PCB 1260	O
L249989-04	Kjeldahl Nitrogen, TKN	J
	PCB 1016	O
	PCB 1221	O
	PCB 1232	O
	PCB 1242	O
	PCB 1248	O
	PCB 1254	O
L249989-08	PCB 1260	O
	TOC (Total Organic Carbon)	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

Control Limits				(AQ)	(SS)
2-Fluorophenol	31-119	Nitrobenzene-d5	43-118	Dibromfluoromethane	68-128 64-125
Phenol-d5	12-134	2-Fluorobiphenyl	45-128	Toluene-d8	76-115 69-118
2,4,6-Tribromophenol	51-141	Terphenyl-d14	43-137	4-Bromofluorobenzene	79-127 61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.



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JRS Corporation - Minneapolis MN
Todd Renville
700 3rd Street South
Minneapolis, MN 55415-1199

**Quality Assurance Report
Level II**

L249989

June 29, 2006

Analyte	Result	Laboratory Blank		Date Analyzed	Batch
		Units			
pH	7.30	su		06/22/06 14:40	WG255402
Altrate	< 1	mg/kg		06/22/06 00:00	WG255611
Altrite	< 1	mg/kg		06/22/06 00:00	WG255611
Phosphorus, Total	< 1	mg/kg		06/22/06 00:00	WG255611
PCB 1016	< .017	mg/kg		06/22/06 16:44	WG255805
PCB 1221	< .017	mg/kg		06/22/06 16:44	WG255805
PCB 1232	< .017	mg/kg		06/22/06 16:44	WG255805
PCB 1242	< .017	mg/kg		06/22/06 16:44	WG255805
PCB 1248	< .017	mg/kg		06/22/06 16:44	WG255805
PCB 1254	< .017	mg/kg		06/22/06 16:44	WG255805
PCB 1260	< .017	mg/kg		06/22/06 16:44	WG255805
Ammonia Nitrogen	< 5	mg/kg		06/23/06 06:56	WG255824
Arsenic	< 1	mg/kg		06/23/06 22:57	WG255866
Chromium	< .25	mg/kg		06/23/06 22:57	WG255866
Mromium	< .5	mg/kg		06/23/06 22:57	WG255866
Lead	< .25	mg/kg		06/23/06 22:57	WG255866
Selenium	< 1	mg/kg		06/23/06 22:57	WG255866
Total Solids	0.00	%		06/23/06 11:45	WG255880
Kjeldahl Nitrogen, TKN	< 50	mg/kg		06/26/06 12:58	WG255894
DOC (Total Organic Carbon)	< 10	mg/kg		06/26/06 12:29	WG255934
Chromium, Hexavalent	< 2	mg/kg		06/22/06 14:00	WG255952
Oil & Grease (Hexane Extr)	< 100	mg/kg		06/23/06 11:21	WG256000
PCB 1016	< .017	mg/kg		06/26/06 10:13	WG256213
PCB 1221	< .017	mg/kg		06/26/06 10:13	WG256213
PCB 1232	< .017	mg/kg		06/26/06 10:13	WG256213
PCB 1242	< .017	mg/kg		06/26/06 10:13	WG256213
PCB 1248	< .017	mg/kg		06/26/06 10:13	WG256213
PCB 1254	< .017	mg/kg		06/26/06 10:13	WG256213
PCB 1260	< .017	mg/kg		06/26/06 10:13	WG256213
Copper	< 1	mg/kg		06/28/06 18:47	WG256370
Chloride	< 1	mg/kg		06/28/06 18:47	WG256370
Chlorine	< 1.5	mg/kg		06/28/06 18:47	WG256370

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
ORP	mV	100.	100.	0.00	20	L249363-01	WG255378
pH	su	7.70	7.70	0.00	20	L249602-01	WG255402
	su	4.90	5.00	2.02	20	L249701-02	WG255402
Ammonia Nitrogen	mg/kg	714.	720.	0.824	20	L249679-01	WG255824
Arsenic	mg/kg	3.30	2.70	20.0	20	L250049-01	WG255866
Chromium	mg/kg	0.00	0.140	BDL	20	L250049-01	WG255866
Mromium	mg/kg	17.9	18.0	0.557	20	L250049-01	WG255866
Lead	mg/kg	9.00	9.80	8.51	20	L250049-01	WG255866
Selenium	mg/kg	0.00	0.00	0.00	20	L250049-01	WG255866



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Quality Assurance Report
Level II
L249989

June 29, 2006

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Total Solids	%	86.9	87.9	1.13	20	L249698-01	WG255880
Kjeldahl Nitrogen, TKN	mg/kg	11800	11000	7.15	20	L249679-01	WG255894
DOC (Total Organic Carbon)	mg/kg	710.	540.	27.2	20	L249989-08	WG255934
Chromium, Hexavalent	mg/kg	0.00	0.00	0.00	20	L249363-01	WG255952
Copper	mg/kg	16.0	18.2	12.9	20	L250408-11	WG256370
Nickel	mg/kg	13.1	35.8	92.8	20	L250408-11	WG256370
Zinc	mg/kg	46.7	43.9	6.18	20	L250408-11	WG256370

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
ORP	mV	229	230.	100.	85-115	WG255378
1	su	8.1	8.00	99.0	85-115	WG255402
Phosphate	mg/kg	221	200.	90.0	76-124	WG255611
Phosphorus, Total	mg/kg	62.7	68.0	108.	31-169	WG255611
PCB 1260	mg/kg	.167	0.143	85.0	64-120	WG255805
Ammonia Nitrogen	mg/kg	391	373.	95.0	50-150	WG255824
Arsenic	mg/kg	161	153.	95.0	79.5-120	WG255866
Chromium	mg/kg	128	118.	92.0	81.3-118	WG255866
Mercury	mg/kg	69.5	65.3	94.0	78.6-121	WG255866
Lead	mg/kg	142	137.	97.0	80.3-119	WG255866
Selenium	mg/kg	64.2	61.0	95.0	75.5-124	WG255866
Total Solids	%	50	50.1	100.	85-115	WG255880
Kjeldahl Nitrogen, TKN	mg/kg	1270	1460	115.	60-140	WG255894
DOC (Total Organic Carbon)	mg/kg	9080	6300	69.0	50-150	WG255934
Chromium, Hexavalent	mg/kg	66.4	64.0	96.0	50-143	WG255952
Oil & Grease (Hexane Extr)	mg/kg	4000	4100	103.	78-114	WG256000
PCB 1260	mg/kg	.167	0.117	70.0	64-120	WG256213
Copper	mg/kg	148	137.	93.0	82.4-117	WG256370
Nickel	mg/kg	147	130.	88.0	81.6-118	WG256370
Zinc	mg/kg	165	145.	88.0	79.4-120	WG256370

Analyte	Units	LCSD Res	Ref Res	RPD	Limit	%Rec	Batch
ORP	mV	220.	230.	4.44	20	96	WG255378
pH	su	8.00	8.00	0.00	20	99	WG255402
Phosphate	mg/kg	200.	200.	0.00	20	90	WG255611
Phosphorus, Total	mg/kg	68.0	68.0	0.00	20	108	WG255611
PCB 1260	mg/kg	0.132	0.143	7.98	20	79	WG255805
Ammonia Nitrogen	mg/kg	370.	373.	0.595	20	95	WG255824



**ENVIRONMENTAL
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JRS Corporation - Minneapolis MN
Todd Renville
700 3rd Street South
Minneapolis, MN 55415-1199

Quality Assurance Report
Level II

L249989

June 29, 2006

Analyte	Laboratory Control Sample			Duplicate RPD	Limit	%Rec	Batch
	Units	LCSD Res	Ref Res				
Kjeldahl Nitrogen, TKN	mg/kg	1350	1460	8.26	20	106	WG255894
DOC (Total Organic Carbon)	mg/kg	6300	6300	0.00	20	69	WG255934
Chromium, Hexavalent	mg/kg	64.0	64.0	0.00	20	96	WG255952
Oil & Grease (Hexane Extr)	mg/kg	4200	4100	2.41	20	105	WG256000
PCB 1260	mg/kg	0.130	0.117	9.98	20	78	WG256213

Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res					
PCB 1260	mg/kg	0.226	0.00	.167	27.0	59-134	L249989-01	WG255805
Ammonia Nitrogen	mg/kg	215.	10.0	250	82.0	80-120	L249161-01	WG255824
Arsenic	mg/kg	46.0	2.70	50	87.0	75-125	L250049-01	WG255866
Cadmium	mg/kg	44.1	0.140	50	88.0	75-125	L250049-01	WG255866
Chromium	mg/kg	64.0	18.0	50	92.0	75-125	L250049-01	WG255866
Cobalt	mg/kg	52.9	9.80	50	86.0	75-125	L250049-01	WG255866
Selenium	mg/kg	39.1	0.00	50	78.0	75-125	L250049-01	WG255866
Kjeldahl Nitrogen, TKN	mg/kg	997.	700.	200	149.	80-120	L249989-01	WG255894
Chromium, Hexavalent	mg/kg	9.60	0.00	20	48.0	80-120	L249989-01	WG255952
Oil & Grease (Hexane Extr)	mg/kg	4200	190.	4000	100.	80-120	L249989-01	WG256000
PCB 1260	mg/kg	0.177	0.00	.167	21.0	59-134	L250269-01	WG256213
Copper	mg/kg	55.6	18.2	50	75.0	75-125	L250408-11	WG256370
Nickel	mg/kg	54.2	35.8	50	37.0	75-125	L250408-11	WG256370
Zinc	mg/kg	84.8	43.9	50	82.0	75-125	L250408-11	WG256370

Analyte	Units	Matrix Spike		Duplicate RPD	Limit	%Rec	Ref Samp	Batch
		MSD Res	Ref Res					
PCB 1260	mg/kg	0.227	0.226	0.281	20	27.0	L249989-01	WG255805
Ammonia Nitrogen	mg/kg	215.	215.	0.0905	20	82.0	L249161-01	WG255824
Arsenic	mg/kg	44.0	46.0	4.44	20	83.0	L250049-01	WG255866
Cadmium	mg/kg	43.6	44.1	1.14	20	87.0	L250049-01	WG255866
Chromium	mg/kg	61.5	64.0	3.98	20	87.0	L250049-01	WG255866
Cobalt	mg/kg	51.4	52.9	2.88	20	83.0	L250049-01	WG255866
Selenium	mg/kg	37.8	39.1	3.38	20	76.0	L250049-01	WG255866
Kjeldahl Nitrogen, TKN	mg/kg	962.	997.	3.65	20	131.	L249989-01	WG255894
Chromium, Hexavalent	mg/kg	9.90	9.60	3.08	20	50.0	L249989-01	WG255952
Oil & Grease (Hexane Extr)	mg/kg	4100	4200	2.41	20	98.0	L249989-01	WG256000
PCB 1260	mg/kg	0.135	0.177	26.8	20	16.0	L250269-01	WG256213
Copper	mg/kg	56.6	55.6	1.78	20	77.0	L250408-11	WG256370
Nickel	mg/kg	54.2	54.2	0.00	20	37.0	L250408-11	WG256370
Zinc	mg/kg	85.1	84.8	0.353	20	82.0	L250408-11	WG256370



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URS Corporation - Minneapolis MN
Todd Renville
700 3rd Street South

Quality Assurance Report
Level II

Minneapolis, MN 55415-1199

L249989

June 29, 2006

Batch number /Run number / Sample number cross reference

WG255378: R279613: L249989-01 02 03 04
WG255402: R279760: L249989-01 02 03 04
WG255805: R279773: L249989-01 03 04
WG255824: R279789: L249989-01 02 03 04
WG255880: R279865: L249989-01 02 03 04
WG255611: R279892: L249989-01 02 03 04
WG255866: R279925: L249989-01 02 03 04
WG256000: R279966: L249989-01 02 03 04
WG255952: R280026: L249989-01 02 03 04
WG256213: R280028: L249989-02
WG255934: R280047: L249989-05 06 07 08
WG255920: R280054: L249989-01 02 03 04
WG255894: R280110: L249989-01 02 03 04
WG256370: R280454: L249989-01 02 03 04

* * Calculations are performed prior to rounding of reported values .



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L249989

June 29, 2006

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



Thrasher Square
700 South Third Street
Minneapolis, MN 55415
612-370-0700 Fax 612-373-8888

CHAIN OF CUSTODY RECORD REQUEST FOR ANALYSIS

WHITE COPY - ORIGINAL (ACCOMPANIES SAMPLES) YELLOW COPY - Lab Returns to URS PINK COPY - P.M.

Project No.: <u>31829974</u>		Task No.: <u>02601</u>													
Project Name: <u>THJA Oronoco</u>		Project Location: <u>Oronoco</u>													
Project Manager: <u>Todd Revillie</u>		<input type="checkbox"/> Normal <input type="checkbox"/> Other <u>48-7a</u> <u>hours</u>													
Sampler: <u>Gregg Rutz</u> Laboratory: <u>ESC</u> Certification No.:		Preservation Codes: A = None B = HCL C = H ₂ SO ₄ D = NH ₄ E = EnCore F = Methanol G = NaOH H = Sodium Bisulfate Solution I = Other													
Laboratory Contact: <u>John Hawkins</u> Reports To Be Sent To:		Matrix Codes: W = Water S = Soil A = Air O = Other B = Biota SI = Sludge PACM = Potential Asbestos Containing Material													
Lab I.D. No.	Sample No.	Collection		No. of Containers, Size and Type	Matrix	ANALYSIS REQUESTED							Comments		
		Date	Time			PCRA Metals	Total Phosphorus	Nitrate + Nitrite	Ammonia Nitrogen	Total Kic Nitrogen	PCBs	TOC		Oil & Grease	Chromium VI
	SP-1	6/30	930	3-2x2 + 4-4x2	S	X	X	X	X	X	X	X	X	run	6249989-01/05
	Sed-2		944'			X	X	X	X	X	X	X	X	run	02/00
	Sed-3		944'			X	X	X	X	X	X	X	X	run	03/07
	Sed-4		936'			X	X	X	X	X	X	X	X	Hold!!!	
	Sed-5		933'			X	X	X	X	X	X	X	X	run	01/08
Packed By:		Comments: <u>See John Hawkins regarding lead metals analysis per quote URSMMN061406S</u>													
Sealed For		Shipping By: <u>TAT 48-7a hours</u>													
Relinquished By: <u>George Dwyer</u>		Date: <u>6/20/06</u>	Relinquished By:		Date: _____	ANALYSIS REQUESTED							Date: <u>6-21-06</u>		
Company: <u>URS</u>		Time: <u>1406</u>	Company:		Time: _____	ANALYSIS REQUESTED							Time: <u>9:00</u>		
Received By: _____		Date: _____	Received By: _____		Date: _____	ANALYSIS REQUESTED							Date: _____		
Company: _____		Time: _____	Company: _____		Time: _____	ANALYSIS REQUESTED							Time: _____		
Relinquished By: <u>George Dwyer</u>		Date: <u>6/21/06</u>	Relinquished By: <u>George Dwyer</u>		Date: <u>6-21-06</u>	ANALYSIS REQUESTED							Date: <u>6-21-06</u>		
Company: <u>URS</u>		Time: <u>1406</u>	Company: <u>URS</u>		Time: <u>1406</u>	ANALYSIS REQUESTED							Time: <u>1406</u>		
Received By: _____		Date: _____	Received By: _____		Date: _____	ANALYSIS REQUESTED							Date: _____		
Company: _____		Time: _____	Company: _____		Time: _____	ANALYSIS REQUESTED							Time: _____		

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Laboratory Services

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Mt. Juliet, TN 37122

Ph.: (800) 767-5859

Fax: (615) 758-5859

Internet: www.envsci.com

Quote: URSMMN061406S

Rep: David Roman (615) 504-2876 droman@envsci.com

SR: John Hawkins (800) 767-5859

JRS Corporation

Mr. Todd Renville

Wheeler Square, 700 3rd Street South

Minneapolis, MN 55415-1199

Email: todd_renville@urscorp.com

Phone: 612-373-6533

Project: Lake Bed Samples

Matrix: Sediment 10 to 20 samples

No Project Specific QAPP or SAP

Payment Terms: Net 90 Days

Quote Date: June 14, 2006

Quote Exp. Date: June 14, 2007

Parameter	Method		Cost/Sample 5 to 7 day TAT	Cost/Sample, 48 Hr. TAT
- Arsenic	6020	Log add 6010 6010 ↓ 7471 ↑	\$15.00	\$22.50
- Cadmium	6010		\$15.00	\$22.50
- Trivalent Chromium	Calc.		\$10.00	\$15.00
- Hexavalent Chromium	3060A/7196A		\$80.00	\$120.00
- Copper	6010		\$15.00	\$22.50
- Lead	6020		\$15.00	\$22.50
- Mercury	7471		\$20.00	\$30.00
- Nickel	6020		\$15.00	\$22.50
- Selenium	6020		\$15.00	\$22.50
- Zinc	6020		\$15.00	\$22.50
- Total Phosphorus	9056	\$20.00	\$30.00	
- Nitrate + Nitrite	9056	\$15.00	\$22.50	
- Ammonia Nitrogen	350.1	\$15.00	\$22.50	
- TKN	351.2	\$20.00	\$30.00	
- PCB's	8082	\$60.00	\$90.00	
- TOC	USDA LOI	\$25.00	\$37.50	
- Oil & Grease	9071B	\$95.00	\$142.50	
		Cost/Sample	\$465.00	\$697.50

Prices quoted reflect a 7 day turnaround and include the following service options:

- * All necessary sampling containers, coolers, and preservatives.
- * Pre-printed labels and chain of custody forms.
- * Data delivery via email or secure web access. Additional \$5.00 per set charge applicable for hard copies.
- * Email notification of sample login.
- * On-Line Data Management.
- * Prices not inclusive of \$3.00 prep/reporting charge if reported in dry weight.
- * Additional charges apply for inbound and outbound transport of samples/supplies.
- * Reported trip blanks are billable samples.

Please reference your job number and/or job name on chain of custody

along with the ESC quote number: URSMMN061406S

If you have any technical questions, or would like to place an order for bottles,

please contact your Technical Service Rep., John Hawkins (800) 767-5859

Susan Peach

From: Lacy Felts
Sent: Monday, June 26, 2006 10:01 AM
To: Reporting
Subject: FW: Login Confirmation for 31809974 - L249989

Please rescan the COC above. Thanks

-----Original Message-----

From: John V. Hawkins
Sent: Monday, June 26, 2006 9:50 AM
To: Login
Cc: Jim Burns; Fran Meenen
Subject: RE: Login Confirmation for 31809974 - L249989

These samples also need CUICP, ZNICP, NIICP

John V. Hawkins
eEnvironmental Science Corp.
(800) 767-5859

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-----Original Message-----

From: Todd_Renville@URSCorp.com [mailto:Todd_Renville@URSCorp.com]
Sent: Monday, June 26, 2006 9:35 AM
To: John V. Hawkins
Cc: David Roman
Subject: RE: Login Confirmation for 31809974 - L249989

Thanks John. On item #1, could you also verify that the lab will run Copper, Nickel & Zinc?

Todd L. Renville, P.G.
Principal Environmental Scientist
URS Corporation
Thresher Square
700 3rd Street South
Minneapolis, MN 55415-1199
612-373-6867
todd_renville@urscorp.com

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"John V. Hawkins"
<jhawkins@envsci.>

com>
06/26/2006 09:11
AM

To
<Todd_Renville@urscorp.com>
cc
"David Roman" <droman@envsci.com>
Subject
RE: Login Confirmation for 31809974
- L249989

1) Chromium III is a calculation after running CR6 and total chromium, CR6, CR3 and Total chromium are all logged.

I will turn off the Barium and Silver

2) We have to run the metals on ICP 6010 first, If we don't get a hit the the higher DL then we then they go to ICPMS 6020

3) OPR, pH and TS are for reporting CR6 in solid matrix.

John V. Hawkins
eEnvironmental Science Corp.
(800) 767-5859

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-----Original Message-----

From: Todd_Renville@URSCorp.com [mailto:Todd_Renville@URSCorp.com]
Sent: Monday, June 26, 2006 8:50 AM
To: John V. Hawkins
Cc: David Roman; George_Beatty@URSCorp.com
Subject: Re: Login Confirmation for 31809974 - L249989
Importance: High

Hi John:

In addition to expected data delivery (requested last week), I have several additional questions after reviewing the preliminary data posted as of this AM:

1) The requested target metals list included: Arsenic, Cadmium, Chromium III & VI, Copper, Lead, Mercury, Nickel, Selenium & Zinc. In the preliminary metals results, I see the typical RCRA metals suite.

Instead of total chromium, do you intend to post Chromium III & VI results? Also, Copper, Nickel and Zinc? One final note, Barium & Silver were not requested and I am unsure why we received these results.

2) We requested very specific detection limits and I was told by Dave Roman that the only parameter you would have trouble with was Cadmium.

However, in reviewing the data, the detection limit for Selenium was over the requested limit (0.43 mg/kg dry weight). Also, Arsenic was over the requested limit (0.42 mg/kg dry weight) for sample SED-5. Is this something you can/intend to correct?

3) Are ORP, total solids & pH supportive of other data and necessary for this set of samples? They were not on the requested parameter list.

I have attempted to review our COC to determine if some of these issues are on our end. However, your local sample pick-up did not leave one of the COC carbon copies and a copy is not available on the website as a pdf.

These results are time sensitive and critical to an ongoing dredging project. As such, please respond as soon as possible. Thanks John.

Todd L. Renville, P.G.
Principal Environmental Scientist
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700 3rd Street South
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612-373-6867
todd_renville@urscorp.com

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jhawkins@envsci.c

om

To 06/22/2006 03:47 Todd_renville@urscorp.com

cc PM

Subject Login Confirmation for 31809974 -
L249989

Please find enclosed a PDF file containing

your laboratory login confirmation report.

Thank you,

Environmental Science Corp.

615-758-5858

[attachment "LoginL249989.pdf" deleted by Todd Renville/Minneapolis/URSCorp]