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Ralph Erickson
Pretreatment Issues and Waste Acceptance
Madison Metropolitan Sewerage District
1610 Moorland Road
Madison, Wisconsin 53713

Subject:
Groundwater Extraction Step Test Results, Madison-Kipp Corporation, Madison, Wisconsin.

ENVIRONMENT

Dear Mr. Erickson:

Date:
March 18, 2014

Contact:
Jennine Trask

Phone:
414.277.6203

Email:
Jennine.trask@arcadis-us.com

ARCADIS is pleased to submit the following summary of the groundwater extraction discharge related to the step test completed at the Madison-Kipp facility located at 201 Waubesa Street in Madison, Wisconsin (site). The purpose of this letter is to provide a description of the groundwater extraction activities and present the analytical data from the step test completed January 20, 2014.

A *Groundwater Remedial Strategy* letter was submitted to the Wisconsin Department of Natural Resources (WDNR) on October 16, 2013 and approved by WDNR in email correspondence on October 17, 2013. The letter to WDNR presented a groundwater remedial strategy for the site utilizing groundwater extraction. The initial activities related to the groundwater extraction remedy included the completion of a step and a pump test. The pump test was not completed as schedule in January due inclement weather. Sufficient information was collected during the step test to allow for full-scale design of the groundwater extraction and treatment system (GETS); therefore, the pump test is not required at this time and will be evaluated for completion upon the GETS system startup.

Step Test Description

The step test has been developed based on the WDNR-approved *Groundwater Remedial Strategy* letter dated October 16, 2013 and summarized in the *Groundwater Extraction Pump Test and Full-Scale Extraction System Summary* letter provided to the Madison Metropolitan Sewerage District (MMSD) on December 4, 2013.

The following steps outline the step test activities and results:

- Groundwater Extraction Well GWE-1, shown on Figure 1, was installed to a depth of approximately 185 feet below ground surface in the northern parking lot in December 2013.

- The step test was conducted on January 20, 2014. Three different pumping rates of 20, 40, and 60 gallons per minute (gpm) were conducted.

- Grab effluent water samples were collected prior to step test initiation and after each the 20, 40, and 60 gpm tests were completed. The groundwater was sampled for volatile organic compounds (VOCs), total iron and manganese, dissolved iron and manganese, total dissolved solids and polychlorinated biphenyls (PCBs). The results are included in Table 1. Laboratory analytical reports are included as Attachment A.

- Groundwater elevation monitoring was completed at site-wide monitoring wells to monitor influence during the step test.

Step Test Summary

A total of 4,200 gallons of groundwater was extracted from Groundwater Extraction Well GWE-1 during the step test. The extracted groundwater was discharged to the permitted manhole using a 3-inch discharge hose in accordance with the permit and the *Discharge Monitoring and Hose Protection Plan* submitted to the MMSD on January 15, 2014. VOC concentrations were consistent with existing groundwater information from the site as included in the permit application. No PCB detections were observed during the step test.

GETS Design and Discharge Alternatives

Discharge alternatives are currently being evaluated for the GETS. ARCADIS, on behalf of Madison-Kipp, will work with MMSD and the City of Madison to coordinate alternatives. A list of alternatives including flow rates and water quality will be discussed with the MMSD and the city of Madison before the final discharge recommendation is determined. It is understood discharge alternatives including discharge to the MMSD will be prepared for presentation, review, and approval of the MMSD Commission before they can be implemented.

Closing

ARCADIS appreciates the opportunity to submit this summary and looks forward to working with you on this project. Should you have any questions relating to the information presented herein, please call any of the undersigned.

Sincerely,
ARCADIS U.S., Inc.

Rebecca Robbennolt
Remediation Specialist

Jennine L. Trask, PE
Certified Project Manager

Attachments:
Table 1 – Groundwater Analytical Results
Figure 1 – Step Test Groundwater Discharge Analytical Results
Attachment A – January 2014 – Lab Analytical Reports

Copies:
Brynn Bemis – City of Madison
Mark Meunier – Madison Kipp
Mark Schmoller – WDNR (electronic)
David Taylor – Madison Metropolitan Sewerage District
Tim Troester – City of Madison
Alina Walcek – Madison Kipp

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Table

Table 1. Step Test Groundwater Discharge Analytical Results, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin

Sample ID Sample Date	Preventive Action Limit	Enforcement Standard	Pre Step Test 1/20/2014	End 20 gpm Test 1/20/2014	End 40 gpm Test 1/20/2014	End 60 gpm Test 1/20/2014
VOCs (µg/L)						
cis-1,2-Dichloroethene	7	70	***650***	***700***	***1,400***	***1,300***
Tetrachloroethene	0.5	5	***1,200***	***1,400***	***3,200***	***3,100***
trans-1,2-Dichloroethene	20	100	9.8	10	*21*	*20*
Trichloroethene	0.5	5	***270***	***300***	***610***	***570***
Vinyl chloride	0.02	0.2	***20***	***21***	***56***	***51***
Metals (µg/L)						
Iron	150	300	***350 B***	38 J B	35 J B	35 J B
Iron (Dissolved)	150	300	50 J B	18 J B	12 J B	20 J B
Manganese	60	300	26	39	*64*	*86*
Manganese (Dissolved)	60	300	21	25	*61*	*79*
Total Dissolved Solids mg/L	NE	NE	NA	1,100	1,100	1,200
Total PCBs (µg/L)						
Aroclor 1016	0.003	0.03	NA	NA	<0.023	NA
Aroclor 1221	0.003	0.03	NA	NA	<0.06	NA
Aroclor 1232	0.003	0.03	NA	NA	<0.037	NA
Aroclor 1242	0.003	0.03	NA	NA	<0.04	NA
Aroclor 1248	0.003	0.03	NA	NA	<0.045	NA
Aroclor 1254	0.003	0.03	NA	NA	<0.026	NA
Aroclor 1260	0.003	0.03	NA	NA	<0.034	NA
Dissolved PCBs (µg/L)						
Aroclor 1016	0.003	0.03	NA	NA	<0.023	NA
Aroclor 1221	0.003	0.03	NA	NA	<0.06	NA
Aroclor 1232	0.003	0.03	NA	NA	<0.037	NA
Aroclor 1242	0.003	0.03	NA	NA	<0.04	NA
Aroclor 1248	0.003	0.03	NA	NA	<0.045	NA
Aroclor 1254	0.003	0.03	NA	NA	<0.026	NA
Aroclor 1260	0.003	0.03	NA	NA	<0.034	NA

Footnotes on Page 2.

Table 1. Step Test Groundwater Discharge Analytical Results, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin

Only VOCs detected in one or more water samples are listed on the table. Refer to laboratory analytical reports for a complete list of constituents analyzed.

100	Concentration exceeds the NR 140 Wis. adm. code Preventive Action Limit.
100	Concentration exceeds the NR 140 Wis. adm. code Enforcement Standard.
<	Constituent not detected above noted laboratory detection limit.
B	Compound was found in the blank and the sample.
gpm	Gallons per minute.
J	Result is between the method detection limit and the limit of quantitation.
mg/L	Milligrams per liter.
µg/L	Micrograms per liter.
NA	Not analyzed.
NE	Not established.
PCBs	Polychlorinated Biphenyls.
VOCs	Volatile Organic Compounds.

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Figure

CLASSIC CLEANERS
BRRTS #0213522764

MW-27D
MW-27D2

MW-9D
MW-9D2
MP-15

MW-12S
MW-26S
MW-1
MP-13
MW-20D
MW-19D2
MW-3D3
GWE-1
MW-3D2
MW-19D
MW-3D
MW-20D2
MW-3S
MW-21D
MW-21D2
MW-18S
MW-10S
MP-14
MW-2S
MW-2D
MW-5D3
MW-5D2
MW-5S
MW-5D
MW-8
MW-7
MP-16
MW-22D
MW-22S
MW-23D
MW-23S
MW-11S
MW-24
MW-4D2
MW-4D
MW-4S
MW-6S
MW-6D
MW-17

MW-25D
MW-25D2

UNIT
WELL 8

LAKE MONONA

0 350 700
Feet

LEGEND

- CLOSED SITE (COMPLETED CLEANUP)
- EXTRACTION WELL
- MUNICIPAL UNIT WELL 8
- MONITORING WELL

MADISON-KIPP CORPORATION
201 WAUBESA STREET
MADISON, WISCONSIN

WELL LOCATIONS MAP

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FIGURE 1

SERVICE LAYER CREDITS: SOURCES: ESRI, DELORME, NAVTEQ, TOMTOM, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, AND THE GIS USER COMMUNITY

CITY: MPLS DIV/GROUP: IM/DV DB: MG LD: TS MADISON-KIPP
G:\GIS\Projects\MadisonKipp\ArcMap\2014-02\Fig1_WellLocations_20140219.mxd

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Attachment A

January 2014 – Lab Analytical Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-70505-1
Client Project/Site: MadisonKipp - WI001368.0011

For:
ARCADIS U.S., Inc.
126 North Jefferson Street
Suite 400
Milwaukee, Wisconsin 53202

Attn: Ms. Toni Schoen

Sandie Fredrick

Authorized for release by:
1/29/2014 11:50:19 AM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Client: ARCADIS U.S., Inc.
Project/Site: MadisonKipp - WI001368.0011

TestAmerica Job ID: 500-70505-1

Job ID: 500-70505-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-70505-1

Comments
No additional comments.

Receipt
The samples were received on 1/23/2014 10:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.9º C.

GC/MS VOA
Method(s) 8260B: The following samples were diluted to bring the concentration of target analytes within the calibration range: End Step 1 (500-70505-3), End Step 2 (500-70505-4), End Step 3 (500-70505-5), Pre Step Test (500-70505-2). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

Field Service / Mobile Lab
No analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: MadisonKipp - WI001368.0011

TestAmerica Job ID: 500-70505-1

Client Sample ID: Trip Blank — Lab Sample ID: 500-70505-1

No Detections.

Client Sample ID: Pre Step Test — Lab Sample ID: 500-70505-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
trans-1,2-Dichloroethene	9.8		2.0	0.50	ug/L	2		8260B	Total/NA
Trichloroethene	270		1.0	0.38	ug/L	2		8260B	Total/NA
Vinyl chloride	20		1.0	0.20	ug/L	2		8260B	Total/NA
cis-1,2-Dichloroethene - DL	650		20	2.4	ug/L	20		8260B	Total/NA
Tetrachloroethene - DL	1200		20	3.4	ug/L	20		8260B	Total/NA
Iron	350	B	100	12	ug/L	1		6020	Total Recoverable
Manganese	26		2.5	0.76	ug/L	1		6020	Total Recoverable
Iron	50	J B	100	12	ug/L	1		6020	Dissolved
Manganese	21		2.5	0.76	ug/L	1		6020	Dissolved

Client Sample ID: End Step 1 — Lab Sample ID: 500-70505-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
trans-1,2-Dichloroethene	10		2.0	0.50	ug/L	2		8260B	Total/NA
Trichloroethene	300		1.0	0.38	ug/L	2		8260B	Total/NA
Vinyl chloride	21		1.0	0.20	ug/L	2		8260B	Total/NA
cis-1,2-Dichloroethene - DL	700		20	2.4	ug/L	20		8260B	Total/NA
Tetrachloroethene - DL	1400		20	3.4	ug/L	20		8260B	Total/NA
Iron	38	J B	100	12	ug/L	1		6020	Total Recoverable
Manganese	39		2.5	0.76	ug/L	1		6020	Total Recoverable
Iron	18	J B	100	12	ug/L	1		6020	Dissolved
Manganese	25		2.5	0.76	ug/L	1		6020	Dissolved
Total Dissolved Solids	1100		10	5.6	mg/L	1		SM 2540C	Total/NA

Client Sample ID: End Step 2 — Lab Sample ID: 500-70505-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
trans-1,2-Dichloroethene	21		5.0	1.3	ug/L	5		8260B	Total/NA
Trichloroethene	610		2.5	0.95	ug/L	5		8260B	Total/NA
Vinyl chloride	56		2.5	0.50	ug/L	5		8260B	Total/NA
cis-1,2-Dichloroethene - DL	1400		50	6.0	ug/L	50		8260B	Total/NA
Tetrachloroethene - DL	3200		50	8.5	ug/L	50		8260B	Total/NA
Iron	35	J B	100	12	ug/L	1		6020	Total Recoverable
Manganese	64		2.5	0.76	ug/L	1		6020	Total Recoverable
Iron	12	J B	100	12	ug/L	1		6020	Dissolved
Manganese	61		2.5	0.76	ug/L	1		6020	Dissolved
Total Dissolved Solids	1100		10	5.6	mg/L	1		SM 2540C	Total/NA

Client Sample ID: End Step 3 — Lab Sample ID: 500-70505-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
trans-1,2-Dichloroethene	20		5.0	1.3	ug/L	5		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: End Step 3 (Continued)

Lab Sample ID: 500-70505-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	570		2.5	0.95	ug/L	5		8260B	Total/NA
Vinyl chloride	51		2.5	0.50	ug/L	5		8260B	Total/NA
cis-1,2-Dichloroethene - DL	1300		50	6.0	ug/L	50		8260B	Total/NA
Tetrachloroethene - DL	3100		50	8.5	ug/L	50		8260B	Total/NA
Iron	35	J B	100	12	ug/L	1		6020	Total Recoverable
Manganese	86		2.5	0.76	ug/L	1		6020	Total Recoverable
Iron	20	J B	100	12	ug/L	1		6020	Dissolved
Manganese	79		2.5	0.76	ug/L	1		6020	Dissolved
Total Dissolved Solids	1200		10	5.6	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: MadisonKipp - WI001368.0011

TestAmerica Job ID: 500-70505-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
6020	Metals (ICP/MS)	SW846	TAL CHI
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: MadisonKipp - WI001368.0011

TestAmerica Job ID: 500-70505-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-70505-1	Trip Blank	Water	01/20/14 00:00	01/23/14 10:30
500-70505-2	Pre Step Test	Water	01/20/14 12:25	01/23/14 10:30
500-70505-3	End Step 1	Water	01/20/14 16:45	01/23/14 10:30
500-70505-4	End Step 2	Water	01/20/14 19:45	01/23/14 10:30
500-70505-5	End Step 3	Water	01/20/14 22:30	01/23/14 10:30

Client: ARCADIS U.S., Inc.
Project/Site: MadisonKipp - WI001368.0011

TestAmerica Job ID: 500-70505-1

Client Sample ID: Trip Blank
Date Collected: 01/20/14 00:00
Date Received: 01/23/14 10:30

Lab Sample ID: 500-70505-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.25		1.0	0.25	ug/L			01/24/14 14:48	1
1,1,1-Trichloroethane	<0.20		1.0	0.20	ug/L			01/24/14 14:48	1
1,1,2,2-Tetrachloroethane	<0.23		1.0	0.23	ug/L			01/24/14 14:48	1
1,1,2-Trichloroethane	<0.28		1.0	0.28	ug/L			01/24/14 14:48	1
1,1-Dichloroethane	<0.19		1.0	0.19	ug/L			01/24/14 14:48	1
1,1-Dichloroethene	<0.31		1.0	0.31	ug/L			01/24/14 14:48	1
1,1-Dichloropropene	<0.34		1.0	0.34	ug/L			01/24/14 14:48	1
1,2,3-Trichlorobenzene	<0.24		1.0	0.24	ug/L			01/24/14 14:48	1
1,2,3-Trichloropropane	<0.45		1.0	0.45	ug/L			01/24/14 14:48	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			01/24/14 14:48	1
1,2,4-Trimethylbenzene	<0.14		1.0	0.14	ug/L			01/24/14 14:48	1
1,2-Dibromo-3-Chloropropane	<0.87		2.0	0.87	ug/L			01/24/14 14:48	1
1,2-Dibromoethane	<0.36		1.0	0.36	ug/L			01/24/14 14:48	1
1,2-Dichlorobenzene	<0.27		1.0	0.27	ug/L			01/24/14 14:48	1
1,2-Dichloroethane	<0.28		1.0	0.28	ug/L			01/24/14 14:48	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			01/24/14 14:48	1
1,3,5-Trimethylbenzene	<0.18		1.0	0.18	ug/L			01/24/14 14:48	1
1,3-Dichlorobenzene	<0.15		1.0	0.15	ug/L			01/24/14 14:48	1
1,3-Dichloropropane	<0.13		1.0	0.13	ug/L			01/24/14 14:48	1
1,4-Dichlorobenzene	<0.15		1.0	0.15	ug/L			01/24/14 14:48	1
2,2-Dichloropropane	<0.32		1.0	0.32	ug/L			01/24/14 14:48	1
2-Chlorotoluene	<0.21		1.0	0.21	ug/L			01/24/14 14:48	1
4-Chlorotoluene	<0.20		1.0	0.20	ug/L			01/24/14 14:48	1
Benzene	<0.074		0.50	0.074	ug/L			01/24/14 14:48	1
Bromobenzene	<0.25		1.0	0.25	ug/L			01/24/14 14:48	1
Bromochloromethane	<0.40		1.0	0.40	ug/L			01/24/14 14:48	1
Bromodichloromethane	<0.17		1.0	0.17	ug/L			01/24/14 14:48	1
Bromoform	<0.28		1.0	0.28	ug/L			01/24/14 14:48	1
Bromomethane	<0.31		1.0	0.31	ug/L			01/24/14 14:48	1
Carbon tetrachloride	<0.26		1.0	0.26	ug/L			01/24/14 14:48	1
Chlorobenzene	<0.14		1.0	0.14	ug/L			01/24/14 14:48	1
Chloroethane	<0.34		1.0	0.34	ug/L			01/24/14 14:48	1
Chloroform	<0.20		1.0	0.20	ug/L			01/24/14 14:48	1
Chloromethane	<0.18		1.0	0.18	ug/L			01/24/14 14:48	1
cis-1,2-Dichloroethene	<0.12		1.0	0.12	ug/L			01/24/14 14:48	1
cis-1,3-Dichloropropene	<0.18		1.0	0.18	ug/L			01/24/14 14:48	1
Dibromochloromethane	<0.32		1.0	0.32	ug/L			01/24/14 14:48	1
Dibromomethane	<0.33		1.0	0.33	ug/L			01/24/14 14:48	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			01/24/14 14:48	1
Ethylbenzene	<0.13		0.50	0.13	ug/L			01/24/14 14:48	1
Hexachlorobutadiene	<0.26		1.0	0.26	ug/L			01/24/14 14:48	1
Isopropyl ether	<0.15		1.0	0.15	ug/L			01/24/14 14:48	1
Isopropylbenzene	<0.14		1.0	0.14	ug/L			01/24/14 14:48	1
Methyl tert-butyl ether	<0.24		1.0	0.24	ug/L			01/24/14 14:48	1
Methylene Chloride	<0.68		5.0	0.68	ug/L			01/24/14 14:48	1
Naphthalene	<0.16		1.0	0.16	ug/L			01/24/14 14:48	1
n-Butylbenzene	<0.13		1.0	0.13	ug/L			01/24/14 14:48	1
N-Propylbenzene	<0.13		1.0	0.13	ug/L			01/24/14 14:48	1
p-Isopropyltoluene	<0.17		1.0	0.17	ug/L			01/24/14 14:48	1

Client Sample ID: Trip Blank

Lab Sample ID: 500-70505-1

Date Collected: 01/20/14 00:00

Matrix: Water

Date Received: 01/23/14 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	<0.15		1.0	0.15	ug/L			01/24/14 14:48	1
Styrene	<0.10		1.0	0.10	ug/L			01/24/14 14:48	1
tert-Butylbenzene	<0.14		1.0	0.14	ug/L			01/24/14 14:48	1
Tetrachloroethene	<0.17		1.0	0.17	ug/L			01/24/14 14:48	1
Toluene	<0.11		0.50	0.11	ug/L			01/24/14 14:48	1
trans-1,2-Dichloroethene	<0.25		1.0	0.25	ug/L			01/24/14 14:48	1
trans-1,3-Dichloropropene	<0.21		1.0	0.21	ug/L			01/24/14 14:48	1
Trichloroethene	<0.19		0.50	0.19	ug/L			01/24/14 14:48	1
Trichlorofluoromethane	<0.19		1.0	0.19	ug/L			01/24/14 14:48	1
Vinyl chloride	<0.10		0.50	0.10	ug/L			01/24/14 14:48	1
Xylenes, Total	<0.068		1.0	0.068	ug/L			01/24/14 14:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*		*01/24/14 14:48*	*1*
4-Bromofluorobenzene (Surr)	*100*		*75 - 120*		*01/24/14 14:48*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*01/24/14 14:48*	*1*
Toluene-d8 (Surr)	*104*		*75 - 120*		*01/24/14 14:48*	*1*

Client Sample ID: Pre Step Test

Lab Sample ID: 500-70505-2

Date Collected: 01/20/14 12:25

Matrix: Water

Date Received: 01/23/14 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.50		2.0	0.50	ug/L			01/24/14 15:42	2
1,1,1-Trichloroethane	<0.40		2.0	0.40	ug/L			01/24/14 15:42	2
1,1,2,2-Tetrachloroethane	<0.46		2.0	0.46	ug/L			01/24/14 15:42	2
1,1,2-Trichloroethane	<0.56		2.0	0.56	ug/L			01/24/14 15:42	2
1,1-Dichloroethane	<0.38		2.0	0.38	ug/L			01/24/14 15:42	2
1,1-Dichloroethene	<0.62		2.0	0.62	ug/L			01/24/14 15:42	2
1,1-Dichloropropene	<0.68		2.0	0.68	ug/L			01/24/14 15:42	2
1,2,3-Trichlorobenzene	<0.48		2.0	0.48	ug/L			01/24/14 15:42	2
1,2,3-Trichloropropane	<0.90		2.0	0.90	ug/L			01/24/14 15:42	2
1,2,4-Trichlorobenzene	<0.62		2.0	0.62	ug/L			01/24/14 15:42	2
1,2,4-Trimethylbenzene	<0.28		2.0	0.28	ug/L			01/24/14 15:42	2
1,2-Dibromo-3-Chloropropane	<1.7		4.0	1.7	ug/L			01/24/14 15:42	2
1,2-Dibromoethane	<0.72		2.0	0.72	ug/L			01/24/14 15:42	2
1,2-Dichlorobenzene	<0.54		2.0	0.54	ug/L			01/24/14 15:42	2
1,2-Dichloroethane	<0.56		2.0	0.56	ug/L			01/24/14 15:42	2
1,2-Dichloropropane	<0.40		2.0	0.40	ug/L			01/24/14 15:42	2
1,3,5-Trimethylbenzene	<0.36		2.0	0.36	ug/L			01/24/14 15:42	2
1,3-Dichlorobenzene	<0.30		2.0	0.30	ug/L			01/24/14 15:42	2
1,3-Dichloropropane	<0.26		2.0	0.26	ug/L			01/24/14 15:42	2
1,4-Dichlorobenzene	<0.30		2.0	0.30	ug/L			01/24/14 15:42	2
2,2-Dichloropropane	<0.64		2.0	0.64	ug/L			01/24/14 15:42	2
2-Chlorotoluene	<0.42		2.0	0.42	ug/L			01/24/14 15:42	2
4-Chlorotoluene	<0.40		2.0	0.40	ug/L			01/24/14 15:42	2
Benzene	<0.15		1.0	0.15	ug/L			01/24/14 15:42	2
Bromobenzene	<0.50		2.0	0.50	ug/L			01/24/14 15:42	2
Bromochloromethane	<0.80		2.0	0.80	ug/L			01/24/14 15:42	2

Client Sample ID: Pre Step Test
Date Collected: 01/20/14 12:25
Date Received: 01/23/14 10:30

Lab Sample ID: 500-70505-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	<0.34		2.0	0.34	ug/L			01/24/14 15:42	2
Bromoform	<0.56		2.0	0.56	ug/L			01/24/14 15:42	2
Bromomethane	<0.62		2.0	0.62	ug/L			01/24/14 15:42	2
Carbon tetrachloride	<0.52		2.0	0.52	ug/L			01/24/14 15:42	2
Chlorobenzene	<0.28		2.0	0.28	ug/L			01/24/14 15:42	2
Chloroethane	<0.68		2.0	0.68	ug/L			01/24/14 15:42	2
Chloroform	<0.40		2.0	0.40	ug/L			01/24/14 15:42	2
Chloromethane	<0.36		2.0	0.36	ug/L			01/24/14 15:42	2
cis-1,3-Dichloropropene	<0.36		2.0	0.36	ug/L			01/24/14 15:42	2
Dibromochloromethane	<0.64		2.0	0.64	ug/L			01/24/14 15:42	2
Dibromomethane	<0.66		2.0	0.66	ug/L			01/24/14 15:42	2
Dichlorodifluoromethane	<0.40		2.0	0.40	ug/L			01/24/14 15:42	2
Ethylbenzene	<0.26		1.0	0.26	ug/L			01/24/14 15:42	2
Hexachlorobutadiene	<0.52		2.0	0.52	ug/L			01/24/14 15:42	2
Isopropyl ether	<0.30		2.0	0.30	ug/L			01/24/14 15:42	2
Isopropylbenzene	<0.28		2.0	0.28	ug/L			01/24/14 15:42	2
Methyl tert-butyl ether	<0.48		2.0	0.48	ug/L			01/24/14 15:42	2
Methylene Chloride	<1.4		10	1.4	ug/L			01/24/14 15:42	2
Naphthalene	<0.32		2.0	0.32	ug/L			01/24/14 15:42	2
n-Butylbenzene	<0.26		2.0	0.26	ug/L			01/24/14 15:42	2
N-Propylbenzene	<0.26		2.0	0.26	ug/L			01/24/14 15:42	2
p-Isopropyltoluene	<0.34		2.0	0.34	ug/L			01/24/14 15:42	2
sec-Butylbenzene	<0.30		2.0	0.30	ug/L			01/24/14 15:42	2
Styrene	<0.20		2.0	0.20	ug/L			01/24/14 15:42	2
tert-Butylbenzene	<0.28		2.0	0.28	ug/L			01/24/14 15:42	2
Toluene	<0.22		1.0	0.22	ug/L			01/24/14 15:42	2
trans-1,2-Dichloroethene	**9.8**		2.0	0.50	ug/L			01/24/14 15:42	2
trans-1,3-Dichloropropene	<0.42		2.0	0.42	ug/L			01/24/14 15:42	2
Trichloroethene	**270**		1.0	0.38	ug/L			01/24/14 15:42	2
Trichlorofluoromethane	<0.38		2.0	0.38	ug/L			01/24/14 15:42	2
Vinyl chloride	**20**		1.0	0.20	ug/L			01/24/14 15:42	2
Xylenes, Total	<0.14		2.0	0.14	ug/L			01/24/14 15:42	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*		*01/24/14 15:42*	*2*
4-Bromofluorobenzene (Surr)	*102*		*75 - 120*		*01/24/14 15:42*	*2*
Dibromofluoromethane	*95*		*75 - 120*		*01/24/14 15:42*	*2*
Toluene-d8 (Surr)	*104*		*75 - 120*		*01/24/14 15:42*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	**650**		20	2.4	ug/L			01/24/14 16:10	20
Tetrachloroethene	**1200**		20	3.4	ug/L			01/24/14 16:10	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*		*01/24/14 16:10*	*20*
4-Bromofluorobenzene (Surr)	*103*		*75 - 120*		*01/24/14 16:10*	*20*
Dibromofluoromethane	*96*		*75 - 120*		*01/24/14 16:10*	*20*
Toluene-d8 (Surr)	*102*		*75 - 120*		*01/24/14 16:10*	*20*

Client Sample ID: Pre Step Test

Lab Sample ID: 500-70505-2

Date Collected: 01/20/14 12:25

Matrix: Water

Date Received: 01/23/14 10:30

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	350	B	100	12	ug/L		01/24/14 08:30	01/24/14 15:02	1
Manganese	26		2.5	0.76	ug/L		01/24/14 08:30	01/24/14 15:02	1

Method: 6020 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	50	J B	100	12	ug/L		01/24/14 08:30	01/24/14 15:06	1
Manganese	21		2.5	0.76	ug/L		01/24/14 08:30	01/24/14 15:06	1

Client Sample ID: End Step 1

Lab Sample ID: 500-70505-3

Date Collected: 01/20/14 16:45

Matrix: Water

Date Received: 01/23/14 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.50		2.0	0.50	ug/L			01/24/14 16:37	2
1,1,1-Trichloroethane	<0.40		2.0	0.40	ug/L			01/24/14 16:37	2
1,1,2,2-Tetrachloroethane	<0.46		2.0	0.46	ug/L			01/24/14 16:37	2
1,1,2-Trichloroethane	<0.56		2.0	0.56	ug/L			01/24/14 16:37	2
1,1-Dichloroethane	<0.38		2.0	0.38	ug/L			01/24/14 16:37	2
1,1-Dichloroethene	<0.62		2.0	0.62	ug/L			01/24/14 16:37	2
1,1-Dichloropropene	<0.68		2.0	0.68	ug/L			01/24/14 16:37	2
1,2,3-Trichlorobenzene	<0.48		2.0	0.48	ug/L			01/24/14 16:37	2
1,2,3-Trichloropropane	<0.90		2.0	0.90	ug/L			01/24/14 16:37	2
1,2,4-Trichlorobenzene	<0.62		2.0	0.62	ug/L			01/24/14 16:37	2
1,2,4-Trimethylbenzene	<0.28		2.0	0.28	ug/L			01/24/14 16:37	2
1,2-Dibromo-3-Chloropropane	<1.7		4.0	1.7	ug/L			01/24/14 16:37	2
1,2-Dibromoethane	<0.72		2.0	0.72	ug/L			01/24/14 16:37	2
1,2-Dichlorobenzene	<0.54		2.0	0.54	ug/L			01/24/14 16:37	2
1,2-Dichloroethane	<0.56		2.0	0.56	ug/L			01/24/14 16:37	2
1,2-Dichloropropane	<0.40		2.0	0.40	ug/L			01/24/14 16:37	2
1,3,5-Trimethylbenzene	<0.36		2.0	0.36	ug/L			01/24/14 16:37	2
1,3-Dichlorobenzene	<0.30		2.0	0.30	ug/L			01/24/14 16:37	2
1,3-Dichloropropane	<0.26		2.0	0.26	ug/L			01/24/14 16:37	2
1,4-Dichlorobenzene	<0.30		2.0	0.30	ug/L			01/24/14 16:37	2
2,2-Dichloropropane	<0.64		2.0	0.64	ug/L			01/24/14 16:37	2
2-Chlorotoluene	<0.42		2.0	0.42	ug/L			01/24/14 16:37	2
4-Chlorotoluene	<0.40		2.0	0.40	ug/L			01/24/14 16:37	2
Benzene	<0.15		1.0	0.15	ug/L			01/24/14 16:37	2
Bromobenzene	<0.50		2.0	0.50	ug/L			01/24/14 16:37	2
Bromochloromethane	<0.80		2.0	0.80	ug/L			01/24/14 16:37	2
Bromodichloromethane	<0.34		2.0	0.34	ug/L			01/24/14 16:37	2
Bromoform	<0.56		2.0	0.56	ug/L			01/24/14 16:37	2
Bromomethane	<0.62		2.0	0.62	ug/L			01/24/14 16:37	2
Carbon tetrachloride	<0.52		2.0	0.52	ug/L			01/24/14 16:37	2
Chlorobenzene	<0.28		2.0	0.28	ug/L			01/24/14 16:37	2
Chloroethane	<0.68		2.0	0.68	ug/L			01/24/14 16:37	2
Chloroform	<0.40		2.0	0.40	ug/L			01/24/14 16:37	2
Chloromethane	<0.36		2.0	0.36	ug/L			01/24/14 16:37	2
cis-1,3-Dichloropropene	<0.36		2.0	0.36	ug/L			01/24/14 16:37	2
Dibromochloromethane	<0.64		2.0	0.64	ug/L			01/24/14 16:37	2

Client: ARCADIS U.S., Inc.
Project/Site: MadisonKipp - WI001368.0011

TestAmerica Job ID: 500-70505-1

Client Sample ID: End Step 1
Date Collected: 01/20/14 16:45
Date Received: 01/23/14 10:30

Lab Sample ID: 500-70505-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	<0.66		2.0	0.66	ug/L			01/24/14 16:37	2
Dichlorodifluoromethane	<0.40		2.0	0.40	ug/L			01/24/14 16:37	2
Ethylbenzene	<0.26		1.0	0.26	ug/L			01/24/14 16:37	2
Hexachlorobutadiene	<0.52		2.0	0.52	ug/L			01/24/14 16:37	2
Isopropyl ether	<0.30		2.0	0.30	ug/L			01/24/14 16:37	2
Isopropylbenzene	<0.28		2.0	0.28	ug/L			01/24/14 16:37	2
Methyl tert-butyl ether	<0.48		2.0	0.48	ug/L			01/24/14 16:37	2
Methylene Chloride	<1.4		10	1.4	ug/L			01/24/14 16:37	2
Naphthalene	<0.32		2.0	0.32	ug/L			01/24/14 16:37	2
n-Butylbenzene	<0.26		2.0	0.26	ug/L			01/24/14 16:37	2
N-Propylbenzene	<0.26		2.0	0.26	ug/L			01/24/14 16:37	2
p-Isopropyltoluene	<0.34		2.0	0.34	ug/L			01/24/14 16:37	2
sec-Butylbenzene	<0.30		2.0	0.30	ug/L			01/24/14 16:37	2
Styrene	<0.20		2.0	0.20	ug/L			01/24/14 16:37	2
tert-Butylbenzene	<0.28		2.0	0.28	ug/L			01/24/14 16:37	2
Toluene	<0.22		1.0	0.22	ug/L			01/24/14 16:37	2
trans-1,2-Dichloroethene	**10**		2.0	0.50	ug/L			01/24/14 16:37	2
trans-1,3-Dichloropropene	<0.42		2.0	0.42	ug/L			01/24/14 16:37	2
Trichloroethene	**300**		1.0	0.38	ug/L			01/24/14 16:37	2
Trichlorofluoromethane	<0.38		2.0	0.38	ug/L			01/24/14 16:37	2
Vinyl chloride	**21**		1.0	0.20	ug/L			01/24/14 16:37	2
Xylenes, Total	<0.14		2.0	0.14	ug/L			01/24/14 16:37	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*		*01/24/14 16:37*	*2*
4-Bromofluorobenzene (Surr)	*102*		*75 - 120*		*01/24/14 16:37*	*2*
Dibromofluoromethane	*95*		*75 - 120*		*01/24/14 16:37*	*2*
Toluene-d8 (Surr)	*105*		*75 - 120*		*01/24/14 16:37*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	**700**		20	2.4	ug/L			01/24/14 17:04	20
Tetrachloroethene	**1400**		20	3.4	ug/L			01/24/14 17:04	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 125*		*01/24/14 17:04*	*20*
4-Bromofluorobenzene (Surr)	*101*		*75 - 120*		*01/24/14 17:04*	*20*
Dibromofluoromethane	*96*		*75 - 120*		*01/24/14 17:04*	*20*
Toluene-d8 (Surr)	*101*		*75 - 120*		*01/24/14 17:04*	*20*

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**38**	**J B**	100	12	ug/L		01/24/14 08:30	01/24/14 15:10	1
Manganese	**39**		2.5	0.76	ug/L		01/24/14 08:30	01/24/14 15:10	1

Method: 6020 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**18**	**J B**	100	12	ug/L		01/24/14 08:30	01/24/14 15:14	1
Manganese	**25**		2.5	0.76	ug/L		01/24/14 08:30	01/24/14 15:14	1

Client Sample ID: End Step 1

Lab Sample ID: 500-70505-3

Date Collected: 01/20/14 16:45

Matrix: Water

Date Received: 01/23/14 10:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1100		10	5.6	mg/L			01/27/14 22:48	1

Client Sample ID: End Step 2

Lab Sample ID: 500-70505-4

Date Collected: 01/20/14 19:45

Matrix: Water

Date Received: 01/23/14 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.3		5.0	1.3	ug/L			01/24/14 17:31	5
1,1,1-Trichloroethane	<1.0		5.0	1.0	ug/L			01/24/14 17:31	5
1,1,2,2-Tetrachloroethane	<1.2		5.0	1.2	ug/L			01/24/14 17:31	5
1,1,2-Trichloroethane	<1.4		5.0	1.4	ug/L			01/24/14 17:31	5
1,1-Dichloroethane	<0.95		5.0	0.95	ug/L			01/24/14 17:31	5
1,1-Dichloroethene	<1.6		5.0	1.6	ug/L			01/24/14 17:31	5
1,1-Dichloropropene	<1.7		5.0	1.7	ug/L			01/24/14 17:31	5
1,2,3-Trichlorobenzene	<1.2		5.0	1.2	ug/L			01/24/14 17:31	5
1,2,3-Trichloropropane	<2.3		5.0	2.3	ug/L			01/24/14 17:31	5
1,2,4-Trichlorobenzene	<1.6		5.0	1.6	ug/L			01/24/14 17:31	5
1,2,4-Trimethylbenzene	<0.70		5.0	0.70	ug/L			01/24/14 17:31	5
1,2-Dibromo-3-Chloropropane	<4.4		10	4.4	ug/L			01/24/14 17:31	5
1,2-Dibromoethane	<1.8		5.0	1.8	ug/L			01/24/14 17:31	5
1,2-Dichlorobenzene	<1.4		5.0	1.4	ug/L			01/24/14 17:31	5
1,2-Dichloroethane	<1.4		5.0	1.4	ug/L			01/24/14 17:31	5
1,2-Dichloropropane	<1.0		5.0	1.0	ug/L			01/24/14 17:31	5
1,3,5-Trimethylbenzene	<0.90		5.0	0.90	ug/L			01/24/14 17:31	5
1,3-Dichlorobenzene	<0.75		5.0	0.75	ug/L			01/24/14 17:31	5
1,3-Dichloropropane	<0.65		5.0	0.65	ug/L			01/24/14 17:31	5
1,4-Dichlorobenzene	<0.75		5.0	0.75	ug/L			01/24/14 17:31	5
2,2-Dichloropropane	<1.6		5.0	1.6	ug/L			01/24/14 17:31	5
2-Chlorotoluene	<1.1		5.0	1.1	ug/L			01/24/14 17:31	5
4-Chlorotoluene	<1.0		5.0	1.0	ug/L			01/24/14 17:31	5
Benzene	<0.37		2.5	0.37	ug/L			01/24/14 17:31	5
Bromobenzene	<1.3		5.0	1.3	ug/L			01/24/14 17:31	5
Bromochloromethane	<2.0		5.0	2.0	ug/L			01/24/14 17:31	5
Bromodichloromethane	<0.85		5.0	0.85	ug/L			01/24/14 17:31	5
Bromoform	<1.4		5.0	1.4	ug/L			01/24/14 17:31	5
Bromomethane	<1.6		5.0	1.6	ug/L			01/24/14 17:31	5
Carbon tetrachloride	<1.3		5.0	1.3	ug/L			01/24/14 17:31	5
Chlorobenzene	<0.70		5.0	0.70	ug/L			01/24/14 17:31	5
Chloroethane	<1.7		5.0	1.7	ug/L			01/24/14 17:31	5
Chloroform	<1.0		5.0	1.0	ug/L			01/24/14 17:31	5
Chloromethane	<0.90		5.0	0.90	ug/L			01/24/14 17:31	5
cis-1,3-Dichloropropene	<0.90		5.0	0.90	ug/L			01/24/14 17:31	5
Dibromochloromethane	<1.6		5.0	1.6	ug/L			01/24/14 17:31	5
Dibromomethane	<1.7		5.0	1.7	ug/L			01/24/14 17:31	5
Dichlorodifluoromethane	<1.0		5.0	1.0	ug/L			01/24/14 17:31	5
Ethylbenzene	<0.65		2.5	0.65	ug/L			01/24/14 17:31	5
Hexachlorobutadiene	<1.3		5.0	1.3	ug/L			01/24/14 17:31	5
Isopropyl ether	<0.75		5.0	0.75	ug/L			01/24/14 17:31	5
Isopropylbenzene	<0.70		5.0	0.70	ug/L			01/24/14 17:31	5

Client Sample ID: End Step 2
Date Collected: 01/20/14 19:45
Date Received: 01/23/14 10:30

Lab Sample ID: 500-70505-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	<1.2		5.0	1.2	ug/L			01/24/14 17:31	5
Methylene Chloride	<3.4		25	3.4	ug/L			01/24/14 17:31	5
Naphthalene	<0.80		5.0	0.80	ug/L			01/24/14 17:31	5
n-Butylbenzene	<0.65		5.0	0.65	ug/L			01/24/14 17:31	5
N-Propylbenzene	<0.65		5.0	0.65	ug/L			01/24/14 17:31	5
p-Isopropyltoluene	<0.85		5.0	0.85	ug/L			01/24/14 17:31	5
sec-Butylbenzene	<0.75		5.0	0.75	ug/L			01/24/14 17:31	5
Styrene	<0.50		5.0	0.50	ug/L			01/24/14 17:31	5
tert-Butylbenzene	<0.70		5.0	0.70	ug/L			01/24/14 17:31	5
Toluene	<0.55		2.5	0.55	ug/L			01/24/14 17:31	5
trans-1,2-Dichloroethene	**21**		5.0	1.3	ug/L			01/24/14 17:31	5
trans-1,3-Dichloropropene	<1.1		5.0	1.1	ug/L			01/24/14 17:31	5
Trichloroethene	**610**		2.5	0.95	ug/L			01/24/14 17:31	5
Trichlorofluoromethane	<0.95		5.0	0.95	ug/L			01/24/14 17:31	5
Vinyl chloride	**56**		2.5	0.50	ug/L			01/24/14 17:31	5
Xylenes, Total	<0.34		5.0	0.34	ug/L			01/24/14 17:31	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*		*01/24/14 17:31*	*5*
4-Bromofluorobenzene (Surr)	*105*		*75 - 120*		*01/24/14 17:31*	*5*
Dibromofluoromethane	*94*		*75 - 120*		*01/24/14 17:31*	*5*
Toluene-d8 (Surr)	*103*		*75 - 120*		*01/24/14 17:31*	*5*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	**1400**		50	6.0	ug/L			01/24/14 17:59	50
Tetrachloroethene	**3200**		50	8.5	ug/L			01/24/14 17:59	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 125*		*01/24/14 17:59*	*50*
4-Bromofluorobenzene (Surr)	*104*		*75 - 120*		*01/24/14 17:59*	*50*
Dibromofluoromethane	*98*		*75 - 120*		*01/24/14 17:59*	*50*
Toluene-d8 (Surr)	*101*		*75 - 120*		*01/24/14 17:59*	*50*

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**35**	**J B**	100	12	ug/L		01/24/14 08:30	01/24/14 15:17	1
Manganese	**64**		2.5	0.76	ug/L		01/24/14 08:30	01/24/14 15:17	1

Method: 6020 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**12**	**J B**	100	12	ug/L		01/24/14 08:30	01/24/14 15:21	1
Manganese	**61**		2.5	0.76	ug/L		01/24/14 08:30	01/24/14 15:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1100**		10	5.6	mg/L			01/27/14 22:50	1

Client: ARCADIS U.S., Inc.
Project/Site: MadisonKipp - WI001368.0011

TestAmerica Job ID: 500-70505-1

Client Sample ID: End Step 3
Date Collected: 01/20/14 22:30
Date Received: 01/23/14 10:30

Lab Sample ID: 500-70505-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.3		5.0	1.3	ug/L			01/24/14 18:26	5
1,1,1-Trichloroethane	<1.0		5.0	1.0	ug/L			01/24/14 18:26	5
1,1,2,2-Tetrachloroethane	<1.2		5.0	1.2	ug/L			01/24/14 18:26	5
1,1,2-Trichloroethane	<1.4		5.0	1.4	ug/L			01/24/14 18:26	5
1,1-Dichloroethane	<0.95		5.0	0.95	ug/L			01/24/14 18:26	5
1,1-Dichloroethene	<1.6		5.0	1.6	ug/L			01/24/14 18:26	5
1,1-Dichloropropene	<1.7		5.0	1.7	ug/L			01/24/14 18:26	5
1,2,3-Trichlorobenzene	<1.2		5.0	1.2	ug/L			01/24/14 18:26	5
1,2,3-Trichloropropane	<2.3		5.0	2.3	ug/L			01/24/14 18:26	5
1,2,4-Trichlorobenzene	<1.6		5.0	1.6	ug/L			01/24/14 18:26	5
1,2,4-Trimethylbenzene	<0.70		5.0	0.70	ug/L			01/24/14 18:26	5
1,2-Dibromo-3-Chloropropane	<4.4		10	4.4	ug/L			01/24/14 18:26	5
1,2-Dibromoethane	<1.8		5.0	1.8	ug/L			01/24/14 18:26	5
1,2-Dichlorobenzene	<1.4		5.0	1.4	ug/L			01/24/14 18:26	5
1,2-Dichloroethane	<1.4		5.0	1.4	ug/L			01/24/14 18:26	5
1,2-Dichloropropane	<1.0		5.0	1.0	ug/L			01/24/14 18:26	5
1,3,5-Trimethylbenzene	<0.90		5.0	0.90	ug/L			01/24/14 18:26	5
1,3-Dichlorobenzene	<0.75		5.0	0.75	ug/L			01/24/14 18:26	5
1,3-Dichloropropane	<0.65		5.0	0.65	ug/L			01/24/14 18:26	5
1,4-Dichlorobenzene	<0.75		5.0	0.75	ug/L			01/24/14 18:26	5
2,2-Dichloropropane	<1.6		5.0	1.6	ug/L			01/24/14 18:26	5
2-Chlorotoluene	<1.1		5.0	1.1	ug/L			01/24/14 18:26	5
4-Chlorotoluene	<1.0		5.0	1.0	ug/L			01/24/14 18:26	5
Benzene	<0.37		2.5	0.37	ug/L			01/24/14 18:26	5
Bromobenzene	<1.3		5.0	1.3	ug/L			01/24/14 18:26	5
Bromochloromethane	<2.0		5.0	2.0	ug/L			01/24/14 18:26	5
Bromodichloromethane	<0.85		5.0	0.85	ug/L			01/24/14 18:26	5
Bromoform	<1.4		5.0	1.4	ug/L			01/24/14 18:26	5
Bromomethane	<1.6		5.0	1.6	ug/L			01/24/14 18:26	5
Carbon tetrachloride	<1.3		5.0	1.3	ug/L			01/24/14 18:26	5
Chlorobenzene	<0.70		5.0	0.70	ug/L			01/24/14 18:26	5
Chloroethane	<1.7		5.0	1.7	ug/L			01/24/14 18:26	5
Chloroform	<1.0		5.0	1.0	ug/L			01/24/14 18:26	5
Chloromethane	<0.90		5.0	0.90	ug/L			01/24/14 18:26	5
cis-1,3-Dichloropropene	<0.90		5.0	0.90	ug/L			01/24/14 18:26	5
Dibromochloromethane	<1.6		5.0	1.6	ug/L			01/24/14 18:26	5
Dibromomethane	<1.7		5.0	1.7	ug/L			01/24/14 18:26	5
Dichlorodifluoromethane	<1.0		5.0	1.0	ug/L			01/24/14 18:26	5
Ethylbenzene	<0.65		2.5	0.65	ug/L			01/24/14 18:26	5
Hexachlorobutadiene	<1.3		5.0	1.3	ug/L			01/24/14 18:26	5
Isopropyl ether	<0.75		5.0	0.75	ug/L			01/24/14 18:26	5
Isopropylbenzene	<0.70		5.0	0.70	ug/L			01/24/14 18:26	5
Methyl tert-butyl ether	<1.2		5.0	1.2	ug/L			01/24/14 18:26	5
Methylene Chloride	<3.4		25	3.4	ug/L			01/24/14 18:26	5
Naphthalene	<0.80		5.0	0.80	ug/L			01/24/14 18:26	5
n-Butylbenzene	<0.65		5.0	0.65	ug/L			01/24/14 18:26	5
N-Propylbenzene	<0.65		5.0	0.65	ug/L			01/24/14 18:26	5
p-Isopropyltoluene	<0.85		5.0	0.85	ug/L			01/24/14 18:26	5
sec-Butylbenzene	<0.75		5.0	0.75	ug/L			01/24/14 18:26	5

Client Sample ID: End Step 3
Date Collected: 01/20/14 22:30
Date Received: 01/23/14 10:30

Lab Sample ID: 500-70505-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	<0.50		5.0	0.50	ug/L			01/24/14 18:26	5
tert-Butylbenzene	<0.70		5.0	0.70	ug/L			01/24/14 18:26	5
Toluene	<0.55		2.5	0.55	ug/L			01/24/14 18:26	5
trans-1,2-Dichloroethene	**20**		5.0	1.3	ug/L			01/24/14 18:26	5
trans-1,3-Dichloropropene	<1.1		5.0	1.1	ug/L			01/24/14 18:26	5
Trichloroethene	**570**		2.5	0.95	ug/L			01/24/14 18:26	5
Trichlorofluoromethane	<0.95		5.0	0.95	ug/L			01/24/14 18:26	5
Vinyl chloride	**51**		2.5	0.50	ug/L			01/24/14 18:26	5
Xylenes, Total	<0.34		5.0	0.34	ug/L			01/24/14 18:26	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*		*01/24/14 18:26*	*5*
4-Bromofluorobenzene (Surr)	*104*		*75 - 120*		*01/24/14 18:26*	*5*
Dibromofluoromethane	*95*		*75 - 120*		*01/24/14 18:26*	*5*
Toluene-d8 (Surr)	*104*		*75 - 120*		*01/24/14 18:26*	*5*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	**1300**		50	6.0	ug/L			01/24/14 18:53	50
Tetrachloroethene	**3100**		50	8.5	ug/L			01/24/14 18:53	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 125*		*01/24/14 18:53*	*50*
4-Bromofluorobenzene (Surr)	*102*		*75 - 120*		*01/24/14 18:53*	*50*
Dibromofluoromethane	*95*		*75 - 120*		*01/24/14 18:53*	*50*
Toluene-d8 (Surr)	*103*		*75 - 120*		*01/24/14 18:53*	*50*

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**35**	**J B**	100	12	ug/L		01/24/14 08:30	01/24/14 15:24	1
Manganese	**86**		2.5	0.76	ug/L		01/24/14 08:30	01/24/14 15:24	1

Method: 6020 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**20**	**J B**	100	12	ug/L		01/24/14 08:30	01/24/14 15:27	1
Manganese	**79**		2.5	0.76	ug/L		01/24/14 08:30	01/24/14 15:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1200**		10	5.6	mg/L			01/27/14 22:52	1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

GC/MS VOA

Analysis Batch: 220915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-70505-1	Trip Blank	Total/NA	Water	8260B	
500-70505-2	Pre Step Test	Total/NA	Water	8260B	
500-70505-2 - DL	Pre Step Test	Total/NA	Water	8260B	
500-70505-3	End Step 1	Total/NA	Water	8260B	
500-70505-3 - DL	End Step 1	Total/NA	Water	8260B	
500-70505-4	End Step 2	Total/NA	Water	8260B	
500-70505-4 - DL	End Step 2	Total/NA	Water	8260B	
500-70505-5	End Step 3	Total/NA	Water	8260B	
500-70505-5 - DL	End Step 3	Total/NA	Water	8260B	
LCS 500-220915/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-220915/6	Method Blank	Total/NA	Water	8260B	

Metals

Prep Batch: 220898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-70505-2	Pre Step Test	Dissolved	Water	3005A	
500-70505-2	Pre Step Test	Total Recoverable	Water	3005A	
500-70505-3	End Step 1	Dissolved	Water	3005A	
500-70505-3	End Step 1	Total Recoverable	Water	3005A	
500-70505-4	End Step 2	Dissolved	Water	3005A	
500-70505-4	End Step 2	Total Recoverable	Water	3005A	
500-70505-5	End Step 3	Dissolved	Water	3005A	
500-70505-5	End Step 3	Total Recoverable	Water	3005A	
LCS 500-220898/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 500-220898/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 221057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-70505-2	Pre Step Test	Dissolved	Water	6020	220898
500-70505-2	Pre Step Test	Total Recoverable	Water	6020	220898
500-70505-3	End Step 1	Dissolved	Water	6020	220898
500-70505-3	End Step 1	Total Recoverable	Water	6020	220898
500-70505-4	End Step 2	Dissolved	Water	6020	220898
500-70505-4	End Step 2	Total Recoverable	Water	6020	220898
500-70505-5	End Step 3	Dissolved	Water	6020	220898
500-70505-5	End Step 3	Total Recoverable	Water	6020	220898
LCS 500-220898/2-A	Lab Control Sample	Total Recoverable	Water	6020	220898
MB 500-220898/1-A	Method Blank	Total Recoverable	Water	6020	220898

General Chemistry

Analysis Batch: 221149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-70505-3	End Step 1	Total/NA	Water	SM 2540C	
500-70505-4	End Step 2	Total/NA	Water	SM 2540C	
500-70505-5	End Step 3	Total/NA	Water	SM 2540C	
LCS 500-221149/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 500-221149/1	Method Blank	Total/NA	Water	SM 2540C	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: MadisonKipp - WI001368.0011

TestAmerica Job ID: 500-70505-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(75-125)	(75-120)	(75-120)	(75-120)
500-70505-1	Trip Blank	102	100	93	104
500-70505-2	Pre Step Test	100	102	95	104
500-70505-2 - DL	Pre Step Test	102	103	96	102
500-70505-3	End Step 1	102	102	95	105
500-70505-3 - DL	End Step 1	104	101	96	101
500-70505-4	End Step 2	102	105	94	103
500-70505-4 - DL	End Step 2	106	104	98	101
500-70505-5	End Step 3	102	104	95	104
500-70505-5 - DL	End Step 3	105	102	95	103
LCS 500-220915/4	Lab Control Sample	101	104	98	106
MB 500-220915/6	Method Blank	105	102	96	104

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-220915/6
Matrix: Water
Analysis Batch: 220915

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.25		1.0	0.25	ug/L			01/24/14 13:53	1
1,1,1-Trichloroethane	<0.20		1.0	0.20	ug/L			01/24/14 13:53	1
1,1,2,2-Tetrachloroethane	<0.23		1.0	0.23	ug/L			01/24/14 13:53	1
1,1,2-Trichloroethane	<0.28		1.0	0.28	ug/L			01/24/14 13:53	1
1,1-Dichloroethane	<0.19		1.0	0.19	ug/L			01/24/14 13:53	1
1,1-Dichloroethene	<0.31		1.0	0.31	ug/L			01/24/14 13:53	1
1,1-Dichloropropene	<0.34		1.0	0.34	ug/L			01/24/14 13:53	1
1,2,3-Trichlorobenzene	<0.24		1.0	0.24	ug/L			01/24/14 13:53	1
1,2,3-Trichloropropane	<0.45		1.0	0.45	ug/L			01/24/14 13:53	1
1,2,4-Trichlorobenzene	<0.31		1.0	0.31	ug/L			01/24/14 13:53	1
1,2,4-Trimethylbenzene	<0.14		1.0	0.14	ug/L			01/24/14 13:53	1
1,2-Dibromo-3-Chloropropane	<0.87		2.0	0.87	ug/L			01/24/14 13:53	1
1,2-Dibromoethane	<0.36		1.0	0.36	ug/L			01/24/14 13:53	1
1,2-Dichlorobenzene	<0.27		1.0	0.27	ug/L			01/24/14 13:53	1
1,2-Dichloroethane	<0.28		1.0	0.28	ug/L			01/24/14 13:53	1
1,2-Dichloropropane	<0.20		1.0	0.20	ug/L			01/24/14 13:53	1
1,3,5-Trimethylbenzene	<0.18		1.0	0.18	ug/L			01/24/14 13:53	1
1,3-Dichlorobenzene	<0.15		1.0	0.15	ug/L			01/24/14 13:53	1
1,3-Dichloropropane	<0.13		1.0	0.13	ug/L			01/24/14 13:53	1
1,4-Dichlorobenzene	<0.15		1.0	0.15	ug/L			01/24/14 13:53	1
2,2-Dichloropropane	<0.32		1.0	0.32	ug/L			01/24/14 13:53	1
2-Chlorotoluene	<0.21		1.0	0.21	ug/L			01/24/14 13:53	1
4-Chlorotoluene	<0.20		1.0	0.20	ug/L			01/24/14 13:53	1
Benzene	<0.074		0.50	0.074	ug/L			01/24/14 13:53	1
Bromobenzene	<0.25		1.0	0.25	ug/L			01/24/14 13:53	1
Bromochloromethane	<0.40		1.0	0.40	ug/L			01/24/14 13:53	1
Bromodichloromethane	<0.17		1.0	0.17	ug/L			01/24/14 13:53	1
Bromoform	<0.28		1.0	0.28	ug/L			01/24/14 13:53	1
Bromomethane	<0.31		1.0	0.31	ug/L			01/24/14 13:53	1
Carbon tetrachloride	<0.26		1.0	0.26	ug/L			01/24/14 13:53	1
Chlorobenzene	<0.14		1.0	0.14	ug/L			01/24/14 13:53	1
Chloroethane	<0.34		1.0	0.34	ug/L			01/24/14 13:53	1
Chloroform	<0.20		1.0	0.20	ug/L			01/24/14 13:53	1
Chloromethane	<0.18		1.0	0.18	ug/L			01/24/14 13:53	1
cis-1,2-Dichloroethene	<0.12		1.0	0.12	ug/L			01/24/14 13:53	1
cis-1,3-Dichloropropene	<0.18		1.0	0.18	ug/L			01/24/14 13:53	1
Dibromochloromethane	<0.32		1.0	0.32	ug/L			01/24/14 13:53	1
Dibromomethane	<0.33		1.0	0.33	ug/L			01/24/14 13:53	1
Dichlorodifluoromethane	<0.20		1.0	0.20	ug/L			01/24/14 13:53	1
Ethylbenzene	<0.13		0.50	0.13	ug/L			01/24/14 13:53	1
Hexachlorobutadiene	<0.26		1.0	0.26	ug/L			01/24/14 13:53	1
Isopropyl ether	<0.15		1.0	0.15	ug/L			01/24/14 13:53	1
Isopropylbenzene	<0.14		1.0	0.14	ug/L			01/24/14 13:53	1
Methyl tert-butyl ether	<0.24		1.0	0.24	ug/L			01/24/14 13:53	1
Methylene Chloride	<0.68		5.0	0.68	ug/L			01/24/14 13:53	1
Naphthalene	<0.16		1.0	0.16	ug/L			01/24/14 13:53	1
n-Butylbenzene	<0.13		1.0	0.13	ug/L			01/24/14 13:53	1
N-Propylbenzene	<0.13		1.0	0.13	ug/L			01/24/14 13:53	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-220915/6
Matrix: Water
Analysis Batch: 220915

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
p-Isopropyltoluene	<0.17		1.0	0.17	ug/L			01/24/14 13:53	1
sec-Butylbenzene	<0.15		1.0	0.15	ug/L			01/24/14 13:53	1
Styrene	<0.10		1.0	0.10	ug/L			01/24/14 13:53	1
tert-Butylbenzene	<0.14		1.0	0.14	ug/L			01/24/14 13:53	1
Tetrachloroethene	<0.17		1.0	0.17	ug/L			01/24/14 13:53	1
Toluene	<0.11		0.50	0.11	ug/L			01/24/14 13:53	1
trans-1,2-Dichloroethene	<0.25		1.0	0.25	ug/L			01/24/14 13:53	1
trans-1,3-Dichloropropene	<0.21		1.0	0.21	ug/L			01/24/14 13:53	1
Trichloroethene	<0.19		0.50	0.19	ug/L			01/24/14 13:53	1
Trichlorofluoromethane	<0.19		1.0	0.19	ug/L			01/24/14 13:53	1
Vinyl chloride	<0.10		0.50	0.10	ug/L			01/24/14 13:53	1
Xylenes, Total	<0.068		1.0	0.068	ug/L			01/24/14 13:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 125*		*01/24/14 13:53*	*1*
4-Bromofluorobenzene (Surr)	*102*		*75 - 120*		*01/24/14 13:53*	*1*
Dibromofluoromethane	*96*		*75 - 120*		*01/24/14 13:53*	*1*
Toluene-d8 (Surr)	*104*		*75 - 120*		*01/24/14 13:53*	*1*

Lab Sample ID: LCS 500-220915/4
Matrix: Water
Analysis Batch: 220915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	56.3		ug/L		113	75 - 120
1,1,1-Trichloroethane	50.0	51.4		ug/L		103	70 - 123
1,1,2,2-Tetrachloroethane	50.0	58.5		ug/L		117	70 - 128
1,1,2-Trichloroethane	50.0	52.4		ug/L		105	69 - 120
1,1-Dichloroethane	50.0	50.0		ug/L		100	68 - 121
1,1-Dichloroethene	50.0	49.1		ug/L		98	58 - 122
1,1-Dichloropropene	50.0	51.7		ug/L		103	70 - 120
1,2,3-Trichlorobenzene	50.0	46.8		ug/L		94	56 - 137
1,2,3-Trichloropropane	50.0	54.2		ug/L		108	70 - 120
1,2,4-Trichlorobenzene	50.0	48.3		ug/L		97	65 - 121
1,2,4-Trimethylbenzene	50.0	53.6		ug/L		107	75 - 121
1,2-Dibromo-3-Chloropropane	50.0	54.8		ug/L		110	60 - 121
1,2-Dibromoethane	50.0	51.6		ug/L		103	70 - 120
1,2-Dichlorobenzene	50.0	51.9		ug/L		104	75 - 120
1,2-Dichloroethane	50.0	50.8		ug/L		102	69 - 120
1,2-Dichloropropane	50.0	50.1		ug/L		100	70 - 120
1,3,5-Trimethylbenzene	50.0	54.3		ug/L		109	75 - 123
1,3-Dichlorobenzene	50.0	51.7		ug/L		103	70 - 120
1,3-Dichloropropane	50.0	53.1		ug/L		106	70 - 120
1,4-Dichlorobenzene	50.0	50.2		ug/L		100	75 - 120
2,2-Dichloropropane	50.0	52.2		ug/L		104	67 - 125
2-Chlorotoluene	50.0	53.6		ug/L		107	70 - 120
4-Chlorotoluene	50.0	53.2		ug/L		106	70 - 120
Benzene	50.0	48.6		ug/L		97	70 - 120

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-220915/4
Matrix: Water
Analysis Batch: 220915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	50.0	52.6		ug/L		105	70 - 120
Bromochloromethane	50.0	49.0		ug/L		98	67 - 122
Bromodichloromethane	50.0	54.8		ug/L		110	70 - 120
Bromoform	50.0	49.1		ug/L		98	70 - 125
Bromomethane	50.0	49.2		ug/L		98	50 - 150
Carbon tetrachloride	50.0	50.7		ug/L		101	70 - 125
Chlorobenzene	50.0	51.2		ug/L		102	70 - 120
Chloroethane	50.0	48.1		ug/L		96	50 - 150
Chloroform	50.0	50.6		ug/L		101	70 - 120
Chloromethane	50.0	48.0		ug/L		96	50 - 134
cis-1,2-Dichloroethene	50.0	48.6		ug/L		97	70 - 120
cis-1,3-Dichloropropene	50.0	56.2		ug/L		112	70 - 120
Dibromochloromethane	50.0	58.2		ug/L		116	70 - 120
Dibromomethane	50.0	50.8		ug/L		102	70 - 120
Dichlorodifluoromethane	50.0	47.4		ug/L		95	40 - 140
Ethylbenzene	50.0	53.0		ug/L		106	75 - 120
Hexachlorobutadiene	50.0	48.4		ug/L		97	65 - 135
Isopropylbenzene	50.0	54.9		ug/L		110	70 - 120
Methyl tert-butyl ether	50.0	49.1		ug/L		98	58 - 122
Methylene Chloride	50.0	41.7		ug/L		83	65 - 125
Naphthalene	50.0	47.8		ug/L		96	55 - 132
n-Butylbenzene	50.0	53.6		ug/L		107	75 - 120
N-Propylbenzene	50.0	53.7		ug/L		107	70 - 120
p-Isopropyltoluene	50.0	53.6		ug/L		107	70 - 120
sec-Butylbenzene	50.0	53.6		ug/L		107	70 - 120
Styrene	50.0	52.9		ug/L		106	75 - 120
tert-Butylbenzene	50.0	54.2		ug/L		108	70 - 120
Tetrachloroethene	50.0	51.2		ug/L		102	70 - 123
Toluene	50.0	53.4		ug/L		107	70 - 120
trans-1,2-Dichloroethene	50.0	49.3		ug/L		99	70 - 124
trans-1,3-Dichloropropene	50.0	57.5		ug/L		115	70 - 120
Trichloroethene	50.0	49.9		ug/L		100	70 - 120
Trichlorofluoromethane	50.0	49.4		ug/L		99	63 - 134
Vinyl chloride	50.0	48.1		ug/L		96	62 - 138
Xylenes, Total	100	106		ug/L		106	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*
4-Bromofluorobenzene (Surr)	*104*		*75 - 120*
Dibromofluoromethane	*98*		*75 - 120*
Toluene-d8 (Surr)	*106*		*75 - 120*

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 500-220898/1-A
Matrix: Water
Analysis Batch: 221057

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 220898

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	14.5	J	100	12	ug/L		01/24/14 08:30	01/24/14 14:55	1
Manganese	<0.76		2.5	0.76	ug/L		01/24/14 08:30	01/24/14 14:55	1

Lab Sample ID: LCS 500-220898/2-A
Matrix: Water
Analysis Batch: 221057

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 220898

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1000	1030		ug/L		103	80 - 120
Manganese	500	493		ug/L		99	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 500-221149/1
Matrix: Water
Analysis Batch: 221149

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<5.6		10	5.6	mg/L			01/27/14 22:01	1

Lab Sample ID: LCS 500-221149/2
Matrix: Water
Analysis Batch: 221149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	250	258		mg/L		103	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: MadisonKipp - WI001368.0011

TestAmerica Job ID: 500-70505-1

Client Sample ID: Trip Blank — Lab Sample ID: 500-70505-1

Date Collected: 01/20/14 00:00 — **Matrix: Water**
Date Received: 01/23/14 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	220915	01/24/14 14:48	JLH	TAL CHI

Client Sample ID: Pre Step Test — Lab Sample ID: 500-70505-2

Date Collected: 01/20/14 12:25 — **Matrix: Water**
Date Received: 01/23/14 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	220915	01/24/14 15:42	JLH	TAL CHI
Total/NA	Analysis	8260B	DL	20	220915	01/24/14 16:10	JLH	TAL CHI
Total Recoverable	Prep	3005A			220898	01/24/14 08:30	LA1	TAL CHI
Total Recoverable	Analysis	6020		1	221057	01/24/14 15:02	BJH	TAL CHI
Dissolved	Prep	3005A			220898	01/24/14 08:30	LA1	TAL CHI
Dissolved	Analysis	6020		1	221057	01/24/14 15:06	BJH	TAL CHI

Client Sample ID: End Step 1 — Lab Sample ID: 500-70505-3

Date Collected: 01/20/14 16:45 — **Matrix: Water**
Date Received: 01/23/14 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	220915	01/24/14 16:37	JLH	TAL CHI
Total/NA	Analysis	8260B	DL	20	220915	01/24/14 17:04	JLH	TAL CHI
Total Recoverable	Prep	3005A			220898	01/24/14 08:30	LA1	TAL CHI
Total Recoverable	Analysis	6020		1	221057	01/24/14 15:10	BJH	TAL CHI
Dissolved	Prep	3005A			220898	01/24/14 08:30	LA1	TAL CHI
Dissolved	Analysis	6020		1	221057	01/24/14 15:14	BJH	TAL CHI
Total/NA	Analysis	SM 2540C		1	221149	01/27/14 22:48	CLB	TAL CHI

Client Sample ID: End Step 2 — Lab Sample ID: 500-70505-4

Date Collected: 01/20/14 19:45 — **Matrix: Water**
Date Received: 01/23/14 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	220915	01/24/14 17:31	JLH	TAL CHI
Total/NA	Analysis	8260B	DL	50	220915	01/24/14 17:59	JLH	TAL CHI
Total Recoverable	Prep	3005A			220898	01/24/14 08:30	LA1	TAL CHI
Total Recoverable	Analysis	6020		1	221057	01/24/14 15:17	BJH	TAL CHI
Dissolved	Prep	3005A			220898	01/24/14 08:30	LA1	TAL CHI
Dissolved	Analysis	6020		1	221057	01/24/14 15:21	BJH	TAL CHI
Total/NA	Analysis	SM 2540C		1	221149	01/27/14 22:50	CLB	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: MadisonKipp - WI001368.0011

TestAmerica Job ID: 500-70505-1

Client Sample ID: End Step 3
Date Collected: 01/20/14 22:30
Date Received: 01/23/14 10:30

Lab Sample ID: 500-70505-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	220915	01/24/14 18:26	JLH	TAL CHI
Total/NA	Analysis	8260B	DL	50	220915	01/24/14 18:53	JLH	TAL CHI
Total Recoverable	Prep	3005A			220898	01/24/14 08:30	LA1	TAL CHI
Total Recoverable	Analysis	6020		1	221057	01/24/14 15:24	BJH	TAL CHI
Dissolved	Prep	3005A			220898	01/24/14 08:30	LA1	TAL CHI
Dissolved	Analysis	6020		1	221057	01/24/14 15:27	BJH	TAL CHI
Total/NA	Analysis	SM 2540C		1	221149	01/27/14 22:52	CLB	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: MadisonKipp - WI001368.0011

TestAmerica Job ID: 500-70505-1

Laboratory: TestAmerica Chicago

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40461	04-30-14
California	NELAP	9	01132CA	04-30-14
Georgia	State Program	4	N/A	04-30-14
Hawaii	State Program	9	N/A	04-30-14
Illinois	NELAP	5	100201	04-30-14
Indiana	State Program	5	C-IL-02	04-30-14
Iowa	State Program	7	82	05-01-14
Kansas	NELAP	7	E-10161	10-31-14
Kentucky (UST)	State Program	4	66	04-30-14
Louisiana	NELAP	6	30720	06-30-14
Massachusetts	State Program	1	M-IL035	06-30-14
Mississippi	State Program	4	N/A	04-30-14
North Carolina DENR	State Program	4	291	12-31-14
North Dakota	State Program	8	R-194	04-30-14
Oklahoma	State Program	6	8908	08-31-14
South Carolina	State Program	4	77001	04-30-14
Texas	NELAP	6	T104704252-09-TX	02-28-14
USDA	Federal		P330-12-00038	02-06-15
Wisconsin	State Program	5	999580010	08-31-14
Wyoming	State Program	8	8TMS-Q	04-30-14

500-70505 COC

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order # 500-70505

Send Results to:

Toni Schoen ARCADIS

Address: 126 N Jefferson St #400

City: Milwaukee State: WI Zip: 53202

Telephone: 414.276.7742

Fax: 414.276.7603

E-mail Address: toni.schoen@arcadis-us.com

Project Name/Location (City, State): MKE (Madison, WI)

Project #: WI001328.0011

Sampler's Printed Name: Nicole Ducklei

Sampler's Signature:

Preservative	B	C	C	E			
Filtered (✓)			✓				
# of Containers	3	1	1	1			
Container Information	1	3	3	9			

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: 1 L plastic
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil
W - Water, SL - Sludge, SW - Sample Wipe
T - Tissue, A - Air, Other: _____

	Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	VOCs	Total Fe, Mn	Dissolved Fe, Mn	TDS					REMARKS
1	Trip Blank	—	—	—	—	W	1	—	—	—					
2	PRE STEP TEST	1/24/14	1225		✓	W	3	1	1	—					
3	END STEP 1	1/20/14	1645		✓	W	3	1	1	1					
4	END STEP 2	1/20/14	1945		✓	W	3	1	1	2					
5	END STEP 3	1/20/14	2230		✓	W	3	1	1	1					

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Test America	Cooler Custody Seal (✓)	Printed Name: Nicole Ducklei	Printed Name: JEFF LUNT	Printed Name:	Printed Name:
☑ Cooler packed with ice (✓)	☑ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements: Standard	Sample Receipt:	Firm: ARCADIS	Firm/Courier: TA	Firm/Courier:	Firm:
Shipping Tracking #: 8042 5912 1267	Condition/Cooler Temp: 1.9	Date/Time: 1/22/2014 14:20	Date/Time: 1/23/14 1030	Date/Time:	Date/Time:

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-70505-1

Login Number: 70505

List Source: TestAmerica Chicago

List Number: 1

Creator: Lunt, Jeff T

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	1.9
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

Client: **ARCADIS Inc (Milw)**
Attn: Toni Schoen
126 North Jefferson Street #400
Milwaukee, WI 53202 6120

NLS Project: 212182
NLS Customer: 12668

Fax: 414 276 7603 Phone: 414 276 7742

Project: Madison-Kipp W601368

End Step 2 (Filtered) NLS ID: 767520
Matrix: WW
Collected: 01/20/14 19:45 Received: 01/23/14

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
PCBs (water) by EPA 8082	see attached					01/28/14	SW846 8082	721026460
Organics Extraction (Water) for Organochlorine Pesticides/PCBs	yes					01/27/14	SW846 3510C	721026460

End Step 2 (Unfiltered) NLS ID: 767521
Matrix: WW
Collected: 01/20/14 19:45 Received: 01/23/14

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
PCBs (water) by EPA 8082	see attached					01/28/14	SW846 8082	721026460
Organics Extraction (Water) for Organochlorine Pesticides/PCBs	yes					01/27/14	SW846 3510C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

LOD = Limit of Detection LOQ = Limit of Quantitation ND = Not Detected (< LOD) 1000 ug/L = 1 mg/L
DWB = Dry Weight Basis NA = Not Applicable %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

ANALYTICAL RESULTS: PCBs by Method EPA 8082

Customer: ARCADIS Inc (Milw) **NLS Project: 212182**

Project Description: Madison-Kipp

Project Title: W601368 **Template: PCBW Printed: 01/30/2014 17:01**

Sample: 767520 End Step 2 (Filtered) Collected: 01/20/14 Analyzed: 01/28/14 - Analytes: 7 | Notes: AD

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	Note
PCB-1016	ND	ug/L	1	0.023	0.077	
PCB-1221	ND	ug/L	1	0.060	0.20	
PCB-1232	ND	ug/L	1	0.037	0.12	
PCB-1242	ND	ug/L	1	0.040	0.13	
PCB-1248	ND	ug/L	1	0.045	0.15	
PCB-1254	ND	ug/L	1	0.026	0.086	
PCB-1260	ND	ug/L	1	0.034	0.11	
TCMX (SURR)	73%					S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

AD = Additional non-target compounds were detected.

Sample: 767521 End Step 2 (Unfiltered) Collected: 01/20/14 Analyzed: 01/28/14 - Analytes: 7 | Notes: AD

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	Note
PCB-1016	ND	ug/L	1	0.023	0.077	
PCB-1221	ND	ug/L	1	0.060	0.20	
PCB-1232	ND	ug/L	1	0.037	0.12	
PCB-1242	ND	ug/L	1	0.040	0.13	
PCB-1248	ND	ug/L	1	0.045	0.15	
PCB-1254	ND	ug/L	1	0.026	0.086	
PCB-1260	ND	ug/L	1	0.034	0.11	
TCMX (SURR)	67%					S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

AD = Additional non-target compounds were detected.

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ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #

Send Results to:

Contact & Company Name: Toni Schoen ARCADIS	Telephone: 414.276.7742
Address: 126 N Jefferson St #400	Fax: 414.276.7603
City: Milwaukee State: WI Zip: 53202	E-mail Address: toni.schoen@arcadis-us.com
Project Name/Location (City, State): Madison-Kipp (Madison, WI)	Project #: WI0013608
Sampler's Printed Name: Nicole Dudei	Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	PARAMETER ANALYSIS & METHOD: PCBs	PCBs						REMARKS
						E	E										
							✓										
						2	2										
						2	2										
END STEP 2	1/20/14	1945		✓	W	2	2										760520
																	760521

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil
W - Water, SL - Sludge, SW - Sample Wipe
T - Tissue, A - Air, Other: _____

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Northern Lakes	Cooler Custody Seal (✓)	Printed Name: Nicole Dudei	Printed Name:	Printed Name:	Printed Name:
☑ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements: Standard	Sample Receipt:	Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm:
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time: 1/22/2014 14:20	Date/Time:	Date/Time:	Date/Time: 1-23-14 12:15