



708 Heartland Trail  
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[www.TRCSolutions.com](http://www.TRCSolutions.com)

June 18, 2018

Mr. Mike Schmoller  
Hydrogeologist  
Wisconsin Department of Natural Resources  
3911 Fish Hatchery Road  
Fitchburg, WI 53711

Subject: Polychlorinated Biphenyls (PCBs) in Rain Garden – Interim Investigative  
Summary Follow-up

Dear Mr. Schmoller:

As requested by Madison Kipp Corporation (MKC), TRC Environmental Corporation (TRC) has been investigating the presence and possible migration of polychlorinated biphenyls (PCBs) to the rain garden just north of the MKC facility which is located at 201 Waubesa Street, Madison, Wisconsin (the site, Figure 1). This letter summarizes the most recent actions completed as outlined in the November 2017 submittal of the Rain Garden – Interim Investigation Report and Proposed Excavation Work Plan (TRC, 2017).

Per the November 2017 report, TRC recommended that the outfall and manhole MH-1A be monitored during heavy snow melt and rainfall events during the 2017-2018 winter and spring seasons. The focus was to monitor sediment accumulation and if possible collect samples after heavy snow melts and high intensity rainfalls (accumulating greater than 1 inch of rainfall in a 24-hour period time).

### Monitoring

TRC monitored manhole MH-1A and the outfall area for sediment accumulation between December 2017 and May 2018 based on snow melt and rain events. The locations of each monitoring point along with site features are shown on Figure 2. Based on actual snow melt and high intensity rain fall events, monitoring was broken up into two main periods.

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#### December 2017 – February 2018

Between December 2017 and February 2018, only one rain event resulted in greater than 1 inch of rainfall accumulation within one day and the focus during these months, was sediment accumulation into the storm sewer network from heavy snow melting events. On February 21, 2018, TRC inspected manhole MH-1A and the outfall into the rain garden. Sediment was observed in MH-1A and one sample was collected for PCBs. The sediment consisted of a fine to coarse material. Laboratory analytical results reported PCBs at a concentration of 0.33 milligram per kilogram (mg/kg) in this sample. The outfall area was inspected as well and only organic materials (i.e., leaves) were observed within the outfall pipe and no sample could be collected.

#### March 2018 – May 2018

Between March and May 2018, snow melt was observed and four rain events occurred resulting in greater than one inch of rainfall accumulation within one days' time. All four rain events were recorded in May 2018 and none were observed during the months of March or April. Periodic inspections of manhole MH-1A were completed following select rain events in March and April but no significant changes in sediment loading were observed and therefore no samples were collected. On May 10, 2018, manhole MH-1A and the outfall pipe were inspected and fine to coarse grain sediment was observed at both locations with some organics present as well. A sample was collected from manhole MH-1A and from within the outfall pipe. Laboratory analytical results reported PCBs in manhole MH-1A sample at concentration of 0.15 mg/kg and at concentration of 1.9 mg/kg at the outfall area.

Table 1 includes a summary of the results collected through May 2018 and the laboratory analytical report for the February and May 2018 samples are included in Attachment 1.

### Discussion

#### Manhole MH-1A

Monitoring results between December 2017 and May 2018 indicate that sediment accumulation within manhole MH-1A contains PCBs at low concentrations below the Natural Resources (NR) 720 industrial direct contact soil residual contaminant level (RCL) for PCBs. Sediment materials are consistent with previous samples collected in 2017 and consist of a fine to coarse grain material.



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## **Outfall**

Monitoring results indicate that sediment observed within the outfall pipe area contained PCBs at a concentration of 1.9 mg/kg. However, based on the concentration of PCBs observed in upstream sediments from manhole MH-1A and the negative drainage pitch of the outfall pipe and outfall pipe discharge area, the higher detections of PCBs could be related to 2017 discharges that are present in the rain garden (pending upcoming excavation). As previously discussed, the outfall pipe and immediate area are negatively pitched which can cause back and forth flow of water and sediment from the rain garden. This could, in this case, have caused migration of PCB impacted sediments known to be present in the rain garden back into the outfall pipe.

In addition, the lack of sediment observed in the outfall pipe from December 2017 to February 2018 corroborates that sediment deposits in the outfall pipe during high intensity rain events. During these rain events, additional sediment load may come from upstream in the storm sewer network, but it is also known that sediment from the garden washes back and forth into the outfall pipe due to the high standing water in the rain garden. The lack sediment accumulation in the outfall pipe could also be the result of the relining work completed in 2017 between manhole MH-3W and MH-1A.

## **Recommendations**

Based on the results from monitoring completed between December 2017 and May 2018, MKC plans to excavate the outfall area as outlined in the November 2017 Rain Garden – Interim Investigation Report and Proposed Excavation Work Plan (TRC, 2017).

Following excavation, the outfall area/pipe and manhole MH-1A will continue to be monitored for the remainder of 2018. The frequency of monitoring will be dependent on high intensity rain events (greater than one inch of rainfall accumulation in a 24-hour period). Following large rain events, TRC will visit the Site and observe the conditions in the outfall area/pipe and manhole MH-1A. A sample of sediment will be collected from each location, if present, quarterly (one in the period July – September and one in the period October – December).

TRC will also remove accumulated sediment from MH-1A to reduce the amount of sediment discharging into the rain garden. Accumulated sediment will be removed with dedicated equipment (e.g., wet/dry vacuum) or other hand tools and containerized for disposal.



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A documentation report, as outlined in the November 2017 report submittal, will be completed following the rain garden excavation and restoration. TRC will prepare a separate brief letter report following the remaining 2018 monitoring.

If you have questions or comments please feel free to contact Andrew Stehn (608-826-3665) or Katherine Vater (608-826-3663).

Sincerely,

TRC Environmental Corporation



Andrew Stehn, P.E.  
Project Engineer



Katherine Vater, P.E.  
Project Manger

Attachments: Table  
Figures  
Attachment 1 - Laboratory Analytical Report

cc: John Hausbeck, Public Health (electronic)  
Mark Sheppard, Madison-Kipp Corporation (electronic)  
Peter Ramanauskas and Michael Beedle, U.S. EPA (electronic)

## Reference

TRC. 2017. Rain Garden – Interim Investigation Report and Proposed Excavation Work Plan. November 29, 2017.



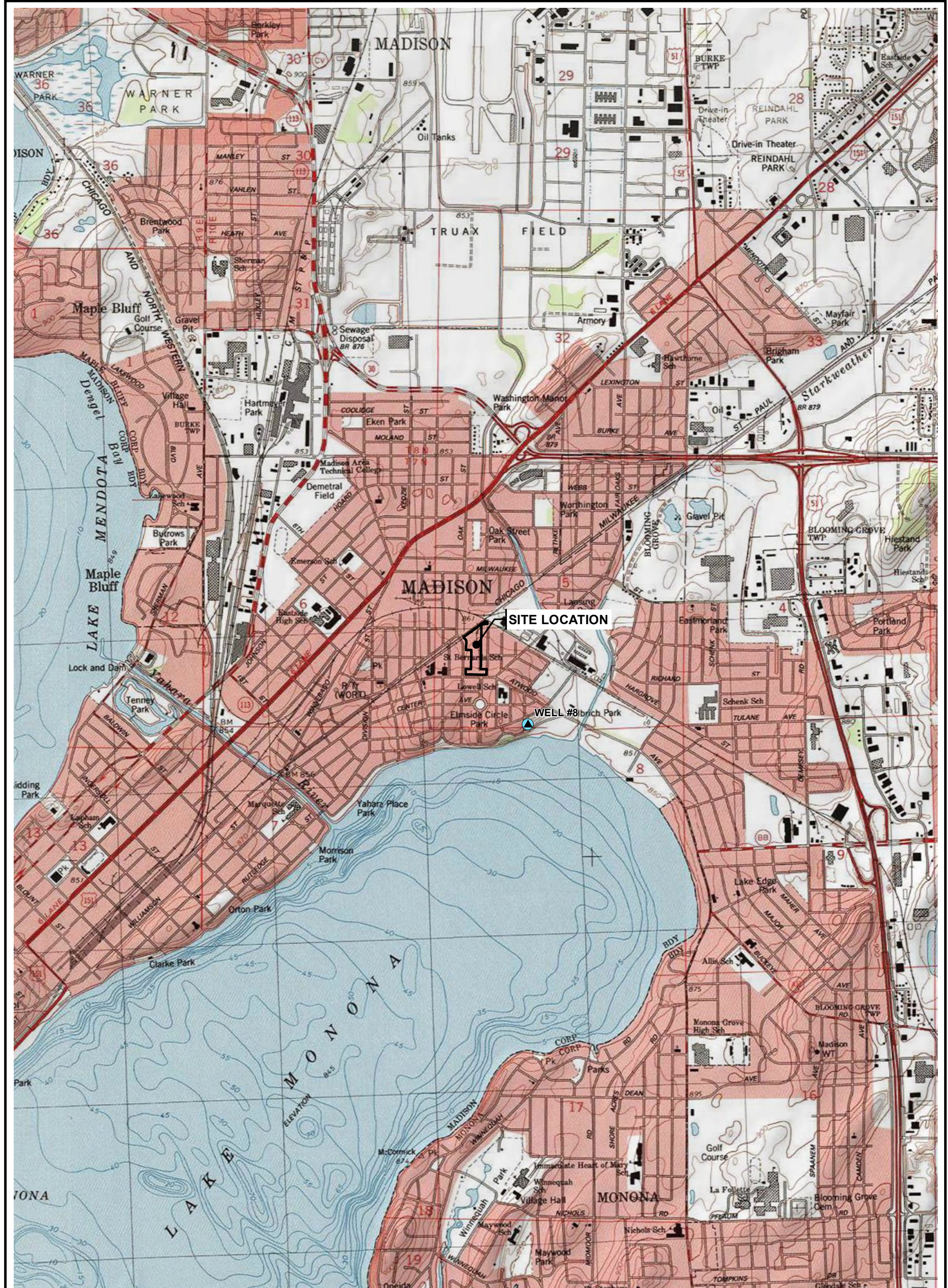
Table 1  
Storm Sewer System Sediment Sampling Analytical Results Summary  
Madison-Kipp Corporation  
201 Waubesa Street, Madison, Wisconsin

PARAMETER	UNIT	NR 720 RCL		SAMPLE LOCATION AND SAMPLE ID																															
		INDUSTRIAL DIRECT CONTACT <sup>(2)</sup>	HISTORICAL INDUSTRIAL DIRECT CONTACT <sup>(3)</sup>	ROOF DRAIN SAMPLE						PAVED SURFACE SAMPLE <sup>(4)</sup>							MANHOLE BOTTOM SAMPLE											OUTFALL SAMPLE							
				MH-3WR	MH-4AR	GUTTER 1	GUTTER 2	MH-2AR	RDO	MH-1A (2)	MH4-TOP	MH-4A	MH-5B	MH-3W	MH-5A	PS-1	MH-1NW-BOTTOM	MH-1NW-BASIN	STORM SEWER	MH-1A(3)-BASIN	MH-1A 9/22/17	MH-1A (10/6/17)	MH-1A (10/17/17)	MH-1A-22118	MH-1A-051018	MH-2W	MH-3W	MH5-PIPE	PIPE	OUTFALL (6/30)	OUTFALL 9/22/17	OUTFALL PIPE-051018			
				5/22/2017	5/22/2017	5/31/2017	5/31/2017	6/14/2017	6/14/2017	5/31/2017	3/9/2017	5/31/2017	5/31/2017	6/14/2017	6/29/2017	6/30/2017	2/15/2017	6/14/2017	12/28/2016	6/30/2017	9/22/2017	10/6/2017	10/17/2017	2/21/2018	5/10/2018	2/15/2017	2/15/2017	3/9/2017	12/19/2016	6/30/2017	9/22/2017	5/10/2018			
Sample Date	--	--	--	Other	Other	Other	Other	Other	Other	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Matrix <sup>(1)</sup>	--	--	--	Other	Other	Other	Other	Other	Other	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
PCB-1016	mg/kg	28	21.2	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0081	<0.0078	<0.0088	<0.010	<0.018	<0.0078	<0.0077	<0.0086	<0.010	<0.011	<0.0092	<0.0089	<0.0097	<0.010	<0.0094	<0.0083	<0.014	<0.0086	<0.010	<0.0095	<0.0086	<0.011	<0.0099	<0.0099		
PCB-1221	mg/kg	0.883	0.589	<0.0041	<0.0041	<0.0041	<0.0041	<0.0041	<0.0041	<0.0045	<0.0043	<0.0049	<0.0058	<0.0098	<0.0043	<0.0043	<0.0048	<0.0057	<0.0059	<0.0051	<0.0049	<0.0054	<0.0057	<0.0052	<0.0046	<0.0078	<0.0047	<0.0058	<0.0053	<0.0048	<0.0061	<0.0055	<0.0055		
PCB-1232	mg/kg	0.792	0.589	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0031	<0.0030	<0.0033	<0.0039	<0.0067	<0.0029	<0.0029	<0.0033	<0.0039	<0.0040	<0.0035	<0.0034	<0.0037	<0.0039	<0.0036	<0.0031	<0.0053	<0.0032	<0.0039	<0.0036	<0.0032	<0.0042	<0.0038	<0.0038		
PCB-1242	mg/kg	0.972	0.744	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0048	<0.0046	<0.0052	<0.0062	<0.011	<0.0046	<0.0046	<0.0051	<0.0061	<0.0063	<0.0055	<0.0053	<0.0058	<0.0061	<0.0056	<0.0049	<0.0083	<0.0051	<0.0062	<0.0057	<0.0051	<0.0066	<0.0059	<0.0059		
PCB-1248	mg/kg	0.975	0.744	0.20	<0.0053	<0.0053	0.049 J	<0.0053	0.050 J	0.023 J	0.028 J	0.096 J	0.12 J	0.32	<0.0056	<0.0055	0.28	0.10 J	<b>3.6</b>	<b>2.2</b>	0.11	0.23	0.71	0.33	0.15	<b>120</b>	<0.0061	<b>0.93</b>	<b>9.2</b>	<b>5.0</b>	<b>4.0</b>	<b>1.9</b>			
PCB-1254	mg/kg	0.988	0.744	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	0.013 J	<0.0048	<0.0046	<0.0052	<0.0062	0.099 J	0.071 J	0.034 J	0.41	0.086 J	<0.0063	<0.0055	<0.0053	<0.0058	<0.0061	<0.0056	<0.0049	<0.0083	<b>1.6</b>	<0.0062	<0.0057	<0.0051	<0.0066	<0.0059			
PCB-1260	mg/kg	1	0.744	<0.0024	<0.0024	<0.0024	<0.0024	<0.0024	<0.0024	<0.0026	<0.0025	<0.0028	<0.0034	<0.0058	<0.0025	<0.0025	<0.0028	<0.0033	<0.0034	<0.003	<0.0029	<0.0031	<0.0033	<0.0031	<0.0027	<0.0045	<0.0028	<0.0034	0.37	<0.0028	<0.0036	<0.0032			
Total PCBs	mg/kg	0.967	0.744	0.20	<0.0074	<0.0074	0.049 J	<0.0074	0.063 J	0.023 J	0.028 J	0.096 J	0.12 J	0.42	0.071 J	0.034 J	0.69	0.19	<b>3.6</b>	<b>2.2</b>	0.11	0.23	0.71	0.33	0.15	<b>120</b>	<b>1.6</b>	<b>0.93</b>	<b>9.6</b>	<b>5.0</b>	<b>4.0</b>	<b>1.9</b>			

Notes:  
 < = Less than  
 mg/kg = Milligrams per kilogram  
 J = Estimated value. Analyte detected at a level less than the reporting limit and greater than or equal to the detection limit.  
 RCL = residual contaminant level  
 PCBs = Polychlorinated Biphenyls  
 Bold and Italics = WDNR Industrial Direct Contact Limit Exceedance  
 Sample ID ending in "R" indicates the sample is from roof drain adjacent the manhole location (e.g., MH-4AR is the roof drain adjacent MH-4A).



Updated by: A. Stehn 6/7/2018  
 Checked by: B. Wachholz 6/7/2018

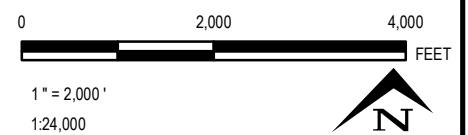
Footnotes:  
<sup>(1)</sup> PCB results for samples with a matrix of "Other" are reported on an as is (wet weight) basis.  
<sup>(2)</sup> As of March 2017, the WDNR updated the industrial direct contact residual contaminant levels for total PCBs and specific Aroclors.  
<sup>(3)</sup> Historical WDNR industrial direct contact RCLs applied at the MKC site.  
<sup>(4)</sup> Paved surface samples collected at the ground surface inlet to the referenced manhole, with the exception of sample PS-1 which was collected from the paved parking lot area just upstream of the rain garden.



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES, "USA TOPO MAPS" WEB BASEMAP SERVICE LAYER.

**LEGEND**

-  SITE PROPERTY BOUNDARY
-  MUNICIPAL SUPPLY WELL



708 Heartland Trail  
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 Phone: 608.826.3600

PROJECT:

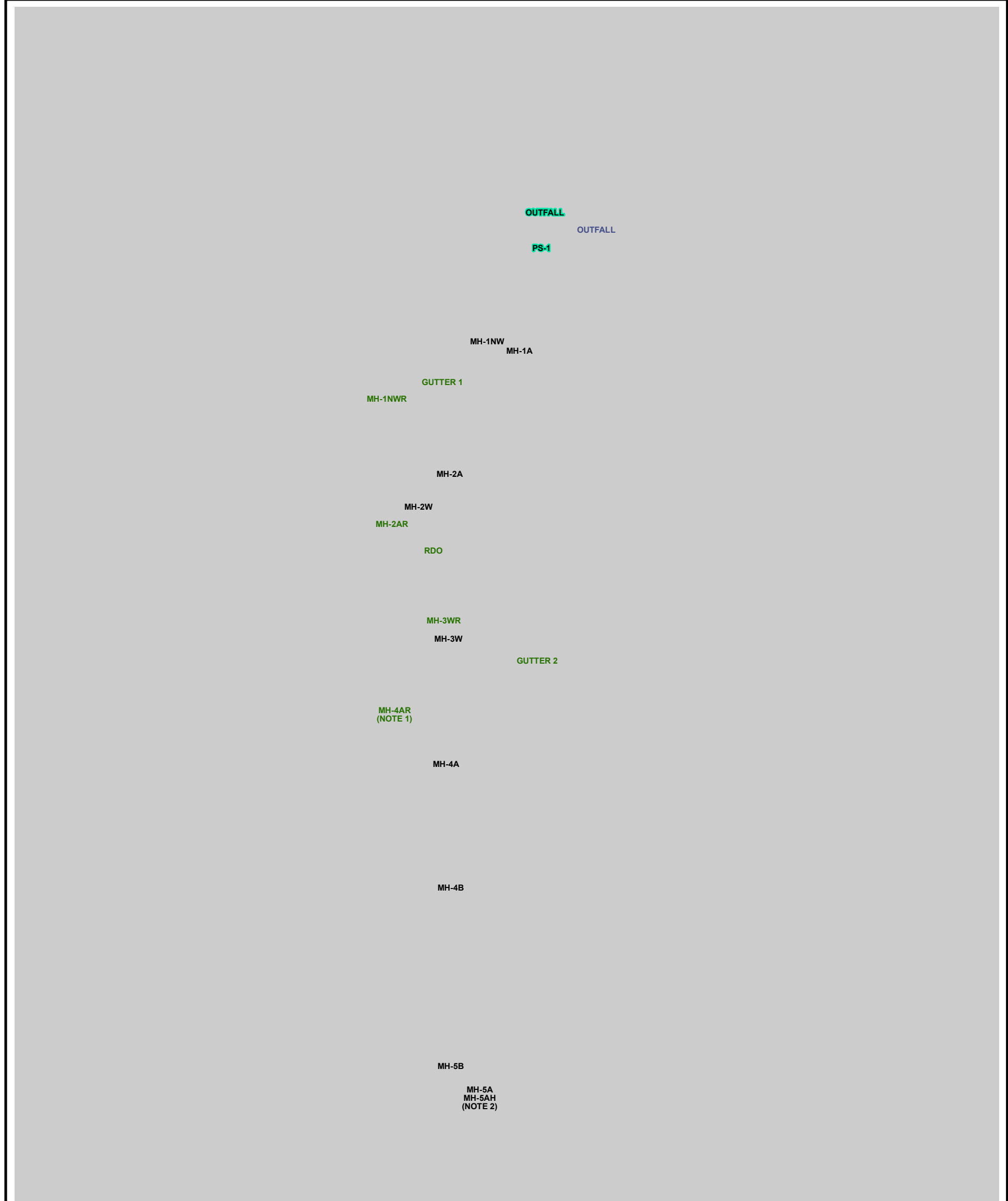
**MADISON-KIPP CORPORATION**  
 201 WAUBESA STREET  
 MADISON, WISCONSIN

TITLE:

**SITE LOCATION MAP**

DRAWN BY:	B DEEGAN
CHECKED BY:	A STEHN
APPROVED BY:	S SELWOOD
DATE:	JULY 2017
PROJ. NO.:	268304
FILE:	268304-001slm.mxd

**FIGURE 1**

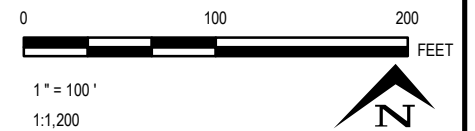


**NOTES**

1. MH-4AR REPRESENTS TWO COLLECTION POINTS THAT MERGE INTO ONE DISCHARGE POINT.
2. MH-5AH REPRESENTS A DISCHARGE PIPE LOCATED IN MANHOLE MH-5A.
3. MH-2W AND THE SECTION OF PIPE BETWEEN MH-2W AND MH-2A WERE ABANDONED ON 5/8/2017.
4. BASEMAP FROM GOOGLE EARTH PRO & PARTNERS, 2014.

**LEGEND**

- |                         |                     |                        |
|-------------------------|---------------------|------------------------|
| SITE PROPERTY BOUNDARY  | MANHOLE/CATCH BASIN | S-3 PIPE SECTION       |
| SURFACE SAMPLE LOCATION | OUTFALL             | S-3-ABANDONED (NOTE 3) |
| ROOF DRAIN INLET        | S-1 PIPE SECTION    | S-4 PIPE SECTION       |
|                         | S-2 PIPE SECTION    |                        |



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 Madison, WI 53717  
 Phone: 608.826.3600

PROJECT:	<b>MADISON-KIPP CORPORATION 201 WAUBESA STREET MADISON, WISCONSIN</b>
TITLE:	<b>STORM SEWER INFRASTRUCTURE</b>

DRAWN BY:	B DEEGAN
CHECKED BY:	A STEHN
APPROVED BY:	S SELWOOD
DATE:	JULY 2017
PROJ. NO.:	268304
FILE:	268304-010.mxd

**FIGURE 2**

**Attachment 1**  
**Laboratory Analytical Report**





2525 Advance Road  
Madison, WI 53718  
608.221.8700 Phone  
608.221.4889 Fax

March 07, 2018

Andrew Stehn  
TRC Environmental Corporation, Inc.  
708 Heartland Trail, Ste 3000  
Madison, WI 53717  
RE: Madison Kipp - Rain Garden Excavation

Enclosed are the analytical results for the samples received by the laboratory on 02/22/2018.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. These results are in compliance with the 2009 NELAP Standards and the appropriate agencies listed below, unless otherwise noted in the case narrative. This analytical report should be reproduced in its entirety.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jessica Esser  
Project Manager

**Certification List**

Certification List			Expires
ADEQ	Arkansas Department of Environmental Quality	17-065-0	09/26/2018
DODELAP	DOD ELAP Accreditation (A2LA)	3269.01	03/31/2018
ILEPA	Illinois Secondary NELAP Accreditation	003174	04/30/2018
KDHE	Kansas Secondary NELAP Accreditation	E-10384	04/30/2018
LELAP	Louisiana Primary NELAP Accreditation	04165	06/30/2018
NCDEQ	North Carolina Dept. of Environmental Quality Accreditation	688	12/31/2018
NJDEP	New Jersey Secondary NELAP Accreditation	WI004	06/30/2018
ODEQ	Oklahoma Department of Environmental Quality Accreditation	2017-154	08/31/2018
TCEQ	Texas Secondary NELAP Accreditation	T104704504-16-7	11/30/2018
WDNR	Wisconsin Certification under NR 149	113289110	08/31/2018



2525 Advance Road  
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608.221.4889 Fax

TRC Environmental Corporation, Inc.  
708 Heartland Trail, Ste 3000  
Madison WI, 53717

Project: Madison Kipp - Rain Garden Excavation  
Project Number: 268304  
Project Manager: Andrew Stehn

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MH-1A-022118	A180807-01	Soil	02/21/2018	02/22/2018

**CASE NARRATIVE**

**Sample Receipt Information:**

1 sample was received on 02/22/2018. Sample was received on ice. Sample was received in acceptable condition.

Please see the chain of custody (COC) document at the end of this report for additional information.



2525 Advance Road  
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 608.221.4889 Fax

TRC Environmental Corporation, Inc.  
 708 Heartland Trail, Ste 3000  
 Madison WI, 53717

Project: Madison Kipp - Rain Garden Excavation  
 Project Number: 268304  
 Project Manager: Andrew Stehn

**MH-1A-022118**

Date Sampled

**A180807-01 (Soil)**

**02/21/2018 14:30**

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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**Pace Analytical - Madison**

**Polychlorinated Biphenyls by EPA Method 8082**

**Preparation Batch: A802178**

PCB-1016	ND	0.0094	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
PCB-1221	ND	0.0052	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
PCB-1232	ND	0.0036	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
PCB-1242	ND	0.0056	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
<b>PCB-1248</b>	<b>0.33</b>	0.0067	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
PCB-1254	ND	0.0056	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
PCB-1260	ND	0.0031	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
<b>Total PCBs</b>	<b>0.33</b>	0.0094	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	

Surrogate: Decachlorobiphenyl

96.6 % 56.6-128

02/26/2018

02/26/2018 17:53

EPA 8082A

Surrogate: Tetrachloro-meta-xylene

108 % 69.6-121

02/26/2018

02/26/2018 17:53

EPA 8082A

**Classical Chemistry Parameters**

**Preparation Batch: A802179**

<b>% Solids</b>	<b>78.7</b>		0.00	% by Weight	1	02/26/2018	02/28/2018 11:24	SM 2540B	
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TRC Environmental Corporation, Inc.  
 708 Heartland Trail, Ste 3000  
 Madison WI, 53717

Project: Madison Kipp - Rain Garden Excavation  
 Project Number: 268304  
 Project Manager: Andrew Stehn

**Polychlorinated Biphenyls by EPA Method 8082 - Quality Control**  
**Pace Analytical - Madison**

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch A802178 - EPA 3570**

**Blank (A802178-BLK1)**

Prepared: 02/26/2018 Analyzed: 02/26/2018 17:28

PCB-1016	ND	0.10	mg/kg wet							
PCB-1221	ND	0.10	mg/kg wet							
PCB-1232	ND	0.10	mg/kg wet							
PCB-1242	ND	0.10	mg/kg wet							
PCB-1248	ND	0.10	mg/kg wet							
PCB-1254	ND	0.10	mg/kg wet							
PCB-1260	ND	0.10	mg/kg wet							
Total PCBs	ND	0.10	mg/kg wet							

Surrogate: Decachlorobiphenyl

0.256 mg/kg wet 0.2400 107 56.6-128

Surrogate: Tetrachloro-meta-xylene

0.263 mg/kg wet 0.2400 110 69.6-121

**LCS (A802178-BS1)**

Prepared: 02/26/2018 Analyzed: 02/26/2018 17:03

PCB-1248	1.93	0.10	mg/kg wet	2.000		96.6	74.4-123			
Surrogate: Decachlorobiphenyl	0.227		mg/kg wet	0.2400		94.5	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.233		mg/kg wet	0.2400		97.1	69.6-121			

**Matrix Spike (A802178-MS1)**

Source: A180807-01

Prepared: 02/26/2018 Analyzed: 02/26/2018 18:18

PCB-1248	2.83	0.13	mg/kg dry	2.543	0.329	98.2	61.9-141			
Surrogate: Decachlorobiphenyl	0.292		mg/kg dry	0.3051		95.7	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.333		mg/kg dry	0.3051		109	69.6-121			

**Matrix Spike Dup (A802178-MSD1)**

Source: A180807-01

Prepared: 02/26/2018 Analyzed: 02/26/2018 18:43

PCB-1248	2.90	0.13	mg/kg dry	2.543	0.329	101	61.9-141	2.55	20	
Surrogate: Decachlorobiphenyl	0.293		mg/kg dry	0.3051		96.0	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.337		mg/kg dry	0.3051		110	69.6-121			



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TRC Environmental Corporation, Inc.  
 708 Heartland Trail, Ste 3000  
 Madison WI, 53717

Project: Madison Kipp - Rain Garden Excavation  
 Project Number: 268304  
 Project Manager: Andrew Stehn

**Classical Chemistry Parameters - Quality Control**

**Pace Analytical - Madison**

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch A802179 - % Solids**

Duplicate (A802179-DUP1)	Source: A180807-01	Prepared: 02/26/2018	Analyzed: 02/28/2018 11:24		
% Solids	74.9	0.00 % by Weight	78.7	4.88	20



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TRC Environmental Corporation, Inc.  
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Madison WI, 53717

Project: Madison Kipp - Rain Garden Excavation  
Project Number: 268304  
Project Manager: Andrew Stehn

### Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
- RPD Relative Percent Difference



**Pace Analytical - ECCS Division**  
 2525 Advance Road  
 Madison, WI 53718  
 608-221-8700 (phone)  
 608-221-4889 (fax)

# CHAIN OF CUSTODY

No. 8309

Page: 1 of 1

Project Number: 268304		PO Number: 103478		Lab Work Order #: <b>A180807</b>				Report To: <b>ANDREW STEHN</b>								
Project Name: <b>MKC - Rain Garden</b>				Preservation Codes				Company: <b>TRC</b>								
Project Location (City, State): <b>Madison, WI</b>				Analyses Requested				Address 1: <b>708 Heartland Trail</b>								
Turn Around (check one): <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush				Matrix	Total # of Containers	<b>PCBS</b>				Address 2: <b>Suite 3000</b>						
If Rush, Report Due Date:										<b>A</b>	E-mail Address: <b>astehn@trcsolutions.com</b>					
Sampled By (Print): <b>ANDREW STEHN</b> <i>AS</i>											Invoice To:					
											Company: <b>Same as above</b>		Address 1:			
				Address 2:												
Sample Description			Collection		Matrix	Total # of Containers					Comments	Lab ID	Lab Receipt Time			
			Date	Time												
MH-1A-022118			02/21/18	14:30	S	1	X					01				
<b>Preservation Codes</b> A=None B=HCL C=H <sub>2</sub> SO <sub>4</sub> D=HNO <sub>3</sub> E=EnCore F=Methanol G=NaOH O=Other (Indicate)		<b>Other Comments:</b>		Relinquished By:		Date:	Time:	Received By:		Date:	Time:					
				<i>Andrew Stehn</i>		02/21/18	16:30	<i>Jessica E...</i>		02-21-18	16:30					
<b>Matrix Codes</b> A=Air S=Soil W=Water O=Other				Relinquished By:		Date:	Time:	Received By:		Date:	Time:					
Custody Seal: <input type="checkbox"/> NA <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact				Shipped Via:		Receipt Temp:		Thermometer #/ Exp. Date:		Temp Blank:						
				walk-in		onice				<input type="checkbox"/> Y <input type="checkbox"/> N						



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May 17, 2018

Ben Wachholz  
TRC Environmental Corporation, Inc.  
230 W Monroe St, Suite 510  
Chicago, IL 60606  
RE: MKC Storm Sewer/Raingarden - Madison, WI

Enclosed are the analytical results for the samples received by the laboratory on 05/11/2018.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. These results are in compliance with the 2009 NELAC Standards and the appropriate agencies listed below, unless otherwise noted in the case narrative. This analytical report should be reproduced in its entirety.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jessica Esser  
Project Manager

**Certification List**

Certification List			Expires
ADEQ	Arkansas Department of Environmental Quality	17-065-0	09/26/2018
DODELAP	DOD ELAP Accreditation (A2LA)	3269.01	03/31/2019
ILEPA	Illinois Secondary NELAP Accreditation	004366	04/30/2019
KDHE	Kansas Secondary NELAP Accreditation	E-10384	04/30/2019
LELAP	Louisiana Primary NELAP Accreditation	04165	06/30/2018
NCDEQ	North Carolina Dept. of Environmental Quality Accreditation	688	12/31/2018
NJDEP	New Jersey Secondary NELAP Accreditation	WI004	06/30/2018
ODEQ	Oklahoma Department of Environmental Quality Accreditation	2017-154	08/31/2018
TCEQ	Texas Secondary NELAP Accreditation	T104704504-16-7	11/30/2018
WDNR	Wisconsin Certification under NR 149	113289110	08/31/2018





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Project: MKC Storm Sewer/Raingarden - Madison, WI  
Project Number: 268304  
Project Manager: Ben Wachholz

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
OUTFALL PIPE-051018	A181916-01	Soil	05/10/2018	05/11/2018
MH-1A-051018	A181916-02	Soil	05/10/2018	05/11/2018

**CASE NARRATIVE**

**Sample Receipt Information:**

2 samples were received on 05/11/2018. Samples were received on ice. Samples were received in acceptable condition.

Please see the chain of custody (COC) document at the end of this report for additional information.



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 Project Number: 268304  
 Project Manager: Ben Wachholz

**OUTFALL PIPE-051018**

Date Sampled  
 05/10/2018 13:30

**A181916-01 (Soil)**

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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**Pace Analytical - Madison**

**Polychlorinated Biphenyls by EPA Method 8082**

**Preparation Batch: A805176**

PCB-1016	ND	0.0099	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
PCB-1221	ND	0.0055	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
PCB-1232	ND	0.0038	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
PCB-1242	ND	0.0059	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
<b>PCB-1248</b>	<b>1.9</b>	0.0071	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
PCB-1254	ND	0.0059	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
PCB-1260	ND	0.0032	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
<b>Total PCBs</b>	<b>1.9</b>	0.0099	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	

Surrogate: Decachlorobiphenyl

97.5 % 56.6-128

05/15/2018

05/15/2018 12:44

EPA 8082A

Surrogate: Tetrachloro-meta-xylene

101 % 69.6-121

05/15/2018

05/15/2018 12:44

EPA 8082A

**Classical Chemistry Parameters**

**Preparation Batch: A805178**

<b>% Solids</b>	<b>74.4</b>	0.00	% by Weight	1	05/15/2018	05/16/2018 08:22	SM 2540B		
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 Project Number: 268304  
 Project Manager: Ben Wachholz

**MH-1A-051018**

Date Sampled

**A181916-02 (Soil)**

**05/10/2018 15:15**

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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**Pace Analytical - Madison**

**Polychlorinated Biphenyls by EPA Method 8082**

**Preparation Batch: A805176**

PCB-1016	ND	0.0083	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
PCB-1221	ND	0.0046	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
PCB-1232	ND	0.0031	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
PCB-1242	ND	0.0049	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
<b>PCB-1248</b>	<b>0.15</b>	0.0059	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
PCB-1254	ND	0.0049	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
PCB-1260	ND	0.0027	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
<b>Total PCBs</b>	<b>0.15</b>	0.0083	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
Surrogate: Decachlorobiphenyl			99.3 %	56.6-128		05/15/2018	05/15/2018 14:28	EPA 8082A	
Surrogate: Tetrachloro-meta-xylene			102 %	69.6-121		05/15/2018	05/15/2018 14:28	EPA 8082A	

**Classical Chemistry Parameters**

**Preparation Batch: A805178**

<b>% Solids</b>	<b>89.3</b>		0.00	% by Weight	1	05/15/2018	05/16/2018 08:22	SM 2540B	
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 Project Number: 268304  
 Project Manager: Ben Wachholz

**Polychlorinated Biphenyls by EPA Method 8082 - Quality Control**  
**Pace Analytical - Madison**

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch A805176 - EPA 3570**

**Blank (A805176-BLK1)**

Prepared: 05/15/2018 Analyzed: 05/15/2018 12:19

PCB-1016	ND	0.10	mg/kg wet							
PCB-1221	ND	0.10	mg/kg wet							
PCB-1232	ND	0.10	mg/kg wet							
PCB-1242	ND	0.10	mg/kg wet							
PCB-1248	ND	0.10	mg/kg wet							
PCB-1254	ND	0.10	mg/kg wet							
PCB-1260	ND	0.10	mg/kg wet							
Total PCBs	ND	0.10	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.231		mg/kg wet	0.2400		96.3	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.211		mg/kg wet	0.2400		87.8	69.6-121			

**LCS (A805176-BS1)**

Prepared: 05/15/2018 Analyzed: 05/15/2018 11:54

PCB-1254	1.77	0.10	mg/kg wet	2.000		88.6	79.1-109			
Surrogate: Decachlorobiphenyl	0.226		mg/kg wet	0.2400		94.0	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.206		mg/kg wet	0.2400		85.8	69.6-121			

**Matrix Spike (A805176-MS1)**

Source: A181916-02

Prepared: 05/15/2018 Analyzed: 05/15/2018 15:25

PCB-1254	2.02	0.11	mg/kg dry	2.241	ND	90.0	66.7-124			
Surrogate: Decachlorobiphenyl	0.240		mg/kg dry	0.2689		89.4	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.239		mg/kg dry	0.2689		88.8	69.6-121			

**Matrix Spike Dup (A805176-MSD1)**

Source: A181916-02

Prepared: 05/15/2018 Analyzed: 05/15/2018 15:50

PCB-1254	2.22	0.11	mg/kg dry	2.241	ND	99.3	66.7-124	9.82	20	
Surrogate: Decachlorobiphenyl	0.266		mg/kg dry	0.2689		99.1	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.277		mg/kg dry	0.2689		103	69.6-121			



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**Classical Chemistry Parameters - Quality Control**

**Pace Analytical - Madison**

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch A805178 - % Solids**

**Duplicate (A805178-DUP1)**      **Source: A181916-02**      Prepared: 05/15/2018      Analyzed: 05/16/2018 08:22

% Solids	84.1	0.00	% by Weight		89.3			5.93	20	
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### Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
- RPD Relative Percent Difference

(Please Print Clearly)

UPPER MIDWEST REGION

Page 1 of 1

Company Name: TRC  
 Branch/Location: Madison, WI  
 Project Contact: Ben Wachholz  
 Phone: 608-354-3923  
 Project Number: 268304  
 Project Name: MKC Rain Garden  
 Project State: WI  
 Sampled By (Print): Ben Wachholz  
 Sampled By (Sign): *Ben Wachholz*  
 PO #: 103478



MN: 612-607-1700 WI: 920-469-2436

A181916

### CHAIN OF CUSTODY

**\*Preservation Codes**  
 A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH  
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

FILTERED?  
(YES/NO)  
  
 PRESERVATION  
(CODE)\*

Y/N	Pick Letter	Analyses Requested
N	A	PCBS

**Quote #:**

**Mail To Contact:** Ben Wachholz

**Mail To Company:** TRC

**Mail To Address:** 708 Heartland Trail Suite 3000  
Madison, WI

**Invoice To Contact:**

**Invoice To Company:** Same as above

**Invoice To Address:**

**Invoice To Phone:** 608-354-3923

CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
5 day TAT	01	
5 day TAT	02	

**Data Package Options** (billable)  
 EPA Level III  
 EPA Level IV

**MS/MSD**  
 On your sample (billable)  
 NOT needed on your sample

**Matrix Codes**  
 A = Air W = Water  
 B = Biota DW = Drinking Water  
 C = Charcoal GW = Ground Water  
 O = Oil SW = Surface Water  
 S = Soil WW = Waste Water  
 Sl = Sludge WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX
		DATE	TIME	
	OUTFALL PIPE--051018	5/10/18	13:30	S
	MH-1A-051018	5/10/18	15:15	S

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge) Date Needed:	Relinquished By: <i>Ben Wachholz</i>	Date/Time: 5/11/18 12:58	Received By: <i>Jessica [Signature]</i>	Date/Time: 05-11-18 12:58	PACE Project No.
	Relinquished By:	Date/Time:	Received By:	Date/Time:	Receipt Temp = <i>on ice</i> °C
	Relinquished By:	Date/Time:	Received By:	Date/Time:	Sample Receipt pH OK / Adjusted
	Relinquished By:	Date/Time:	Received By:	Date/Time:	Cooler Custody Seal Present / Not Present Intact / Not Intact

Samples on HOLD are subject to special pricing and release of liability