State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Road
Fitchburg WI 53711-5397

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

June 13, 2018

Mr. Robert Franz
27824 County Hwy II
Cazenovia, WI 53924

File Ref: 03-53-000559

Subject: Air Sampling Results for the Hub Pub
May 4, 2018 Sampling Event
15672 STH 80, Hub City
Located adjacent to Anderson Property Site (BRRTS #03-53-000559)

Dear Mr. Franz:

This letter and attachments summarizes the results of air sampling performed at the Hub Pub located at 15672 State Highway 80, Hub City, Wisconsin. Sampling was performed on May 4, 2018 by the Department of Health Services (DHS).

In April 16, 2018, you notified the Wisconsin Department of Natural Resources (DNR) of petroleum-like ("heavy diesel") odors in the basement of the Hub Pub. You said that you began noticing the odors on about April 9, 2018, before the weather got cold and snowy. You requested vapor tests be done in May when it is raining and warm. You stated that your sump pump was actively discharging an orange substance onto the ground at the Hub Pub property.

I notified DHS of your request. On May 3, 2018, you spoke with Curtis Hedman, Toxicologist for DHS, informing him that odors were present and the sump pump was operating repeatedly. Mr. Hedman (DHS) responded by sampling air at the Hub Pub the next day (May 4, 2018).

The DHS collected air samples using 6-liter Summa canisters during a 6-hour sample period. Air samples were obtained from the basement where the sump pump is located, in the kitchen area of the former bar (located just above the basement), and from the outside. The air sampling results are described in a letter and table provided by DHS (see **Attachment A**). The air sample laboratory report is included in **Attachment B**.

The sampling results provided by DHS indicate that the air sample collected in the basement had two petroleum constituents exceeding DNR vapor action levels (VALs). Benzene was detected at a concentration of 4.2 parts-per-billion by Volume (ppbV), exceeding the VAL of 1.1 ppbV. Ethylbenzene was detected at a concentration of 4.5 ppbV, exceeding the VAL of 2.5 ppbV.

In the air sample obtained in the kitchen, 1,4-dichlorobenzene was detected at a concentration of 1.6 ppbV, exceeding the VAL of 0.43 ppbV. The source of this compound appears to be from chemicals used within the Hub Pub, and not from vapor intrusion.

DHS's conclusions and recommendations regarding the air sampling (see attached) are re-stated below:

> **Conclusions:** The results from this sampling event confirm that during high water table periods, petroleum product compound concentrations can exist in the building basement air above DNR VALs. The amounts measured in indoor air are below what represents an acute or immediate health hazard. The

VAL is calculated for long-term continuous exposure, and if concentrations were to persist above the VAL all of the time, this would represent a Health Hazard from chronic exposure. However, since the potential for exposure exists intermittently, there is not an apparent health hazard from chronic exposure.

Recommendations:

- To protect human health during periods of intermittent exposure such as high water events, DHS recommends that the Hub Pub property owner take steps to prevent indoor exposure to petroleum odors. These could include:
  - Ventilate the basement area;
  - Keep the sump pump crock covered with a properly sealed lid;
  - Install a petroleum-rated vapor mitigation system in the basement area.
- DHS recommends that those responsible for the source contamination take steps to provide a permanent solution to the petroleum contamination existing on the neighboring property.
- DHS suggests fencing off the sump pump discharge area as a barrier to incidental contact for visitors of the Hub Pub property to petroleum in sump discharge water.

The DNR agrees with these conclusions and recommendations by DHS. If you have any questions, please contact me in writing at the letterhead address, by telephone at 608-275-3222 or by email at john.mason@wisconsin.gov.

Sincerely,

John Mason
Project Manager

cc: Ed Berry and Rita Thielmann, 15625 STH 80, Richland Center, WI, 53581
Robert Thiboldeaux, DHS, 1 West Wilson Street, Rm 150, Madison, WI 53701 (elec. copy)
Curtis Hedman, DHS, 1 West Wilson Street, Rm 150, Madison, WI 53701 (elec. copy)
Troy Moris, Env. Health Coordinator, 111 South Jefferson St, Flr. 2, Lancaster, WI 53813 (elec.copy)
Steven Martin, DNR (elec. copy)
Art Harrington, Godfrey and Kahn (elec. copy)

Attachment A – Air Sampling Results at Hub Pub - Letter and Table by DHS dated June 11, 2018

Scott Walker
Governor

Linda Seemeyer
Secretary

DIVISION OF PUBLIC HEALTH

1 WEST WILSON STREET
PO BOX 2659
MADISON WI 53701-2659

Telephone: 608-266-1251
Fax: 608-267-2832
TTY: 711 or 800-947-3529

State of Wisconsin
Department of Health Services

June 11, 2018

John Mason
Hydrogeologist
Remediation and Redevelopment Program
Environmental Management Division
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road, Fitchburg, WI 53711

Re: Field investigation notes and TO-15 results evaluation for Hub Pub, 15672 STH 80 Hub City – located adjacent to Anderson Property site (BRRTS #03-53-000559)

Dear Mr. Mason:

Background: Staff from the Wisconsin Department of Health Services (DHS) recently conducted indoor air sampling at the property located at the Hub Pub, 15672 State Highway 80, in Hub City, Wisconsin. This work was performed to assess potential petroleum-related vapors inside the building at the Hub Pub. This work was performed in response to previous and ongoing complaints of petroleum odors being observed at the property, which may be attributed to historical releases of petroleum products from former underground petroleum storage tanks on the adjacent property.

Investigation: The building owner and I were the only persons present at the time of sampling. The field investigation of the property consisted of an inspection of the building and grounds, real-time screening for total volatile organic compounds (VOCs) using a photoionization detector (PID), and indoor and outdoor air samples for later laboratory analysis at the Wisconsin State Laboratory of Hygiene (WSLH). Six liter Summa canisters were set up close to breathing height in the main level (e.g. in the kitchen area of the former bar, located above the basement) and basement areas along with an outdoor ambient air reference six liter Summa canister for a six hour sampling time period. Air was field-screened on May 4, 2018 at the time the cans were deployed. The air samples were analyzed by WSLH using US EPA Method TO-15 to evaluate for VOCs present. Vapors from some of the VOCs monitored for by Method TO-15 could theoretically migrate from contaminated soils and groundwater into the indoor air of a property in a process known as vapor intrusion (VI). This sampling event followed several days of heavy rains which had brought the water table close to the foundation, and provided conditions under which petroleum from the adjacent property might directly affect the Hub Pub building.

Findings: During the inspection at the time of sampling, the building owner pointed out that since the last sampling event, solvent containers that are potential indoor sources of VOCs had been removed to the extent possible. During the visit, the sump pump was actively discharging

every several minutes due to the high water table. Orange residue observed around the sump water discharge area during previous sampling event inspections was present again. We both agreed that a faint petroleum odor was discernable in the basement area. PID VOC readings were very similar to those observed during the January 2018 sampling event. TO-15 results for these samples were reported by WSLH on May 8, 2018. Results contain the flag, F, if the analytical result is between the limit of detection (LOD) and limit of quantitation (LOQ) for the WSLH TO-15 method, which indicates there may be more quantitative uncertainty (i.e. > 30%) associated with these results. Six-hour Summa canister samples were taken because petroleum odors were reported to be present by the building owner in the days leading up to the sampling event. The results for the VOCs present in these samples were compared to Vapor Action Levels (VALs) based on available DNR and EPA Regional Screening Levels (RSLs)[1], and a summary of these results is presented in a table attached to this letter.

While the focus of this sampling event was to assess for petroleum based product vapor intrusion, one non-petroleum based VOC, 1,4-Dichlorobenzene, was detected at levels above the VAL of 0.43 ppbV that has been set to be protective of lifetime cancer risk. Common product uses for 1,4-Dichlorobenzene are as an ingredient in pesticide formulations and as a deodorizer in urinal cakes. The building owner made an effort to mitigate sources of this compound after the January 2018 sampling event, and the level of 1,4-Dichlorobenzene present for this sampling event was much lower than the levels detected in the previous samples.

DNR VALs were exceeded for two petroleum constituents (benzene and ethylbenzene) in the basement air samples. The observed benzene concentration was 4.2 ppbV (VAL = 1.1 ppbV) and the observed ethylbenzene concentration was 4.5 ppbV (VAL = 2.5 ppbV).

All other VOCs detected indoors were observed to be at concentrations that were an order of magnitude or more below available VALs, and appeared to be occurring either by outdoor air influence or due to a possible non-VI indoor source. In addition, these TO-15 VOCs results are also consistent with the observed total VOCs screening results that were performed by a RAE Systems Photoionization Detector (PID), which ranged from 0 to 0.1ppmV (or 0 to 100ppbV) while on site on May 4, 2018.

Vapor intrusion traveling from a petroleum mass in soil or groundwater to a building foundation is a possibility when the mass is close to the foundation. The effect can be enhanced during shallow water table periods. In this case, the location of former petroleum underground storage tanks (USTs) and associated soil contamination is within 70 feet of the building on the investigated property (DNR communication). During the summer 2017 visit to the Hub Pub, DHS staff noted faint petroleum odors in the sump water outfall when the sump discharged, suggesting that the sump is intercepting petroleum-contaminated groundwater some of the time. The TO-15 results from this high water table sampling event indicated the presence of several petroleum vapor intrusion indicator compounds with two of these compounds being present at levels exceeding the DNR VAL. Basement sample concentrations detected for these compounds were an order of magnitude greater than concentrations observed in the main level. 1,4-

[1] United States Environmental Protection Agency. Regional Screening Levels- Generic Tables (revised November 2017). Internet: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-november-2017

Dichlorobenzene concentrations would be expected to continue going down over time now that the indoor sources have been mitigated.

Conclusions: The results from this sampling event confirm that during high water table periods, petroleum product compound concentrations can exist in the building basement air above DNR VALs. The amounts measured in indoor air are below what represents an acute or immediate health hazard. The VAL is calculated for long-term continuous exposure, and if concentrations were to persist above the VAL all of the time, this would represent a Health Hazard from chronic exposure. However, since the potential for exposure exists intermittently, there is not an apparent health hazard from chronic exposure.

Recommendations:

- To protect human health during periods of intermittent exposure such as high water events, DHS recommends that the Hub Pub property owner take steps to prevent indoor exposure to petroleum odors. These could include:
    - Ventilate the basement area;
    - Keep the sump pump crock covered with a properly sealed lid;
    - Install a petroleum-rated vapor mitigation system in the basement area.
- DHS recommends that those responsible for the source contamination take steps to provide a permanent solution to the petroleum contamination existing on the neighboring property.
- DHS suggests fencing off the sump pump discharge area as a barrier to incidental contact for visitors of the Hub Pub property to petroleum in sump discharge water.

Please contact Curtis Hedman with the Wisconsin Division of Public Health at (608) 266-6677, or curtis.hedman@wisconsin.gov if you have any questions about the health recommendations made in this letter.

Sincerely,

Curtis J. Hedman

Curtis Hedman
Toxicologist

Cc: Steve Martin, SCR Team Supervisor, WI DNR
Robert Thiboldeaux, Senior Toxicologist, WI DHS
Michael Metcalf, Indoor Air Quality Communications Coordinator, WI DHS

Scott Walker
Governor

Linda Seemeyer
Secretary

DIVISION OF PUBLIC HEALTH

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Fax: 608-267-2832
TTY: 711 or 800-947-3529

State of Wisconsin
Department of Health Services

Table: Summary of TO-15 Results for Hub Pub Sampling Event on May 4, 2018

	ppbV Results								
	Outdoor		Main Level		Basement				
VOC Detected	ppbV	flag	ppbV	flag	ppbV	flag	Action Level	Action Level Source	Notes
Chloromethane	0.49						45	DNR	outdoor influence
Trichlorofluoromethane	0.23		2.3		0.29	F	No indoor action level	No indoor action level	outdoor influence
Methylene chloride	0.058	F					180	DNR	outdoor influence
Trichlorotrifluoroethane	0.052	F					680	RSL	outdoor influence
Vinyl acetate			0.17	F			60	RSL	possible non-VI indoor source
Methyl Ethyl Ketone (MEK)	0.17		0.20	F			1800	RSL	outdoor influence
Hexane	0.016	F			0.082	F	210	RSL	outdoor influence
1,1,1-Trichloroethane			0.50				940	DNR	possible non-VI indoor source
Benzene	0.044	F	0.24	F	**4.2**		1.1	DNR	**Petroleum VI Indicator**
Carbon tetrachloride	0.079						0.73	DNR	outdoor influence
Cyclohexane					0.76		1800	RSL	possible non-VI indoor source
4-Methyl-2-pentanone (MIBK)	0.028	F					760	RSL	outdoor influence
Toluene			0.15	F	0.91		1,400	DNR	**Petroleum VI Indicator**
Ethyl Benzene			0.23	F	**4.5**		2.5	DNR	**Petroleum VI Indicator**
m/p-xylene			0.36	F	6.1		23	DNR	**Petroleum VI Indicator**
o-xylene					1.6		23	DNR	**Petroleum VI Indicator**
Styrene			0.22	F			230	RSL	possible non-VI indoor source
1-ethyl-4-methyl benzene			0.15	F	0.91		No indoor action level	No indoor action level	possible non-VI indoor source
1,4-Dichlorobenzene			**1.6**				0.43	RSL	possible non-VI indoor source
1,3,5-Trimethylbenzene					0.31	F	13	DNR	**Petroleum VI Indicator**
1,2,4-Trimethylbenzene	0.028	F	0.17	F	2.0		13	DNR	**Petroleum VI Indicator**
Flag Key									
F = Result is between LOD and LOQ.									

Attachment B – Laboratory Report for Air Samples Collected at the Hub Pub on May 4, 2018

Wisconsin State Laboratory of Hygiene
UNIVERSITY OF WISCONSIN-MADISON

Wisconsin State Laboratory of Hygiene
2601 Agriculture Drive, PO Box 7996
Madison, WI 53707-7996
(800)442-4618 - FAX (608)224-6213
http://www.slh.wisc.edu

Laboratory Report

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

Environmental Health Division

WDNR LAB ID: 113133790 NELAP LAB ID: E37658 EPA LAB ID: WI00007, WI00008 WI DATCP ID: 105-415

WSLH Sample: 379954001

Report To:
CURTIS HEDMAN
1 W. WILSON ST
RM 150
MADISON, WI 53701

Invoice To:
DEPARTMENT OF HEALTH

Customer ID: DH060

Field #: MAIN LEVEL
Project No: HUB PUB
Collection End: 5/4/2018 6:12:00 PM
Collection Start: 5/4/18 12:17
Collected By: CURTIS HEDMAN
Date Received: 5/7/2018
Date Reported: 5/8/2018
Sample Reason:

ID#:
Sample Location:
Sample Description:
Sample Type: AI-INDOOR AIR
Waterbody:
Point or Outfall:
Sample Depth:
Program Code:
Region Code:
County:

OC-Volatiles

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date 05/07/18 Analysis Date 05/07/18					
Propene	EPA TO-15	ND	ppbv	0.22	0.73
Chloromethane	EPA TO-15	ND	ppbv	0.15	0.48
1,2-Dichlorotetrafluoroethane	EPA TO-15	ND	ppbv	0.15	0.49
Vinyl chloride	EPA TO-15	ND	ppbv	0.13	0.41
1,3-Butadiene	EPA TO-15	ND	ppbv	0.17	0.57
Bromomethane	EPA TO-15	ND	ppbv	0.13	0.43
Chloroethane	EPA TO-15	ND	ppbv	0.13	0.44
Acrolein	EPA TO-15	ND	ppbv	0.30	0.98
QC limit for precision exceeded.					
Trichlorofluoromethane	EPA TO-15	2.3	ppbv	0.15	0.51
1,1-Dichloroethene	EPA TO-15	ND	ppbv	0.060	0.20
Methylene chloride	EPA TO-15	ND	ppbv	0.17	0.57
Carbon disulfide	EPA TO-15	ND	ppbv	0.080	0.26
Trichlorotrifluoroethane	EPA TO-15	ND	ppbv	0.11	0.34
trans-1,2-Dichloroethene	EPA TO-15	ND	ppbv	0.070	0.23

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Laboratory Report

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

Environmental Health Division

WDNR LAB ID: 113133790 NELAP LAB ID: E37658 EPA LAB ID: WI00007, WI00008 WI DATCP ID: 105-415

WSLH Sample: 379954001

OC-Volatiles

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date 05/07/18 Analysis Date 05/07/18					
1,1-Dichloroethane	EPA TO-15	ND	ppbv	0.12	0.40
Methyl tert-Butyl ether (MTBE)	EPA TO-15	ND	ppbv	0.11	0.35
Vinyl acetate	EPA TO-15	0.17F	ppbv	0.080	0.27
Methyl Ethyl Ketone (MEK)	EPA TO-15	0.20F	ppbv	0.14	0.45
cis-1,2-Dichloroethene	EPA TO-15	ND	ppbv	0.055	0.19
Hexane	EPA TO-15	ND	ppbv	0.055	0.18
Chloroform	EPA TO-15	ND	ppbv	0.17	0.56
Tetrahydrofuran	EPA TO-15	ND	ppbv	0.090	0.31
1,2-Dichloroethane	EPA TO-15	ND	ppbv	0.095	0.32
1,1,1-Trichloroethane	EPA TO-15	0.50	ppbv	0.14	0.47
Benzene	EPA TO-15	0.24F	ppbv	0.090	0.30
Carbon tetrachloride	EPA TO-15	ND	ppbv	0.12	0.39
Cyclohexane	EPA TO-15	ND	ppbv	0.12	0.38
1,2-Dichloropropane	EPA TO-15	ND	ppbv	0.14	0.45
Bromodichloromethane	EPA TO-15	ND	ppbv	0.15	0.50
Trichloroethene	EPA TO-15	ND	ppbv	0.15	0.49
n-Heptane	EPA TO-15	ND	ppbv	0.10	0.34
cis-1,3-Dichloropropene	EPA TO-15	ND	ppbv	0.13	0.41
4-Methyl-2-pentanone (MIBK)	EPA TO-15	ND	ppbv	0.14	0.47
trans-1,3-Dichloropropene	EPA TO-15	ND	ppbv	0.14	0.45
1,1,2-Trichloroethane	EPA TO-15	ND	ppbv	0.14	0.46
Toluene	EPA TO-15	0.15F	ppbv	0.13	0.44
2-Hexanone	EPA TO-15	ND	ppbv	0.24	0.79
Chlorodibromomethane	EPA TO-15	ND	ppbv	0.14	0.47
1,2-Dibromoethane	EPA TO-15	ND	ppbv	0.15	0.49
Tetrachloroethene	EPA TO-15	ND	ppbv	0.13	0.43
Chlorobenzene	EPA TO-15	ND	ppbv	0.18	0.58
Ethyl Benzene	EPA TO-15	0.23F	ppbv	0.12	0.39
m/p-xylene	EPA TO-15	0.36F	ppbv	0.22	0.72

Wisconsin State Laboratory of Hygiene
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Laboratory Report

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

Environmental Health Division

WDNR LAB ID: 113133790 NELAP LAB ID: E37658 EPA LAB ID: WI00007, WI00008 WI DATCP ID: 105-415

WSLH Sample: 379954001

OC-Volatiles

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date 05/07/18 Analysis Date 05/07/18					
Bromoform	EPA TO-15	ND	ppbv	0.13	0.42
Styrene	EPA TO-15	0.22F	ppbv	0.13	0.44
1,1,2,2-Tetrachloroethane	EPA TO-15	ND	ppbv	0.16	0.54
o-Xylene	EPA TO-15	ND	ppbv	0.13	0.44
1-ethyl-4-methyl benzene	EPA TO-15	0.15F	ppbv	0.15	0.50
1,3,5-Trimethylbenzene	EPA TO-15	ND	ppbv	0.12	0.39
1,2,4-Trimethylbenzene	EPA TO-15	0.17F	ppbv	0.14	0.47
1,3-Dichlorobenzene	EPA TO-15	ND	ppbv	0.18	0.61
1,4-Dichlorobenzene	EPA TO-15	1.6	ppbv	0.33	1.1
1,2-Dichlorobenzene	EPA TO-15	ND	ppbv	0.21	0.68
Hexachlorobutadiene	EPA TO-15	ND	ppbv	0.32	1.1

The Upper QC limit for the calibration check is exceeded.

List of Abbreviations:

LOD = Level of detection
LOQ = Level of quantification
ND = None detected. Results are less than the LOD
F next to result = Result is between LOD and LOQ
Z next to result = Result is between 0 (zero) and LOD
if LOD=LOQ, Limits were not statistically derived

Test results for NELAP accredited tests are certified to meet the requirements of the NELAC standards. For a list of accredited analytes see http://www.slh.wisc.edu/about/compliance/nelac-laboratory-accreditation
Results, LOD and LOQ values have been adjusted for analytical dilutions and percent moisture where applicable.
Results relate only to the items tested.

The water microbiology unit analyzes samples as received and not all samples are tested for preservation before analysis is performed.

Wisconsin State Laboratory of Hygiene
UNIVERSITY OF WISCONSIN-MADISON

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Laboratory Report

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

Environmental Health Division

WDNR LAB ID: 113133790 NELAP LAB ID: E37658 EPA LAB ID: WI00007, WI00008 WI DATCP ID: 105-415

WSLH Sample: 379954001

Responsible Party

Microbiology: Sharon Kluender, Lab Manager, 608-224-6262
Inorganic Chemistry: DeWayne Kennedy-Parker, Lab Manager, 608-224-6282
Metals: DeWayne Kennedy-Parker, Lab Manager, 608-224-6282
Organic Chemistry: Al Spallato, Lab Manager, 608-224-6269
Emergency Chemical Response: Noel Stanton, Lab Manager, 608-224-6251
Environmental Toxicology: Tracy Hanke, Lab Manager, 608-224-6270

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Laboratory Report

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

Environmental Health Division

WDNR LAB ID: 113133790 NELAP LAB ID: E37658 EPA LAB ID: WI00007, WI00008 WI DATCP ID: 105-415

WSLH Sample: 379954002

Report To:
CURTIS HEDMAN
1 W. WILSON ST
RM 150
MADISON, WI 53701

Invoice To:
DEPARTMENT OF HEALTH

Customer ID: DH060

Field #: BASEMENT
Project No: HUB PUB
Collection End: 5/4/2018 6:20:00 PM
Collection Start: 5/4/18 12:26
Collected By: CURTIS HEDMAN
Date Received: 5/7/2018
Date Reported: 5/8/2018
Sample Reason:

ID#:
Sample Location:
Sample Description:
Sample Type: AI-INDOOR AIR
Waterbody:
Point or Outfall:
Sample Depth:
Program Code:
Region Code:
County:

OC-Volatiles

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date 05/07/18 Analysis Date 05/07/18					
Propene	EPA TO-15	ND	ppbv	0.22	0.73
Chloromethane	EPA TO-15	ND	ppbv	0.15	0.48
1,2-Dichlorotetrafluoroethane	EPA TO-15	ND	ppbv	0.15	0.49
Vinyl chloride	EPA TO-15	ND	ppbv	0.13	0.41
1,3-Butadiene	EPA TO-15	ND	ppbv	0.17	0.57
Bromomethane	EPA TO-15	ND	ppbv	0.13	0.43
Chloroethane	EPA TO-15	ND	ppbv	0.13	0.44
Acrolein	EPA TO-15	ND	ppbv	0.30	0.98
Trichlorofluoromethane	EPA TO-15	0.29F	ppbv	0.15	0.51
1,1-Dichloroethene	EPA TO-15	ND	ppbv	0.060	0.20
Methylene chloride	EPA TO-15	ND	ppbv	0.17	0.57
Carbon disulfide	EPA TO-15	ND	ppbv	0.080	0.26
Trichlorotrifluoroethane	EPA TO-15	ND	ppbv	0.11	0.34
trans-1,2-Dichloroethene	EPA TO-15	ND	ppbv	0.070	0.23
1,1-Dichloroethane	EPA TO-15	ND	ppbv	0.12	0.40

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Environmental Health Division

WDNR LAB ID: 113133790 NELAP LAB ID: E37658 EPA LAB ID: WI00007, WI00008 WI DATCP ID: 105-415

WSLH Sample: 379954002

OC-Volatiles

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date 05/07/18 Analysis Date 05/07/18					
Methyl tert-Butyl ether (MTBE)	EPA TO-15	ND	ppbv	0.11	0.35
Vinyl acetate	EPA TO-15	ND	ppbv	0.080	0.27
Methyl Ethyl Ketone (MEK)	EPA TO-15	ND	ppbv	0.14	0.45
cis-1,2-Dichloroethene	EPA TO-15	ND	ppbv	0.055	0.19
Hexane	EPA TO-15	0.082F	ppbv	0.055	0.18
Chloroform	EPA TO-15	ND	ppbv	0.17	0.56
Tetrahydrofuran	EPA TO-15	ND	ppbv	0.090	0.31
1,2-Dichloroethane	EPA TO-15	ND	ppbv	0.095	0.32
1,1,1-Trichloroethane	EPA TO-15	ND	ppbv	0.14	0.47
Benzene	EPA TO-15	4.2	ppbv	0.090	0.30
Carbon tetrachloride	EPA TO-15	ND	ppbv	0.12	0.39
Cyclohexane	EPA TO-15	0.76	ppbv	0.12	0.38
1,2-Dichloropropane	EPA TO-15	ND	ppbv	0.14	0.45
Bromodichloromethane	EPA TO-15	ND	ppbv	0.15	0.50
Trichloroethene	EPA TO-15	ND	ppbv	0.15	0.49
n-Heptane	EPA TO-15	ND	ppbv	0.10	0.34
cis-1,3-Dichloropropene	EPA TO-15	ND	ppbv	0.13	0.41
4-Methyl-2-pentanone (MIBK)	EPA TO-15	ND	ppbv	0.14	0.47
trans-1,3-Dichloropropene	EPA TO-15	ND	ppbv	0.14	0.45
1,1,2-Trichloroethane	EPA TO-15	ND	ppbv	0.14	0.46
Toluene	EPA TO-15	0.91	ppbv	0.13	0.44
2-Hexanone	EPA TO-15	ND	ppbv	0.24	0.79
Chlorodibromomethane	EPA TO-15	ND	ppbv	0.14	0.47
1,2-Dibromoethane	EPA TO-15	ND	ppbv	0.15	0.49
Tetrachloroethene	EPA TO-15	ND	ppbv	0.13	0.43
Chlorobenzene	EPA TO-15	ND	ppbv	0.18	0.58
Ethyl Benzene	EPA TO-15	4.5	ppbv	0.12	0.39
m/p-xylene	EPA TO-15	6.1	ppbv	0.22	0.72
Bromoform	EPA TO-15	ND	ppbv	0.13	0.42

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Laboratory Report

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

Environmental Health Division

WDNR LAB ID: 113133790 NELAP LAB ID: E37658 EPA LAB ID: WI00007, WI00008 WI DATCP ID: 105-415

WSLH Sample: 379954002

OC-Volatiles

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date 05/07/18 Analysis Date 05/07/18					
Styrene	EPA TO-15	ND	ppbv	0.13	0.44
1,1,2,2-Tetrachloroethane	EPA TO-15	ND	ppbv	0.16	0.54
o-Xylene	EPA TO-15	1.6	ppbv	0.13	0.44
1-ethyl-4-methyl benzene	EPA TO-15	0.91	ppbv	0.15	0.50
1,3,5-Trimethylbenzene	EPA TO-15	0.31F	ppbv	0.12	0.39
1,2,4-Trimethylbenzene	EPA TO-15	2.0	ppbv	0.14	0.47
1,3-Dichlorobenzene	EPA TO-15	ND	ppbv	0.18	0.61
1,4-Dichlorobenzene	EPA TO-15	ND	ppbv	0.33	1.1
1,2-Dichlorobenzene	EPA TO-15	ND	ppbv	0.21	0.68
Hexachlorobutadiene	EPA TO-15	ND	ppbv	0.32	1.1

The Upper QC limit for the calibration check is exceeded.

List of Abbreviations:

LOD = Level of detection
LOQ = Level of quantification
ND = None detected. Results are less than the LOD
F next to result = Result is between LOD and LOQ
Z next to result = Result is between 0 (zero) and LOD
if LOD=LOQ, Limits were not statistically derived

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Results, LOD and LOQ values have been adjusted for analytical dilutions and percent moisture where applicable.
Results relate only to the items tested.

The water microbiology unit analyzes samples as received and not all samples are tested for preservation before analysis is performed.

Responsible Party

Microbiology: Sharon Kluender, Lab Manager, 608-224-6262
Inorganic Chemistry: DeWayne Kennedy-Parker, Lab Manager, 608-224-6282
Metals: DeWayne Kennedy-Parker, Lab Manager, 608-224-6282
Organic Chemistry: Al Spallato, Lab Manager, 608-224-6269
Emergency Chemical Response: Noel Stanton, Lab Manager, 608-224-6251
Environmental Toxicology: Tracy Hanke, Lab Manager, 608-224-6270

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Environmental Health Division

WDNR LAB ID: 113133790 NELAP LAB ID: E37658 EPA LAB ID: WI00007, WI00008 WI DATCP ID: 105-415

WSLH Sample: 379954003

Report To:
CURTIS HEDMAN
1 W. WILSON ST
RM 150
MADISON, WI 53701

Invoice To:
DEPARTMENT OF HEALTH

Customer ID: DH060

Field #: OUTDOOR
Project No: HUB PUB
Collection End: 5/4/2018 6:27:00 PM
Collection Start: 5/4/18 12:32
Collected By: CURTIS HEDMAN
Date Received: 5/7/2018
Date Reported: 5/8/2018
Sample Reason:

ID#:
Sample Location:
Sample Description:
Sample Type: AR-AIR
Waterbody:
Point or Outfall:
Sample Depth:
Program Code:
Region Code:
County:

OC-Volatiles

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date 05/07/18 Analysis Date 05/07/18					
Propene	EPA TO-15	ND	ppbv	0.044	0.15
Chloromethane	EPA TO-15	0.49	ppbv	0.029	0.096
1,2-Dichlorotetrafluoroethane	EPA TO-15	ND	ppbv	0.029	0.098
Vinyl chloride	EPA TO-15	ND	ppbv	0.025	0.082
1,3-Butadiene	EPA TO-15	ND	ppbv	0.034	0.11
Bromomethane	EPA TO-15	ND	ppbv	0.026	0.086
Chloroethane	EPA TO-15	ND	ppbv	0.026	0.088
Acrolein	EPA TO-15	ND	ppbv	0.059	0.20
QC limit for precision exceeded.					
Trichlorofluoromethane	EPA TO-15	0.23	ppbv	0.030	0.10
1,1-Dichloroethene	EPA TO-15	ND	ppbv	0.012	0.040
Methylene chloride	EPA TO-15	0.058F	ppbv	0.034	0.11
Carbon disulfide	EPA TO-15	ND	ppbv	0.016	0.052
Trichlorotrifluoroethane	EPA TO-15	0.052F	ppbv	0.021	0.068
trans-1,2-Dichloroethene	EPA TO-15	ND	ppbv	0.014	0.046

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Environmental Health Division

WDNR LAB ID: 113133790 NELAP LAB ID: E37658 EPA LAB ID: WI00007, WI00008 WI DATCP ID: 105-415

WSLH Sample: 379954003

OC-Volatiles

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date 05/07/18 Analysis Date 05/07/18					
1,1-Dichloroethane	EPA TO-15	ND	ppbv	0.024	0.080
Methyl tert-Butyl ether (MTBE)	EPA TO-15	ND	ppbv	0.021	0.069
Vinyl acetate	EPA TO-15	ND	ppbv	0.016	0.053
Methyl Ethyl Ketone (MEK)	EPA TO-15	0.17	ppbv	0.027	0.090
cis-1,2-Dichloroethene	EPA TO-15	ND	ppbv	0.011	0.037
Hexane	EPA TO-15	0.016F	ppbv	0.011	0.036
Chloroform	EPA TO-15	ND	ppbv	0.034	0.11
Tetrahydrofuran	EPA TO-15	ND	ppbv	0.018	0.061
1,2-Dichloroethane	EPA TO-15	ND	ppbv	0.019	0.064
1,1,1-Trichloroethane	EPA TO-15	ND	ppbv	0.028	0.093
Benzene	EPA TO-15	0.044F	ppbv	0.018	0.059
Carbon tetrachloride	EPA TO-15	0.079	ppbv	0.023	0.077
Cyclohexane	EPA TO-15	ND	ppbv	0.023	0.075
1,2-Dichloropropane	EPA TO-15	ND	ppbv	0.027	0.089
Bromodichloromethane	EPA TO-15	ND	ppbv	0.030	0.099
Trichloroethene	EPA TO-15	ND	ppbv	0.029	0.097
n-Heptane	EPA TO-15	ND	ppbv	0.020	0.068
cis-1,3-Dichloropropene	EPA TO-15	ND	ppbv	0.025	0.082
4-Methyl-2-pentanone (MIBK)	EPA TO-15	0.028F	ppbv	0.028	0.094
trans-1,3-Dichloropropene	EPA TO-15	ND	ppbv	0.027	0.089
1,1,2-Trichloroethane	EPA TO-15	ND	ppbv	0.027	0.091
Toluene	EPA TO-15	ND	ppbv	0.026	0.087
2-Hexanone	EPA TO-15	ND	ppbv	0.047	0.16
Chlorodibromomethane	EPA TO-15	ND	ppbv	0.028	0.094
1,2-Dibromoethane	EPA TO-15	ND	ppbv	0.029	0.097
Tetrachloroethene	EPA TO-15	ND	ppbv	0.026	0.085
Chlorobenzene	EPA TO-15	ND	ppbv	0.035	0.12
Ethyl Benzene	EPA TO-15	ND	ppbv	0.023	0.077
m/p-xylene	EPA TO-15	ND	ppbv	0.043	0.14

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Environmental Health Division

WDNR LAB ID: 113133790 NELAP LAB ID: E37658 EPA LAB ID: WI00007, WI00008 WI DATCP ID: 105-415

WSLH Sample: 379954003

OC-Volatiles

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date 05/07/18	Analysis Date 05/07/18				
Bromoform	EPA TO-15	ND	ppbv	0.025	0.083
Styrene	EPA TO-15	ND	ppbv	0.026	0.088
1,1,2,2-Tetrachloroethane	EPA TO-15	ND	ppbv	0.032	0.11
o-Xylene	EPA TO-15	ND	ppbv	0.026	0.087
1-ethyl-4-methyl benzene	EPA TO-15	ND	ppbv	0.030	0.10
1,3,5-Trimethylbenzene	EPA TO-15	ND	ppbv	0.023	0.078
1,2,4-Trimethylbenzene	EPA TO-15	0.028F	ppbv	0.028	0.093
1,3-Dichlorobenzene	EPA TO-15	ND	ppbv	0.036	0.12
1,4-Dichlorobenzene	EPA TO-15	ND	ppbv	0.065	0.22
1,2-Dichlorobenzene	EPA TO-15	ND	ppbv	0.041	0.14
Hexachlorobutadiene	EPA TO-15	ND	ppbv	0.063	0.21

The Upper QC limit for the calibration check is exceeded.

List of Abbreviations:

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ND = None detected. Results are less than the LOD
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Z next to result = Result is between 0 (zero) and LOD
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WSLH Sample: 379954003

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