Request for Qualifications
Engineering Consultant Services for Moore Lane Bridge
Town of Norwich, Vermont

Issued July 10, 2024

The Town of Norwich is seeking proposals from qualified Engineering Consultants to work with the Town to address an ongoing contaminant issue on Moore Lane Bridge in Norwich, Vermont.

The selected firm will provide consultative services related to the mitigation of an identified petroleum emulsion emanating from the bridge's wooden structure. The intent of this Request for Qualifications (RFQ) is to select an experienced and qualified consultant who will work with the Town to develop a long-term mitigation plan to resolve the problem.

Prospective applicants are advised to read this information over carefully prior to submitting the RFQ.

Two hard copies of the RFQ must be submitted along with an electronic copy to both the Town Manager and the Director of Public Works, clearly marked as follows:

RFQ Engineering Consultant Services for Moore Lane Bridge

Chris Kaufman, Public Works Director
Brennan Duffy, Town Manager
Town of Norwich
P.O. Box 376 / 300 Main St., Norwich, VT 05055

Email: ckaufman@norwich.vt.us and bduffy@norwich.vt.us

The RFQ submittal must be received by **August 19, at 1 p.m. EST**

Background

Moore Lane Bridge (No. 12), located on Moore Lane, is a town owned bridge in Norwich, Vermont. The circa 1989 bridge is a stress-laminated timber bridge sitting on concrete abutments with wingwalls and a bridge deck covered with asphalt. The bridge is structurally in good condition with a deteriorating raised wooden sidewalk on the south side of the bridge. The bridge is greater than 20 feet in length and is currently being inspected by the State every two years. The bridge is skewed 27 degrees and has an approximate length from 37 to 49 feet. The width of the structure is approximately 21.6 feet curb to curb. Bloody Brook runs underneath the bridge from north-west to south-east.

In 2021, a dark colored, petroleum emulsion material was found to be leaking from the underside of the deck onto the adjoining concrete abutments and potentially entering Bloody Brook. In June 2022, the Town of Norwich hired an environmental consultant, Murray & Masterson Environmental Services, to collect streambed sediment and water samples as well as a sample of the material. This report is attached in the RFQ. The contaminant was determined to be an asphalt emulsion material. Results of the contaminant sample collected were found to be above the laboratory detection limits for naphthalene (318.0 ppm), fluoranthene (9,960 ppm), and benzo(a)pyrene (395 ppm) all above the VSL residential standard. TPH-DRO was reported 36 times above the TPH standard (36,186 ppm).

In June/July 2022, the Town of Norwich commissioned an environmental cleanup firm, Clean Harbors Environmental, to remove an underlying tarp laden with asphalt emulsion and clean off the emulsion contaminant from the concrete abutments. In August 2022, an engineering firm developed a set of design plans to address the dripping emulsion by installing a double layer of absorbents with pre-treated plywood. In October/November 2022, a construction company installed the absorbent material and plywood system. The engineering deterrent appeared to be effective for at least one-year until break-through started occurring on the east side of the concrete abutments and reaching the underlying brook. Other options considered as a part of the treatment were removal of the wooden sidewalk and grinding off the asphalt to inspect and possibly install an impermeable barrier. The emulsion appears to be more active during periods of high heat and humidity, along with rain events. The Town is actively working with Clean Harbors Environmental in July 2024 to clean off the emulsion material from the concrete abutments and eliminate impact to the underlying waters.

General Requirements

The intent of this RFQ is to determine an experienced and qualified consultant who will work with the Town to develop a long-term mitigation plan to resolve the problem. It is envisioned that this process will involve providing further study and expertise as required, developing alternative solutions with cost estimates and, once a solution is accepted, developing final plans and costs and potentially aiding the Town in procurement and oversight of the project. Solutions may include engineering, construction, and environmental options, including and up to complete removal and replacement of the contaminated decking materials.

Firms submitting a response must respond in writing to all the requirements of this RFQ. The RFQ should reflect detailed considerations of all the technical challenges presented by this project. Any additional information or tasks that the responding firm believes to be relevant should be included in the submittal. The Town of Norwich will select the best qualified firm that meets the minimum qualifications.

The Selection Committee will be comprised of the Norwich Town Manager and Public Works Director.

The RFQ is due in the Town Manager's office as a hard copy and an electronic copy by **1 p.m. on August 19, 2024**. No late submittals will be accepted. Bidders are **required** to notify the DPW Director of your interest in bidding so any addenda can be issued to all interested parties. Questions will be answered until August 12, 2024, at 3 pm. Responses will be provided to all interested bidders.

Costs incurred for the preparation of the RFQ will be the sole responsibility of the submitting firm. The Town of Norwich reserves the right to select or reject any vendor if it deems that action to be in the best interest of accomplishing the specified project. The Town of Norwich reserves the right to accept the RFQ based on all of its qualities, or on one or more of its qualities. The Town of Norwich also reserves the right to discontinue the selection process at any time prior to the awarding of a contract.

Consultant Selection Process

Firms to be considered for selection must demonstrate experience in both engineering and environmental evaluations and have a minimum of two licensed professional engineers on staff.

The Town of Norwich will follow a Qualification-Based Selection (QBS) process for consultant selection. Applicants must provide sufficient information to allow the reviewers to understand their contributions to past projects cited as examples of relevant experience. From the RFQ's submitted by qualified consulting firms, the Town of Norwich may select finalists for an interview.

The final selection will be based upon:

- Understanding of the Project Scope - demonstrated understanding of the scope and approach of this project communicated in a clear and easy-to-understand manner.
- Approach for completing the work and examples from similar projects must be provided.
- References from recent and relevant project clients.
- Any other criteria determined appropriate by the Town of Norwich
- Cost – per the QBS process, rates will not be considered an integral part of the selection.

Instructions to Consultants

The RFQ must include:

1. Résumés and descriptions of relevant experience of key engineering firm personnel who will be assigned to work on this project

2. Rates of all personnel (including subcontractors) to be used on the project.
3. Description of team members' roles
4. Proof of experience working with contaminants.
5. Two samples demonstrating comparable work products.
6. Three professional references
7. Proof of Insurance

Primary contact: Chris Kaufman at 802-649-2209
ckaufman@norwich.vt.us

The Selection Committee may determine a short-list of candidates to be invited for interviews and presentations prior to a final decision.

The review of the RFQ's should be completed in time to notify the selected consultant by late August 2024.

MURRAY & MASTERSON

ENVIRONMENTAL SERVICES

June 17, 2022

Mr. Rod Francis
Town Manager
Town of Norwich
300 Main Street
Norwich, Vermont 05055

RE: Bridge Emulsion, Streambed, & Surface Water Sampling Results
Moore Lane Bridge
Moore Lane
Norwich, Vermont
MMES Project #22-120
VTDEC Spill #2021-WMD225

Dear Mr. Francis:

Please find attached the results for the bridge, streambed, and surface water media sampling completed at the bridge located on Moore Lane in Norwich, Vermont.

The original wood decking on Moore Lane Bridge was paved over, which cause asphalt emulsions to leach through the wooden planks at intermittent times into Bloody Brook. The incident was first reported in June 2021, and this release has been occurring at irregular intervals since at least that date. The Town of Norwich installed a temporary solution to prevent additional release of emulsions into the brook.

Two deviations were made to the scope of work submitted on May 25, 2022. The bridge abutment extends down directly on both sides of the brook. Only one streambed soil sample was collected due to the limited amount of accessible streambed nearby the bridge. Bridge emulsions were leaching through the wooden planks, and a sample of the emulsion was able to be taken. Therefore, sampling of the actual bridge materials was not necessary.

Sampling Procedures

On June 1, 2022, MMES collected one bridge emulsion sample, one streambed soil sample, and two surface water samples. The bridge emulsion sample was collected from the leaching asphalt emulsions from the bridge decking and adjacent concrete abutment. The soil sample (SS-1) was collected from a point bar in the center of the streambed, which was the only small area not submerged by Bloody Brook. One surface water sample (SW-1) was collected directly underneath the bridge, and the second surface water sample (SW-2) was collected 50 feet downstream from the bridge.

All samples were analyzed for full list Volatile Organic Compounds (VOCs) per EPA method 8260, Semi-Volatile Organic Compounds (SVOCs) per EPA Method 8270, and Total Petroleum Hydrocarbons (TPH) diesel range organics (DRO) per EPA Method 8015D at Endyne Laboratories, Inc. in Lebanon, New Hampshire.

Sampling Results

Naphthalene (318.0 ppm) was the only VOC reported above laboratory method detection limits in the bridge emulsion sample. Naphthalene was above the Vermont Screening Level (VSL) non-residential standard. Of the SVOCs, fluoranthene (9,960 ppm) was reported above the VSL residential standard, and benzo(a)pyrene (BaP) (395 ppm) was reported above the VSL residential standard. TPH-DRO was reported 36 times above the TPH standard (36,186 ppm) in the bridge emulsion sample.

No VOCs were reported above laboratory detections limits from the streambed sample collected. Phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, BaP, and the toxic equivalent of BaP was reported above laboratory method detection limits in the streambed sample. TPH-DRO (6.1 ppm) was reported at 6.1 ppm. Bridge emulsion and streambed soil sampling data are presented in Table 1.

VOCs, SVOCs, and TPH-DRO were below laboratory method detection limits in surface water samples SW-1 and SW-2. Surface water data is presented in Table 2. Laboratory analytical reports for all samples are included in Appendix A.

Conclusions & Recommendations

Sheens and emulsion material were not noted in the stream or streambed on the date of sampling.

The analytical data indicates the bridge emulsion product is significantly hazardous. Streambed and surface water samples also indicates the bridge emulsion product is not significantly impacting Bloody Brook. However, mobilization of the bridge decking emulsion presents a significant risk of impact to this sensitive receptor. Corrective actions need to be undertaken to prevent mobilization of the hazardous bridge emulsions.

If you have any questions regarding this report, feel free to contact us at (802) 453-5100.

Sincerely,
Murray & Masterson Environmental Services, LLC

Brendan Miller
Project Engineer

ec: James Donaldson, VTDEC Spills Program

Tables

Project: Moore Lane Bridge
Location: Norwich, Vermont
MMES Project #22-126
VTDEC Spill #2021-WMD225

Table 1

Bridge Emulsion and Streambed Data

Compound	**VSL Residental (ppm)**	**VSL Non-Residential (ppm)**	Bridge Emulsions	Soil Sample SS-1
Benzene	**0.7**	**4.2**	<4.29	<0.073
Toluene	**706**	**798**	<4.29	<0.073
Ethylbenezene	**3.7**	**22**	<4.29	<0.073
Xylenes	**252**	**257**	<8.59	<0.146
Methyl-tert-butyl-ether (MTBE)	**649**	**4,464**	<8.59	<0.146
Naphthalene	**2.7**	**16**	**318.0**	<0.146
1,2,3-Trimethylbenzene	**144**	**177**	<8.59	<0.146
1,2,4-Trimethylbenzene			<8.59	<0.146
1,3,5-Trimethylbenzene			<8.59	<0.146
2-Methylnaphthalene	-	-	63.2	<0.0226
1-Methylnaphthalene	-	-	48.8	<0.0226
Acenaphthene	-	-	786	<0.0226
Dibenzofuran	-	-	666	<0.0903
Fluorene	**2,301**	**26,371**	1,240	<0.0226
Phenanthrene	-	-	10,600	0.0406
Anthracene	-	-	716	<0.0226
Carbazole	-	-	522	<0.226
Fluoranthene	**2,301**	**26,371**	**9,960**	0.0569
Pyrene	-	-	6,730	0.0456
Benzo(a)anthracene	-	-	1,610	0.0266
Chrysene	-	-	1,410	<0.0226
Benzo(b)fluoranthene	-	-	788	<0.0226
Benzo(k)fluoranthene	-	-	326	<0.0226
Benzo(a)pyrene	**0.07**	**1.54**	**395**	0.0126
Indeno(1,2,3-cd)pyrene	-	-	170	<0.0226
Dibenzo(a,h)anthracene	-	-	32.1	<0.0113
Benzo(g,h,i)perylene	-	-	123	<0.0226
BaP Toxic Equivalent	-	-	689	0.0313
TPH-DRO	-	-	335,000	6.1

Notes:
VSL - Vermont Screening Level
ND/BQL - Not Detect/Below Quality Limits
All Concentrations in parts per million (ppm)
Green cells represent compounds that exceed the Residential VSL

Surface Water Data

Compound	**VGES**	SW-1	SW-2
Benzene	**5**	<0.5	<0.5
Toluene	**1,000**	<1.0	<1.0
Ethylbenzene	**700**	<1.0	<1.0
Xylenes	**10,000**	<2.0	<2.0
MTBE	**11**	<2.0	<2.0
Naphthalene	**0.5**	<0.5	<0.5
1,2,3-Trimethylbenzene	**23**	<1.0	<1.0
1,2,4-Trimethylbenzene		<1.0	<1.0
1,3,5-Trimethylbenzene		<1.0	<1.0
Total VOCs	**-**	**ND/BQL**	**ND/BQL**
2-Methylnaphthalene	**-**	<0.5	<0.5
1-Methylnaphthalene	**-**	<0.5	<0.5
Acenaphthene	**-**	<0.5	<0.5
Dibenzofuran	**-**	<2.0	<2.0
Fluorene	**46**	<0.5	<0.5
Phenanthrene	**-**	<10.0	<10.0
Anthracene	**343**	<0.5	<0.5
Carbazole	**-**	<5.0	<5.0
Fluoranthene	**46**	<10.0	<10.0
Pyrene	**-**	<5.0	<5.0
Benzo(a)anthracene	**-**	<1.0	<1.0
Chrysene	**-**	<0.5	<0.5
Benzo(b)fluoranthene	**-**	<0.5	<0.5
Benzo(k)fluoranthene	**-**	<0.5	<0.5
Benzo(a)pyrene	**0.2**	<0.5	<0.5
Indeno(1,2,3-cd)pyrene	**-**	<0.5	<0.5
Dibenzo(a,h)anthracene	**-**	<0.5	<0.5
Benzo(g,h,i)perylene	**-**	<0.5	<0.5
BaP Toxic Equivalent	**-**	<1.2	<1.2
Total SVOCs	**-**	**ND/BQL**	**ND/BQL**
TPH-DRO	**-**	<570	<570

Notes:
VGES - Vermont Groundwater Enforcement Standards
N/A - Not Analyzed/Available
All Concentrations in parts per billion (ppb)
Shaded cells represent compounds that exceed the VGES

Appendix A

Laboratory Analytical Data

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

Murray & Masterson Environ.	101052
88B North Street	
Bristol, VT 05443	

PROJECT: Town of Norwich Moore Bridge
WORK ORDER: **2206-14024**
DATE RECEIVED: June 01, 2022
DATE REPORTED: June 15, 2022
SAMPLER: Dagan Murray

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody located at the end of this report.

The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Lebanon, NH facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

This NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers.

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Alexander J Rakotz
Laboratory Director Lebanon, NH

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ.
PROJECT: Town of Norwich Moore Bridge

WORK ORDER: **2206-14024**
DATE RECEIVED: 06/01/2022

001 Site: Moore Bridge SW-1 Date Sampled: 6/1/22 Time: 12:00

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
VOC w/ Oxygenates, Water 8260C							
Dichlorodifluoromethane	< 5.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Chloromethane	< 3.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Vinyl chloride	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A	
Bromomethane	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A	
Chloroethane	< 5.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Trichlorofluoromethane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Diethyl ether	< 5.0	ug/L	EPA 8260C	6/7/22	W TRP	N	
1,1-Dichloroethene	< 0.7	ug/L	EPA 8260C	6/7/22	W TRP	A	
Acetone	< 10.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Carbon disulfide	< 5.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Methylene chloride	< 5.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
t-Butanol	< 20.0	ug/L	EPA 8260C	6/7/22	W TRP	N	
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
trans-1,2-Dichloroethene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	N	
1,1-Dichloroethane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	N	
2-Butanone	< 10.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
2,2-Dichloropropane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	N	
cis-1,2-Dichloroethene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Bromochloromethane	< 0.8	ug/L	EPA 8260C	6/7/22	W TRP	A	
Chloroform	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Tetrahydrofuran	< 10.0	ug/L	EPA 8260C	6/7/22	W TRP	N	
1,1,1-Trichloroethane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Carbon tetrachloride	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A	
1,1-Dichloropropene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	N	
Benzene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A	
t-Amylmethyl ether (TAME)	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	N	
1,2-Dichloroethane	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A	
Trichloroethene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A	
1,2-Dichloropropane	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A	
Dibromomethane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Bromodichloromethane	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A	
cis-1,3-Dichloropropene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Toluene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
trans-1,3-Dichloropropene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
1,1,2-Trichloroethane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Tetrachloroethene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A	
1,3-Dichloropropane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	N	
2-Hexanone	< 10.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Dibromochloromethane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A	

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

1,2-Dibromoethane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Chlorobenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Ethylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,1,1,2-Tetrachloroethane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Xylenes, Total	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Styrene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Bromoform	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Isopropylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Bromobenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
n-Propylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2,3-Trichloropropane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
2-Chlorotoluene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,3,5-Trimethylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
4-Chlorotoluene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
t-Butylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2,4-Trimethylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
s-Butylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
4-Isopropyltoluene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,3-Dichlorobenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,4-Dichlorobenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2,3-Trimethylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	U
n-Butylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2-Dichlorobenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2,4-Trichlorobenzene	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,3,5-Trichlorobenzene	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	N
Hexachlorobutadiene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
Naphthalene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2,3-Trichlorobenzene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
Surr. 1 (Dibromofluoromethane)	103	%	EPA 8260C	6/7/22	W TRP	A
Surr. 2 (Toluene d8)	102	%	EPA 8260C	6/7/22	W TRP	A
Surr. 3 (4-Bromofluorobenzene)	104	%	EPA 8260C	6/7/22	W TRP	A
Unidentified Peaks	0		EPA 8260C	6/7/22	W TRP	U
TPH DRO Package						
Extraction TPH-DRO	Completed		EPA 3511	6/8/22	W ECM	N
C7-C10 TPH	< 0.57	mg/L	EPA 8015D	6/8/22	W DPD	U
C10-C28 TPH-DRO	< 0.57	mg/L	EPA 8015D	6/8/22	W DPD	A
C28-C40 TPH	< 0.57	mg/L	EPA 8015D	6/8/22	W DPD	U
Tot. Petroleum Hydrocarbons	< 0.57	mg/L	EPA 8015D	6/8/22	W DPD	U
Hydrocarbon Window	NA		EPA 8015D	6/8/22	W DPD	U
EPA 8270C Semi-VOA						
Extraction EPA 3510C	Extracted		EPA 3510C	6/7/22	W CLD	A
N-Nitrosodimethylamine	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Pyridine	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Aniline	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	N

Laboratory Report DATE REPORTED: 06/15/2022

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PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

Bis(2-chloroethyl)ether	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
1,2-Dichlorobenzene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
1,3-Dichlorobenzene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
1,4-Dichlorobenzene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Benzyl alcohol	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
2,2'-Oxybis(1-chloropropane)	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
N-Nitrosodi-n-propylamine	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Hexachloroethane	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Nitrobenzene	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
N-Nitrosopiperidine	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Isophorone	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Bis(2-chloroethoxy)methane	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
1,2,4-Trichlorobenzene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Naphthalene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
4-Chloroaniline	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Hexachlorobutadiene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
N-Nitrosodi-n-butylamine	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
2-Methylnaphthalene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
1-Methylnaphthalene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	U	
Hexachlorocyclopentadiene	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
2-Chloronaphthalene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
1-Chloronaphthalene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
2-Nitroaniline	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Dimethyl phthalate	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
2,6-Dinitrotoluene	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Acenaphthylene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
3-Nitroaniline	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Acenaphthene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
Dibenzofuran	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
2,4-Dinitrotoluene	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
1-Naphthylamine	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
2-Naphthylamine	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Fluorene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
Diethyl phthalate	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
4-Chlorophenyl phenyl ether	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
4-Nitroaniline	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
N-Nitrosodiphenylamine	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Azobenzene/1,2-Diphenylhydrazine	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	U	
4-Bromophenyl phenyl ether	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Hexachlorobenzene	< 1.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Phenanthrene	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Anthracene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
Carbazole	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Di-n-butylphthalate	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Fluoranthene	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Benzidine	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	A	QA-

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

Pyrene	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Butyl benzyl phthalate	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Benzo(a)anthracene	< 1.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Chrysene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
3,3'-Dichlorobenzidine	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Bis(2-ethylhexyl)phthalate	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Di-n-octylphthalate	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Benzo(b)fluoranthene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
Benzo(k)fluoranthene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
Benzo(a)pyrene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
Indeno(1,2,3-cd)pyrene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
Dibenzo(a,h)anthracene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
Benzo(g,h,i)perylene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
Phenol	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2-Chlorophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2-Methylphenol (o-cresol)	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
3&4-Methylphenol (m&p-cresol)	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Cresols, Total	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2-Nitrophenol	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,4-Dimethylphenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,4-Dichlorophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,6-Dichlorophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	N
4-Chloro-3-methylphenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,4,5-Trichlorophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,4,6-Trichlorophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,4-Dinitrophenol	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	A
4-Nitrophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
4,6-Dinitro-2-methylphenol	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Pentachlorophenol	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A
BaP Toxic Equiv. Quotient	< 1.2	ug/L	EPA 8270D	6/14/22	W EEP	U
B/N Surr.1 Nitrobenzene-d5	80	%	EPA 8270D	6/14/22	W EEP	A
B/N Surr.2 2-Fluorobiphenyl	79	%	EPA 8270D	6/14/22	W EEP	A
B/N Surr.3 Terphenyl-d14	97	%	EPA 8270D	6/14/22	W EEP	A
Acid Surr.1 2-Fluorophenol	31	%	EPA 8270D	6/14/22	W EEP	A
Acid Surr.2 Phenol-d5	28	%	EPA 8270D	6/14/22	W EEP	A
Acid Surr.3 Tribromophenol	108	%	EPA 8270D	6/14/22	W EEP	A
Unidentified Peaks	0		EPA 8270D	6/14/22	W EEP	U

002 Site: Moore Bridge SW-2 Date Sampled: 6/1/22 Time: 12:25

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
VOC w/ Oxygenates, Water 8260C							
Dichlorodifluoromethane	< 5.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Chloromethane	< 3.0	ug/L	EPA 8260C	6/7/22	W TRP	A	
Vinyl chloride	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A	
Bromomethane	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A	

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

Chloroethane	< 5.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Trichlorofluoromethane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Diethyl ether	< 5.0	ug/L	EPA 8260C	6/7/22	W TRP	N
1,1-Dichloroethene	< 0.7	ug/L	EPA 8260C	6/7/22	W TRP	A
Acetone	< 10.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Carbon disulfide	< 5.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Methylene chloride	< 5.0	ug/L	EPA 8260C	6/7/22	W TRP	A
t-Butanol	< 20.0	ug/L	EPA 8260C	6/7/22	W TRP	N
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
trans-1,2-Dichloroethene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Di-isopropyl ether (DIPE)	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	N
1,1-Dichloroethane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	N
2-Butanone	< 10.0	ug/L	EPA 8260C	6/7/22	W TRP	A
2,2-Dichloropropane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	N
cis-1,2-Dichloroethene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Bromochloromethane	< 0.8	ug/L	EPA 8260C	6/7/22	W TRP	A
Chloroform	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Tetrahydrofuran	< 10.0	ug/L	EPA 8260C	6/7/22	W TRP	N
1,1,1-Trichloroethane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Carbon tetrachloride	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
1,1-Dichloropropene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	N
Benzene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
t-Amylmethyl ether (TAME)	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	N
1,2-Dichloroethane	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
Trichloroethene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2-Dichloropropane	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
Dibromomethane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Bromodichloromethane	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
cis-1,3-Dichloropropene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Toluene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
trans-1,3-Dichloropropene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,1,2-Trichloroethane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Tetrachloroethene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
1,3-Dichloropropane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	N
2-Hexanone	< 10.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Dibromochloromethane	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2-Dibromoethane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Chlorobenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Ethylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,1,1,2-Tetrachloroethane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Xylenes, Total	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Styrene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Bromoform	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Isopropylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

1,1,2,2-Tetrachloroethane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
Bromobenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
n-Propylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2,3-Trichloropropane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
2-Chlorotoluene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,3,5-Trimethylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
4-Chlorotoluene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
t-Butylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2,4-Trimethylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
s-Butylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
4-Isopropyltoluene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,3-Dichlorobenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,4-Dichlorobenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2,3-Trimethylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	U
n-Butylbenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2-Dichlorobenzene	< 1.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2,4-Trichlorobenzene	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	A
1,3,5-Trichlorobenzene	< 2.0	ug/L	EPA 8260C	6/7/22	W TRP	N
Hexachlorobutadiene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
Naphthalene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
1,2,3-Trichlorobenzene	< 0.5	ug/L	EPA 8260C	6/7/22	W TRP	A
Surr. 1 (Dibromofluoromethane)	100	%	EPA 8260C	6/7/22	W TRP	A
Surr. 2 (Toluene d8)	101	%	EPA 8260C	6/7/22	W TRP	A
Surr. 3 (4-Bromofluorobenzene)	102	%	EPA 8260C	6/7/22	W TRP	A
Unidentified Peaks	0		EPA 8260C	6/7/22	W TRP	U
TPH DRO Package						
Extraction TPH-DRO	Completed		EPA 3511	6/8/22	W ECM	N
C7-C10 TPH	< 0.57	mg/L	EPA 8015D	6/8/22	W DPD	U
C10-C28 TPH-DRO	< 0.57	mg/L	EPA 8015D	6/8/22	W DPD	A
C28-C40 TPH	< 0.57	mg/L	EPA 8015D	6/8/22	W DPD	U
Tot. Petroleum Hydrocarbons	< 0.57	mg/L	EPA 8015D	6/8/22	W DPD	U
Hydrocarbon Window	NA		EPA 8015D	6/8/22	W DPD	U
EPA 8270C Semi-VOA						
Extraction EPA 3510C	Extracted		EPA 3510C	6/7/22	W CLD	A
N-Nitrosodimethylamine	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Pyridine	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Aniline	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	N
Bis(2-chloroethyl)ether	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
1,2-Dichlorobenzene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A
1,3-Dichlorobenzene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A
1,4-Dichlorobenzene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Benzyl alcohol	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	N
2,2'-Oxybis(1-chloropropane)	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
N-Nitrosodi-n-propylamine	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Hexachloroethane	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

Nitrobenzene	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
N-Nitrosopiperidine	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Isophorone	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Bis(2-chloroethoxy)methane	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
1,2,4-Trichlorobenzene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Naphthalene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
4-Chloroaniline	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Hexachlorobutadiene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
N-Nitrosodi-n-butylamine	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
2-Methylnaphthalene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
1-Methylnaphthalene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	U	
Hexachlorocyclopentadiene	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
2-Chloronaphthalene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
1-Chloronaphthalene	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
2-Nitroaniline	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Dimethyl phthalate	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
2,6-Dinitrotoluene	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Acenaphthylene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
3-Nitroaniline	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Acenaphthene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
Dibenzofuran	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
2,4-Dinitrotoluene	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
1-Naphthylamine	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
2-Naphthylamine	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Fluorene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
Diethyl phthalate	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
4-Chlorophenyl phenyl ether	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
4-Nitroaniline	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
N-Nitrosodiphenylamine	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Azobenzene/1,2-Diphenylhydrazine	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	U	
4-Bromophenyl phenyl ether	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Hexachlorobenzene	< 1.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Phenanthrene	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Anthracene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
Carbazole	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	N	
Di-n-butylphthalate	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Fluoranthene	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A	RPD
Benzidine	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	A	QA-
Pyrene	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	RPD
Butyl benzyl phthalate	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Benzo(a)anthracene	< 1.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Chrysene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	
3,3'-Dichlorobenzidine	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Bis(2-ethylhexyl)phthalate	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Di-n-octylphthalate	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A	
Benzo(b)fluoranthene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A	

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

Benzo(k)fluoranthene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
Benzo(a)pyrene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
Indeno(1,2,3-cd)pyrene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
Dibenzo(a,h)anthracene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
Benzo(g,h,i)perylene	< 0.5	ug/L	EPA 8270D	6/14/22	W EEP	A
Phenol	< 2.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2-Chlorophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2-Methylphenol (o-cresol)	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
3&4-Methylphenol (m&p-cresol)	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Cresols, Total	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2-Nitrophenol	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,4-Dimethylphenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,4-Dichlorophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,6-Dichlorophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	N
4-Chloro-3-methylphenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,4,5-Trichlorophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,4,6-Trichlorophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
2,4-Dinitrophenol	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	A
4-Nitrophenol	< 5.0	ug/L	EPA 8270D	6/14/22	W EEP	A
4,6-Dinitro-2-methylphenol	< 20.0	ug/L	EPA 8270D	6/14/22	W EEP	A
Pentachlorophenol	< 10.0	ug/L	EPA 8270D	6/14/22	W EEP	A
BaP Toxic Equiv. Quotient	< 1.2	ug/L	EPA 8270D	6/14/22	W EEP	U
B/N Surr.1 Nitrobenzene-d5	83	%	EPA 8270D	6/14/22	W EEP	A
B/N Surr.2 2-Fluorobiphenyl	83	%	EPA 8270D	6/14/22	W EEP	A
B/N Surr.3 Terphenyl-d14	100	%	EPA 8270D	6/14/22	W EEP	A
Acid Surr.1 2-Fluorophenol	34	%	EPA 8270D	6/14/22	W EEP	A
Acid Surr.2 Phenol-d5	29	%	EPA 8270D	6/14/22	W EEP	A
Acid Surr.3 Tribromophenol	113	%	EPA 8270D	6/14/22	W EEP	A
Unidentified Peaks	0		EPA 8270D	6/14/22	W EEP	U

003 Site: Bridge Decking / Abutment Date Sampled: 6/1/22 Time: 12:30

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
Volatile Organic Compounds							
Prep EPA 5035A	Complete		EPA 5035A-H	6/9/22	W TRP	A	
Dichlorodifluoromethane	< 21,500	ug/Kg	EPA 8260C	6/9/22	W TRP	N	
Chloromethane	< 21,500	ug/Kg	EPA 8260C	6/9/22	W TRP	A	
Vinyl chloride	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A	
Bromomethane	< 21,500	ug/Kg	EPA 8260C	6/9/22	W TRP	A	
Chloroethane	< 21,500	ug/Kg	EPA 8260C	6/9/22	W TRP	A	
Trichlorofluoromethane	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N	
Diethyl ether	< 21,500	ug/Kg	EPA 8260C	6/9/22	W TRP	N	
1,1-Dichloroethene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A	
Acetone	< 42,900	ug/Kg	EPA 8260C	6/9/22	W TRP	N	
Carbon disulfide	< 21,500	ug/Kg	EPA 8260C	6/9/22	W TRP	N	
Methylene chloride	< 42,900	ug/Kg	EPA 8260C	6/9/22	W TRP	A	

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

t-Butanol	< 107,000	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Methyl-t-butyl ether (MTBE)	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
trans-1,2-Dichloroethene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
Di-isopropyl ether (DIPE)	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	U
1,1-Dichloroethane	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
Ethyl-t-butyl ether (ETBE)	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	U
2-Butanone	< 42,900	ug/Kg	EPA 8260C	6/9/22	W TRP	A
2,2-Dichloropropane	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	N
cis-1,2-Dichloroethene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Bromochloromethane	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Chloroform	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
Tetrahydrofuran	< 42,900	ug/Kg	EPA 8260C	6/9/22	W TRP	U
1,1,1-Trichloroethane	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
Carbon tetrachloride	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,1-Dichloropropene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Benzene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
t-Amylmethyl ether (TAME)	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	U
1,2-Dichloroethane	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
Trichloroethene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,2-Dichloropropane	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
Dibromomethane	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Bromodichloromethane	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
cis-1,3-Dichloropropene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
4-Methyl-2-pentanone (MIBK)	< 42,900	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Toluene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
trans-1,3-Dichloropropene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,1,2-Trichloroethane	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
Tetrachloroethene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,3-Dichloropropane	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	N
2-Hexanone	< 42,900	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Dibromochloromethane	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,2-Dibromoethane	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Chlorobenzene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
Ethylbenzene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,1,1,2-Tetrachloroethane	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Xylenes, Total	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
Styrene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Bromoform	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
Isopropylbenzene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,1,2,2-Tetrachloroethane	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
Bromobenzene	< 4,290	ug/Kg	EPA 8260C	6/9/22	W TRP	N
n-Propylbenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,2,3-Trichloropropane	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
2-Chlorotoluene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
1,3,5-Trimethylbenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
4-Chlorotoluene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

t-Butylbenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,2,4-Trimethylbenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
s-Butylbenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
4-Isopropyltoluene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,3-Dichlorobenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,4-Dichlorobenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,2,3-Trimethylbenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
n-Butylbenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,2-Dichlorobenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,2-Dibromo-3-Chloropropane	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
1,2,4-Trichlorobenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
1,3,5-Trichlorobenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Hexachlorobutadiene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Naphthalene	318,000	ug/Kg	EPA 8260C	6/9/22	W TRP	A
1,2,3-Trichlorobenzene	< 8,590	ug/Kg	EPA 8260C	6/9/22	W TRP	N
Surr. 1 (Dibromofluoromethane)	99	%	EPA 8260C	6/9/22	W TRP	U
Surr. 2 (Toluene d8)	97	%	EPA 8260C	6/9/22	W TRP	U
Surr. 3 (4-Bromofluorobenzene)	95	%	EPA 8260C	6/9/22	W TRP	U
Unidentified Peaks	2		EPA 8260C	6/9/22	W TRP	U
TPH DRO Package						
Extraction	Completed		EPA 3550C	6/3/22	W CLD	A
C7-C10 TPH	< 15700	mg/Kg	EPA 8015D	6/7/22	W DPD	U
C10-C28 TPH-DRO	319000	mg/Kg	EPA 8015D	6/7/22	W DPD	A
C28-C40 TPH	15900	mg/Kg	EPA 8015D	6/7/22	W DPD	U
Tot. Petroleum Hydrocarbons	335000	mg/Kg	EPA 8015D	6/7/22	W DPD	U
Hydrocarbon Window	C14-C32		EPA 8015D	6/7/22	W DPD	U
EPA 8270C Semi-VOA						
Extraction	Completed		EPA 3550C	6/13/22	W CLD	A
N-Nitrosodimethylamine	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
Pyridine	< 478	mg/Kg	EPA 8270D	6/14/22	W EEP	A
Aniline	< 478	mg/Kg	EPA 8270D	6/14/22	W EEP	N
Bis(2-chloroethyl)ether	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
1,2-Dichlorobenzene	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A
1,3-Dichlorobenzene	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A
1,4-Dichlorobenzene	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A
Benzyl alcohol	< 957	mg/Kg	EPA 8270D	6/14/22	W EEP	N
2,2'-Oxybis(1-chloropropane)	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
N-Nitrosodi-n-propylamine	< 478	mg/Kg	EPA 8270D	6/14/22	W EEP	A
Hexachloroethane	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A
Nitrobenzene	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
N-Nitrosopiperidine	< 478	mg/Kg	EPA 8270D	6/14/22	W EEP	N
Isophorone	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A
Bis(2-chloroethoxy)methane	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
1,2,4-Trichlorobenzene	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A
Naphthalene	< 23.9	mg/Kg	EPA 8270D	6/14/22	W EEP	A
4-Chloroaniline	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	N

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

Hexachlorobutadiene	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
N-Nitrosodi-n-butylamine	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	N	
2-Methylnaphthalene	63.2	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
1-Methylnaphthalene	48.8	mg/Kg	EPA 8270D	6/14/22	W EEP	U	
Hexachlorocyclopentadiene	< 957	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
2-Chloronaphthalene	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
1-Chloronaphthalene	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	N	
2-Nitroaniline	< 957	mg/Kg	EPA 8270D	6/14/22	W EEP	N	
Dimethyl phthalate	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
2,6-Dinitrotoluene	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Acenaphthylene	< 23.9	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
3-Nitroaniline	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	N	
Acenaphthene	786	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Dibenzofuran	666	mg/Kg	EPA 8270D	6/14/22	W EEP	N	
2,4-Dinitrotoluene	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
1-Naphthylamine	< 478	mg/Kg	EPA 8270D	6/14/22	W EEP	N	
2-Naphthylamine	< 478	mg/Kg	EPA 8270D	6/14/22	W EEP	N	
Fluorene	1,240	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Diethyl phthalate	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
4-Chlorophenyl phenyl ether	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
4-Nitroaniline	< 957	mg/Kg	EPA 8270D	6/14/22	W EEP	N	
N-Nitrosodiphenylamine	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Azobenzene/1,2-Diphenylhydrazine	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	U	
4-Bromophenyl phenyl ether	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Hexachlorobenzene	< 47.8	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Phenanthrene	10,600	mg/Kg	EPA 8270D	6/15/22	W EEP	A	
Anthracene	716	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Carbazole	522	mg/Kg	EPA 8270D	6/14/22	W EEP	N	
Di-n-butylphthalate	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Fluoranthene	9,960	mg/Kg	EPA 8270D	6/15/22	W EEP	A	
Benzidine	< 957	mg/Kg	EPA 8270D	6/14/22	W EEP	A	QA-
Pyrene	6,730	mg/Kg	EPA 8270D	6/15/22	W EEP	A	
Butyl benzyl phthalate	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Benzo(a)anthracene	1,610	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Chrysene	1,410	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
3,3'-Dichlorobenzidine	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Bis(2-ethylhexyl)phthalate	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Di-n-octylphthalate	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Benzo(b)fluoranthene	788	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Benzo(k)fluoranthene	326	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Benzo(a)pyrene	395	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Indeno(1,2,3-cd)pyrene	170	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Dibenzo(a,h)anthracene	32.1	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Benzo(g,h,i)perylene	123	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
Phenol	< 95.7	mg/Kg	EPA 8270D	6/14/22	W EEP	A	
2-Chlorophenol	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A	

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

2-Methylphenol (o-cresol)	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
3&4-Methylphenol (m&p-cresol)	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
Cresols, Total	< 478	mg/Kg	EPA 8270D	6/14/22	W EEP	U
2-Nitrophenol	< 478	mg/Kg	EPA 8270D	6/14/22	W EEP	A
2,4-Dimethylphenol	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
2,4-Dichlorophenol	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
2,6-Dichlorophenol	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	N
4-Chloro-3-methylphenol	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
2,4,5-Trichlorophenol	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
2,4,6-Trichlorophenol	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
2,4-Dinitrophenol	< 957	mg/Kg	EPA 8270D	6/14/22	W EEP	A
4-Nitrophenol	< 239	mg/Kg	EPA 8270D	6/14/22	W EEP	A
4,6-Dinitro-2-methylphenol	< 957	mg/Kg	EPA 8270D	6/14/22	W EEP	A
Pentachlorophenol	< 478	mg/Kg	EPA 8270D	6/14/22	W EEP	A
BaP Toxic Equiv. Quotient	689	mg/Kg	EPA 8270D	6/14/22	W EEP	U
B/N Surr.1 Nitrobenzene-d5	103	%	EPA 8270D	6/14/22	W EEP	U
B/N Surr.2 2-Fluorobiphenyl	110	%	EPA 8270D	6/14/22	W EEP	U
B/N Surr.3 Terphenyl-d14	120	%	EPA 8270D	6/14/22	W EEP	U
Acid Surr.1 2-Fluorophenol	80	%	EPA 8270D	6/14/22	W EEP	U
Acid Surr.2 Phenol-d5	93	%	EPA 8270D	6/14/22	W EEP	U
Acid Surr.3 Tribromophenol	78	%	EPA 8270D	6/14/22	W EEP	U
Unidentified Peaks	>10		EPA 8270D	6/14/22	W EEP	U

004 Site: Moore Bridge SS-1 Date Sampled: 6/1/22 Time: 12:40

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
Volatile Organic Compounds							
Prep EPA 5035A	Complete		EPA 5035A-H	6/9/22	W TRP	A	
Dichlorodifluoromethane	< 365	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N	
Chloromethane	< 365	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
Vinyl chloride	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
Bromomethane	< 365	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
Chloroethane	< 365	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
Trichlorofluoromethane	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N	
Diethyl ether	< 365	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N	
1,1-Dichloroethene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
Acetone	< 730	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N	
Carbon disulfide	< 365	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N	
Methylene chloride	< 730	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
t-Butanol	< 1,830	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N	
Methyl-t-butyl ether (MTBE)	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
trans-1,2-Dichloroethene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
Di-isopropyl ether (DIPE)	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	U	
1,1-Dichloroethane	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
Ethyl-t-butyl ether (ETBE)	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	U	
2-Butanone	< 730	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

2,2-Dichloropropane	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
cis-1,2-Dichloroethene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
Bromochloromethane	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
Chloroform	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
Tetrahydrofuran	< 730	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	U
1,1,1-Trichloroethane	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
Carbon tetrachloride	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,1-Dichloropropene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
Benzene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
t-Amylmethyl ether (TAME)	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	U
1,2-Dichloroethane	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
Trichloroethene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,2-Dichloropropane	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
Dibromomethane	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
Bromodichloromethane	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
cis-1,3-Dichloropropene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
4-Methyl-2-pentanone (MIBK)	< 730	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
Toluene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
trans-1,3-Dichloropropene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,1,2-Trichloroethane	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
Tetrachloroethene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,3-Dichloropropane	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
2-Hexanone	< 730	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
Dibromochloromethane	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,2-Dibromoethane	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
Chlorobenzene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
Ethylbenzene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,1,1,2-Tetrachloroethane	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
Xylenes, Total	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
Styrene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
Bromoform	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
Isopropylbenzene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,1,2,2-Tetrachloroethane	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
Bromobenzene	< 73.0	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
n-Propylbenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,2,3-Trichloropropane	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
2-Chlorotoluene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
1,3,5-Trimethylbenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
4-Chlorotoluene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N
t-Butylbenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,2,4-Trimethylbenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
s-Butylbenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
4-Isopropyltoluene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,3-Dichlorobenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,4-Dichlorobenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A
1,2,3-Trimethylbenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

n-Butylbenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
1,2-Dichlorobenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
1,2-Dibromo-3-Chloropropane	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N	
1,2,4-Trichlorobenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N	
1,3,5-Trichlorobenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N	
Hexachlorobutadiene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N	
Naphthalene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	A	
1,2,3-Trichlorobenzene	< 146	ug/Kg, Dry	EPA 8260C	6/9/22	W TRP	N	
Surr. 1 (Dibromofluoromethane)	98	%	EPA 8260C	6/9/22	W TRP	U	
Surr. 2 (Toluene d8)	97	%	EPA 8260C	6/9/22	W TRP	U	
Surr. 3 (4-Bromofluorobenzene)	96	%	EPA 8260C	6/9/22	W TRP	U	
Unidentified Peaks	0		EPA 8260C	6/9/22	W TRP	U	
TPH DRO Package							
Extraction	Completed		EPA 3550C	6/3/22	W CLD	A	
C7-C10 TPH	< 3.6	mg/Kg, dry	EPA 8015D	6/7/22	W DPD	U	
C10-C28 TPH-DRO	< 3.6	mg/Kg, dry	EPA 8015D	6/7/22	W DPD	A	RPD
C28-C40 TPH	4.2	mg/Kg, dry	EPA 8015D	6/7/22	W DPD	U	
Tot. Petroleum Hydrocarbons	6.1	mg/Kg, dry	EPA 8015D	6/7/22	W DPD	U	
Hydrocarbon Window	C20-C34		EPA 8015D	6/7/22	W DPD	U	
EPA 8270C Semi-VOA							
Extraction	Completed		EPA 3550C	6/13/22	W CLD	A	
N-Nitrosodimethylamine	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Pyridine	< 451	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Aniline	< 451	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
Bis(2-chloroethyl)ether	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
1,2-Dichlorobenzene	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
1,3-Dichlorobenzene	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
1,4-Dichlorobenzene	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Benzyl alcohol	< 903	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
2,2'-Oxybis(1-chloropropane)	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
N-Nitrosodi-n-propylamine	< 451	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Hexachloroethane	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Nitrobenzene	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
N-Nitrosopiperidine	< 451	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
Isophorone	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Bis(2-chloroethoxy)methane	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
1,2,4-Trichlorobenzene	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Naphthalene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
4-Chloroaniline	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
Hexachlorobutadiene	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
N-Nitrosodi-n-butylamine	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
2-Methylnaphthalene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
1-Methylnaphthalene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	U	
Hexachlorocyclopentadiene	< 903	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
2-Chloronaphthalene	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
1-Chloronaphthalene	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ. WORK ORDER: **2206-14024**
PROJECT: Town of Norwich Moore Bridge DATE RECEIVED: 06/01/2022

2-Nitroaniline	< 903	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
Dimethyl phthalate	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
2,6-Dinitrotoluene	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Acenaphthylene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
3-Nitroaniline	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
Acenaphthene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Dibenzofuran	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
2,4-Dinitrotoluene	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
1-Naphthylamine	< 451	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
2-Naphthylamine	< 451	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
Fluorene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Diethyl phthalate	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
4-Chlorophenyl phenyl ether	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
4-Nitroaniline	< 903	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
N-Nitrosodiphenylamine	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Azobenzene/1,2-Diphenylhydrazine	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	U	
4-Bromophenyl phenyl ether	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Hexachlorobenzene	< 45.1	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Phenanthrene	40.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Anthracene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Carbazole	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	
Di-n-butylphthalate	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Fluoranthene	56.9	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Benzidine	< 903	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	QA-
Pyrene	45.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Butyl benzyl phthalate	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Benzo(a)anthracene	26.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Chrysene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
3,3'-Dichlorobenzidine	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Bis(2-ethylhexyl)phthalate	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Di-n-octylphthalate	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Benzo(b)fluoranthene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Benzo(k)fluoranthene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Benzo(a)pyrene	12.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Indeno(1,2,3-cd)pyrene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Dibenzo(a,h)anthracene	< 11.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Benzo(g,h,i)perylene	< 22.6	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Phenol	< 90.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
2-Chlorophenol	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
2-Methylphenol (o-cresol)	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
3&4-Methylphenol (m&p-cresol)	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
Cresols, Total	< 451	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	U	
2-Nitrophenol	< 451	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
2,4-Dimethylphenol	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
2,4-Dichlorophenol	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A	
2,6-Dichlorophenol	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	N	

Laboratory Report DATE REPORTED: 06/15/2022

CLIENT: Murray & Masterson Environ.
PROJECT: Town of Norwich Moore Bridge

WORK ORDER: **2206-14024**
DATE RECEIVED: 06/01/2022

4-Chloro-3-methylphenol	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A
2,4,5-Trichlorophenol	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A
2,4,6-Trichlorophenol	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A
2,4-Dinitrophenol	< 903	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A
4-Nitrophenol	< 226	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A
4,6-Dinitro-2-methylphenol	< 903	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A
Pentachlorophenol	< 451	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	A
BaP Toxic Equiv. Quotient	31.3	ug/Kg, dry	EPA 8270D	6/14/22	W EEP	U
B/N Surr.1 Nitrobenzene-d5	98	%	EPA 8270D	6/14/22	W EEP	U
B/N Surr.2 2-Fluorobiphenyl	98	%	EPA 8270D	6/14/22	W EEP	U
B/N Surr.3 Terphenyl-d14	100	%	EPA 8270D	6/14/22	W EEP	U
Acid Surr.1 2-Fluorophenol	89	%	EPA 8270D	6/14/22	W EEP	U
Acid Surr.2 Phenol-d5	95	%	EPA 8270D	6/14/22	W EEP	U
Acid Surr.3 Tribromophenol	115	%	EPA 8270D	6/14/22	W EEP	U
Unidentified Peaks	0		EPA 8270D	6/14/22	W EEP	U

Report Summary of Qualifiers and Notes

DRO values are based on the response and calibration of Diesel/#2 Fuel Oil.

RPD: Variability observed. The Relative Percent Difference of the Matrix Spike Duplicate was above method acceptance limits.

VOC results below 200 ug/Kg may be biased low due to sample preparation by 5035A High method.

QA-: QA/QC associated with this analysis did not meet laboratory acceptance limits indicating the results may be biased low.

ENDYNE, INC.
160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333

CHAIN-OF-CUSTODY-RECORD

Special Reporting Instructions/PO#:

Project Name: Town of Norwich Moore Bridge	Client/Contact Name: Murray & Masterson Environmental Services	Sampler Name: Dylan Murray
State of Origin: VT __ NY __ NH __ Other __	Phone #:	Phone #: 802-453-5100
Endyne WO #	Mailing Address: 886 North St. Bristol, VT 05443	Billing Address: Same

Sample Location	Matrix	GRAB	COMP	Date/Time Sampled	Sample Containers No.	Sample Containers Type/Size	Sample Preservation	Analysis Required	FieldResults/Remarks	Due Date
Moore Bridge SW-1	H2O	X		12:20	4	40mL/VL	HCl	#23, 24, 25		
Moore Bridge SW-2	H2O	X		12:25	4	40mL/VL	HCl			
Bridge Decking/Abutment	Emulsion	X		1230	4	40mL/4oz	Methanol			
Moore Bridge SS-1	soil	X		1240	3	40mL/4oz	Methanol			

2206-14024

Murray & Masterson Environ.
Town of Norwich Moore Bridge

Relinquished by:	Date/Time	Received by:	Date/Time	Received by:	Date/Time
	6/1/22 1310			AJS	6/1/22 1310

1	pH	6	TKN	11	Total Solids	16	Sulfate	21	1664 TPH/FOG	26	8270 PAH Only
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	8015 GRO	27	8081 Pest
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	8015 DRO	28	8082 PCB
4	Nitrite N	9	BOD	14	Turbidity	19	VT PCF	24	8260B	29	PP13 Metals
5	Nitrate N	10	Alkalinity	15	Conductivity	20	VOC Halocarbons	25	8270 B/N or Acid	30	Total RCRA8
31	Metals (Total, Diss.) Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Tl, U, V, Zn										
32	TCLP (volatiles, semi-volatiles, metals, pesticides, herbicides)					33	Other				
34	Corrosivity	35	Ignitability	36	Reactivity	37	Other				
38	Other										

LAB USE ONLY
Delivery:
Temp: 14.1/ccer
Comment:

(White - Laboratory / Yellow - Client)

Page ____ of ____