2022 Groundwater Monitoring Program Report

Superior Terminal
Superior, Wisconsin

Prepared for
Enbridge Energy

August 2022

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ENBRIDGE ENERGY LIMITED PARTNERSHIP
GROUNDWATER MONITORING PROGRAM - REPORT FORM
(Superior Terminal – Superior, WI)
Sample Dates: May 10 – 13, 2022

I. Site Location

Site Name/Address: *Superior Terminal, 2800 East 21st Street, Superior, WI, 54880*
Milepost: *1098* Location Map Attached? ☒ Yes ☐ No *See Figure 1*

Legal Description: ___¼, ___ ¼, Sec *31, 36*, T *49* , R *13, 14* County: _____ State: *WI*

II. Review of Physical Setting

Topography/Run-off Direction: *South*

Surrounding Land Use: *Industrial/Forest/Residential* North
Forest/Nemadji River/Golf Course South
Industry/Forest West
Forest/Nemadji River East

Adjacent Water Bodies? *Yes – to the South and East*

Name of water body (if applicable): *Nemadji River*

III. Monitoring Well Data

Monitoring Wells: *28* Site Map with Monitoring Well Locations Attached? ☒ Yes ☐ No *See Figure 2*
 # Private Wells: 3 *Site Map with Private Well Locations Attached* ☒ Yes ☐ No *See Figure 2*
3382

Well Locations (GPS Coordinates):

MW-1R	N *46.68707°* W *-92.06922°*	MW-2	N *46.68069°* W *-92.06667°*	MW-5	N *46.68819°* W *-92.05092°*
MW-5B	N *46.68817°* W *-92.05091°*	MW-6	N *46.68393°* W *-92.06184°*	MW-6B	N *46.68392°* W *-92.06187°*
MW-10	N *46.68124°* W *-92.05694°*	MW-11	N *46.68428°* W *-92.05247°*	MW-11B	N *46.68419°* W *-92.05694°*
MW-12	N *46.69058°* W *-92.05075°*	MW-14	N *46.68348°* W *-92.06680°*	MW-15	N *46.68456°* W *-92.06717°*
MW-17	N *46.68977°* W *-92.04828°*	MW-17B	N *46.68978°* W *-92.04832°*	MW-18	N *46.69081°* W *-92.04665°*
MW-19A	N *46.69014°*	MW-19B	N *46.69015°*	MW-20A	N *46.68565°*

	W *-92.06411°*		W *-92.06409°*		W *-92.05740°*
MW-20B	N *46.68564°* W *-92.05738°*	MW-21A	N *46.68188°* W *-92.06080°*	MW-21B	N *46.68190°* W *-92.06079°*
MW-22B	N *46.68350°* W *-92.05313°*	MW-23B	N *46.68658°* W *-92.05070°*	MW-24A	N *46.69037°* W *-92.05623°*
MW-24B	N *46.69039°* W *-92.05620°*	MW-25A	N *46.69449°* W *-92.04603°*	MW-25B	N *46.69450°* W *-92.04604°*
MW-26	N *46.69683°* W *-92.05110°*				

Average Groundwater Depth (Shallow Wells): *2.84 feet below grade*
Average Groundwater Depth (Deep Wells): *10.08 feet below grade*

Groundwater Elevation and Survey Data Attached? ☒ Yes ☐ No *1*

Groundwater Samples Collected? ☒ Yes ☐ No #Sampling Events: *1 (May 2022)*

Analytical Laboratory Name & Location: *Pace Analytical, Nashville, TN.*

Analytical Parameters Submitted:

Groundwater: petroleum volatile organic compounds (PVOCs: 1,2,4 – trimethylbenzene; 1,3,5-trimethylbenzene; benzene; ethylbenzene; toluene; total xylenes; and methyl-tert-butyl ether (MTBE)) and naphthalene.
Private Wells: BTEX (benzene; toluene; ethylbenzene; total xylenes); chloride; iron; nitrate plus nitrite; total coliform; fecal coliform as E. coli; and pH.

Analytical Laboratory Reports Attached? ☒ Yes ☐ No - *See Appendix A, Laboratory Analytical Reports (monitoring well sampling) / Appendix D, Private Well Memo (private well sampling)*

Analytes Detected?

Groundwater: ☐ Yes ☒ No *See Table 2 and Appendix A*

Private Wells: ☒ Yes ☐ No *See Appendix D (Iron, chloride, and elevated pH)*

Free Product Encountered? ☐ Yes ☒ No Location: _____

IV. Monitoring Well Conditions (well by well)

- MW-1R was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination (i.e., odor, discoloration, sheen) was observed.
- MW-2 was in good condition, recovery rate was poor, purge water was clear to slightly turbid, no evidence of contamination was observed. The well lock was difficult to open and therefore replaced with an Enbridge well lock. Vegetation was overgrown around the monitoring well.
- MW-5 was in good condition, recovery rate was poor, purge water was clear to slightly turbid, no evidence of contamination was observed.
- MW-5B was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed. The well lock was difficult to open and therefore replaced with an Enbridge well lock.
- MW-6 was in good condition, recovery rate was poor, purge water was clear to slightly turbid, no evidence of contamination was observed.
- MW-6B was in good condition, recovery rate was poor, purge water was clear to turbid, no evidence of contamination was observed.
- MW-10 was in good condition, recovery rate was poor, purge water was clear to slightly turbid, no evidence of contamination was observed.
- MW-11 was in good condition, recovery rate was poor, purge water was clear to turbid, no evidence of contamination was observed.
- MW-11B was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed.
- MW-12 was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed.
- MW-14 was in good condition, recovery rate was poor, purge water was clear to slightly turbid, some small plant roots were observed in the purge water, no evidence of contamination was observed. The lock was replaced with an Enbridge well lock.
- MW-15 was in good condition, recovery rate was poor, purge water was clear to slightly turbid, no evidence of contamination was observed. The lock was replaced with an Enbridge well lock.
- MW-17 was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed. The well lock was difficult to open and therefore replaced with an Enbridge well lock.
- MW-17B was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed. The well lock was difficult to open and therefore replaced with an Enbridge well lock.
- MW-18 was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed.
- MW-19A was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed.
- MW-19B was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed.
- MW-20A was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed.
- MW-20B was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed.
- MW-21A was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed.

- MW-21B was in good condition, recovery rate was poor, purge water was clear to slightly turbid, no evidence of contamination was observed.
- MW-22B was in good condition, recovery rate was poor, purge water was slightly turbid to turbid, no evidence of contamination was observed. The well lock was difficult to open and therefore replaced with an Enbridge well lock.
- MW-23B was in good condition, recovery rate was poor, purge water was clear, no evidence of contamination was observed. Frost action loosened the concrete around the steel protective casing and it appears the concrete and steel casing have heaved slightly. The well lock was difficult to open and therefore replaced with an Enbridge well lock.
- MW-24A was in good condition, recovery rate was poor, purge water was clear to turbid, no evidence of contamination was observed. Frost action loosened the concrete around the steel protective casing and bollards and it appears the steel casing and bollards have heaved slightly. The well lock was difficult to open and therefore replaced with an Enbridge well lock.
- MW-24B was in good condition, recovery rate was poor, purge water was clear to slightly turbid, no evidence of contamination was observed. Frost action loosened the concrete around the steel protective casing and bollards and it appears the steel casing and bollards have heaved slightly. The well lock was difficult to open and therefore replaced with an Enbridge well lock.
- MW-25A was in good condition, recovery rate was poor, purge water was slightly turbid to very turbid, no evidence of contamination was observed.
- MW-25B was in good condition, recovery rate was poor, purge water was clear to very turbid, no evidence of contamination was observed.
- MW-26 was in good condition, recovery rate was poor, purge water was clear to slightly turbid, no evidence of contamination was observed. Frost action loosened the concrete around the steel protective casing and bollards and it appears the steel casing and bollards have heaved slightly.

V. Conclusions

- Each monitoring well was photographed and the general condition of each well was documented. Photographs of each monitoring well are provided in Appendix B.
- Barr measured water levels and well depths in each well on May 9, 2022 prior to groundwater sample collection.
- Field water quality parameters were measured prior to well purging using a YSI ProDSS down-well probe. Field parameter and well purging documentation is provided in Appendix C. Field parameters included: temperature, conductivity, dissolved oxygen, pH, oxidation reduction potential and turbidity.
    - Field water quality parameters were not collected at MW-12, as the YSI down-well probe would not fit past approximately 3.1 feet from the top of the riser. The well did not appear to be bent or have any type of obstruction; however, since the down-well probe diameter is only slightly smaller than the inside diameter of the well riser, any minor or slight change in the riser angle would limit the advancement of the down-well probe.
- Groundwater samples were collected from each monitoring well following purging as documented on the field sampling forms in Appendix C. Groundwater samples were collected from each well using new disposable bailers.
- Groundwater sample collection in 2022 occurred between May 10 and 13.
- Groundwater samples collected from each monitoring well were analyzed by Pace Analytical for PVOCs and naphthalene.
- No analytes were detected above laboratory detection limits in groundwater from the monitoring wells (Table 2).

  - No analytes were detected above laboratory detection limits from the duplicate samples collected at MW-1R, MW-18 and MW-26.
- Groundwater contours of the shallow and deep wells are provided in Figures 3 and 4, respectively.
- The locks at monitoring wells MW-14 and MW-15 have been replaced with Enbridge well locks. These wells are shared with Superior Refining Company (SRC).
- The locks on the following eight monitoring wells were difficult to open and therefore replaced with a new Enbridge well lock: MW-2, MW-5B, MW-17, MW-17B, MW-22B, MW-23B, MW-24A, and MW-24B.
- The vegetation around MW-2 was overgrown.
- The private wells were sampled on May 12, 2022. Private well sampling documentation and laboratory results are provided in Appendix D.

VI. Recommendations

- Check monitoring well conditions and measure water levels annually.
- Continue to sample monitoring wells for PVOC plus naphthalene annually.
- Assess and remove the loose concrete around wells/bollards at MW-24A, MW-24B, and MW-26; evaluate the condition of the pro-tops and bollards to confirm they remain secure.
- Vegetation has become overgrown around MW-2; trim back vegetation prior to the next year's sampling event.

Company Name: Barr Engineering Co.

Prepared By: Kaitlin Montz	Kaitlin Montz	8/4/2022
Printed Name	Signature	Date
Reviewed By: Lynette Carney	Lynette Carney	8/4/2022
Printed Name	Signature	Date

Tables

Table 1: Groundwater Elevation Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

Location	Date	Surface Elevation	TOC Elevation	Depth to Water	Total Well Depth	Depth of Water Below Grade	Relative Water Elevation	Screened Interval[+]				Screen Submerged?
								TOS		BOS		
		(ft)[‡]	(ft)[‡]	(ft bTOC)	(ft bTOC)	(ft bgs)	(ft)	(ft bgs)	(ft)	(ft bgs)	(ft)	Yes / No
MW-1	See Previous Reports for data prior to 2017											
	22-May-17	663.46	665.22	4.47	22.28	2.71	660.75	10	653.46	20	643.46	Yes
	2-Oct-17	663.46	665.22	5.12	22.57	3.36	660.10	10	653.46	20	643.46	Yes
	29-May-18	663.46	665.22	5.13	22.28	3.37	660.09	10	653.46	20	643.46	Yes
	15-Nov-18	663.46	665.22	6.54	22.31	4.78	658.68	10	653.46	20	643.46	Yes
	27-May-19	663.46	665.22	4.98	22.30	3.22	660.24	10	653.46	20	643.46	Yes
	MW-1 Abandoned on June 18, 2019											
MW-1R	29-Oct-19	660.95	663.90	12.1	17.54	9.15	651.80	4.5	656.45	14.5	646.45	No
	18-May-20	660.95	663.90	5.83	17.55	2.88	658.07	4.5	656.45	14.5	646.45	Yes
	19-Oct-20	660.95	663.90	7.21	17.55	4.26	656.69	4.5	656.45	14.5	646.45	Yes
	10-May-21	660.95	663.90	5.75	17.55	2.80	658.15	4.5	656.45	14.5	646.45	Yes
	5-May-22	660.95	663.90	5.50	17.53	2.55	658.40	4.5	656.45	14.5	646.45	Yes
MW-2	See Previous Reports for data prior to 2017											
	22-May-17	657.06	659.37	3.07	27.18	0.76	656.30	14.5	642.56	24.5	632.56	Yes
	2-Oct-17	657.06	659.37	3.14	27.26	0.83	656.23	14.5	642.56	24.5	632.56	Yes
	29-May-18	657.06	659.37	3.72	27.18	1.41	655.65	14.5	642.56	24.5	632.56	Yes
	14-Nov-18	657.06	659.37	3.30	27.19	0.99	656.07	14.5	642.56	24.5	632.56	Yes
	30-May-19	657.06	659.37	3.51	27.17	1.20	655.86	14.5	642.56	24.5	632.56	Yes
	29-Oct-19	654.98	657.33	3.28	27.18	0.93	654.05	14.5	640.48	24.5	630.48	Yes
	19-May-20	654.98	657.33	3.84	27.20	1.49	653.49	14.5	640.48	24.5	630.48	Yes
	19-Oct-20	654.98	657.33	7.01	27.20	4.66	650.32	14.5	640.48	24.5	630.48	Yes
	10-May-21	654.98	657.33	4.11	28.20	1.76	653.22	14.5	640.48	24.5	630.48	Yes
	9-May-22	654.98	657.33	3.28	27.19	0.93	654.05	14.5	640.48	24.5	630.48	Yes
MW-5	See Previous Reports for data prior to 2017											
	23-May-17	642.85	645.37	2.87	27.02	0.35	642.50	14.4	630.97	24.4	620.97	Yes
	5-Oct-17	642.85	645.37	2.80	27.06	0.28	642.57	14.4	630.97	24.4	620.97	Yes
	31-May-18	642.85	645.37	2.79	27.02	0.27	642.58	14.4	630.97	24.4	620.97	Yes
	15-Nov-18	642.85	645.37	3.19	27.30	0.67	642.18	14.4	630.97	24.4	620.97	Yes
	29-May-19	642.85	645.37	3.00	27.03	0.48	642.37	14.4	630.97	24.4	620.97	Yes
	30-Oct-19	640.69	643.41	3.16	27.03	0.44	640.25	14.4	629.01	24.4	619.01	Yes
	19-May-20	640.69	643.41	3.55	27.04	0.83	639.86	14.4	629.01	24.4	619.01	Yes
	21-Oct-20	640.69	643.41	7.10	27.02	4.38	636.31	14.4	629.01	24.4	619.01	Yes
	10-May-21	640.69	643.41	3.41	27.03	0.69	640.00	14.4	629.01	24.4	619.01	Yes
	9-May-22	640.69	643.41	2.96	27.02	0.24	640.45	14.4	629.01	24.4	619.01	Yes
MW-5B	See Previous Reports for data prior to 2017											
	23-May-17	640.89	644.20	8.15	57.91	4.84	636.05	49	595.20	54	590.20	Yes
	5-Oct-17	640.89	644.20	7.18	57.78	3.87	637.02	49	595.20	54	590.20	Yes
	31-May-18	640.89	644.20	6.53	57.91	3.22	637.67	49	595.20	54	590.20	Yes
	15-Nov-18	640.89	644.20	6.80	57.30	3.49	637.40	49	595.20	54	590.20	Yes
	29-May-19	640.89	644.20	6.82	57.95	3.51	637.38	49	595.20	54	590.20	Yes
	30-Oct-19	640.82	644.31	7.04	57.95	3.55	637.27	49	595.31	54	590.31	Yes
	19-May-20	640.82	644.31	6.81	57.94	3.32	637.50	49	595.31	54	590.31	Yes
	21-Oct-20	640.82	644.31	9.57	57.90	6.08	634.74	49	595.31	54	590.31	Yes
	10-May-21	640.82	644.31	7.10	57.91	3.61	637.21	49	595.31	54	590.31	Yes
	9-May-22	640.82	644.31	6.34	57.91	2.85	637.97	49	595.31	54	590.31	Yes
MW-6	See Previous Reports for data prior to 2017											
	22-May-17	645.79	648.01	7.24	26.68	5.02	640.77	14	634.01	24	624.01	Yes
	3-Oct-17	645.79	648.01	6.65	26.76	4.43	641.36	14	634.01	24	624.01	Yes
	30-May-18	645.79	648.01	7.14	26.68	4.92	640.87	14	634.01	24	624.01	Yes
	16-Nov-18	645.79	648.01	7.47	26.69	5.25	640.54	14	634.01	24	624.01	Yes
	28-May-19	645.79	648.01	7.37	26.70	5.15	640.64	14	634.01	24	624.01	Yes
	29-Oct-19	643.73	646.04	7.51	26.70	5.20	638.53	14	632.04	24	622.04	Yes
	20-May-20	643.73	646.04	7.73	27.70	5.42	638.31	14	632.04	24	622.04	Yes
	20-Oct-20	643.73	646.04	10.02	26.69	7.71	636.02	14	632.04	24	622.04	Yes
	10-May-21	643.73	646.04	9.82	26.70	7.51	636.22	14	632.04	24	622.04	Yes
	9-May-22	643.73	646.04	7.53	26.67	5.22	638.51	14	632.04	24	622.04	Yes

Table 1: Groundwater Elevation Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

Location	Date	Surface Elevation	TOC Elevation	Depth to Water	Total Well Depth	Depth of Water Below Grade	Relative Water Elevation	Screened Interval[+]				Screen Submerged?
								TOS		BOS		
		(ft)[‡]	(ft)[‡]	(ft bTOC)	(ft bTOC)	(ft bgs)	(ft)	(ft bgs)	(ft)	(ft bgs)	(ft)	Yes / No
MW-6B	See Previous Reports for data prior to 2017											
	22-May-17	644.23	646.77	9.12	58.23	6.58	637.65	50	596.77	55	591.77	Yes
	3-Oct-17	644.23	646.77	9.15	58.10	6.61	637.62	50	596.77	55	591.77	Yes
	30-May-18	644.23	646.77	8.91	58.23	6.37	637.86	50	596.77	55	591.77	Yes
	16-Nov-18	644.23	646.77	9.00	58.26	6.46	637.77	50	596.77	55	591.77	Yes
	28-May-19	644.23	646.77	9.00	58.25	6.46	637.77	50	596.77	55	591.77	Yes
	29-Oct-19	644.06	646.77	9.98	58.25	7.27	636.79	50	596.77	55	591.77	Yes
	20-May-20	644.06	646.77	9.42	58.29	6.71	637.35	50	596.77	55	591.77	Yes
	20-Oct-20	644.06	646.77	11.29	58.48	8.58	635.48	50	596.77	55	591.77	Yes
	10-May-21	644.06	646.77	10.06	58.28	7.35	636.71	50	596.77	55	591.77	Yes
	9-May-22	644.06	646.77	10.42	58.48	7.71	636.35	50	596.77	55	591.77	Yes
MW-10	See Previous Reports for data prior to 2017											
	23-May-17	660.11	662.01	5.20	30.43	3.30	656.81	18.6	643.41	28.6	633.41	Yes
	4-Oct-17	660.11	662.01	4.75	30.50	2.85	657.26	18.6	643.41	28.6	633.41	Yes
	30-May-18	660.11	662.01	6.28	30.43	4.38	655.73	18.6	643.41	28.6	633.41	Yes
	16-Nov-18	660.11	662.01	5.24	30.43	3.34	656.77	18.6	643.41	28.6	633.41	Yes
	28-May-19	660.11	662.01	5.00	30.43	3.10	657.01	18.6	643.41	28.6	633.41	Yes
	29-Oct-19	658.65	660.05	4.22	30.44	2.82	655.83	19.1	640.95	29.1	630.95	Yes
	20-Oct-20	658.65	660.05	6.08	30.44	4.68	653.97	19.1	640.95	29.1	630.95	Yes
	10-May-21	658.65	660.05	6.34	30.45	4.94	653.71	19.1	640.95	29.1	630.95	Yes
	9-May-22	658.65	660.05	5.69	30.45	4.29	654.36	19.1	640.95	29.1	630.95	Yes
MW-11	See Previous Reports for data prior to 2017											
	23-May-17	654.06	656.33	7.80	18.18	5.53	648.53	6.23	650.10	16.23	640.10	No
	4-Oct-17	654.06	656.33	7.69	18.27	5.42	648.64	6.23	650.10	16.23	640.10	No
	30-May-18	654.06	656.33	7.75	18.18	5.48	648.58	6.23	650.10	16.23	640.10	No
	16-Nov-18	654.06	656.33	8.09	18.18	5.82	648.24	6.23	650.10	16.23	640.10	No
	29-May-19	654.06	656.33	8.06	18.20	5.79	648.27	6.23	650.10	16.23	640.10	No
	31-Oct-19	651.83	654.38	8.10	18.19	5.55	646.28	5.95	648.43	15.95	638.43	No
	20-May-20	651.83	654.38	8.29	18.18	5.74	646.09	5.95	648.43	15.95	638.43	No
	21-Oct-20	651.83	654.38	8.94	18.18	6.39	645.44	5.95	648.43	15.95	638.43	No
	10-May-21	651.83	654.38	8.56	18.19	6.01	645.82	5.95	648.43	15.95	638.43	No
	9-May-22	651.83	654.38	7.81	18.16	5.26	646.57	5.95	648.43	15.95	638.43	No
MW-11B	See Previous Reports for data prior to 2017											
	23-May-17	653.86	655.91	22.94	57.50	20.89	632.97	50	605.91	55	600.91	Yes
	4-Oct-17	653.86	655.91	26.95	57.50	24.90	628.96	50	605.91	55	600.91	Yes
	30-May-18	653.86	655.91	22.31	57.50	20.26	633.60	50	605.91	55	600.91	Yes
	16-Nov-18	653.86	655.91	24.70	57.52	22.65	631.21	50	605.91	55	600.91	Yes
	29-May-19	653.86	655.91	23.00	57.83	20.95	632.91	50	605.91	55	600.91	Yes
	28-Oct-19	651.85	653.97	25.60	57.83	23.48	628.37	50	603.97	55	598.97	Yes
	20-May-20	651.85	653.97	23.42	57.51	21.30	630.55	50	603.97	55	598.97	Yes
	21-Oct-20	651.85	653.97	25.92	57.52	23.80	628.05	50	603.97	55	598.97	Yes
	10-May-21	651.85	653.97	23.56	57.52	21.44	630.41	50	603.97	55	598.97	Yes
	9-May-22	651.85	653.97	21.08	57.51	18.96	632.89	50	603.97	55	598.97	Yes
MW-12	See Previous Reports for data prior to 2017											
	23-May-17	645.36	649.46	4.75	22.47	0.65	644.71	8.4	636.96	18.4	626.96	Yes
	4-Oct-17	645.36	649.17	4.42	22.57	0.61	644.75	8.69	636.67	18.69	626.67	Yes
	31-May-18	645.36	649.17	4.62	22.47	0.81	644.55	8.69	636.67	18.69	626.67	Yes
	19-Nov-18	645.36	649.17	4.64	22.18	0.83	644.53	8.69	636.67	18.69	626.67	Yes
	29-May-19	645.36	649.17	4.32	22.18	0.51	644.85	8.69	636.67	18.69	626.67	Yes
	28-Oct-19	643.25	647.15	4.57	22.19	0.67	642.58	8.6	634.65	18.6	624.65	Yes
	21-May-20	643.25	647.15	4.70	22.23	0.80	642.45	8.6	634.65	18.6	624.65	Yes
	20-Oct-20	643.25	647.15	7.22	22.20	3.32	639.93	8.6	634.65	18.6	624.65	Yes
	23-Oct-20	643.25	648.15	top of casing elevation resurveyed after well repair								
	10-May-21	643.25	648.15	4.52	21.05	-0.38	643.63	7.6	635.65	17.6	625.65	Yes
	9-May-22	643.25	648.15	3.40	21.06	-1.50	644.75	7.6	635.65	17.6	625.65	Yes

Table 1: Groundwater Elevation Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

Location	Date	Surface Elevation	TOC Elevation	Depth to Water	Total Well Depth	Depth of Water Below Grade	Relative Water Elevation	Screened Interval[+]				Screen Submerged?
								TOS		BOS		
		(ft)[‡]	(ft)[‡]	(ft bTOC)	(ft bTOC)	(ft bgs)	(ft)	(ft bgs)	(ft)	(ft bgs)	(ft)	Yes / No
MW-14	See Previous Reports for data prior to 2017											
	22-May-17	659.27	661.15	3.40	18.35	1.52	657.75	6.6	652.65	16.6	642.65	Yes
	2-Oct-17	659.27	661.15	4.82	18.42	2.94	656.33	6.6	652.65	16.6	642.65	Yes
	29-May-18	659.27	661.15	5.25	18.35	3.37	655.90	6.6	652.65	16.6	642.65	Yes
	14-Nov-18	659.27	661.15	4.91	18.35	3.03	656.24	6.6	652.65	16.6	642.65	Yes
	27-May-19	659.27	661.15	4.67	18.35	2.79	656.48	6.6	652.65	16.6	642.65	Yes
	29-Oct-19	657.06	659.11	5.01	18.34	2.96	654.10	6.4	650.61	16.4	640.61	Yes
	19-May-20	657.06	659.11	5.55	18.34	3.50	653.56	6.4	650.61	16.4	640.61	Yes
	21-Oct-20	657.06	659.11	7.30	18.35	5.25	651.81	6.4	650.61	16.4	640.61	Yes
	10-May-21	657.06	659.11	5.06	18.35	3.01	654.05	6.4	650.61	16.4	640.61	Yes
	9-May-22	657.06	659.11	4.53	18.33	2.48	654.58	6.4	650.61	16.4	640.61	Yes
MW-15	See Previous Reports for data prior to 2017											
	22-May-17	659.10	660.88	2.92	17.32	1.14	657.96	5.7	653.38	15.7	643.38	Yes
	2-Oct-17	659.10	660.88	2.82	17.43	1.04	658.06	5.7	653.38	15.7	643.38	Yes
	29-May-18	659.10	660.88	3.92	17.32	2.14	656.96	5.7	653.38	15.7	643.38	Yes
	14-Nov-18	659.10	660.88	2.91	17.31	1.13	657.97	5.7	653.38	15.7	643.38	Yes
	27-May-19	659.10	660.88	3.07	17.32	1.29	657.81	5.7	653.38	15.7	643.38	Yes
	29-Oct-19	657.20	659.03	3.04	17.30	1.21	655.99	5.7	651.53	15.7	641.53	Yes
	19-May-20	657.20	659.03	3.88	17.31	2.05	655.15	5.7	651.53	15.7	641.53	Yes
	21-Oct-20	657.20	659.03	7.16	17.30	5.33	651.87	5.7	651.53	15.7	641.53	Yes
	10-May-21	657.20	659.03	3.98	17.31	2.15	655.05	5.7	651.53	15.7	641.53	Yes
	9-May-22	657.20	659.03	2.96	17.29	1.13	656.07	5.7	651.53	15.7	641.53	Yes
MW-17	See Previous Reports for data prior to 2017											
	23-May-17	640.70	643.19	4.24	17.46	1.75	638.95	5	635.70	15	625.70	Yes
	5-Oct-17	640.70	643.19	3.93	17.44	1.44	639.26	5	635.70	15	625.70	Yes
	31-May-18	640.70	643.19	5.95	17.46	3.46	637.24	5	635.70	15	625.70	Yes
	15-Nov-18	640.70	643.19	3.88	17.49	1.39	639.31	5	635.70	15	625.70	Yes
	29-May-19	640.70	643.19	3.79	17.47	1.30	639.40	5	635.70	15	625.70	Yes
	30-Oct-19	638.72	641.10	4.06	17.47	1.68	637.04	5	633.72	15	623.72	Yes
	19-May-20	638.72	641.10	5.53	17.48	3.15	635.57	5	633.72	15	623.72	Yes
	22-Oct-20	638.72	641.10	7.61	17.47	5.23	633.49	5	633.72	15	623.72	No
	10-May-21	638.72	641.10	4.81	17.48	2.43	636.29	5	633.72	15	623.72	Yes
	9-May-22	638.72	641.10	5.76	17.46	3.38	635.34	5	633.72	15	623.72	Yes
MW-17B	See Previous Reports for data prior to 2017											
	23-May-17	640.95	643.27	17.78	44.88	15.46	625.49	39.5	601.45	42.5	598.45	Yes
	5-Oct-17	640.95	643.27	22.30	44.80	19.98	620.97	39.5	601.45	42.5	598.45	Yes
	31-May-18	640.95	643.27	16.50	44.88	14.18	626.77	39.5	601.45	42.5	598.45	Yes
	15-Nov-18	640.95	643.27	20.10	44.97	17.78	623.17	39.5	601.45	42.5	598.45	Yes
	29-May-19	640.95	643.27	18.11	44.94	15.79	625.16	39.5	601.45	42.5	598.45	Yes
	30-Oct-19	638.89	641.27	20.45	44.94	18.07	620.82	39.5	599.39	42.5	596.39	Yes
	19-May-20	638.89	641.27	17.83	44.88	15.45	623.44	39.5	599.39	42.5	596.39	Yes
	22-Oct-20	638.89	641.27	20.16	44.97	17.78	621.11	39.5	599.39	42.5	596.39	Yes
	10-May-21	638.89	641.27	18.42	44.95	16.04	622.85	39.5	599.39	42.5	596.39	Yes
	9-May-22	638.89	641.27	15.81	44.91	13.43	625.46	39.5	599.39	42.5	596.39	Yes
MW-18	See Previous Reports for data prior to 2017											
	23-May-17	641.80	644.23	5.55	17.22	3.12	638.68	5	636.80	15	626.80	Yes
	5-Oct-17	641.80	644.23	5.25	17.20	2.82	638.98	5	636.80	15	626.80	Yes
	31-May-18	641.80	644.23	7.64	17.22	5.21	636.59	5	636.80	15	626.80	No
	15-Nov-18	641.80	644.23	5.43	17.23	3.00	638.80	5	636.80	15	626.80	Yes
	29-May-19	641.80	644.23	5.73	17.25	3.30	638.50	5	636.80	15	626.80	Yes
	30-Oct-19	639.83	642.25	5.39	17.25	2.97	636.86	5	634.83	15	624.83	Yes
	19-May-20	639.83	642.25	6.01	17.25	3.59	636.24	5	634.83	15	624.83	Yes
	21-Oct-20	639.83	642.25	6.29	17.25	3.87	635.96	5	634.83	15	624.83	Yes
	10-May-21	639.83	642.25	6.12	17.25	3.70	636.13	5	634.83	15	624.83	Yes
	9-May-22	639.83	642.25	7.86	17.23	5.44	634.39	5	634.83	15	624.83	No

Table 1: Groundwater Elevation Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

Location	Date	Surface Elevation (ft)‡	TOC Elevation (ft)‡	Depth to Water (ft bTOC)	Total Well Depth (ft bTOC)	Depth of Water Below Grade (ft bgs)	Relative Water Elevation (ft)	Screened Interval+ TOS (ft bgs)	TOS (ft)	BOS (ft bgs)	BOS (ft)	Screen Submerged? Yes / No
MW-19A	See Previous Reports for data prior to 2017											
	22-May-17	656.15	658.12	3.27	24.14	1.30	654.85	12	644.15	22	634.15	Yes
	5-Oct-17	656.15	658.12	3.08	26.00	1.11	655.04	12	644.15	22	634.15	Yes
	29-May-18	656.15	658.12	3.53	24.14	1.56	654.59	12	644.15	22	634.15	Yes
	14-Nov-18	656.15	658.12	3.15	24.15	1.18	654.97	12	644.15	22	634.15	Yes
	27-May-19	656.15	658.12	3.51	24.15	1.54	654.61	12	644.15	22	634.15	Yes
	29-Oct-19	654.76	656.06	2.91	24.13	1.61	653.15	12	642.76	22	632.76	Yes
	18-May-20	654.76	656.06	3.16	24.15	1.86	652.90	12	642.76	22	632.76	Yes
	19-Oct-20	654.76	656.06	3.10	24.16	1.80	652.96	12	642.76	22	632.76	Yes
	10-May-21	654.76	656.06	3.26	24.17	1.96	652.80	12	642.76	22	632.76	Yes
	9-May-22	654.76	656.06	3.05	24.15	1.75	653.01	12	642.76	22	632.76	Yes
MW-19B	See Previous Reports for data prior to 2017											
	22-May-17	656.19	658.22	12.88	59.93	10.85	645.34	53	603.19	58	598.19	Yes
	5-Oct-17	656.19	658.22	13.46	59.80	11.43	644.76	53	603.19	58	598.19	Yes
	29-May-18	656.19	658.22	12.52	59.93	10.49	645.70	53	603.19	58	598.19	Yes
	14-Nov-18	656.19	658.22	8.76	59.93	6.73	649.46	53	603.19	58	598.19	Yes
	27-May-19	656.19	658.22	7.47	60.30	5.44	650.75	53	603.19	58	598.19	Yes
	29-Oct-19	654.79	656.19	7.56	59.94	6.16	648.63	53	601.79	58	596.79	Yes
	18-May-20	654.79	656.19	7.64	59.94	6.24	648.55	53	601.79	58	596.79	Yes
	19-Oct-20	654.79	656.19	8.46	59.97	7.06	647.73	53	601.79	58	596.79	Yes
	10-May-21	654.79	656.19	8.50	59.95	7.10	647.69	53	601.79	58	596.79	Yes
	9-May-22	654.79	656.19	8.70	59.94	7.30	647.49	53	601.79	58	596.79	Yes
MW-20A	See Previous Reports for data prior to 2017											
	23-May-17	648.98	651.04	4.33	24.18	2.27	646.71	12	636.98	22	626.98	Yes
	3-Oct-17	648.98	651.04	4.67	24.00	2.61	646.37	12	636.98	22	626.98	Yes
	30-May-18	648.98	651.04	5.28	24.18	3.22	645.76	12	636.98	22	626.98	Yes
	16-Nov-18	648.98	651.04	4.46	24.20	2.40	646.58	12	636.98	22	626.98	Yes
	28-May-19	648.98	651.04	4.09	24.19	2.03	646.95	12	636.98	22	626.98	Yes
	30-Oct-19	647.10	649.16	4.88	24.19	2.82	644.28	12	635.10	22	625.10	Yes
	18-May-20	647.10	649.16	5.09	24.20	3.03	644.07	12	635.10	22	625.10	Yes
	19-Oct-20	647.10	649.16	8.82	24.20	6.76	640.34	12	635.10	22	625.10	Yes
	10-May-21	647.10	649.16	4.88	24.20	2.82	644.28	12	635.10	22	625.10	Yes
	9-May-22	647.10	649.16	5.75	24.20	3.69	643.41	12	635.10	22	625.10	Yes
MW-20B	See Previous Reports for data prior to 2017											
	22-May-17	649.36	651.34	17.72	60.16	15.74	633.62	53	596.36	58	591.36	Yes
	3-Oct-17	649.36	651.34	19.97	57.55	17.99	631.37	53	596.36	58	591.36	Yes
	30-May-18	649.36	651.34	17.04	60.16	15.06	634.30	53	596.36	58	591.36	Yes
	16-Nov-18	649.36	651.34	18.33	60.05	16.35	633.01	53	596.36	58	591.36	Yes
	28-May-19	649.36	651.34	17.68	60.18	15.70	633.66	53	596.36	58	591.36	Yes
	30-Oct-19	647.47	649.44	18.57	60.18	16.60	630.87	53	594.47	58	589.47	Yes
	18-May-20	647.47	649.44	17.66	60.18	15.69	631.78	53	594.47	58	589.47	Yes
	19-Oct-20	647.47	649.44	18.39	60.19	16.42	631.05	53	594.47	58	589.47	Yes
	10-May-21	647.47	649.44	17.86	60.19	15.89	631.58	53	594.47	58	589.47	Yes
	9-May-22	647.47	649.44	16.85	60.17	14.88	632.59	53	594.47	58	589.47	Yes
MW-21A	See Previous Reports for data prior to 2017											
	22-May-17	646.86	648.84	3.90	24.55	1.92	644.94	12	634.86	22	624.86	Yes
	3-Oct-17	646.86	648.84	4.00	24.40	2.02	644.84	12	634.86	22	624.86	Yes
	30-May-18	646.86	648.84	4.11	24.55	2.13	644.73	12	634.86	22	624.86	Yes
	16-Nov-18	646.86	648.84	3.89	24.55	1.91	644.95	12	634.86	22	624.86	Yes
	28-May-19	646.86	648.84	4.64	24.50	2.66	644.20	12	634.86	22	624.86	Yes
	31-Oct-19	644.72	646.82	4.04	24.50	1.94	642.78	12	632.72	22	622.72	Yes
	20-May-20	644.72	646.82	4.09	24.54	1.99	642.73	12	632.72	22	622.72	Yes
	20-Oct-20	644.72	646.82	6.02	24.55	3.92	640.80	12	632.72	22	622.72	Yes
	10-May-21	644.72	646.82	4.31	24.55	2.21	642.51	12	632.72	22	622.72	Yes
	9-May-22	644.72	646.82	6.63	24.54	4.53	640.19	12	632.72	22	622.72	Yes

Table 1: Groundwater Elevation Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

Location	Date	Surface Elevation (ft)‡	TOC Elevation (ft)‡	Depth to Water (ft bTOC)	Total Well Depth (ft bTOC)	Depth of Water Below Grade (ft bgs)	Relative Water Elevation (ft)	Screened Interval+ TOS (ft bgs)	TOS (ft)	BOS (ft bgs)	BOS (ft)	Screen Submerged? Yes / No
MW-21B	See Previous Reports for data prior to 2017											
	22-May-17	646.68	648.83	18.71	60.65	16.56	630.12	53	593.68	58	588.68	Yes
	3-Oct-17	646.68	648.83	20.03	60.70	17.88	628.80	53	593.68	58	588.68	Yes
	30-May-18	646.68	648.83	17.81	60.65	15.66	631.02	53	593.68	58	588.68	Yes
	16-Nov-18	646.68	648.83	18.90	61.60	16.75	629.93	53	593.68	58	588.68	Yes
	28-May-19	646.68	648.83	17.99	60.65	15.84	630.84	53	593.68	58	588.68	Yes
	31-Oct-19	644.63	646.80	19.06	60.65	16.89	627.74	53	591.63	58	586.63	Yes
	20-May-20	644.63	646.80	18.13	60.70	15.96	628.67	53	591.63	58	586.63	Yes
	20-Oct-20	644.63	646.80	19.23	60.65	17.06	627.57	53	591.63	58	586.63	Yes
	10-May-21	644.63	646.80	18.57	60.68	16.40	628.23	53	591.63	58	586.63	Yes
	9-May-22	644.63	646.80	17.90	60.70	15.73	628.90	53	591.63	58	586.63	Yes
MW-22B	See Previous Reports for data prior to 2017											
	23-May-17	655.49	658.35	17.19	57.70	14.33	641.16	49	606.49	54	601.49	Yes
	4-Oct-17	655.49	658.35	17.83	57.55	14.97	640.52	49	606.49	54	601.49	Yes
	30-May-18	655.49	658.35	17.91	57.70	15.05	640.44	49	606.49	54	601.49	Yes
	16-Nov-18	655.49	658.35	17.93	57.74	15.07	640.42	49	606.49	54	601.49	Yes
	28-May-19	655.49	658.35	18.39	57.71	15.53	639.96	49	606.49	54	601.49	Yes
	28-Oct-19	655.55	658.48	18.58	58.35	15.65	639.90	49	606.55	54	601.55	Yes
	20-May-20	655.55	658.48	18.84	57.74	15.91	639.64	49	606.55	54	601.55	Yes
	21-Oct-20	655.55	658.48	19.47	57.71	16.54	639.01	49	606.55	54	601.55	Yes
	10-May-21	655.55	658.48	19.36	57.75	16.43	639.12	49	606.55	54	601.55	Yes
	9-May-22	655.55	658.48	19.31	57.72	16.38	639.17	49	606.55	54	601.55	Yes
MW-23B	See Previous Reports for data prior to 2017											
	23-May-17	643.51	646.22	8.32	58.27	5.61	637.90	49	594.51	54	589.51	Yes
	5-Oct-17	643.51	646.22	6.36	57.11	3.65	639.86	49	594.51	54	589.51	Yes
	31-May-18	643.51	646.22	7.90	58.27	5.19	638.32	49	594.51	54	589.51	Yes
	15-Nov-18	643.51	646.22	7.23	57.30	4.52	638.99	49	594.51	54	589.51	Yes
	29-May-19	643.51	646.22	6.71	57.28	4.00	639.51	49	594.51	54	589.51	Yes
	30-Oct-19	643.82	646.32	6.57	57.28	4.07	639.75	49	594.82	54	589.82	Yes
	19-May-20	643.82	646.32	7.03	57.29	4.53	639.29	49	594.82	54	589.82	Yes
	21-Oct-20	643.82	646.32	13.01	57.26	10.51	633.31	49	594.82	54	589.82	Yes
	10-May-21	643.82	646.32	5.62	57.30	3.12	640.70	49	594.82	54	589.82	Yes
	9-May-22	643.82	646.32	6.71	57.30	4.21	639.61	49	594.82	54	589.82	Yes
MW-24A	See Previous Reports for data prior to 2017											
	23-May-17	649.09	651.69	3.74	19.03	1.14	647.95	6	643.09	16	633.09	Yes
	3-Oct-17	649.09	651.69	3.65	18.85	1.05	648.04	6	643.09	16	633.09	Yes
	31-May-18	649.09	651.69	4.51	19.03	1.91	647.18	6	643.09	16	633.09	Yes
	15-Nov-18	649.09	651.69	3.85	19.05	1.25	647.84	6	643.09	16	633.09	Yes
	27-May-19	649.09	651.69	3.68	19.03	1.08	648.01	6	643.09	16	633.09	Yes
	28-Oct-19	649.48	652.32	3.97	19.02	1.13	648.35	6	643.48	16	633.48	Yes
	18-May-20	649.48	652.32	4.99	19.50	2.15	647.33	6	643.48	16	633.48	Yes
	19-Oct-20	649.48	652.32	6.19	19.06	3.35	646.13	6	643.48	16	633.48	Yes
	10-May-21	649.48	652.32	4.72	19.03	1.88	647.60	6	643.48	16	633.48	Yes
	11-May-21	649.48	652.14	0.18 feet removed from top of casing								
	9-May-22	650.48	652.14	4.16	20.82	2.50	647.98	6	644.48	16	634.48	Yes
MW-24B	See Previous Reports for data prior to 2017											
	23-May-17	648.86	651.45	14.06	49.35	11.47	637.39	41	607.86	46	602.86	Yes
	3-Oct-17	648.86	651.45	13.52	49.21	10.93	637.93	41	607.86	46	602.86	Yes
	31-May-18	648.86	651.45	10.82	49.35	8.23	640.63	41	607.86	46	602.86	Yes
	15-Nov-18	648.86	651.45	11.03	49.81	8.44	640.42	41	607.86	46	602.86	Yes
	27-May-19	648.86	651.45	14.95	49.38	12.36	636.50	41	607.86	46	602.86	Yes
	28-Oct-19	649.09	651.91	11.32	49.37	8.50	640.59	41	608.09	46	603.09	Yes
	18-May-20	649.09	651.91	7.76	49.37	4.94	644.15	41	608.09	46	603.09	Yes
	19-Oct-20	649.09	651.91	15.42	49.41	12.60	636.49	41	608.09	46	603.09	Yes
	10-May-21	649.09	651.91	8.84	49.38	6.02	643.07	41	608.09	46	603.09	Yes
	9-May-22	649.09	651.91	5.25	49.35	2.43	646.66	41	608.09	46	603.09	Yes

Table 1: Groundwater Elevation Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

Location	Date	Surface Elevation (ft)‡	TOC Elevation (ft)‡	Depth to Water (ft bTOC)	Total Well Depth (ft bTOC)	Depth of Water Below Grade (ft bgs)	Relative Water Elevation (ft)	Screened Interval+ TOS (ft bgs)	TOS (ft)	BOS (ft bgs)	BOS (ft)	Screen Submerged? Yes / No
MW-25A	See Previous Reports for data prior to 2017											
	23-May-17	635.91	638.31	3.03	19.22	0.63	635.28	6	629.91	16	619.91	Yes
	4-Oct-17	635.91	638.31	3.05	19.00	0.65	635.26	6	629.91	16	619.91	Yes
	31-May-18	635.91	638.31	2.99	19.22	0.59	635.32	6	629.91	16	619.91	Yes
	19-Nov-18	635.91	638.31	3.59	19.22	1.19	634.72	6	629.91	16	619.91	Yes
	30-May-19	635.91	638.31	3.33	19.21	0.93	634.98	6	629.91	16	619.91	Yes
	28-Oct-19	636.57	639.16	3.45	19.23	0.86	635.71	6	630.57	16	620.57	Yes
	20-May-20	636.57	639.16	3.98	19.25	1.39	635.18	6	630.57	16	620.57	Yes
	20-Oct-20	636.57	639.16	6.01	19.23	3.42	633.15	6	630.57	16	620.57	Yes
	10-May-21	636.57	639.16	3.98	19.26	1.39	635.18	6	630.57	16	620.57	Yes
	9-May-22	636.57	639.16	3.47	19.27	0.88	635.69	6	630.57	16	620.57	Yes
MW-25B	See Previous Reports for data prior to 2017											
	23-May-17	635.85	638.52	7.60	49.43	4.93	630.92	41	594.85	46	589.85	Yes
	4-Oct-17	635.85	638.52	8.50	49.21	5.83	630.02	41	594.85	46	589.85	Yes
	31-May-18	635.85	638.52	7.62	49.43	4.95	630.90	41	594.85	46	589.85	Yes
	19-Nov-18	635.85	638.52	8.69	49.45	6.02	629.83	41	594.85	46	589.85	Yes
	30-May-19	635.85	638.52	8.32	49.42	5.65	630.20	41	594.85	46	589.85	Yes
	28-Oct-19	636.59	638.81	9.32	49.42	7.10	629.49	41	595.59	46	590.59	Yes
	20-May-20	636.59	638.81	8.54	49.48	6.32	630.27	41	595.59	46	590.59	Yes
	20-Oct-20	636.59	638.81	9.59	49.45	7.37	629.22	41	595.59	46	590.59	Yes
	10-May-21	636.59	638.81	9.29	50.45	7.07	629.52	41	595.59	46	590.59	Yes
	9-May-22	636.59	638.81	9.21	49.42	6.99	629.60	41	595.59	46	590.59	Yes
MW-26	See Previous Reports for data prior to 2017											
	23-May-17	643.44	646.17	7.44	18.90	4.71	638.73	6	637.44	16	627.44	Yes
	4-Oct-17	643.44	646.17	7.10	18.70	4.37	639.07	6	637.44	16	627.44	Yes
	31-May-18	643.44	646.17	7.65	18.90	4.92	638.52	6	637.44	16	627.44	Yes
	19-Nov-18	643.44	646.17	6.90	18.92	4.17	639.27	6	637.44	16	627.44	Yes
	30-May-19	643.44	646.17	7.55	18.91	4.82	638.62	6	637.44	16	627.44	Yes
	28-Oct-19	643.64	646.44	6.88	18.90	4.08	639.56	6	637.64	16	627.64	Yes
	21-May-20	643.64	646.44	6.70	18.91	3.90	639.74	6	637.64	16	627.64	Yes
	20-Oct-20	643.64	646.44	7.83	18.90	5.03	638.61	6	637.64	16	627.64	Yes
	10-May-21	643.64	646.44	8.78	18.92	5.98	637.66	6	637.64	16	627.64	Yes
	9-May-22	643.64	646.44	8.14	18.90	5.34	638.30	6	637.64	16	627.64	Yes

Notes: ft = feet bTOC = Below top of casing bgs = below ground surface

\+ = When well construction records were not available, the well screen was assumed to be 10 feet (MW-10, MW-11, MW-12, MW-14 and MW-15)

‡ = Elevations measured from 2015 to present in NAVD88 (North America Vertical Datum)

Table 2: Groundwater Quality Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

Location	Sampling Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (m,o,p) (µg/L)	1,2,4-Trimethylbenzene (µg/L)	1,3,5-Trimethylbenzene (µg/L)	Naphthalene (µg/L)
	See Previous Reports for data prior to 2017							
	22-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	2-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
MW-1	29-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	15-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	27-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	MW-1 Abandoned on June 18, 2019							
	29-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	18-May-20	NA	NA	NA	NA	NA	NA	NA
MW-1R	19-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.1	<1.0	<1.0	<5.1
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	22-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	2-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	29-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	14-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-2	30-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	29-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	19-May-20	NA	NA	NA	NA	NA	NA	NA
	19-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	11-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	13-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	5-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	15-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-5	29-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	30-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	19-May-20	NA	NA	NA	NA	NA	NA	NA
	21-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	13-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	5-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	15-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-5B	29-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	30-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	19-May-20	NA	NA	NA	NA	NA	NA	NA
	21-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	13-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	23-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	3-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	30-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	16-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-6	28-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	29-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	20-May-20	NA	NA	NA	NA	NA	NA	NA
	20-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	11-May-21	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<25.0
	13-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	23-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	3-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	30-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	16-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-6B	28-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	29-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	20-May-20	NA	NA	NA	NA	NA	NA	NA
	20-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	11-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	13-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	23-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	4-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	30-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
MW-10	16-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	28-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	31-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	20-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0

Table 2: Groundwater Quality Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

Location	Sampling Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (m,o,p) (µg/L)	1,2,4-Trimethylbenzene (µg/L)	1,3,5-Trimethylbenzene (µg/L)	Naphthalene (µg/L)
MW-11	See Previous Reports for data prior to 2017							
	23-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	4-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	30-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	16-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	29-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	28-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	20-May-20	NA	NA	NA	NA	NA	NA	NA
	21-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
MW-11B	See Previous Reports for data prior to 2017							
	23-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	4-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	30-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	16-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	29-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	28-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	20-May-20	NA	NA	NA	NA	NA	NA	NA
	21-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
MW-12	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	4-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	19-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	29-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	28-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	21-May-20	NA	NA	NA	NA	NA	NA	NA
	20-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	11-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
MW-14	See Previous Reports for data prior to 2017							
	22-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	2-Oct-17	<1.1	<0.57	<0.45	<0.81	<0.45	<0.60	<1.4
	29-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	14-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	27-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	29-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	19-May-20	NA	NA	NA	NA	NA	NA	NA
	21-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	13-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
MW-15	See Previous Reports for data prior to 2017							
	22-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	2-Oct-17	<1.1	<0.57	<0.45	<0.81	<0.45	<0.60	<1.4
	29-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	14-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	27-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	29-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	19-May-20	NA	NA	NA	NA	NA	NA	NA
	21-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	13-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
MW-17	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	5-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	15-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	29-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	30-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	19-May-20	NA	NA	NA	NA	NA	NA	NA
	22-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	13-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0

Table 2: Groundwater Quality Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

Location	Sampling Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (m,o,p) (µg/L)	1,2,4-Trimethylbenzene (µg/L)	1,3,5-Trimethylbenzene (µg/L)	Naphthalene (µg/L)
MW-17B	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	5-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	15-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	29-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	30-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	19-May-20	NA	NA	NA	NA	NA	NA	NA
	22-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	13-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
MW-18	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	5-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	15-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	29-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	30-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	19-May-20	NA	NA	NA	NA	NA	NA	NA
	21-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	13-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
MW-19A	See Previous Reports for data prior to 2017							
	22-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	5-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	29-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	14-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	27-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	29-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	18-May-20	NA	NA	NA	NA	NA	NA	NA
	19-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	11-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	13-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
MW-19B	See Previous Reports for data prior to 2017							
	22-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	5-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	29-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	14-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	27-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	29-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	18-May-20	NA	NA	NA	NA	NA	NA	NA
	23-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	11-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	13-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
MW-20A	See Previous Reports for data prior to 2017							
	23-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	3-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	30-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	16-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	28-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	30-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	18-May-20	NA	NA	NA	NA	NA	NA	NA
	23-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	11-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	11-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
MW-20B	See Previous Reports for data prior to 2017							
	23-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	3-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	30-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	16-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	28-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	30-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	18-May-20	NA	NA	NA	NA	NA	NA	NA
	19-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	11-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	13-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
MW-21A	See Previous Reports for data prior to 2017							
	23-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	3-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	30-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	16-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	28-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	31-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	20-May-20	NA	NA	NA	NA	NA	NA	NA
	20-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	13-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0

Table 2: Groundwater Quality Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

Location	Sampling Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (m,o,p) (µg/L)	1,2,4-Trimethylbenzene (µg/L)	1,3,5-Trimethylbenzene (µg/L)	Naphthalene (µg/L)
	See Previous Reports for data prior to 2017							
	23-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	3-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	30-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	16-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-21B	28-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	31-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	20-May-20	NA	NA	NA	NA	NA	NA	NA
	20-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	13-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	4-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	30-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	16-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-22B	28-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	28-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	20-May-20	NA	NA	NA	NA	NA	NA	NA
	21-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	5-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	15-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-23B	29-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	30-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	19-May-20	NA	NA	NA	NA	NA	NA	NA
	21-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	14-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	3-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	15-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-24A	27-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	28-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	18-May-20	NA	NA	NA	NA	NA	NA	NA
	19-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	11-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	11-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	3-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	15-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-24B	27-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	28-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	18-May-20	NA	NA	NA	NA	NA	NA	NA
	19-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	11-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	11-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	4-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	19-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-25A	30-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	28-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	20-May-20	NA	NA	NA	NA	NA	NA	NA
	20-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	11-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	4-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	19-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
MW-25B	30-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	28-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	20-May-20	NA	NA	NA	NA	NA	NA	NA
	20-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	11-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0

Table 2: Groundwater Quality Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

Location	Sampling Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (m,o,p) (µg/L)	1,2,4-Trimethylbenzene (µg/L)	1,3,5-Trimethylbenzene (µg/L)	Naphthalene (µg/L)
MW-26	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	4-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	31-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	19-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	30-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	28-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	21-May-20	NA	NA	NA	NA	NA	NA	NA
	20-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	12-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	11-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
Trip Blank	See Previous Reports for data prior to 2017							
	24-May-17	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	5-Oct-17	<1.0	<1.0	<1.0	<3.0	<4.0	<1.0	<10.0
	29-May-18	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<1.6
	14-Nov-18	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<4.0
	27-May-19	<1.0	<5.0	<1.0	<3.0	<2.8	<2.9	<5.0
	31-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	<5.5
	31-Oct-19	<0.34	<0.28	<0.46	<1.0	<0.65	<0.41	0.15J
	18-Mar-20	NA	NA	NA	NA	NA	NA	NA
	18-Mar-20	NA	NA	NA	NA	NA	NA	NA
	19-Oct-20	<1.0	<1.0	<1.1	<3.0	<2.8	<2.9	<5.0
	11-May-21	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	10-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0
	13-May-22	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<5.0

Notes:
Analytical parameter methyl-tert-butyl ether (MTBE) is not summarized on the table but no detections have historically been observed
µg/L = micrograms per liter (parts per billion)
NA = Not analyzed for this parameter
NS = Not sampled for this parameter
<1.0 = not detected above the laboratory practical quantitation limit or reporting limit
J = Estimated concentration at or above the Limit of Detection and below the Limit of Quantitation
2022 laboratory report and chain of custody include prefix "SR-" to sample location names.

Figures

★ Site Location

Enbridge Pipelines

Terminal Property Boundary

Non-Enbridge Owned Property

N

0 2,000 4,000

Feet

1 Inch = 2,000 Feet

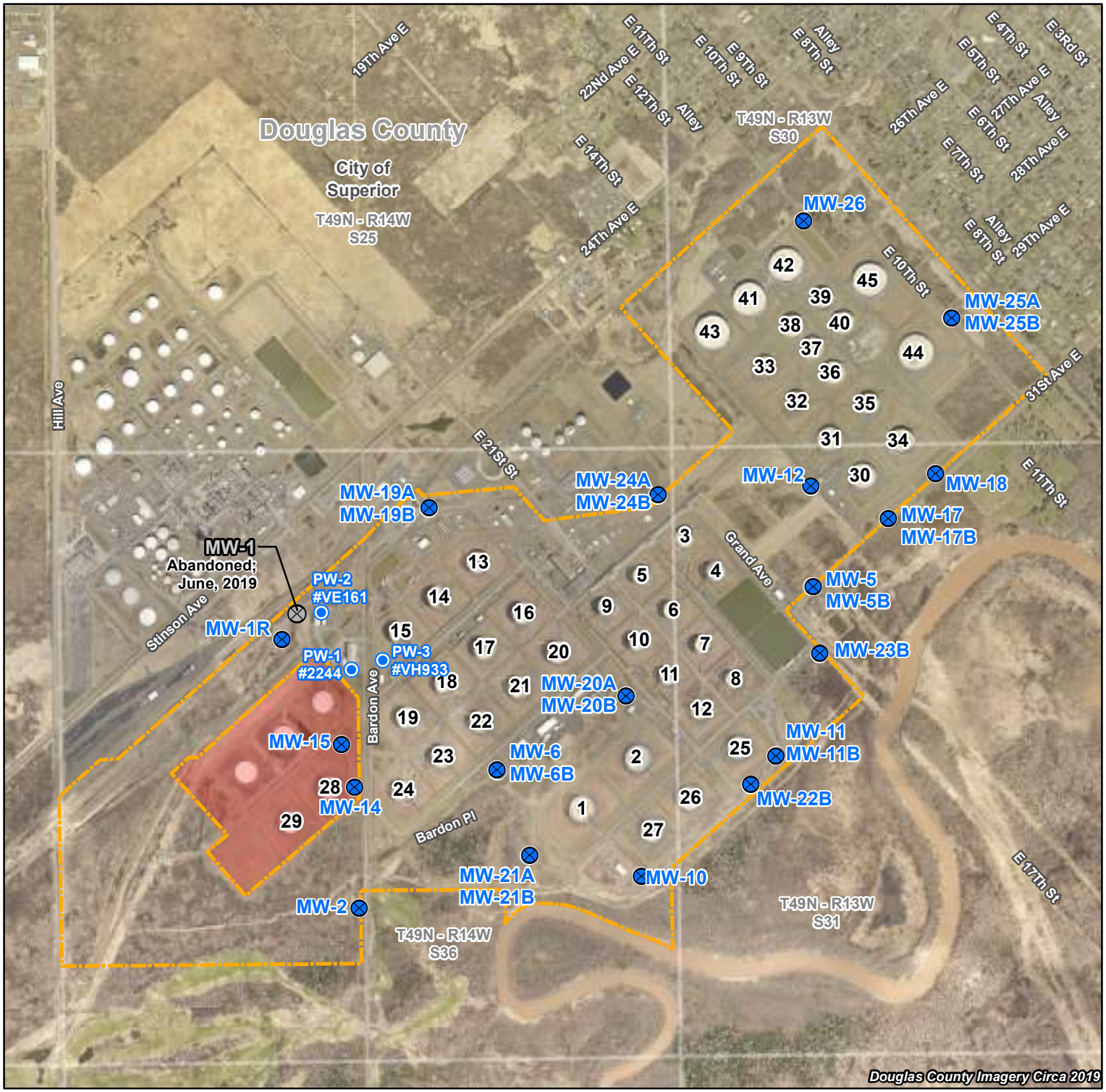
Figure 1

SITE LOCATION

Superior Terminal
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE

Barr Footer: ArcGIS 10.8.1, 2022-08-03 15:35 File: I:\Client\Enbridge_Energy\Work_Orders\Spill_Response_Investigation\49161419\Maps\Reports\2022\Figure1_Superior_Terminal_Site_Location.mxd User: vaw



Monitoring Well Location
Private Well Location
Abandonend Monitoring Well
Terminal Property Boundary
Non-Enbridge Owned Property

Note:
Monitoring well locations with "B" are deep wells (piezometers).

0 1,200 2,400

Feet

1 Inch = 1,200 Feet

Figure 2

MONITORING WELL LOCATIONS

Superior Terminal
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE

Barr Footer: ArcGIS 10.8.1, 2022-08-03 15:42 File: I:\Client\Enbridge_Energy\Work_Orders\Spill_Response_Investigation\49161419\Maps\Reports\2022\Figure2_Superior_SiteMap_2022.mxd User: vaw

Site Location

Monitoring Wells
Groundwater Elevation (ft NAVD)

Groundwater Elevation (ft)
Contour Interval = 2-Foot
(Dashed Where Inferred)

Groundwater Flow Direction

5-Foot Topographic Contours

Terminal Property Boundary

Non-Enbridge Owned Property

Groundwater elevations measured on 5/9/22.

N

0 1,200 2,400

Feet

1 Inch = 1,200 Feet

Figure 3

SPRING 2022
SHALLOW GROUNDWATER ELEVATION CONTOURS

Superior Terminal
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE

Barr Footer: ArcGIS 10.8.1, 2022-08-03 15:53 File: I:\Client\Enbridge_Energy\Work_Orders\Spill_Response_Investigation\49161419\Maps\Reports\2022\01_Spring2022\Figure3_Superior_Spring_Shallow_GroundwaterElevation_Contours.mxd User: vaw

Site Location

Monitoring Wells - Piezometer
Groundwater Elevation (ft NAVD)

Groundwater Elevation (ft)
Contour Interval = 2-Foot
(Dashed Where Inferred)

Groundwater Flow Direction

5-Foot Topographic Contours

Terminal Property Boundary

Non-Enbridge Owned Property

Groundwater elevations measured on 5/9/22.

N

0 1,200 2,400

Feet

1 Inch = 1,200 Feet

Figure 4

SPRING 2022
DEEP GROUNDWATER
ELEVATION CONTOURS

Superior Terminal
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE

Appendix A

Laboratory Analytical Reports

ANALYTICAL REPORT

June 17, 2022

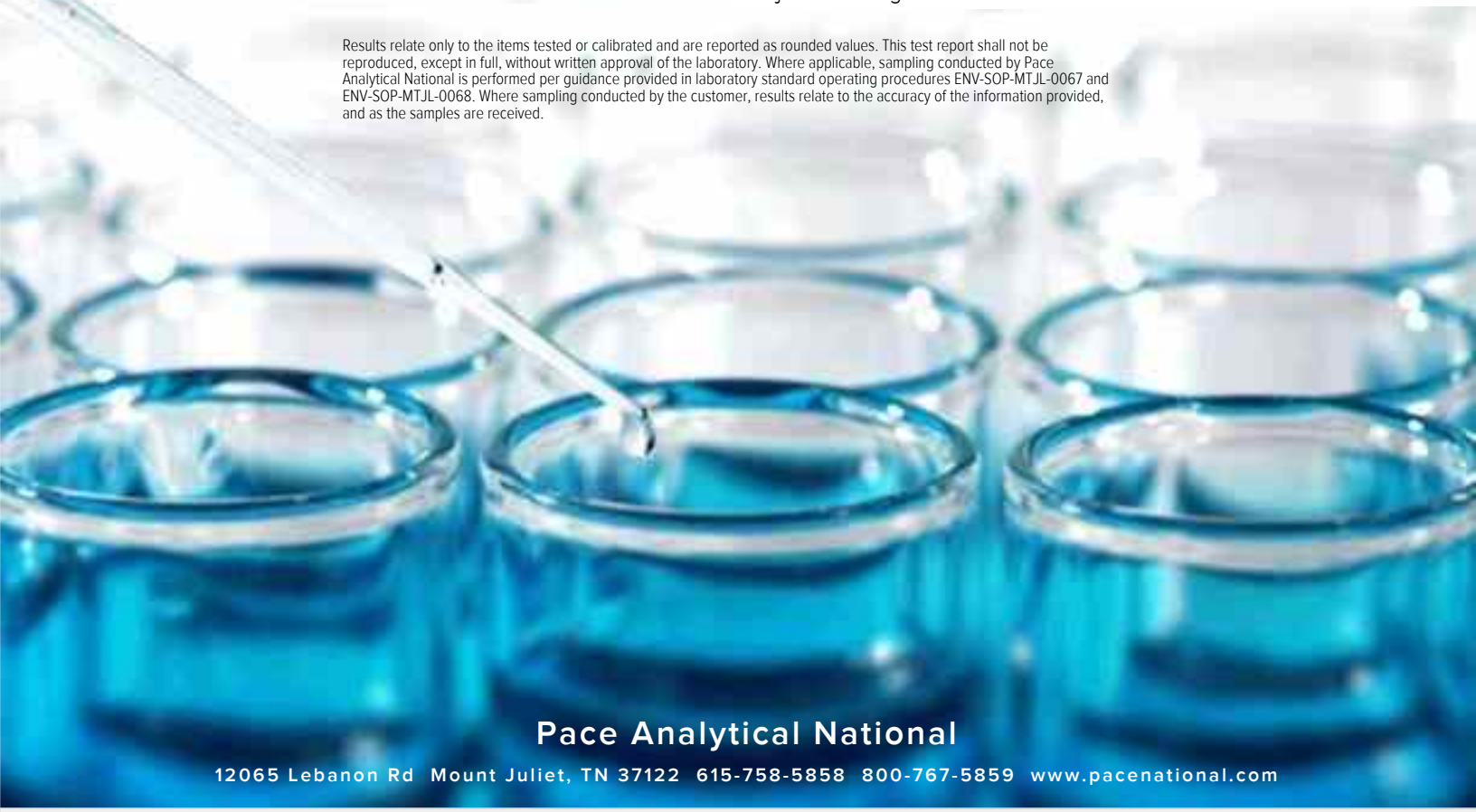
Revised Report

Barr Engineering, Inc.

Sample Delivery Group:	L1493955
Samples Received:	05/13/2022
Project Number:	COC-010847
Description:	Superior - Terminal OIL
Site:	SUPERIOR, WI
Report To:	Lynette M. Carney 4700 West 77th St., Suite 200 Minneapolis, MN 55435

Entire Report Reviewed By:

Jennifer Gambill
Project Manager



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COC-010847-01 SR-MW-1R L1493955-01 GW

Collected by	Collected date/time	Received date/time
	05/10/22 08:55	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 17:09	05/19/22 17:09	ACG	Mt. Juliet, TN

COC-010847-03 SR-MW-5 L1493955-02 GW

Collected by	Collected date/time	Received date/time
	05/10/22 11:40	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 17:30	05/19/22 17:30	ACG	Mt. Juliet, TN

COC-010847-04 SR-MW-5B L1493955-03 GW

Collected by	Collected date/time	Received date/time
	05/10/22 12:15	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 17:50	05/19/22 17:50	ACG	Mt. Juliet, TN

COC-010847-07 SR-MW-10 L1493955-04 GW

Collected by	Collected date/time	Received date/time
	05/10/22 14:15	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 18:11	05/19/22 18:11	ACG	Mt. Juliet, TN

COC-010847-08 SR-MW-11 L1493955-05 GW

Collected by	Collected date/time	Received date/time
	05/10/22 15:50	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 18:31	05/19/22 18:31	ACG	Mt. Juliet, TN

COC-010847-09 SR-MW-11B L1493955-06 GW

Collected by	Collected date/time	Received date/time
	05/10/22 16:20	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 18:51	05/19/22 18:51	ACG	Mt. Juliet, TN

COC-010847-10 SR-MW-12 L1493955-07 GW

Collected by	Collected date/time	Received date/time
	05/11/22 10:20	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 19:12	05/19/22 19:12	ACG	Mt. Juliet, TN

COC-010847-13 SR-MW-17 L1493955-08 GW

Collected by	Collected date/time	Received date/time
	05/10/22 10:23	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 19:32	05/19/22 19:32	ACG	Mt. Juliet, TN

COC-010847-14 SR-MW-17B L1493955-09 GW

Collected by	Collected date/time	Received date/time
	05/10/22 10:43	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 19:52	05/19/22 19:52	ACG	Mt. Juliet, TN

COC-010847-15 SR-MW-18 L1493955-10 GW

Collected by	Collected date/time	Received date/time
	05/10/22 09:45	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 20:13	05/19/22 20:13	ACG	Mt. Juliet, TN

COC-010847-18 SR-MW-20A L1493955-11 GW

Collected by	Collected date/time	Received date/time
	05/11/22 13:00	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 20:33	05/19/22 20:33	ACG	Mt. Juliet, TN

COC-010847-22 SR-MW-22B L1493955-12 GW

Collected by	Collected date/time	Received date/time
	05/10/22 15:08	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 20:53	05/19/22 20:53	ACG	Mt. Juliet, TN

COC-010847-23 SR-MW-23B L1493955-13 GW

Collected by	Collected date/time	Received date/time
	05/10/22 13:05	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866456	1	05/19/22 21:14	05/19/22 21:14	ACG	Mt. Juliet, TN

COC-010847-24 SR-MW-24A L1493955-14 GW

Collected by	Collected date/time	Received date/time
	05/11/22 09:10	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866988	1	05/20/22 14:41	05/20/22 14:41	ADM	Mt. Juliet, TN

COC-010847-25 SR-MW-24B L1493955-15 GW

Collected by	Collected date/time	Received date/time
	05/11/22 09:45	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866988	1	05/20/22 15:02	05/20/22 15:02	ADM	Mt. Juliet, TN

COC-010847-26 SR-MW-25A L1493955-16 GW

Collected by	Collected date/time	Received date/time
	05/11/22 11:05	05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866988	1	05/20/22 15:22	05/20/22 15:22	ADM	Mt. Juliet, TN

COC-010847-27 SR-MW-25B L1493955-17 GW

Collected by | Collected date/time 05/11/22 11:27 | Received date/time 05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866988	1	05/20/22 15:43	05/20/22 15:43	ADM	Mt. Juliet, TN

COC-010847-28 SR-MW-26 L1493955-18 GW

Collected by | Collected date/time 05/11/22 12:05 | Received date/time 05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866988	1	05/20/22 16:30	05/20/22 16:30	ADM	Mt. Juliet, TN

COC-010847-29 MISC DUPLICATE 1 L1493955-19 GW

Collected by | Collected date/time 05/11/22 00:00 | Received date/time 05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866988	1	05/20/22 16:50	05/20/22 16:50	ADM	Mt. Juliet, TN

COC-010847-30 MISC DUPLICATE 2 L1493955-20 GW

Collected by | Collected date/time 05/10/22 00:00 | Received date/time 05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866988	1	05/20/22 17:11	05/20/22 17:11	ADM	Mt. Juliet, TN

COC-010847-31 MISC DUPLICATE 3 L1493955-21 GW

Collected by | Collected date/time 05/10/22 00:00 | Received date/time 05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866988	1	05/20/22 17:32	05/20/22 17:32	ADM	Mt. Juliet, TN

COC-010847-32 MISC TRIP BLANK 1 L1493955-22 GW

Collected by | Collected date/time 05/10/22 00:00 | Received date/time 05/13/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1866988	1	05/20/22 17:52	05/20/22 17:52	ADM	Mt. Juliet, TN

COC-010847-02 SR-MW-2 L1493955-23 GW

Collected by | Collected date/time 05/13/22 12:08 | Received date/time 05/18/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868292	1	05/23/22 21:20	05/23/22 21:20	DWR	Mt. Juliet, TN

COC-010847-05 SR-MW-6 L1493955-24 GW

Collected by | Collected date/time 05/13/22 15:00 | Received date/time 05/18/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868292	1	05/23/22 21:39	05/23/22 21:39	DWR	Mt. Juliet, TN

COC-010847-06 SR-MW-6B L1493955-25 GW

Collected by	Collected date/time	Received date/time
	05/13/22 14:35	05/18/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868292	1	05/23/22 21:58	05/23/22 21:58	DWR	Mt. Juliet, TN

COC-010847-11 SR-MW-14 L1493955-26 GW

Collected by	Collected date/time	Received date/time
	05/13/22 10:48	05/18/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868292	1	05/23/22 22:18	05/23/22 22:18	DWR	Mt. Juliet, TN

COC-010847-12 SR-MW-15 L1493955-27 GW

Collected by	Collected date/time	Received date/time
	05/13/22 11:18	05/18/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868292	1	05/23/22 22:37	05/23/22 22:37	DWR	Mt. Juliet, TN

COC-010847-16 SR-MW-19A L1493955-28 GW

Collected by	Collected date/time	Received date/time
	05/13/22 13:22	05/18/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868292	1	05/23/22 22:56	05/23/22 22:56	DWR	Mt. Juliet, TN

COC-010847-17 SR-MW-19B L1493955-29 GW

Collected by	Collected date/time	Received date/time
	05/13/22 13:25	05/18/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868292	1	05/23/22 23:15	05/23/22 23:15	DWR	Mt. Juliet, TN

COC-010847-19 SR-MW-20B L1493955-30 GW

Collected by	Collected date/time	Received date/time
	05/13/22 16:25	05/18/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868292	1	05/23/22 23:34	05/23/22 23:34	DWR	Mt. Juliet, TN

COC-010847-20 SR-MW-21A L1493955-31 GW

Collected by	Collected date/time	Received date/time
	05/13/22 15:45	05/18/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868292	1	05/23/22 23:53	05/23/22 23:53	DWR	Mt. Juliet, TN

COC-010847-21 SR-MW-21B L1493955-32 GW

Collected by	Collected date/time	Received date/time
	05/13/22 16:02	05/18/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868292	1	05/24/22 00:12	05/24/22 00:12	DWR	Mt. Juliet, TN

COC-010847-33 MISC TRIP BLANK 2 L1493955-33 GW

Collected by	Collected date/time	Received date/time
	05/13/22 00:00	05/18/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868292	1	05/24/22 00:31	05/24/22 00:31	DWR	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jennifer Gambill
Project Manager

Report Revision History

Level II Report - Version 1: 05/24/22 15:13
Level II Report - Version 2: 05/25/22 13:18
Level II Report - Version 3: 06/14/22 08:26

Project Narrative

The following report has been revised to correct the site location.

Sample Delivery Group (SDG) Narrative

pH outside of method requirement.

Lab Sample ID	Project Sample ID	Method
L1493955-05	COC-010847-08 SR-MW-11	8260B

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 17:09	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 17:09	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 17:09	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 17:09	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 17:09	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 17:09	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 17:09	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 17:09	WG1866456
(S) Toluene-d8	*104*			*80.0-120*		*05/19/2022 17:09*	WG1866456
(S) 4-Bromofluorobenzene	*97.4*			*77.0-126*		*05/19/2022 17:09*	WG1866456
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*05/19/2022 17:09*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 17:30	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 17:30	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 17:30	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 17:30	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 17:30	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 17:30	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 17:30	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 17:30	WG1866456
(S) Toluene-d8	*96.4*			*80.0-120*		*05/19/2022 17:30*	WG1866456
(S) 4-Bromofluorobenzene	*86.4*			*77.0-126*		*05/19/2022 17:30*	WG1866456
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*05/19/2022 17:30*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 17:50	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 17:50	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 17:50	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 17:50	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 17:50	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 17:50	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 17:50	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 17:50	WG1866456
(S) Toluene-d8	*97.9*			*80.0-120*		*05/19/2022 17:50*	WG1866456
(S) 4-Bromofluorobenzene	*89.0*			*77.0-126*		*05/19/2022 17:50*	WG1866456
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*05/19/2022 17:50*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 18:11	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 18:11	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 18:11	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 18:11	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 18:11	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 18:11	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 18:11	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 18:11	WG1866456
(S) Toluene-d8	*100*			*80.0-120*		*05/19/2022 18:11*	WG1866456
(S) 4-Bromofluorobenzene	*91.4*			*77.0-126*		*05/19/2022 18:11*	WG1866456
(S) 1,2-Dichloroethane-d4	*122*			*70.0-130*		*05/19/2022 18:11*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 18:31	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 18:31	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 18:31	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 18:31	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 18:31	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 18:31	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 18:31	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 18:31	WG1866456
(S) Toluene-d8	*103*			*80.0-120*		*05/19/2022 18:31*	WG1866456
(S) 4-Bromofluorobenzene	*90.4*			*77.0-126*		*05/19/2022 18:31*	WG1866456
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*05/19/2022 18:31*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 18:51	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 18:51	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 18:51	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 18:51	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 18:51	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 18:51	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 18:51	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 18:51	WG1866456
(S) Toluene-d8	*99.7*			*80.0-120*		*05/19/2022 18:51*	WG1866456
(S) 4-Bromofluorobenzene	*95.6*			*77.0-126*		*05/19/2022 18:51*	WG1866456
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*05/19/2022 18:51*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 19:12	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 19:12	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 19:12	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 19:12	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 19:12	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 19:12	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 19:12	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 19:12	WG1866456
(S) Toluene-d8	*96.9*			*80.0-120*		*05/19/2022 19:12*	WG1866456
(S) 4-Bromofluorobenzene	*87.9*			*77.0-126*		*05/19/2022 19:12*	WG1866456
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*		*05/19/2022 19:12*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 19:32	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 19:32	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 19:32	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 19:32	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 19:32	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 19:32	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 19:32	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 19:32	WG1866456
(S) Toluene-d8	*96.4*			*80.0-120*		*05/19/2022 19:32*	WG1866456
(S) 4-Bromofluorobenzene	*86.7*			*77.0-126*		*05/19/2022 19:32*	WG1866456
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*		*05/19/2022 19:32*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 19:52	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 19:52	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 19:52	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 19:52	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 19:52	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 19:52	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 19:52	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 19:52	WG1866456
(S) Toluene-d8	*97.8*			*80.0-120*		*05/19/2022 19:52*	WG1866456
(S) 4-Bromofluorobenzene	*84.0*			*77.0-126*		*05/19/2022 19:52*	WG1866456
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*05/19/2022 19:52*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 20:13	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 20:13	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 20:13	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 20:13	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 20:13	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 20:13	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 20:13	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 20:13	WG1866456
(S) Toluene-d8	*99.3*			*80.0-120*		*05/19/2022 20:13*	WG1866456
(S) 4-Bromofluorobenzene	*86.1*			*77.0-126*		*05/19/2022 20:13*	WG1866456
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*05/19/2022 20:13*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 20:33	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 20:33	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 20:33	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 20:33	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 20:33	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 20:33	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 20:33	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 20:33	WG1866456
(S) Toluene-d8	*94.7*			*80.0-120*		*05/19/2022 20:33*	WG1866456
(S) 4-Bromofluorobenzene	*83.8*			*77.0-126*		*05/19/2022 20:33*	WG1866456
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*		*05/19/2022 20:33*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 20:53	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 20:53	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 20:53	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 20:53	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 20:53	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 20:53	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 20:53	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 20:53	WG1866456
(S) Toluene-d8	*97.6*			*80.0-120*		*05/19/2022 20:53*	WG1866456
(S) 4-Bromofluorobenzene	*90.7*			*77.0-126*		*05/19/2022 20:53*	WG1866456
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*05/19/2022 20:53*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/19/2022 21:14	WG1866456
Ethylbenzene	<0.137		0.137	1.00	1	05/19/2022 21:14	WG1866456
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/19/2022 21:14	WG1866456
Naphthalene	<1.00		1.00	5.00	1	05/19/2022 21:14	WG1866456
Toluene	<0.278		0.278	1.00	1	05/19/2022 21:14	WG1866456
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/19/2022 21:14	WG1866456
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/19/2022 21:14	WG1866456
Xylenes, Total	<0.174		0.174	3.00	1	05/19/2022 21:14	WG1866456
(S) Toluene-d8	*99.0*			*80.0-120*		*05/19/2022 21:14*	WG1866456
(S) 4-Bromofluorobenzene	*89.1*			*77.0-126*		*05/19/2022 21:14*	WG1866456
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*		*05/19/2022 21:14*	WG1866456

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/20/2022 14:41	WG1866988
Ethylbenzene	<0.137		0.137	1.00	1	05/20/2022 14:41	WG1866988
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/20/2022 14:41	WG1866988
Naphthalene	<1.00		1.00	5.00	1	05/20/2022 14:41	WG1866988
Toluene	<0.278		0.278	1.00	1	05/20/2022 14:41	WG1866988
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/20/2022 14:41	WG1866988
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/20/2022 14:41	WG1866988
Xylenes, Total	<0.174		0.174	3.00	1	05/20/2022 14:41	WG1866988
(S) Toluene-d8	*102*			*80.0-120*		*05/20/2022 14:41*	WG1866988
(S) 4-Bromofluorobenzene	*86.5*			*77.0-126*		*05/20/2022 14:41*	WG1866988
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*05/20/2022 14:41*	WG1866988

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/20/2022 15:02	WG1866988
Ethylbenzene	<0.137		0.137	1.00	1	05/20/2022 15:02	WG1866988
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/20/2022 15:02	WG1866988
Naphthalene	<1.00		1.00	5.00	1	05/20/2022 15:02	WG1866988
Toluene	<0.278		0.278	1.00	1	05/20/2022 15:02	WG1866988
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/20/2022 15:02	WG1866988
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/20/2022 15:02	WG1866988
Xylenes, Total	<0.174		0.174	3.00	1	05/20/2022 15:02	WG1866988
(S) Toluene-d8	*97.0*			*80.0-120*		*05/20/2022 15:02*	WG1866988
(S) 4-Bromofluorobenzene	*86.9*			*77.0-126*		*05/20/2022 15:02*	WG1866988
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*		*05/20/2022 15:02*	WG1866988

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/20/2022 15:22	WG1866988
Ethylbenzene	<0.137		0.137	1.00	1	05/20/2022 15:22	WG1866988
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/20/2022 15:22	WG1866988
Naphthalene	<1.00		1.00	5.00	1	05/20/2022 15:22	WG1866988
Toluene	<0.278		0.278	1.00	1	05/20/2022 15:22	WG1866988
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/20/2022 15:22	WG1866988
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/20/2022 15:22	WG1866988
Xylenes, Total	<0.174		0.174	3.00	1	05/20/2022 15:22	WG1866988
(S) Toluene-d8	*101*			*80.0-120*		*05/20/2022 15:22*	WG1866988
(S) 4-Bromofluorobenzene	*89.6*			*77.0-126*		*05/20/2022 15:22*	WG1866988
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*		*05/20/2022 15:22*	WG1866988

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/20/2022 15:43	WG1866988
Ethylbenzene	<0.137		0.137	1.00	1	05/20/2022 15:43	WG1866988
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/20/2022 15:43	WG1866988
Naphthalene	<1.00		1.00	5.00	1	05/20/2022 15:43	WG1866988
Toluene	<0.278		0.278	1.00	1	05/20/2022 15:43	WG1866988
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/20/2022 15:43	WG1866988
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/20/2022 15:43	WG1866988
Xylenes, Total	<0.174		0.174	3.00	1	05/20/2022 15:43	WG1866988
(S) Toluene-d8	*98.9*			*80.0-120*		*05/20/2022 15:43*	WG1866988
(S) 4-Bromofluorobenzene	*84.7*			*77.0-126*		*05/20/2022 15:43*	WG1866988
(S) 1,2-Dichloroethane-d4	*118*			*70.0-130*		*05/20/2022 15:43*	WG1866988

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/20/2022 16:30	WG1866988
Ethylbenzene	<0.137		0.137	1.00	1	05/20/2022 16:30	WG1866988
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/20/2022 16:30	WG1866988
Naphthalene	<1.00		1.00	5.00	1	05/20/2022 16:30	WG1866988
Toluene	<0.278		0.278	1.00	1	05/20/2022 16:30	WG1866988
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/20/2022 16:30	WG1866988
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/20/2022 16:30	WG1866988
Xylenes, Total	<0.174		0.174	3.00	1	05/20/2022 16:30	WG1866988
(S) Toluene-d8	*96.8*			*80.0-120*		*05/20/2022 16:30*	WG1866988
(S) 4-Bromofluorobenzene	*89.1*			*77.0-126*		*05/20/2022 16:30*	WG1866988
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*		*05/20/2022 16:30*	WG1866988

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/20/2022 16:50	WG1866988
Ethylbenzene	<0.137		0.137	1.00	1	05/20/2022 16:50	WG1866988
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/20/2022 16:50	WG1866988
Naphthalene	<1.00		1.00	5.00	1	05/20/2022 16:50	WG1866988
Toluene	<0.278		0.278	1.00	1	05/20/2022 16:50	WG1866988
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/20/2022 16:50	WG1866988
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/20/2022 16:50	WG1866988
Xylenes, Total	<0.174		0.174	3.00	1	05/20/2022 16:50	WG1866988
(S) Toluene-d8	*99.1*			*80.0-120*		*05/20/2022 16:50*	WG1866988
(S) 4-Bromofluorobenzene	*85.1*			*77.0-126*		*05/20/2022 16:50*	WG1866988
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*05/20/2022 16:50*	WG1866988

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/20/2022 17:11	WG1866988
Ethylbenzene	<0.137		0.137	1.00	1	05/20/2022 17:11	WG1866988
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/20/2022 17:11	WG1866988
Naphthalene	<1.00		1.00	5.00	1	05/20/2022 17:11	WG1866988
Toluene	<0.278		0.278	1.00	1	05/20/2022 17:11	WG1866988
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/20/2022 17:11	WG1866988
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/20/2022 17:11	WG1866988
Xylenes, Total	<0.174		0.174	3.00	1	05/20/2022 17:11	WG1866988
(S) Toluene-d8	*102*			*80.0-120*		*05/20/2022 17:11*	WG1866988
(S) 4-Bromofluorobenzene	*90.3*			*77.0-126*		*05/20/2022 17:11*	WG1866988
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*		*05/20/2022 17:11*	WG1866988

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/20/2022 17:32	WG1866988
Ethylbenzene	<0.137		0.137	1.00	1	05/20/2022 17:32	WG1866988
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/20/2022 17:32	WG1866988
Naphthalene	<1.00		1.00	5.00	1	05/20/2022 17:32	WG1866988
Toluene	<0.278		0.278	1.00	1	05/20/2022 17:32	WG1866988
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/20/2022 17:32	WG1866988
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/20/2022 17:32	WG1866988
Xylenes, Total	<0.174		0.174	3.00	1	05/20/2022 17:32	WG1866988
(S) Toluene-d8	*104*			*80.0-120*		*05/20/2022 17:32*	WG1866988
(S) 4-Bromofluorobenzene	*88.6*			*77.0-126*		*05/20/2022 17:32*	WG1866988
(S) 1,2-Dichloroethane-d4	*118*			*70.0-130*		*05/20/2022 17:32*	WG1866988

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/20/2022 17:52	WG1866988
Ethylbenzene	<0.137		0.137	1.00	1	05/20/2022 17:52	WG1866988
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/20/2022 17:52	WG1866988
Naphthalene	<1.00		1.00	5.00	1	05/20/2022 17:52	WG1866988
Toluene	<0.278		0.278	1.00	1	05/20/2022 17:52	WG1866988
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/20/2022 17:52	WG1866988
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/20/2022 17:52	WG1866988
Xylenes, Total	<0.174		0.174	3.00	1	05/20/2022 17:52	WG1866988
(S) Toluene-d8	*107*			*80.0-120*		*05/20/2022 17:52*	WG1866988
(S) 4-Bromofluorobenzene	*92.1*			*77.0-126*		*05/20/2022 17:52*	WG1866988
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*05/20/2022 17:52*	WG1866988

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/23/2022 21:20	WG1868292
Ethylbenzene	<0.137		0.137	1.00	1	05/23/2022 21:20	WG1868292
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/23/2022 21:20	WG1868292
Naphthalene	<1.00		1.00	5.00	1	05/23/2022 21:20	WG1868292
Toluene	<0.278		0.278	1.00	1	05/23/2022 21:20	WG1868292
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/23/2022 21:20	WG1868292
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/23/2022 21:20	WG1868292
Xylenes, Total	<0.174		0.174	3.00	1	05/23/2022 21:20	WG1868292
(S) Toluene-d8	*103*			*80.0-120*		*05/23/2022 21:20*	WG1868292
(S) 4-Bromofluorobenzene	*108*			*77.0-126*		*05/23/2022 21:20*	WG1868292
(S) 1,2-Dichloroethane-d4	*124*			*70.0-130*		*05/23/2022 21:20*	WG1868292

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/23/2022 21:39	WG1868292
Ethylbenzene	<0.137		0.137	1.00	1	05/23/2022 21:39	WG1868292
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/23/2022 21:39	WG1868292
Naphthalene	<1.00		1.00	5.00	1	05/23/2022 21:39	WG1868292
Toluene	<0.278		0.278	1.00	1	05/23/2022 21:39	WG1868292
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/23/2022 21:39	WG1868292
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/23/2022 21:39	WG1868292
Xylenes, Total	<0.174		0.174	3.00	1	05/23/2022 21:39	WG1868292
(S) Toluene-d8	*103*			*80.0-120*		*05/23/2022 21:39*	WG1868292
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*05/23/2022 21:39*	WG1868292
(S) 1,2-Dichloroethane-d4	*124*			*70.0-130*		*05/23/2022 21:39*	WG1868292

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/23/2022 21:58	WG1868292
Ethylbenzene	<0.137		0.137	1.00	1	05/23/2022 21:58	WG1868292
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/23/2022 21:58	WG1868292
Naphthalene	<1.00		1.00	5.00	1	05/23/2022 21:58	WG1868292
Toluene	<0.278		0.278	1.00	1	05/23/2022 21:58	WG1868292
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/23/2022 21:58	WG1868292
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/23/2022 21:58	WG1868292
Xylenes, Total	<0.174		0.174	3.00	1	05/23/2022 21:58	WG1868292
(S) Toluene-d8	*102*			*80.0-120*		*05/23/2022 21:58*	WG1868292
(S) 4-Bromofluorobenzene	*106*			*77.0-126*		*05/23/2022 21:58*	WG1868292
(S) 1,2-Dichloroethane-d4	*125*			*70.0-130*		*05/23/2022 21:58*	WG1868292

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/23/2022 22:18	WG1868292
Ethylbenzene	<0.137		0.137	1.00	1	05/23/2022 22:18	WG1868292
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/23/2022 22:18	WG1868292
Naphthalene	<1.00		1.00	5.00	1	05/23/2022 22:18	WG1868292
Toluene	<0.278		0.278	1.00	1	05/23/2022 22:18	WG1868292
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/23/2022 22:18	WG1868292
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/23/2022 22:18	WG1868292
Xylenes, Total	<0.174		0.174	3.00	1	05/23/2022 22:18	WG1868292
(S) Toluene-d8	*102*			*80.0-120*		*05/23/2022 22:18*	WG1868292
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*05/23/2022 22:18*	WG1868292
(S) 1,2-Dichloroethane-d4	*126*			*70.0-130*		*05/23/2022 22:18*	WG1868292

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/23/2022 22:37	WG1868292
Ethylbenzene	<0.137		0.137	1.00	1	05/23/2022 22:37	WG1868292
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/23/2022 22:37	WG1868292
Naphthalene	<1.00		1.00	5.00	1	05/23/2022 22:37	WG1868292
Toluene	<0.278		0.278	1.00	1	05/23/2022 22:37	WG1868292
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/23/2022 22:37	WG1868292
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/23/2022 22:37	WG1868292
Xylenes, Total	<0.174		0.174	3.00	1	05/23/2022 22:37	WG1868292
(S) Toluene-d8	*109*			*80.0-120*		*05/23/2022 22:37*	WG1868292
(S) 4-Bromofluorobenzene	*99.9*			*77.0-126*		*05/23/2022 22:37*	WG1868292
(S) 1,2-Dichloroethane-d4	*119*			*70.0-130*		*05/23/2022 22:37*	WG1868292

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/23/2022 22:56	WG1868292
Ethylbenzene	<0.137		0.137	1.00	1	05/23/2022 22:56	WG1868292
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/23/2022 22:56	WG1868292
Naphthalene	<1.00		1.00	5.00	1	05/23/2022 22:56	WG1868292
Toluene	<0.278		0.278	1.00	1	05/23/2022 22:56	WG1868292
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/23/2022 22:56	WG1868292
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/23/2022 22:56	WG1868292
Xylenes, Total	<0.174		0.174	3.00	1	05/23/2022 22:56	WG1868292
(S) Toluene-d8	*104*			*80.0-120*		*05/23/2022 22:56*	WG1868292
(S) 4-Bromofluorobenzene	*99.1*			*77.0-126*		*05/23/2022 22:56*	WG1868292
(S) 1,2-Dichloroethane-d4	*124*			*70.0-130*		*05/23/2022 22:56*	WG1868292

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/23/2022 23:15	WG1868292
Ethylbenzene	<0.137		0.137	1.00	1	05/23/2022 23:15	WG1868292
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/23/2022 23:15	WG1868292
Naphthalene	<1.00		1.00	5.00	1	05/23/2022 23:15	WG1868292
Toluene	<0.278		0.278	1.00	1	05/23/2022 23:15	WG1868292
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/23/2022 23:15	WG1868292
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/23/2022 23:15	WG1868292
Xylenes, Total	<0.174		0.174	3.00	1	05/23/2022 23:15	WG1868292
(S) Toluene-d8	*107*			*80.0-120*		*05/23/2022 23:15*	WG1868292
(S) 4-Bromofluorobenzene	*96.7*			*77.0-126*		*05/23/2022 23:15*	WG1868292
(S) 1,2-Dichloroethane-d4	*118*			*70.0-130*		*05/23/2022 23:15*	WG1868292

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/23/2022 23:34	WG1868292
Ethylbenzene	<0.137		0.137	1.00	1	05/23/2022 23:34	WG1868292
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/23/2022 23:34	WG1868292
Naphthalene	<1.00		1.00	5.00	1	05/23/2022 23:34	WG1868292
Toluene	<0.278		0.278	1.00	1	05/23/2022 23:34	WG1868292
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/23/2022 23:34	WG1868292
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/23/2022 23:34	WG1868292
Xylenes, Total	<0.174		0.174	3.00	1	05/23/2022 23:34	WG1868292
(S) Toluene-d8	*106*			*80.0-120*		*05/23/2022 23:34*	WG1868292
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*05/23/2022 23:34*	WG1868292
(S) 1,2-Dichloroethane-d4	*123*			*70.0-130*		*05/23/2022 23:34*	WG1868292

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/23/2022 23:53	WG1868292
Ethylbenzene	<0.137		0.137	1.00	1	05/23/2022 23:53	WG1868292
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/23/2022 23:53	WG1868292
Naphthalene	<1.00		1.00	5.00	1	05/23/2022 23:53	WG1868292
Toluene	<0.278		0.278	1.00	1	05/23/2022 23:53	WG1868292
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/23/2022 23:53	WG1868292
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/23/2022 23:53	WG1868292
Xylenes, Total	<0.174		0.174	3.00	1	05/23/2022 23:53	WG1868292
(S) Toluene-d8	*110*			*80.0-120*		*05/23/2022 23:53*	WG1868292
(S) 4-Bromofluorobenzene	*97.1*			*77.0-126*		*05/23/2022 23:53*	WG1868292
(S) 1,2-Dichloroethane-d4	*121*			*70.0-130*		*05/23/2022 23:53*	WG1868292

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/24/2022 00:12	WG1868292
Ethylbenzene	<0.137		0.137	1.00	1	05/24/2022 00:12	WG1868292
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/24/2022 00:12	WG1868292
Naphthalene	<1.00		1.00	5.00	1	05/24/2022 00:12	WG1868292
Toluene	<0.278		0.278	1.00	1	05/24/2022 00:12	WG1868292
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/24/2022 00:12	WG1868292
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/24/2022 00:12	WG1868292
Xylenes, Total	<0.174		0.174	3.00	1	05/24/2022 00:12	WG1868292
(S) Toluene-d8	*107*			*80.0-120*		*05/24/2022 00:12*	WG1868292
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*05/24/2022 00:12*	WG1868292
(S) 1,2-Dichloroethane-d4	*124*			*70.0-130*		*05/24/2022 00:12*	WG1868292

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	<0.0941		0.0941	1.00	1	05/24/2022 00:31	WG1868292
Ethylbenzene	<0.137		0.137	1.00	1	05/24/2022 00:31	WG1868292
Methyl tert-butyl ether	<0.101		0.101	1.00	1	05/24/2022 00:31	WG1868292
Naphthalene	<1.00		1.00	5.00	1	05/24/2022 00:31	WG1868292
Toluene	<0.278		0.278	1.00	1	05/24/2022 00:31	WG1868292
1,2,4-Trimethylbenzene	<0.322		0.322	1.00	1	05/24/2022 00:31	WG1868292
1,3,5-Trimethylbenzene	<0.104		0.104	1.00	1	05/24/2022 00:31	WG1868292
Xylenes, Total	<0.174		0.174	3.00	1	05/24/2022 00:31	WG1868292
(S) Toluene-d8	*105*			*80.0-120*		*05/24/2022 00:31*	WG1868292
(S) 4-Bromofluorobenzene	*108*			*77.0-126*		*05/24/2022 00:31*	WG1868292
(S) 1,2-Dichloroethane-d4	*131*	J1		*70.0-130*		*05/24/2022 00:31*	WG1868292

Method Blank (MB)

(MB) R3793822-5 05/19/22 11:43

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	<0.0941		0.0941	1.00
Ethylbenzene	<0.137		0.137	1.00
Methyl tert-butyl ether	<0.101		0.101	1.00
Naphthalene	<1.00		1.00	5.00
Toluene	<0.278		0.278	1.00
1,2,4-Trimethylbenzene	<0.322		0.322	1.00
1,3,5-Trimethylbenzene	<0.104		0.104	1.00
Xylenes, Total	<0.174		0.174	3.00
(S) Toluene-d8	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*92.3*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3793822-1 05/19/22 10:00 • (LCSD) R3793822-2 05/19/22 10:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	5.30	5.62	106	112	70.0-123			5.86	20
Ethylbenzene	5.00	4.74	5.04	94.8	101	79.0-123			6.13	20
Methyl tert-butyl ether	5.00	5.53	5.92	111	118	68.0-125			6.81	20
Naphthalene	5.00	4.71	5.50	94.2	110	54.0-135			15.5	20
Toluene	5.00	5.08	5.17	102	103	79.0-120			1.76	20
1,2,4-Trimethylbenzene	5.00	5.09	5.62	102	112	76.0-121			9.90	20
1,3,5-Trimethylbenzene	5.00	4.72	5.53	94.4	111	76.0-122			15.8	20
Xylenes, Total	15.0	14.8	16.0	98.7	107	79.0-123			7.79	20
(S) Toluene-d8				*98.2*	*93.9*	*80.0-120*				
(S) 4-Bromofluorobenzene				*87.6*	*85.7*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*116*	*116*	*70.0-130*				

Method Blank (MB)

(MB) R3794392-3 05/20/22 11:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	<0.0941		0.0941	1.00
Ethylbenzene	<0.137		0.137	1.00
Methyl tert-butyl ether	<0.101		0.101	1.00
Naphthalene	<1.00		1.00	5.00
Toluene	<0.278		0.278	1.00
1,2,4-Trimethylbenzene	<0.322		0.322	1.00
1,3,5-Trimethylbenzene	<0.104		0.104	1.00
Xylenes, Total	<0.174		0.174	3.00
(S) Toluene-d8	*100*			*80.0-120*
(S) 4-Bromofluorobenzene	*88.8*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3794392-1 05/20/22 09:59 • (LCSD) R3794392-2 05/20/22 11:02

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	5.22	5.21	104	104	70.0-123			0.192	20
Ethylbenzene	5.00	4.01	4.41	80.2	88.2	79.0-123			9.50	20
Methyl tert-butyl ether	5.00	5.39	5.29	108	106	68.0-125			1.87	20
Naphthalene	5.00	4.28	4.07	85.6	81.4	54.0-135			5.03	20
Toluene	5.00	4.80	4.89	96.0	97.8	79.0-120			1.86	20
1,2,4-Trimethylbenzene	5.00	5.09	4.79	102	95.8	76.0-121			6.07	20
1,3,5-Trimethylbenzene	5.00	4.48	4.71	89.6	94.2	76.0-122			5.01	20
Xylenes, Total	15.0	13.4	13.5	89.3	90.0	79.0-123			0.744	20
(S) Toluene-d8				*92.3*	*101*	*80.0-120*				
(S) 4-Bromofluorobenzene				*87.5*	*90.3*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*110*	*115*	*70.0-130*				

L1494876-101 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494876-101 05/20/22 12:05 • (MS) R3794392-4 05/20/22 18:33 • (MSD) R3794392-5 05/20/22 18:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	<0.0941	6.11	5.65	122	113	1	17.0-158			7.82	27
Ethylbenzene	5.00	<0.137	4.91	4.73	98.2	94.6	1	30.0-155			3.73	27
Methyl tert-butyl ether	5.00	<0.101	6.36	5.83	127	117	1	28.0-150			8.70	29
Naphthalene	5.00	<1.00	5.14	5.29	103	106	1	12.0-156			2.88	35
Toluene	5.00	<0.278	5.35	5.15	107	103	1	26.0-154			3.81	28

L1494876-101 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494876-101 05/20/22 12:05 • (MS) R3794392-4 05/20/22 18:33 • (MSD) R3794392-5 05/20/22 18:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,2,4-Trimethylbenzene	5.00	<0.322	5.48	5.04	110	101	1	26.0-154			8.37	27
1,3,5-Trimethylbenzene	5.00	<0.104	5.53	5.03	111	101	1	28.0-153			9.47	27
Xylenes, Total	15.0	<0.174	15.0	14.0	100	93.3	1	29.0-154			6.90	28
(S) Toluene-d8					*92.4*	*91.8*		*80.0-120*				
(S) 4-Bromofluorobenzene					*87.9*	*85.4*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*117*	*109*		*70.0-130*				

L1494876-106 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494876-106 05/20/22 18:12 • (MS) R3794392-6 05/20/22 19:14 • (MSD) R3794392-7 05/20/22 19:34

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	<0.0941	6.23	6.36	125	127	1	17.0-158			2.07	27
Ethylbenzene	5.00	<0.137	5.32	5.43	106	109	1	30.0-155			2.05	27
Methyl tert-butyl ether	5.00	<0.101	6.26	6.35	125	127	1	28.0-150			1.43	29
Naphthalene	5.00	<1.00	5.61	5.58	112	112	1	12.0-156			0.536	35
Toluene	5.00	<0.278	5.67	5.87	113	117	1	26.0-154			3.47	28
1,2,4-Trimethylbenzene	5.00	<0.322	5.54	5.86	111	117	1	26.0-154			5.61	27
1,3,5-Trimethylbenzene	5.00	<0.104	5.24	5.66	105	113	1	28.0-153			7.71	27
Xylenes, Total	15.0	<0.174	16.1	16.3	107	109	1	29.0-154			1.23	28
(S) Toluene-d8					*103*	*95.2*		*80.0-120*				
(S) 4-Bromofluorobenzene					*93.9*	*84.7*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*115*	*118*		*70.0-130*				

Method Blank (MB)

(MB) R3795346-3 05/23/22 17:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	<0.0941		0.0941	1.00
Ethylbenzene	<0.137		0.137	1.00
Methyl tert-butyl ether	<0.101		0.101	1.00
Naphthalene	<1.00		1.00	5.00
Toluene	<0.278		0.278	1.00
1,2,4-Trimethylbenzene	<0.322		0.322	1.00
1,3,5-Trimethylbenzene	<0.104		0.104	1.00
Xylenes, Total	<0.174		0.174	3.00
(S) Toluene-d8	*108*			*80.0-120*
(S) 4-Bromofluorobenzene	*108*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*121*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795346-1 05/23/22 16:38 • (LCSD) R3795346-2 05/23/22 16:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.24	4.85	84.8	97.0	70.0-123			13.4	20
Ethylbenzene	5.00	4.61	5.31	92.2	106	79.0-123			14.1	20
Methyl tert-butyl ether	5.00	4.91	5.47	98.2	109	68.0-125			10.8	20
Naphthalene	5.00	4.68	5.58	93.6	112	54.0-135			17.5	20
Toluene	5.00	4.31	4.98	86.2	99.6	79.0-120			14.4	20
1,2,4-Trimethylbenzene	5.00	4.54	5.30	90.8	106	76.0-121			15.4	20
1,3,5-Trimethylbenzene	5.00	4.49	5.10	89.8	102	76.0-122			12.7	20
Xylenes, Total	15.0	13.9	15.8	92.7	105	79.0-123			12.8	20
(S) Toluene-d8				*103*	*104*	*80.0-120*				
(S) 4-Bromofluorobenzene				*103*	*105*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*122*	*122*	*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

L1493955

E213

ENBRIDGE

chain of custody and sample log

contact name: Douglas Dodds/Joseph Bauer

contact no: (713) 989-8319/(713) 989-8332

PACE Nashville
12065 Lebanon Rd, Mt. Juliet, TN 37122
America

4/29/2022

T208559 / P922096

LABORATORY USE ONLY

coc/arf no.: COC-010847

distribution

Original to LABORATORY

Copy to Lab Services

fax: (713) 386-4733

Scan Copy to: LaboratoryServices

Comp Station:	Superior - Terminal
Shipping Address:	Kaitlin Montz 218.529.7141 2314 W Michigan St. Suite: 2 Duluth, MN 55806
Program Code:	OIL
Project Code:	Wisconsin
Turnaround:	5 days
Region:	Superior Area
Routing Code:	GTEHSLAB
Business Unit:	-
Department:	LP US

Work Order	
Method of Shipment (to Field):	FEDEX (Next day)
Method of Shipment (from Field):	Fedex (Priority overnight)
Freight Bill #:	
Cooler Temp (Celsius):	0.1
Condition of Contents:	
Sampler Print:	
Sampler Signature:	
Lab Acceptance Signature:	**Date/Time:** 5/13/22 0900

Relinquished By: Kaitlin Montz	**Date/Time:** 5/12/2022 1330	**Recd. By:**	**Date/Time:**
Relinquished By:	**Date/Time:**	**Recd. By:**	**Date/Time:**

Comments or Lab Remarks:

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	✓ Y N	VOA Zero Headspace:	✓ Y N
Bottles arrive intact:	✓ Y N	Pres.Correct/Check:	Y N
Correct bottles used:	✓ Y N		
Sufficient volume sent:	✓ Y N		
RAD Screen <0.5 mR/hr:	✓ Y N		

Date Bottleware Required: May-03-2022

Type of Data Package: Type II St

Expected Sample Date: May-09-2022

e-mail: Joseph.Bauer@enbridge.com

Prelim Data: No

L1493955

Sample ID	Sample Point	Sample Name	Collection Date	Collection Time	Matrix	COMP/ GRAB	MAG	Bottle Preserve	ICE	Use Except Qty.	Use Except Pkg.	QC Req	Hold Test	
COC-010847-01	SR-MW-1R	SR-MW-1R	5/11/22	0855	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-01
COC-010847-02	SR-MW-2				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-03	SR-MW-5	SR-MW-5	5/10/22	1140	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-02
COC-010847-04	SR-MW-5B	SR-MW-5B	5/10/22	1215	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-03
COC-010847-05	SR-MW-6				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-06	SR-MW-6B				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-07	SR-MW-10	SR-MW-10	5/10/22	1415	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-04
COC-010847-08	SR-MW-11	SR-MW-11	5/10/22	1550	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-05
COC-010847-09	SR-MW-11B	SR-MW-11B	5/10/22	1620	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-06
COC-010847-10	SR-MW-12	SR-MW-12	5/11/22	1020	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-07
COC-010847-	SR-MW-				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	

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COC-010847-12	SR-MW-15				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-13	SR-MW-17	SR-MW-17	5/10/22	1023	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-08
COC-010847-14	SR-MW-17B	SR-MW-17B	5/10/22	1043	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-09
COC-010847-15	SR-MW-18	SR-MW-18	5/10/22	0945	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-10
COC-010847-16	SR-MW-19A				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-17	SR-MW-19B				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-18	SR-MW-20A	SR-MW-20A	5/11/22	1300	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-11
COC-010847-19	SR-MW-20B	SR-MW-20B	5/11/22	1333	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-20	SR-MW-21A				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-21	SR-MW-21B				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-22	SR-MW-22B	SR-MW-22B	5/10/22	1568	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-12
COC-010847-23	SR-MW-23B	SR-MW-23B	5/10/22	1305	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	-13

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COC-010847-24	SR-MW-24A	SR-MW-24A	5/11/22	0910	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	14
COC-010847-25	SR-MW-24B	SR-MW-24B	5/11/22	0945	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	15
COC-010847-26	SR-MW-25A	SR-MW-25A	5/11/22	1105	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	16
COC-010847-27	SR-MW-25B	SR-MW-25B	5/11/22	1127	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	17
COC-010847-28	SR-MW-26	SR-MW-26	5/11/22	1205	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	18
COC-010847-29	MISC	Duplicate 1	5/11/22	—	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False	Field Duplicate	False	19
COC-010847-30	MISC	Duplicate 2	5/10/22	—	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False	Field Duplicate	False	20
COC-010847-31	MISC	Duplicate 3	5/10/22	—	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False	Field Duplicate	False	21
COC-010847-32	MISC	Trip Blank 1	5/10/22	—	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False	Trip Blank	False	22
COC-010847-33	MISC	Trip Blank 2			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False	Trip Blank	False	
COC-010847-34	MISC	Extra 1			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-35	MISC	Extra 2			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-	MISC	Extra 3			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	

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COC-010847-37	MISC	Extra 4			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-38	MISC	Extra 5			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False

~~L1495126~~ L1493955

AV 5/19/22

ENBRIDGE			
chain of custody and sample log contact name: Douglas Dubbs/Joseph Bauer contact no: (713) 989-8310/(713) 989-8332	PACE Nashville 12065 Lebanon Rd, Mt. Juliet, TN 37122 America	4.29.2022b T208559 / P922096 LABORATORY USE ONLY	coc/arf no.: COC-010847 **distribution** Original to LABORATORY Copy to Lab Services fax: (713) 386-4733 Scan Copy to: LaboratoryServices

Comp Station:	Superior - Terminal
Shipping Address:	Kaitlin Montz 218.529.7141 2314 W Michigan St. Suite: 2 Duluth, MN 55806
Program Code:	OIL
Project Code:	Wisconsin
Turnaround:	5 days
Region:	Superior Area
Routing Code:	GTEHSLAB
Business Unit:	-
Department:	LP US

Work Order	
Method of Shipment (to Field):	FEDEX (Next day)
Method of Shipment (from Field):	Fedex (priority overnight)
Freight Bill #:	
Cooler Temp (Celsius):	
Condition of Contents:	
Sampler Print:	
Sampler Signature:	
Lab Acceptance Signature:	**Date/Time:**

Relinquished By: Kaitlin Montz	**Date/Time:** 5/16/2022 1555	**Recd. By:** [signature]	**Date/Time:** 5/17/22 930
Relinquished By:	**Date/Time:**	**Recd. By:**	**Date/Time:**

Comments or Lab Remarks: 5.810=5.8 MMAG

Date Bottleware Required: May-03-2022	**Type of Data Package:** Type II Std.
Expected Sample Date: May-09-2022	**e-mail:** Joseph.Bauer@enbridge.com
Prelim Data: No	

~~L1495126~~
L1493955

Sample ID	Sample Point	Sample Name	Collection Date	Collection Time	Matrix	COMP/ GRAB	MAG	Bottle Preserv	ICE	Use Except Qty	Use Except Pkg	QC Req	Hold Test	
COC-010847-01	SR-MW-1R				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-02	SR-MW-2	SR-MW-2	05/13/22	1208	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	~~01~~ 23
COC-010847-03	SR-MW-5				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-04	SR-MW-5B				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-05	SR-MW-6	SR-MW-6	05/13/22	1500	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	~~11~~ 24
COC-010847-06	SR-MW-6B	SR-MW-6B	05/13/22	1435	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	~~07~~ 25
COC-010847-07	SR-MW-10				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-08	SR-MW-11				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-09	SR-MW-11B				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-10	SR-MW-12				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	
COC-010847-11	SR-MW-14	SR-MW-14	05/13/22	1048	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False	~~09~~ 26

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~~27~~	~~14~~												
COC-010847-12	SR-MW-15	SR-MW-15	05/13/22	1118	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-13	SR-MW-17				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-14	SR-MW-17B				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-15	SR-MW-18				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-16	SR-MW-19A	SR-MW-19A	05/13/22	1322	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-17	SR-MW-19B	SR-MW-19B	05/13/22	1325	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-18	SR-MW-20A				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-19	SR-MW-20B	SR-MW-20B	05/13/22	1625	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-20	SR-MW-21A	SR-MW-21A	05/13/22	1545	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-21	SR-MW-21B	SR-MW-21B	05/13/22	1642	Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-22	SR-MW-22B				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-23	SR-MW-23B				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False

L493955

COC-010847-24	SR-MW-24A				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-25	SR-MW-24B				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-26	SR-MW-25A				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-27	SR-MW-25B				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-28	SR-MW-26				Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-29	MISC	Duplicate 1			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False	Field Duplicate	False
COC-010847-30	MISC	Duplicate 2			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False	Field Duplicate	False
COC-010847-31	MISC	Duplicate 3			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False	Field Duplicate	False
COC-010847-32	MISC	Trip Blank 1			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False	Trip Blank	False
COC-010847-33	MISC	Trip Blank 2	05/03/22		Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False	Trip Blank	False
COC-010847-34	MISC	Extra 1			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-35	MISC	Extra 2			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010847-	MISC	Extra 3			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False

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~~STL49516~~
LIV93951

36													
COC-010647-37	MISC	Extra 4			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False
COC-010647-38	MISC	Extra 5			Aqueous (Water)	Grab	8260_BTEX_TMB_AQ_2	HCl	Yes	False	False		False


Sample Receipt Checklist
COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles Arrive Intact: Y N
Correct Bottles Used: Y N
Sufficient Volume Rec'd: Y N
RAD Screen <0.5 mR/hr: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

ENBRIDGE **chain of custody and sample log** contact name: **Douglas Dodds/Joseph Bauer** contact no: (713) 989-8319/(713) 989-8332	PACE Nashville 12065 Lebanon Rd, Mt. Juliet, TN 37122 America	**LABORATORY USE ONLY**	**coc/arf no.:** COC-010847 **distribution** Original to LABORATORY Copy to Lab Services fax: (713) 386-4733 Scan Copy to: LaboratoryServices

Comp Station:	Superior - Terminal
Shipping Address:	Kaitlin Montz 218.529.7141 2314 W Michigan St. Suite: 2 Duluth, MN 55806
Program Code:	OIL
Project Code:	Wisconsin
Turnaround:	5 days
Region:	Superior Area
Routing Code:	GTEHSLAB
Business Unit:	-
Department:	LP US

Work Order	
Method of Shipment (to Field):	FEDEX (Next day)
Method of Shipment (from Field):	
Freight Bill #:	
Cooler Temp (Celsius):	
Condition of Contents:	
Sampler Print:	
Sampler Signature:	
Lab Acceptance Signature:	**Date/Time:**

Relinquished By:	**Date/Time:**	**Recd. By:**	**Date/Time:**
Relinquished By:	**Date/Time:**	**Recd. By:**	**Date/Time:**

Comments or Lab Remarks:

Date Bottleware Required: May-03-2022	**Type of Data Package:** Type II Std.
Expected Sample Date: May-09-2022	**e-mail:** Joseph.Bauer@enbridge.com
Prelim Data: No	

Sample ID	Sample Point	Sample Name	Collection Date	Collection Time	Matrix	COMP/ GRAB	MAG	Bottle Preserve	ICE	Use Except Qty.	Use Except Pkg.	QC Req	Hold Test
COC-010847-01	SR-MW-1R				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-02	SR-MW-2				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-03	SR-MW-5				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-04	SR-MW-5B				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-05	SR-MW-6				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-06	SR-MW-6B				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-07	SR-MW-10				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-08	SR-MW-11				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-09	SR-MW-11B				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-10	SR-MW-12				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-	SR-MW-				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False

11	14												
COC-010847-12	SR-MW-15				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-13	SR-MW-17				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-14	SR-MW-17B				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-15	SR-MW-18				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-16	SR-MW-19A				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-17	SR-MW-19B				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-18	SR-MW-20A				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-19	SR-MW-20B				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-20	SR-MW-21A				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-21	SR-MW-21B				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-22	SR-MW-22B				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-23	SR-MW-23B				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False

COC-010847-24	SR-MW-24A				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-25	SR-MW-24B				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-26	SR-MW-25A				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-27	SR-MW-25B				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-28	SR-MW-26				Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False		False
COC-010847-29	MISC	Duplicate 1			Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False	Field Duplicate	False
COC-010847-31	MISC	Duplicate 2			Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False	Field Duplicate	False
COC-010847-32	MISC	Duplicate 3			Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False	Field Duplicate	False
COC-010847-33	MISC	Trip Blank 1			Aqueous (Water)	Grab	BTEX_TMB_NAP_MTBE_A	HCl	Yes	False	False	Trip Blank	False

Appendix B

Well Photos

Superior Terminal Well Photos Spring - 2022

MW-1R

MW-2

MW-5 & MW-5B

Superior Terminal Well Photos Spring - 2022

MW-6 & MW-6B

MW-10

MW-11 & MW-11B

Superior Terminal Well Photos Spring - 2022

MW-12

MW-14

MW-15

Superior Terminal Well Photos Spring - 2022

MW-17 & MW-17B

MW-18

MW-19A & MW-19B

Superior Terminal Well Photos Spring - 2022

MW-20A & MW-20B

MW-21A & MW-21B

MW-22B

Superior Terminal Well Photos Spring - 2022

MW-23B

MW-24A & MW-24B

MW-25A & 25B

Superior Terminal Well Photos Spring - 2022

MW-26

Appendix C

Field Notes

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-1R
Location: Superior Terminal, Superior, WI	**Date:** 5/10/2022
Project #: 49161528	**Sample Time:** 0855

GENERAL DATA	
Enbridge lock:	Yes
Casing diameter (in.):	2"
Total well depth (ft.):*	17.53
Static water level (ft.):*	5.50
Water depth (ft.):*	12.03
Well volume (gal.):	1.9
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	0843
Stop time (hh:mm:ss):	0850
Duration (hh:mm:ss):	7 min
Rate, gpm:	0.9
Volume, purged: (note units)	6 gal-1-2my
Duplicate collected?	Dup-3
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
0838	5.7	1167	7.03	114.4	1.32	7.80 Fair

Odor: none

Purge Appearance: clear, colorless

Sample Appearance: clear, colorless

Comments: water level measured on 5/9/2022

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 6 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-2
Location: Superior Terminal, Superior, WI	**Date:** 9/13/2022
Project #: 4916/1528	**Sample Time:** 12:08

GENERAL DATA	
Enbridge lock:	YES
Casing diameter *(in.)*:	2"
Total well depth *(ft.)*:*	27.19
Static water level *(ft.)*:*	3.28
Water depth *(ft.)*:*	23.91
Well volume *(gal.)*:	3.9
Purge method:	Bail
Sample method:	bail
Start time *(hh:mm:ss)*:	11:46
Stop time *(hh:mm:ss)*:	12:05
Duration *(hh:mm:ss)*:	20
Rate, gpm:	0.575
Volume, purged: *(note units)*	11.5 gal
Duplicate collected?	NO
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
						FNU
11:44	7.2	1603	7.40	236.6	1.75	48.76

Odor: None detected

Purge Appearance: clear to light brown, slightly turbid

Sample Appearance: light brown

Comments: water level measured on 9/9/2022
replace lock

CO2- Mn2- Fe(T)- Fe2-

Others present: KLS3

Well Condition: good

(MW) groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

(PVOC+) naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

BARR

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client:	Enbridge	**Monitoring Point:**	MW-5
Location:	Superior Terminal, Superior, WI	**Date:**	5/10/22
Project #:	49161528	**Sample Time:**	1140

GENERAL DATA		**STABILIZATION TEST**						
Enbridge lock:	yes	Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity ~~Appearance~~ FNU
Casing diameter (in.):	2"							
Total well depth (ft.):*	27.02	1109	7.2	1188	7.34	95.6	2.03	133.04
Static water level (ft.):*	2.96							
Water depth (ft.):*	24.06							
Well volume (gal.):	3.9							
Purge method:	bail							
Sample method:	bail							

Start time (hh:mm:ss):	1119	Odor:	none
Stop time (hh:mm:ss):	1137	Purge Appearance:	Slightly Brown/pink to clear
Duration (hh:mm:ss):	18 min	Sample Appearance:	clear colorless
Rate, gpm:	0.7	Comments:	water level measured 5/9/2022
Volume, purged: (note units)	12.5 gal -dry		
Duplicate collected?	no		
Sample collection by:	KMJ3	CO2- Mn2- Fe(T)- Fe2-	
Others present:	none	Well Condition:	Good, Faded paint & little rusty

MW: groundwater monitoring well (circled) WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-5B
Location: Superior Terminal, Superior, WI	**Date:** 5/10/22
Project #: 49161528	**Sample Time:** 1215

GENERAL DATA	
Enbridge lock:	Yes
Casing diameter (in.):	2"
Total well depth (ft.):*	57.91
Static water level (ft.):*	6.34
Water depth (ft.):*	51.57
Well volume (gal.):	8.4
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	1145
Stop time (hh:mm:ss):	1212
Duration (hh:mm:ss):	27min
Rate, gpm:	0.5
Volume, purged: (note units)	13.5 gal - dry
Duplicate collected?	no
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
1114	6.7	625	7.62	96.1	3.04	19.26

Odor: other, c none

Purge Appearance: clear, colorless

Sample Appearance: clear, colorless

Comments: water level measured on 5/9/2022, replace lock

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: Sub, Finish Paint

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** mw-6
Location: Superior Terminal, Superior, WI	**Date:** 5/13/22
Project #: 49161528	**Sample Time:** 15:00

GENERAL DATA	
Enbridge lock:	yes
Casing diameter (in.):	2"
Total well depth (ft.):*	26.67
Static water level (ft.):*	7.53
Water depth (ft.):*	19.14
Well volume (gal.):	3.1
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	1440
Stop time (hh:mm:ss):	1457
Duration (hh:mm:ss):	17
Rate, gpm:	0.59
Volume, purged: (note units)	10 - dry
Duplicate collected?	no
Sample collection by:	KMJ3 / KLS3
Others present:	KLS3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance FNU
1353	8.6	1604	7.26	246.4	5.29	23.10
1 gal						

Odor: none detected.

Purge Appearance: clear & colorless + light brown, slightly turbid

Sample Appearance: clear

Comments: water level measured on 5/9/22

CO2- Mn2- Fe(T)- Fe2-

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-6B
Location: Superior Terminal, Superior, WI	**Date:** 5/13/2022
Project #: 49161528	**Sample Time:** ~~5/13/2022~~ 14:35

GENERAL DATA	
Enbridge lock:	Yes
Casing diameter (in.):	2"
Total well depth (ft.):*	58.49
Static water level (ft.):*	10.42
Water depth (ft.):*	48.12
Well volume (gal.):	7.8
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	13:53
Stop time (hh:mm:ss):	14:30
Duration (hh:mm:ss):	37
Rate, gpm:	0.3
Volume, purged: (note units)	@ 11.5
Duplicate collected?	no
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity ~~Appearance~~ FNU
1351	8.3	751	7.45	204.3	2.29	16.30

Odor: none detected

Purge Appearance: clear to light brown, slightly turbid

Sample Appearance: clear

Comments: water level measured on 5/9/22
YSI pressure transducer - 5/11/2022

CO2- Mn2- Fe(T)- Fe2-

Others present: ~~Ivan~~ KLS3

Well Condition: good

(MW): groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-10
Location: Superior Terminal, Superior, WI	**Date:** 5/10/22
Project #: 49161528	**Sample Time:** 1415

GENERAL DATA	
Enbridge lock:	yes
Casing diameter (in.):	2"
Total well depth (ft.):*	30.45
Static water level (ft.):*	5.69
Water depth (ft.):*	24.76
Well volume (gal.):	4.0
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	1346
Stop time (hh:mm:ss):	1413
Duration (hh:mm:ss):	27 min
Rate, gpm:	0.5
Volume, purged: (note units)	14.5 gal - dry
Duplicate collected?	no
Sample collection by: KMJ3	

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance Final
1340	8.2	2300	6.78	87.4	1.13	687.02

Odor: none

Purge Appearance: brown - turbid to clear

Sample Appearance: clear / colorless

Comments: measure water level on 5/9/22

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene-3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-11
Location: Superior Terminal, Superior, WI	**Date:** 5/10/22
Project #: 49161528	**Sample Time:** 1550

GENERAL DATA		STABILIZATION TEST						
Enbridge lock:	YES	Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity ~~Appearance~~
Casing diameter (in.):	2"							
Total well depth (ft.):*	18.16	1521	7.4	2011	6.41	15.1	1.60	6.26
Static water level (ft.):*	7.81							
Water depth (ft.):*	10.35							
Well volume (gal.):	1.7							
Purge method:	bail							
Sample method:	bail							
Start time (hh:mm:ss):	1539	Odor: none						
Stop time (hh:mm:ss):	1547	Purge Appearance: light Brown, turbid						
Duration (hh:mm:ss):	8 min	Sample Appearance: light Brown.						
Rate, gpm:	0.5	Comments: water level measured on 5/9/22						
Volume, purged: (note units)	4.0 gal - 2x							
Duplicate collected?	no							
Sample collection by: KMJ3		CO2- Mn2- Fe(T)- Fe2-						
Others present: bailer		Well Condition: good						

(MW) groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-11B
Location: Superior Terminal, Superior, WI	**Date:** 5/10/22
Project #: 49161528	**Sample Time:** 1620

GENERAL DATA		STABILIZATION TEST						
Enbridge lock:	YES	Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance FAU's
Casing diameter (in.):	2"							
Total well depth (ft.):*	57.51	1534	7.4	770	7.77	172	2.76	1.12
Static water level (ft.):*	21.08							
Water depth (ft.):*	36.43							
Well volume (gal.):	6.0							
Purge method:	bail							
Sample method:	bail							
Start time (hh:mm:ss):	1555	Odor: none						
Stop time (hh:mm:ss):	1617	Purge Appearance: clear, colorless						
Duration (hh:mm:ss):	22 min	Sample Appearance: clear, colorless						
Rate, gpm:	0.4	Comments: water level measured on 5/9/22						
Volume, purged: (note units)	9.5 gal - dry							
Duplicate collected?	NO							
Sample collection by: KMJ3		CO2-	Mn2-	Fe(T)-	Fe2-			
Others present: None		Well Condition: good						

(MW): groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-12
Location: Superior Terminal, Superior, WI	**Date:** 5/11/22
Project #: 49161528	**Sample Time:** 1020

GENERAL DATA	
Enbridge lock:	Yes
Casing diameter (in.):	2"
Total well depth (ft.)*:	21.06
Static water level (ft.)*:	3.40
Water depth (ft.)*:	17.66
Well volume (gal.):	2.9
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	1012
Stop time (hh:mm:ss):	1018
Duration (hh:mm:ss):	6 min
Rate, gpm:	0.7
Volume, purged: (note units)	4 gal
Duplicate collected?	no
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance

Odor: none

Purge Appearance: clear, colorless

Sample Appearance: clear, colorless

Comments: water level measurement on 5/9/2022
YSI probe not able to fit down well past 3.1 ft

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- J semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-14
Location: Superior Terminal, Superior, WI	**Date:** 5/13/22
Project #: 49161528	**Sample Time:** 10:48

GENERAL DATA	
Enbridge lock:	Yes
Casing diameter (in.):	2"
Total well depth (ft.):*	13.33
Static water level (ft.):*	4.53
Water depth (ft.):*	13.8
Well volume (gal.):	2.2
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	10:27
Stop time (hh:mm:ss):	10:43
Duration (hh:mm:ss):	16 min.
Rate, gpm:	0.5
Volume, purged: (note units)	8 gal - bkg
Duplicate collected?	NO
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity ~~Appearance~~ FNU
10:16	6.1	1151	7.05	235.1	1.09	3.88

Odor: none detected

Purge Appearance: clear + light brown, turbid

Sample Appearance: clear

Comments: water level gauge on 5/9/2022 upon lock.

organic material in some bails + on YSI at beginning.

CO2- Mn2- Fe(T)- Fe2-

Others present: KLS3

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-15
Location: Superior Terminal, Superior, WI	**Date:** 5/13/22
Project #: 49161528	**Sample Time:** 1118

GENERAL DATA	
Enbridge lock:	yes
Casing diameter *(in.)*:	2"
Total well depth *(ft.)*:*	17.29
Static water level *(ft.)*:*	2.96
Water depth *(ft.)*:*	14.33
Well volume *(gal.)*:	2.3
Purge method:	bail
Sample method:	bail
Start time *(hh:mm:ss)*:	1107
Stop time *(hh:mm:ss)*:	1114
Duration *(hh:mm:ss)*:	7 min
Rate, gpm:	0.9
Volume, purged: *(note units)*	6.5 gal-dry
Duplicate collected?	no
Sample collection by:	KMJ3 / KLS2

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity ~~Appearance~~ FAU
1105	6.2	994	7.29	107.7	2.37	243.80

Odor: none

Purge Appearance: clear, colorless

Sample Appearance: clear, colorless

Comments: water level measured 5/9/2022. replace lock.

CO2- Mn2- Fe(T)- Fe2-

Others present: KLS2

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-17
Location: Superior Terminal, Superior, WI	**Date:** 5/10/22
Project #: 49161528	**Sample Time:** 1023

GENERAL DATA	
Enbridge lock:	yes
Casing diameter *(in.)*:	2"
Total well depth *(ft.)*:*	17.96
Static water level *(ft.)*:*	5.76
Water depth *(ft.)*:*	11.7
Well volume *(gal.)*:	1.9
Purge method:	bail
Sample method:	bail
Start time *(hh:mm:ss)*:	1009
Stop time *(hh:mm:ss)*:	1120
Duration *(hh:mm:ss)*:	11 min
Rate, gpm:	0.36
Volume, purged: *(note units)*	4 gal - 2 bv
Duplicate collected?	no
Sample collection by: KMJ3	

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
						Foam
1602	5.9	1356	7.42	114.3	4.45	10.23

Odor: none

Purge Appearance: clear, colorless

Sample Appearance: clear, colorless

Comments: water level measured on 5/9/2022, replace lock

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: good

(MW)-groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene-3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-17B
Location: Superior Terminal, Superior, WI	**Date:** 5/10/22
Project #: 49161528	**Sample Time:** 1043

GENERAL DATA	
Enbridge lock:	Yes
Casing diameter (in.):	2"
Total well depth (ft.):*	44.91
Static water level (ft.):*	15.81
Water depth (ft.):*	29.10
Well volume (gal.):	4.7
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	~~KMJ3~~ 1026
Stop time (hh:mm:ss):	1040
Duration (hh:mm:ss):	14
Rate, gpm:	0.4
Volume, purged: (note units)	5.5 gal
Duplicate collected?	no
Sample collection by:	KMJ3

STABILIZATION TEST							
Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity ~~Appearance~~ FNR	
1006	7.2	535	7.64	89.8	4.91	1.53	

Odor: none

Purge Appearance: clear, colorless

Sample Appearance: clear, colorless

Comments: water level measured on 5/9/2022. replace lock

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene-3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-18
Location: Superior Terminal, Superior, WI	**Date:** 5/10/22
Project #: 49161528	**Sample Time:** 0945

GENERAL DATA	
Enbridge lock:	#45
Casing diameter (in.):	2"
Total well depth (ft.):*	17.23
Static water level (ft.):*	7.86
Water depth (ft.):*	10.37
Well volume (gal.):	1.7
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	0933
Stop time (hh:mm:ss):	0941
Duration (hh:mm:ss):	8 min
Rate, gpm:	0.4
Volume, purged: (note units)	3.5 gal-bay
Duplicate collected?	Dup-2
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance FNM
0928	5.7	1188	7.51	110.5	5.61	10.21

Odor: none

Purge Appearance: clear, colorless

Sample Appearance: clear, colorless

Comments: Water level measured on 5/9/22.

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: good

MW groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 6 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-19R
Location: Superior Terminal, Superior, WI	**Date:** 5/13/2022
Project #: 49161528	**Sample Time:** 13:22

GENERAL DATA	
Enbridge lock:	YES
Casing diameter (in.):	2"
Total well depth (ft.):*	24.15
Static water level (ft.):*	3.05
Water depth (ft.):*	21.10
Well volume (gal.):	3.4
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	13:02
Stop time (hh:mm:ss):	13:19
Duration (hh:mm:ss):	17
Rate, gpm:	0.53
Volume, purged: (note units)	9 - dry
Duplicate collected?	NO
Sample collection by:	KMJ3/KLS3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
12:48	8.0	762	7.60	231.6	1.05	7.88 FNU

Odor: none detected.

Purge Appearance: clear

Sample Appearance: clear

Comments: water level measured on 5/9/22

CO2- Mn2- Fe(T)- Fe2-

Others present: KLS3

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-193
Location: Superior Terminal, Superior, WI	**Date:** 5/13/2022
Project #: 49161528	**Sample Time:** 1325

GENERAL DATA		STABILIZATION TEST						
Enbridge lock:	Yes	Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance Purg
Casing diameter (in.):	2"							
Total well depth (ft.):*	59.94	1255	7.5	202.2	7.55	215.0	2.44	1.94
Static water level (ft.):*	8.70							
Water depth (ft.):*	51.24							
Well volume (gal.):	8.35							
Purge method:	bail							
Sample method:	bail							
Start time (hh:mm:ss):	12:58	Odor: none						
Stop time (hh:mm:ss):	1322	Purge Appearance: clear, colorless						
Duration (hh:mm:ss):	24 min	Sample Appearance: clear, colorless						
Rate, gpm:	0.5	Comments: water level measured on 5/9/2022.						
Volume, purged: (note units)	12 gal-dup							
Duplicate collected?	none							
Sample collection by: KMJ3		CO2- Mn2- Fe(T)- Fe2-						

Others present: KLS3 Well Condition: Good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW - 20 A
Location: Superior Terminal, Superior, WI	**Date:** 5/11/22
Project #: 49161528	**Sample Time:** 1300

GENERAL DATA	
Enbridge lock:	Yes
Casing diameter (in.):	2"
Total well depth (ft.):*	24.20
Static water level (ft.):*	5.75
Water depth (ft.):*	18.45
Well volume (gal.):	3.0
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	1240
Stop time (hh:mm:ss):	1258
Duration (hh:mm:ss):	18 min
Rate, gpm:	0.5
Volume, purged: (note units)	9 gal - buy
Duplicate collected?	NO
Sample collection by: KMJ3	

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity ~~Appearance~~ FNU
1229	2.0	1545	7.23	135.1	2.28	0.05

Odor: none

Purge Appearance: clear, colorless

Sample Appearance: clear, colorless

Comments: water level measured on 5/9/22

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-20B
Location: Superior Terminal, Superior, WI	**Date:** 5/13/22
Project #: 49161528.00	**Sample Time:** 1625

GENERAL DATA	
Enbridge lock:	YES
Casing diameter *(in.)*:	2"
Total well depth *(ft.)*:*	60.17
Static water level *(ft.)*:*	16.85
Water depth *(ft.)*:*	43.32
Well volume *(gal.)*:	7.0
Purge method:	bail
Sample method:	bail
Start time *(hh:mm:ss)*:	1306
Stop time *(hh:mm:ss)*:	1329
Duration *(hh:mm:ss)*:	35 min
Rate, gpm:	0.3
Volume, purged: *(note units)*	11 gal - 3 bv
Duplicate collected?	no
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity ~~Appearance~~ FAN
1234	7.1	493	7.62	179.7	3.60	0.20

Odor: none

Purge Appearance: clear, colorless

Sample Appearance: clear, colorless

Comments: water level measured on 5/9/22
Bailed dry on 5/11/22
Sample collected on 5/13/22 after building 1.5 additional gallons before dry
(well volume on 5/13/22 = 3.3 gallons)

CO2- Mn2- Fe(T)- Fe2-

Others present: KLS3

Well Condition: good

(MW): groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-21A
Location: Superior Terminal, Superior, WI	**Date:** 5/13/22
Project #: 49161528	**Sample Time:** ~~1315~~ 1545

GENERAL DATA	
Enbridge lock:	yes
Casing diameter (in.):	2"
Total well depth (ft.):*	24.54
Static water level (ft.):*	6.63
Water depth (ft.):*	18.91
Well volume (gal.):	3.1
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	1528
Stop time (hh:mm:ss):	1542
Duration (hh:mm:ss):	14 min
Rate, gpm:	0.6
Volume, purged: (note units)	8 gal - dry
Duplicate collected?	no
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity ~~Appearance~~ Final
~~1515~~	7.3	1621	7.34	223.2	3.97	36.53

Odor: none

Purge Appearance: clear, colorless

Sample Appearance: clear, colorless

Comments: water level measured on 5/9/22.

CO2- Mn2- Fe(T)- Fe2-

Others present: ~~none~~ KLS3

Well Condition: good

(MW) groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-21B
Location: Superior Terminal, Superior, WI	**Date:** 5/13/22
Project #: 49161528	**Sample Time:** 16:02

GENERAL DATA		STABILIZATION TEST						
Enbridge lock:	yes	Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity ~~Appearance~~ FeW
Casing diameter (in.):	2"							
Total well depth (ft.):*	60.78	1523	6.9	659	7.56	127.1	1.99	42.74
Static water level (ft.):*	17.90							
Water depth (ft.):*	42.83							
Well volume (gal.):	7.0							
Purge method:	bail							
Sample method:	bail							
Start time (hh:mm:ss):	15 25	Odor: none detected						
Stop time (hh:mm:ss):	15 58	Purge Appearance: clear to light brown, slightly turbid						
Duration (hh:mm:ss):	~~1~~ 33	Sample Appearance: Light Brown						
Rate, gpm:	0.3	Comments: water level measured 5/9/22						
Volume, purged: (note units)	11 gal-DI							
Duplicate collected?	no							
Sample collection by: KMJ3		CO2- Mn2- Fe(T)- Fe2-						

Others present: KLS3 Well Condition: Good

(MW): groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-22B
Location: Superior Terminal, Superior, WI	**Date:** 5/10/22
Project #: 49161528	**Sample Time:** 1508

GENERAL DATA	
Enbridge lock:	Yes
Casing diameter *(in.)*:	2"
Total well depth *(ft.)*:*	57.92
Static water level *(ft.)*:*	19.31
Water depth *(ft.)*:*	38.61
Well volume *(gal.)*:	6.3
Purge method:	bail
Sample method:	bail
Start time *(hh:mm:ss)*:	1442
Stop time *(hh:mm:ss)*:	1505
Duration *(hh:mm:ss)*:	23
Rate, gpm:	0.4
Volume, purged: *(note units)*	9 gal - 1½
Duplicate collected?	no
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
1437	7.4	812	7.52	-78.3	0.82	28.21

Odor:

Purge Appearance: Brown, turbid

Sample Appearance: light Brown

Comments: water level measured on 5/9/22 prior to purging locks.

well between the job trailer, fuel containers nearby.

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: good, faded paint

(MW) groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-23B
Location: Superior Terminal, Superior, WI	**Date:** 5/10/22
Project #: 49161528	**Sample Time:** 1305

GENERAL DATA		STABILIZATION TEST						
Enbridge lock:	Enblock yes	Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
Casing diameter (in.):	2"							Fines
Total well depth (ft.):*	57.30	1235	7.0	762	7.68	144.7	2.32	12.71
Static water level (ft.):*	6.71							
Water depth (ft.):*	40.59							
Well volume (gal.):	6.6							
Purge method:	bail							
Sample method:	bail							
Start time (hh:mm:ss):	1239	Odor: none						
Stop time (hh:mm:ss):	1302	Purge Appearance: clear						
Duration (hh:mm:ss):	23 min	Sample Appearance: clear						
Rate, gpm:	0.4	Comments: water level measured on 5/9/22, replaced lock.						
Volume, purged: (note units)	9.5 gal - 1 cy							
Duplicate collected?	no							
Sample collection by:	KMJ3	CO2-	Mn2-	Fe(T)-	Fe2-			
Others present:	none	Well Condition:	Good					

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-24M
Location: Superior Terminal, Superior, WI	**Date:** 5/11/2022
Project #: 49161528	**Sample Time:** 0910

GENERAL DATA	
Enbridge lock:	Yes
Casing diameter (in.):	2"
Total well depth (ft.):*	20.82
Static water level (ft.):*	4.16
Water depth (ft.):*	16.66
Well volume (gal.):	2.7
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	0857
Stop time (hh:mm:ss):	0908
Duration (hh:mm:ss):	11 min
Rate, gpm:	0.6
Volume, purged: (note units)	6.5 gal - 3 bag
Duplicate collected?	no
Sample collection by:	KMJ3

STABILIZATION TEST							
Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance ~~Appearance~~ FNA
0911	6.4	926	7.16	153.6	2.16	8.22

Odor: none

Purge Appearance: light brown, slightly turbid

Sample Appearance: light brown

Comments: water level measurement on 5/9/2022 replaced lock

Cracked in bollard & well above grade surface.

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: Good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

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Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-29B
Location: Superior Terminal, Superior, WI	**Date:** 5/11/22
Project #: 49161528	**Sample Time:** 0945

GENERAL DATA		STABILIZATION TEST						
Enbridge lock:	yes	Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
Casing diameter *(in.)*:	2"							
Total well depth *(ft.)*:*	49.35	0941	7.5	808	7.07	151.1	2.59	5.52
Static water level *(ft.)*:*	5.25							
Water depth *(ft.)*:*	44.1							
Well volume *(gal.)*:	7.2							
Purge method:	bail							
Sample method:	bail							

Start time *(hh:mm:ss)*:	0917	Odor: none
Stop time *(hh:mm:ss)*:	0942	Purge Appearance: light brown, slightly turbid
Duration *(hh:mm:ss)*:	25 min	Sample Appearance: light brown
Rate, gpm:	0.4	Comments: Water level measured on 5/9/22 replace lock
Volume, purged: *(note units)*	10.5 gal - dry	
Duplicate collected?	NO	Concrete in bollards + well are good.
Sample collection by:	KMJ3	CO2- Mn2- Fe(T)- Fe2-
Others present: none		Well Condition: good

(MW circled): groundwater monitoring well   WS: water supply well   SW: surface water   SE: sediment   other:

PVOC+ naphthalene- 3   semi-volatile-   general-   nutrient-   cyanide-   DRO-   Sulfide-

oil,grease-   bacteria-   total metal-   filtered metal-   methane-   filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-25A
Location: Superior Terminal, Superior, WI	**Date:** 5/11/22
Project #: 49161528	**Sample Time:** 1105

GENERAL DATA	
Enbridge lock:	yes
Casing diameter (in.):	2"
Total well depth (ft.):*	19.89
Static water level (ft.):*	3.98
Water depth (ft.):*	15.91
Well volume (gal.):	2.6
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	1054
Stop time (hh:mm:ss):	1101
Duration (hh:mm:ss):	7 min
Rate, gpm:	0.6
Volume, purged: (note units)	4.5 gal - bag
Duplicate collected?	no
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
1045	5.8	954	7.21	220.5	1.27	76.3 clear

Odor: none

Purge Appearance: light brown / pale to brown - turbid

Sample Appearance: brown

Comments: water level measurement on 5/9/2022

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-25B
Location: Superior Terminal, Superior, WI	**Date:** 5/11/22
Project #: 49161528	**Sample Time:** 1127

GENERAL DATA	
Enbridge lock:	Yes
Casing diameter (in.):	2"
Total well depth (ft.):*	49.42
Static water level (ft.):*	9.21
Water depth (ft.):*	40.21
Well volume (gal.):	6.6
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	1109
Stop time (hh:mm:ss):	1124
Duration (hh:mm:ss):	15min
Rate, gpm:	0.6
Volume, purged: (note units)	8.5 gal - avg
Duplicate collected?	no
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity ~~Appearance~~
1051	7.1	395	7.77	159.1	1.73	220 yr

Odor: none

Purge Appearance: clear to brown/pink very turbid

Sample Appearance: brown

Comments: water level measurement on 5/9/22

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Barr Engineering Company
Well Sampling/Stabilization Data Sheet

Client: Enbridge	**Monitoring Point:** MW-26
Location: Superior Terminal, Superior, WI	**Date:** 1205 (Sample time)
Project #: 49161528	**Sample Time:** 5/11/22 (Date)

GENERAL DATA

Enbridge lock:	Yes
Casing diameter (in.):	2"
Total well depth (ft.):*	18.90
Static water level (ft.):*	8.14
Water depth (ft.):*	10.76
Well volume (gal.):	1.8
Purge method:	bail
Sample method:	bail
Start time (hh:mm:ss):	1152
Stop time (hh:mm:ss):	1201
Duration (hh:mm:ss):	9 min
Rate, gpm:	0.7
Volume, purged: (note units)	6 gal - dup
Duplicate collected?	Dup-1
Sample collection by:	KMJ3

STABILIZATION TEST

Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
1177	6.6	1014	7.08	199.2	2.96	14.59

Odor: none

Purge Appearance: clear to light brown

Sample Appearance: light brown

Comments: Measure water level on 5/9/22

CO2- Mn2- Fe(T)- Fe2-

Others present: none

Well Condition: good

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

PVOC+ naphthalene- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

Appendix D

Private Well Memo

resourceful. naturally.
engineering and environmental consultants

BARR

August 4, 2022

Sent via email

Mr. Nick Larabel
Environmental Advisor
Enbridge Energy
455 Leggitt Road
Marshall, MI 49068

Re: Potable Well Sampling Results – Superior Terminal, 2022 Groundwater Monitoring Program

Dear Mr. Larabel:

On May 12, 2022, Barr Engineering Co (Barr) collected water quality samples from the three private water supply wells located at the Enbridge Superior Terminal. Water samples from private wells PW-1 and PW-2 were collected from indoor spigots closest to, but prior to, each pressure tank. The water sample from private well PW-3 was collected from an outside spigot. Figure 1 depicts the locations of the potable wells at the terminal. Prior to sample collection, stagnant water was purged from each well by allowing the spigot to run for approximately 20 minutes. This allowed the well pump to cycle on and helped ensure the sample was representative of the aquifer. Water samples from each well were collected into laboratory-supplied containers and submitted to Pace Analytical Laboratory of Duluth, Minnesota and Ormond Beach, Florida for chemical analyses of benzene, toluene, ethylbenzene, total xylenes (BTEX), iron, chloride, pH, nitrate, and total and fecal coliform (as E. coli). The results are summarized on Table 1 and copy of the analytical laboratory report is provided in Attachment A.

No BTEX compounds were detected in these wells and although the iron and pH detections are above established criteria, these detections, along with the chloride and nitrate, appear to represent natural groundwater conditions. These results are similar to what has previously been detected in these wells since monitoring began in 2017.

The wells were inspected and were found in good condition except for PW-2 which was found to have a gap between the well casing and the well cover, as similarly observed in 2021. Photo documentation of this is provided in Attachment B.

If you have any questions or require additional information, please contact me at (218) 529-7133 or Lynette Carney at (218) 529-7141.

Sincerely,
Barr Engineering Co.

Kaitlin Montz
Geologist

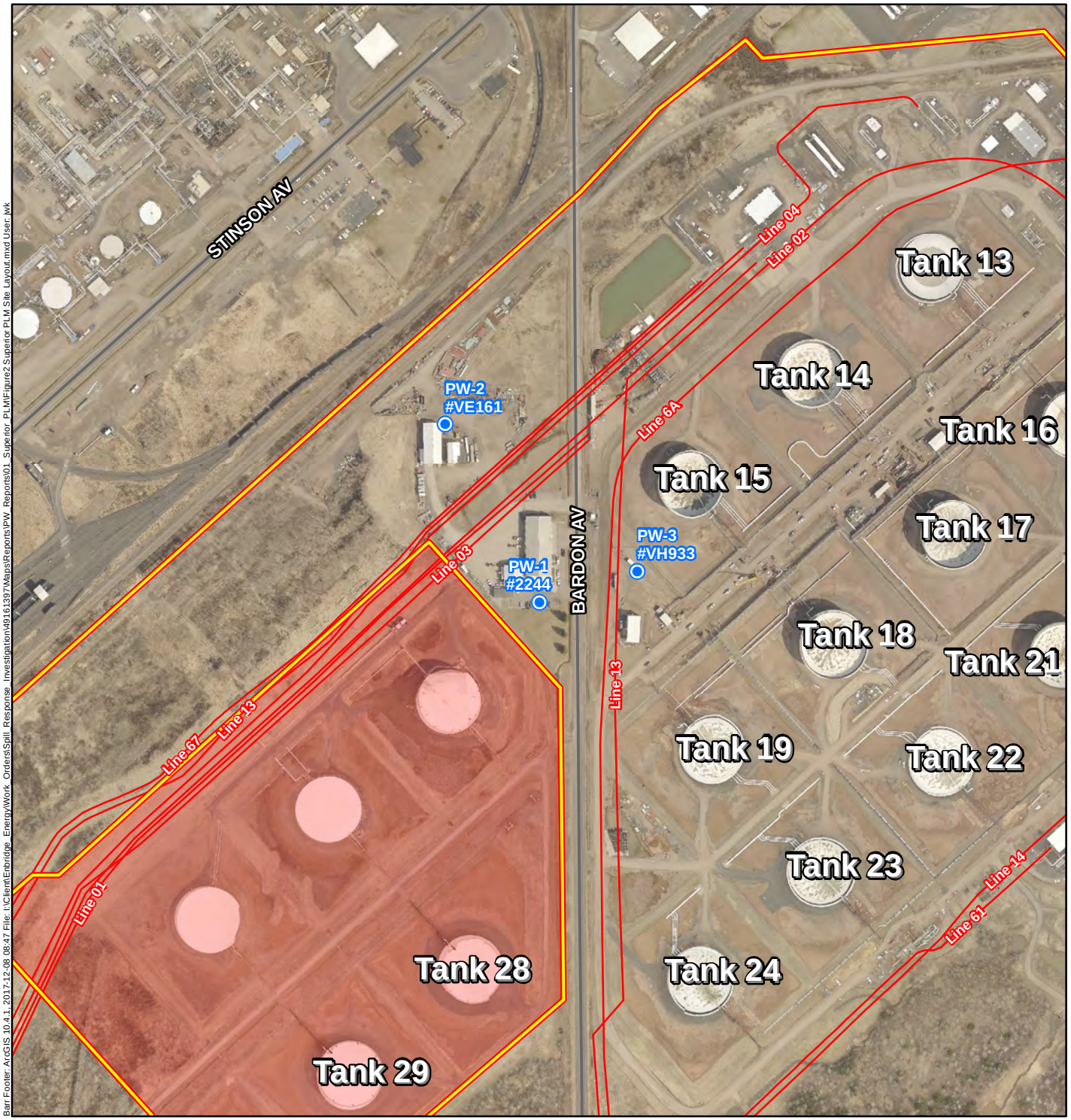
Enclosure:

Table 1	Private Well Groundwater Quality Data
Figure 1	Private Well Locations
Attachment A	Pace Analytical Laboratory Report
Attachment B	Private Well PW-2 Photos

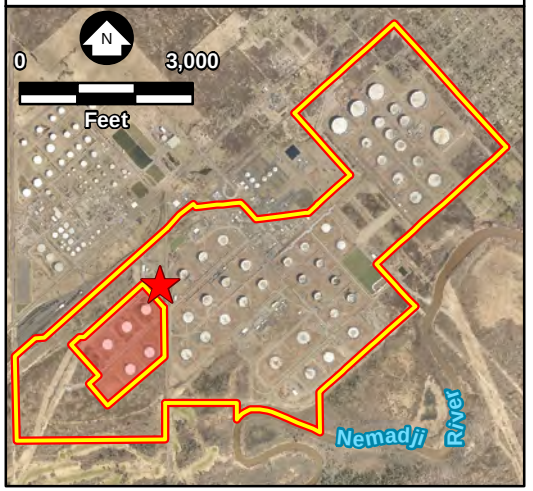
Table 1: Private Well Groundwater Quality Data
Enbridge Energy Limited Partnership - Superior, WI Terminal

	Sampling Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (m,o,p) (µg/L)	Chloride (mg/L)	Iron (mg/L)	Nitrate as N (mg/L)	Total Coliform (P/A)	Fecal Coliform as E. Coli (P/A)	Total Coliform (MPN/100/ml)	Fecal Coliform as E. Coli (MPN/100/ml)	pH
PW-1	2-Oct-17	<1.0	<4.0	<1.0	<3.0	NS	NS	NS	NS	NS	NS	NS	NS
	29-May-18	<1.0	<1.0	<1.0	<3.0	72.7	**0.442**	<0.020	Absent	Absent	NA	NA	**8.8**
	21-May-19	<1.0	<5.0	<1.0	<3.0	73.9	**1.950**	0.068J	NA	NA	<1.0	<1.0	**8.6**
	21-May-20	<0.12	<0.078	<0.11	<0.30	73.3	**0.2**	<0.0090	Absent	Absent	<1.0	<1.0	8.3
	13-May-21	<0.40	<0.28	<0.23	<0.11	72.3	**1.7**	<0.0027	Absent	Absent	<1.0	<1.0	**8.6**
	12-May-22	<0.50	<0.50	<0.50	<1.0	74.7	**0.4**	<0.0038	NA	NA	<1.0	<1.0	**8.8**
PW-2	2-Oct-17	<1.0	<4.0	<1.0	<3.0	NS	NS	NS	NS	NS	NS	NS	NS
	29-May-18	<1.0	<1.0	<1.0	<3.0	108	**0.153**	<0.020	Absent	Absent	NA	NA	**9.0**
	21-May-19	<0.34	<0.28	<0.46	<1.0	109	0.099	<0.020	NA	NA	<1.0	<1.0	**8.8**
	21-May-20	<0.12	<0.078	<0.11	<0.30	107	0.1	<0.0090	Absent	Absent	<1.0	<1.0	**9.0**
	13-May-21	<0.40	<0.28	<0.23	<0.11	104	0.1	<0.0027	NA	NA	**1.0**	<1.0	**9.0**
	9-Jun-21	NS	NS	NS	NS	NS	NS	NS	Absent	Absent	**3.0**	<1.0	NS
	12-May-22	<0.50	<0.50	<0.50	<1.0	107	**1.5**	<0.0038	NA	NA	<1.0	<1.0	**9.1**
PW-3	3-Oct-17	<1.0	<4.0	<1.0	<3.0	NS	NS	NS	NS	NS	NS	NS	NS
	29-May-18	<1.0	<1.0	<1.0	<3.0	59.5	**1.200**	<0.020	Absent	Absent	NA	NA	**9.1**
	21-May-19	<1.0	<5.0	<1.0	<3.0	60.4	**1.290**	<0.020	NA	NA	<1.0	<1.0	**8.9**
	21-May-20	<0.12	<0.078	<0.11	<0.30	60.8	**1.9**	<0.0090	Absent	Absent	<1.0	<1.0	8.2
	13-May-21	<0.40	<0.28	<0.23	<0.11	57.6	**0.4**	<0.0027	Absent	Absent	<1.0	<1.0	**8.7**
	12-May-22	<0.50	<0.50	<0.50	<1.0	59.5	**0.96**	<0.0038	NA	NA	<1.0	<1.0	8.9
WAC NR 140 ES Criteria	--	5	800	700	2,000	250	0.3	10	--	--	--	--	--
WAC NR 140 PAL Criteria	--	0.5	160	140	400	125	0.15	2	--	--	--	--	--
EPA Primary DW Criteria	--	5	1,000	700	10,000	--	--	10	Pos/Neg	Pos/Neg	0	0	--
EPA Secondary DW Criteria	--	--	--	--	--	250	0.3	--	--	--	--	--	6.5 - 8.5

Notes:
µg/L = micrograms per liter (parts per billion)
mg/L = milligrams per liter
NA = Not analyzed for this parameter
NS = Not sampled for this parameter
<1.0 = not detected above the laboratory practical quantitation limit or reporting limit
-- = No standard established
Bold results exceeded established criteria
WAC NR 140 ES Criteria = Wisconsin Administrative Code NR 140, Enforcement Standard, revised December 2010.
WAC NR 140 PAL Criteria = Wisconsin Administrative Code NR 140, Preventive Action Limit, revised December 2010.



ENBRIDGE SUPERIOR TERMINAL



- Site Location
- Pipeline Infrastructure
- Enbridge Ownership Boundary
- Non-Enbridge Owned Property
- Private Well

N

0 400 800

Feet

1 Inch = 400 Feet

Douglas County Imagery Circa May, 2016

Figure 1

PRIVATE WELL LOCATONS

Superior Terminal
Enbridge Energy, L.P.

ENBRIDGE

Attachment A

Pace Analytical Laboratory Report

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

May 26, 2022

Jim Taraldsen
Barr Engineering Company
325 S Lake Ave
Duluth, MN 55802

RE: Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

Dear Jim Taraldsen:

Enclosed are the analytical results for sample(s) received by the laboratory on May 12, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Duluth, MN
- Pace Analytical Services - Ormond Beach

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

Sincerely,

Martha Hansen
martha.hansen@pacelabs.com
(612)607-6451
Project Manager

Enclosures

cc: Barr DM, Barr Engineering
Accounts Payable, Barr Engineering

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

Pace Analytical Services Ormond Beach
8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Ohio DEP 87780
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services, LLC - Duluth MN
4730 Oneota Street, Duluth, MN 55807
Minnesota Certification #: 027-137-152
Minnesota Dept of Ag Approval: via Minnesota 027-137-152
Minnesota Petrofund Registration #: 1240
Montana Certification #: CERT0102
Nevada Certification #: MN00037
North Dakota Certification #: R-105
Wisconsin Certification #: 999446800
Wisconsin Dept of Ag Certification: 480341

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10608058001	**PW-3**	Water	05/12/22 08:55	05/12/22 11:31
10608058002	**PW-1**	Water	05/12/22 10:00	05/12/22 11:31
10608058003	**PW-2**	Water	05/12/22 10:45	05/12/22 11:31
10608058004	**Trip Blank**	Water	05/12/22 00:00	05/12/22 11:31

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10608058001	**PW-3**	Colilert-18 (Fecal Coliforms)	AK3	1	PASI-DU
		SM 9223B (Colilert-18 QT) 2004	AK3	2	PASI-DU
		EPA 300.0	AK3	2	PASI-DU
		EPA 524.2	JLR	9	PASI-O
		SM 4500-H+B	SWB	1	PASI-O
10608058002	**PW-1**	Colilert-18 (Fecal Coliforms)	AK3	1	PASI-DU
		SM 9223B (Colilert-18 QT) 2004	AK3	2	PASI-DU
		EPA 300.0	AK3	2	PASI-DU
		EPA 524.2	JLR	9	PASI-O
		SM 4500-H+B	SWB	1	PASI-O
10608058003	**PW-2**	Colilert-18 (Fecal Coliforms)	AK3	1	PASI-DU
		SM 9223B (Colilert-18 QT) 2004	AK3	2	PASI-DU
		EPA 300.0	AK3	2	PASI-DU
		EPA 524.2	JLR	9	PASI-O
		SM 4500-H+B	SWB	1	PASI-O
10608058004	**Trip Blank**	EPA 524.2	JLR	9	PASI-O

PASI-DU = Pace Analytical Services - Duluth, MN
PASI-O = Pace Analytical Services - Ormond Beach

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

Sample: PW-3 **Lab ID: 10608058001** Collected: 05/12/22 08:55 Received: 05/12/22 11:31 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9223B QT Fecal Coliform DU	Analytical Method: Colilert-18 (Fecal Coliforms) Preparation Method: Colilert-18 (Fecal Coliforms)								
	Pace Analytical Services - Duluth, MN								
Fecal Coliform Bacteria	**<1.0**	MPN/100 mL	1.0	1.0	1	05/12/22 15:42	05/13/22 11:02		
9223B QT Total Coli Ecoli DU	Analytical Method: SM 9223B (Colilert-18 QT) 2004 Preparation Method: SM 9223B (Colilert-18 QT) 2004								
	Pace Analytical Services - Duluth, MN								
E.coli	**<1.0**	MPN/100 mL	1.0	1.0	1	05/12/22 16:00	05/13/22 11:04		
Total Coliform Bacteria	**<1.0**	MPN/100 mL	1.0	1.0	1	05/12/22 16:00	05/13/22 11:04		
300.0 IC Anions WW 48 Hrs DU	Analytical Method: EPA 300.0								
	Pace Analytical Services - Duluth, MN								
Chloride	**59.5**	mg/L	1.0	0.45	1		05/13/22 00:55	16887-00-6	N2
Nitrate as N	**<0.0038**	mg/L	0.10	0.0038	1		05/13/22 00:55	14797-55-8	
524.2 MSV	Analytical Method: EPA 524.2								
	Pace Analytical Services - Ormond Beach								
Benzene	**<0.40**	ug/L	0.50	0.40	1		05/16/22 00:57	71-43-2	
Ethylbenzene	**<0.23**	ug/L	0.50	0.23	1		05/16/22 00:57	100-41-4	
Toluene	**<0.28**	ug/L	0.50	0.28	1		05/16/22 00:57	108-88-3	
Xylene (Total)	**<0.11**	ug/L	1.0	0.11	1		05/16/22 00:57	1330-20-7	
m&p-Xylene	**<0.39**	ug/L	1.0	0.39	1		05/16/22 00:57	179601-23-1	
o-Xylene	**<0.19**	ug/L	0.50	0.19	1		05/16/22 00:57	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		05/16/22 00:57	460-00-4	p2
Toluene-d8 (S)	99	%	70-130		1		05/16/22 00:57	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	103	%	70-130		1		05/16/22 00:57	2199-69-1	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
	Pace Analytical Services - Ormond Beach								
pH at 25 Degrees C	**8.9**	Std. Units	0.10	0.10	1		05/17/22 13:28		H3,H6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

Sample: PW-1 **Lab ID: 10608058002** Collected: 05/12/22 10:00 Received: 05/12/22 11:31 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9223B QT Fecal Coliform DU	Analytical Method: Colilert-18 (Fecal Coliforms) Preparation Method: Colilert-18 (Fecal Coliforms)								
	Pace Analytical Services - Duluth, MN								
Fecal Coliform Bacteria	**<1.0**	MPN/100 mL	1.0	1.0	1	05/12/22 15:42	05/13/22 11:02		
9223B QT Total Coli Ecoli DU	Analytical Method: SM 9223B (Colilert-18 QT) 2004 Preparation Method: SM 9223B (Colilert-18 QT) 2004								
	Pace Analytical Services - Duluth, MN								
E.coli	**<1.0**	MPN/100 mL	1.0	1.0	1	05/12/22 16:00	05/13/22 11:04		
Total Coliform Bacteria	**<1.0**	MPN/100 mL	1.0	1.0	1	05/12/22 16:00	05/13/22 11:04		
300.0 IC Anions WW 48 Hrs DU	Analytical Method: EPA 300.0								
	Pace Analytical Services - Duluth, MN								
Chloride	**74.7**	mg/L	1.0	0.45	1		05/13/22 04:04	16887-00-6	N2
Nitrate as N	**<0.0038**	mg/L	0.10	0.0038	1		05/13/22 04:04	14797-55-8	
524.2 MSV	Analytical Method: EPA 524.2								
	Pace Analytical Services - Ormond Beach								
Benzene	**<0.40**	ug/L	0.50	0.40	1		05/16/22 01:21	71-43-2	
Ethylbenzene	**<0.23**	ug/L	0.50	0.23	1		05/16/22 01:21	100-41-4	
Toluene	**<0.28**	ug/L	0.50	0.28	1		05/16/22 01:21	108-88-3	
Xylene (Total)	**<0.11**	ug/L	1.0	0.11	1		05/16/22 01:21	1330-20-7	
m&p-Xylene	**<0.39**	ug/L	1.0	0.39	1		05/16/22 01:21	179601-23-1	
o-Xylene	**<0.19**	ug/L	0.50	0.19	1		05/16/22 01:21	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		05/16/22 01:21	460-00-4	p2
Toluene-d8 (S)	99	%	70-130		1		05/16/22 01:21	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	102	%	70-130		1		05/16/22 01:21	2199-69-1	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
	Pace Analytical Services - Ormond Beach								
pH at 25 Degrees C	**8.8**	Std. Units	0.10	0.10	1		05/17/22 13:28		H3,H6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

Sample: PW-2 **Lab ID: 10608058003** Collected: 05/12/22 10:45 Received: 05/12/22 11:31 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9223B QT Fecal Coliform DU	Analytical Method: Colilert-18 (Fecal Coliforms) Preparation Method: Colilert-18 (Fecal Coliforms)								
	Pace Analytical Services - Duluth, MN								
Fecal Coliform Bacteria	**<1.0**	MPN/100 mL	1.0	1.0	1	05/12/22 15:42	05/13/22 11:02		
9223B QT Total Coli Ecoli DU	Analytical Method: SM 9223B (Colilert-18 QT) 2004 Preparation Method: SM 9223B (Colilert-18 QT) 2004								
	Pace Analytical Services - Duluth, MN								
E.coli	**<1.0**	MPN/100 mL	1.0	1.0	1	05/12/22 16:00	05/13/22 11:04		
Total Coliform Bacteria	**<1.0**	MPN/100 mL	1.0	1.0	1	05/12/22 16:00	05/13/22 11:04		
300.0 IC Anions WW 48 Hrs DU	Analytical Method: EPA 300.0								
	Pace Analytical Services - Duluth, MN								
Chloride	**107**	mg/L	1.0	0.45	1		05/13/22 04:51	16887-00-6	N2
Nitrate as N	**<0.0038**	mg/L	0.10	0.0038	1		05/13/22 04:51	14797-55-8	
524.2 MSV	Analytical Method: EPA 524.2								
	Pace Analytical Services - Ormond Beach								
Benzene	**<0.40**	ug/L	0.50	0.40	1		05/16/22 01:46	71-43-2	
Ethylbenzene	**<0.23**	ug/L	0.50	0.23	1		05/16/22 01:46	100-41-4	
Toluene	**<0.28**	ug/L	0.50	0.28	1		05/16/22 01:46	108-88-3	
Xylene (Total)	**<0.11**	ug/L	1.0	0.11	1		05/16/22 01:46	1330-20-7	
m&p-Xylene	**<0.39**	ug/L	1.0	0.39	1		05/16/22 01:46	179601-23-1	
o-Xylene	**<0.19**	ug/L	0.50	0.19	1		05/16/22 01:46	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		05/16/22 01:46	460-00-4	p2
Toluene-d8 (S)	103	%	70-130		1		05/16/22 01:46	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	102	%	70-130		1		05/16/22 01:46	2199-69-1	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
	Pace Analytical Services - Ormond Beach								
pH at 25 Degrees C	**9.1**	Std. Units	0.10	0.10	1		05/17/22 13:29		H3,H6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

Sample: Trip Blank **Lab ID: 10608058004** Collected: 05/12/22 00:00 Received: 05/12/22 11:31 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
524.2 MSV	Analytical Method: EPA 524.2 Pace Analytical Services - Ormond Beach								
Benzene	**<0.40**	ug/L	0.50	0.40	1		05/16/22 02:10	71-43-2	
Ethylbenzene	**<0.23**	ug/L	0.50	0.23	1		05/16/22 02:10	100-41-4	
Toluene	**<0.28**	ug/L	0.50	0.28	1		05/16/22 02:10	108-88-3	
Xylene (Total)	**<0.11**	ug/L	1.0	0.11	1		05/16/22 02:10	1330-20-7	
m&p-Xylene	**<0.39**	ug/L	1.0	0.39	1		05/16/22 02:10	179601-23-1	
o-Xylene	**<0.19**	ug/L	0.50	0.19	1		05/16/22 02:10	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		05/16/22 02:10	460-00-4	p2
Toluene-d8 (S)	101	%	70-130		1		05/16/22 02:10	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	103	%	70-130		1		05/16/22 02:10	2199-69-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

QC Batch:	814990	Analysis Method:	Colilert-18 (Fecal Coliforms)
QC Batch Method:	Colilert-18 (Fecal Coliforms)	Analysis Description:	9223B QT Fecal Coliform DU
		Laboratory:	Pace Analytical Services - Duluth, MN

Associated Lab Samples: 10608058001, 10608058002, 10608058003

METHOD BLANK: 4320083 Matrix: Water

Associated Lab Samples: 10608058001, 10608058002, 10608058003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliform Bacteria	MPN/100 mL	<1.0	1.0	05/13/22 11:02	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

QC Batch:	815003	Analysis Method:	SM 9223B (Colilert-18 QT) 2004
QC Batch Method:	SM 9223B (Colilert-18 QT) 2004	Analysis Description:	9223B QT Total Coli Ecoli DU
		Laboratory:	Pace Analytical Services - Duluth, MN

Associated Lab Samples: 10608058001, 10608058002, 10608058003

METHOD BLANK: 4320156 Matrix: Water

Associated Lab Samples: 10608058001, 10608058002, 10608058003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
E.coli	MPN/100 mL	<1.0	1.0	05/13/22 11:04	
Total Coliform Bacteria	MPN/100 mL	<1.0	1.0	05/13/22 11:04	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

QC Batch: 815015
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions WW 48 Hrs DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10608058001, 10608058002, 10608058003

METHOD BLANK: 4320340 Matrix: Water
Associated Lab Samples: 10608058001, 10608058002, 10608058003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.45	1.0	05/13/22 00:08	N2
Nitrate as N	mg/L	<0.0038	0.10	05/13/22 00:08	

LABORATORY CONTROL SAMPLE: 4320341

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	100	101	101	90-110	N2
Nitrate as N	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4320342 4320343

Parameter	Units	10608058001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	59.5	100	100	160	162	100	102	90-110	1	20	N2
Nitrate as N	mg/L	<0.0038	5	5	5.1	5.2	101	103	90-110	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

QC Batch: 824251
QC Batch Method: EPA 524.2
Analysis Method: EPA 524.2
Analysis Description: 524.2 MSV
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 10608058001, 10608058002, 10608058003, 10608058004

METHOD BLANK: 4528964 Matrix: Water
Associated Lab Samples: 10608058001, 10608058002, 10608058003, 10608058004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	<0.40	0.50	05/15/22 22:33	
Ethylbenzene	ug/L	<0.23	0.50	05/15/22 22:33	
m&p-Xylene	ug/L	<0.39	1.0	05/15/22 22:33	
o-Xylene	ug/L	<0.19	0.50	05/15/22 22:33	
Toluene	ug/L	<0.28	0.50	05/15/22 22:33	
Xylene (Total)	ug/L	<0.11	1.0	05/15/22 22:33	
1,2-Dichlorobenzene-d4 (S)	%	101	70-130	05/15/22 22:33	
4-Bromofluorobenzene (S)	%	98	70-130	05/15/22 22:33	
Toluene-d8 (S)	%	99	70-130	05/15/22 22:33	

LABORATORY CONTROL SAMPLE & LCSD: 4528965 4528966

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	10	11.0	11.1	110	111	70-130	1	20	
Ethylbenzene	ug/L	10	10.2	10.3	102	103	70-130	1	20	
m&p-Xylene	ug/L	20	20.9	21.2	104	106	70-130	1	20	
o-Xylene	ug/L	10	9.4	9.5	94	95	70-130	0	20	
Toluene	ug/L	10	10.5	10.5	105	105	70-130	0	20	
Xylene (Total)	ug/L	30	30.3	30.7	101	102	70-130	1	20	
1,2-Dichlorobenzene-d4 (S)	%				99	100	70-130			
4-Bromofluorobenzene (S)	%				98	100	70-130			
Toluene-d8 (S)	%				103	102	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALIFIERS

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
p2	Post-analysis pH measurement indicates pH > 2.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 49161528.01 200 205 2022 GMP S
Pace Project No.: 10608058

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10608058001	**PW-3**	Colilert-18 (Fecal Coliforms)	814990	Colilert-18 (Fecal Coliforms)	815001
10608058002	**PW-1**	Colilert-18 (Fecal Coliforms)	814990	Colilert-18 (Fecal Coliforms)	815001
10608058003	**PW-2**	Colilert-18 (Fecal Coliforms)	814990	Colilert-18 (Fecal Coliforms)	815001
10608058001	**PW-3**	SM 9223B (Colilert-18 QT) 2004	815003	SM 9223B (Colilert-18 QT) 2004	815006
10608058002	**PW-1**	SM 9223B (Colilert-18 QT) 2004	815003	SM 9223B (Colilert-18 QT) 2004	815006
10608058003	**PW-2**	SM 9223B (Colilert-18 QT) 2004	815003	SM 9223B (Colilert-18 QT) 2004	815006
10608058001	**PW-3**	EPA 300.0	815015		
10608058002	**PW-1**	EPA 300.0	815015		
10608058003	**PW-2**	EPA 300.0	815015		
10608058001	**PW-3**	EPA 524.2	824251		
10608058002	**PW-1**	EPA 524.2	824251		
10608058003	**PW-2**	EPA 524.2	824251		
10608058004	**Trip Blank**	EPA 524.2	824251		
10608058001	**PW-3**	SM 4500-H+B	824650		
10608058002	**PW-1**	SM 4500-H+B	824650		
10608058003	**PW-2**	SM 4500-H+B	824650		

Barr Engineering Co. Chain of Custody

COC Number: № 591154

COC 1 of 1

WO#: 10608058

PM: MKH Due Date: 05/26/22

CLIENT: BARR

Sample Origination State: ☐ CO ☐ MI ☐ MN ☐ MO ☐ ND ☐ NV ☐ TX ☐ UT ☒ WI ☐ WY ☐ Other: ________

REPORT TO		INVOICE TO	
Company:	Barr Engineering Co.	Company:	Barr
Address:	325 S. Lake Ave ~~Duluth~~	Address:	↓
Address:	Duluth, MN 55802	Address:	
Name:	Lynette Carney	Name:	
email:	lcarney@barr.com	email:	
Copy to:	BarrDM@barr.com	P.O.	—
Project Name:	2022 GMP SPT PW	Barr Project No:	49161528.01 200 205

Analysis Requested — Water: BTEX (524.2); Chloride (300.0); pH (SM 4500 H+); Iron (200.7); Nitrate (300.0); T Coli/E.Coli - see side comment ①; T Coli/E.Coli - see side comment ②; ~~Soil~~; % Solids

Preservative Code: G A A C A G G
Field Filtered Y/N: N N N N N N N

	Location	Start	Stop	Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix Code	Perform MS/MSD Y / Ⓝ	Total Number Of Containers	BTEX (524.2)	Chloride (300.0)	pH (SM 4500 H+)	Iron (200.7)	Nitrate (300.0)	T Coli/E.Coli ①	T Coli/E.Coli ②	Comments
1.	PW-3	—	—	—	05/12/2022	0855	DW	N	8	X	X	X	X	X	X	X	
2.	PW-1	—	—		05/12/2022	1000	DW	N	8	X	X	X	X	X	X	X	
3.	PW-2	—	—		05/12/2022	1045	DW	N	11	X	X	X	X	X	X	X	PW-2 has 3 VOA vials with preservative & 3 VOA vials without preservative. Air Bubbles in samples - KMJ3
4.	Trip Blank	—	—		05/12/2022	—	WQ	N	2	X							
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

Matrix Code: S = Soil/Solid; SD = Sediment; SQ = MeOH blank; OTH = Other (Oil, etc.)

Preservative Code: H = $Na_2S_2O_3$; I = Ascorbic Acid; J = Zn Acetate; K = Other

Additional information for Analysis requested:
① total and fecal coliforms as method Colilert w/E.Coli by method SM 9223B (Colilert-18 QT) 2004
AND
② total and fecal coliform as method Colilert w/E.Coli by method SM 9223B (Colilert-18) - P/A

BARR USE ONLY	
Sampled by:	KMJ3
Barr Proj. Manager:	LMC
Barr DQ Manager:	JET
Lab Name:	Pace
Lab Location:	

Relinquished by:	On Ice?	Date	Time	Received by:	Date	Time
[signature]	Ⓨ N	5/12/22	1131	S Velacich / Pace	5/12/22	11:31
	Y N					

Samples Shipped VIA: ☐ Ground Courier ☐ Air Carrier ☐ Sampler ☐ Other: ________

Air Bill Number:

Lab WO: Temperature on Receipt (°C): 4.9 Custody Seal Intact? ☐ Y ☐ N ☐ None

Requested Due Date: ☒ Standard Turn Around Time ☐ Rush ________ (mm/dd/yyyy)

Distribution - **White-Original:** Accompanies Shipment to Laboratory; **Yellow Copy:** Include in Field Documents; **Scan and email:** a copy to BarrDM@barr.com for tracking and filing procedures

H:\RLG\STDFORMS\Chain of Custody Form 2015 RLG Rev. 01/30/2020

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)
	Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: Barr Engineering Co

Project #:

WO# : 10608058

10608058

Courier: ☐Fed Ex ☐UPS ☐USPS ☑Client ☐Pace ☐SpeeDee ☐Commercial

See Exceptions ☐ENV-FRM-MIN4-0142

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☐Yes ☑No Seals Intact? ☐Yes ☐No Biological Tissue Frozen? ☐Yes ☐No ☑N/A

Packing Material: ☐Bubble Wrap ☑Bubble Bags ☐None ☐Other:_____ Temp Blank? ☑Yes ☐No

Thermometer: ☐T1(0461) ☐T2(1336) ☐T3(0459) ☐T4(0254) ☐T5(0489) ☐T6(0235) ☐T7 (0042) ☑01339252/1710 ☐122639816 ☐140792808

Type of Ice: ☑Wet ☐Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☑No Were All Container Temps Taken? ☐Yes ☑No ☐N/A

Temp should be above freezing to 6°C

Cooler Temp Read w/temp blank: 4.8 °C

Correction Factor: +0.1

Cooler Temp Corrected w/temp blank: 4.9 °C

Average Corrected Temp (no temp blank only): _____ °C ☐See Exceptions ENV-FRM-MIN4-0142 ☐1 Container

USDA Regulated Soil: (☑N/A, water sample/Other:_____)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☑No

Date/Initials of Person Examining Contents: 5/12/22 SY

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☑No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☑Duluth ☐Minneapolis ☐Virginia

Chain of Custody Present and Filled Out?	☑Yes	☐No		1.
Chain of Custody Relinquished?	☑Yes	☐No		2.
Sampler Name and/or Signature on COC?	☑Yes	☐No	☐N/A	3.
Samples Arrived within Hold Time?	☑Yes	☐No		4. If Fecal: ☑<8 hrs ☐>8hr, <24 hrs, ☐>24 hrs
Short Hold Time Analysis (<72 hr)?	☑Yes	☐No		5. ☑Fecal Coliform ☐HPC ☑Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other
Rush Turn Around Time Requested?	☐Yes	☑No		6.
Sufficient Volume?	☑Yes	☐No		7.
Correct Containers Used?	☑Yes	☐No		8.
-Pace Containers Used?	☑Yes	☐No		
Containers Intact?	☑Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☑N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☑Water ☐Soil ☐Oil ☐Other-	☑Yes	☐No		11. If no, write ID/ Date/Time on Container Below: See Exception ☐ ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☑N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐Yes	☐No	☑N/A	☐NaOH ☐HNO_3 ☐H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes	☐No	☑N/A	Positive for Res. Chlorine? ☐Yes ☐No pH Paper Lot# See Exception ☐ ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐Yes	☐No	☑N/A	
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☑N/A	13. See Exception ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☑N/A	
Trip Blank Present?	☐Yes	☐No	☑N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☑N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ Field Data Required? ☐Yes ☐No

Comments/Resolution: _____

Project Manager Review: _____ Date: 5/12/22

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e.,, out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: _____

Qualtrax ID: 52742

WO#: 35717836

35717836

ustody

Samples Pre-Logged into eCOC.

Pace Analytical
www.pacelabs.com

State Of Origin: WI
Cert. Needed: [X] Yes [ ] No
Owner Received Date: 5/12/2022 **Results Requested By:** 5/26/2022

49161528.01 200 205 2022 GMP S

Report To	Subcontract To
Martha Hansen Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-6451	Pace Analytical Ormond Beach 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers VG9H	BP3U					524.2 BTEX (Pace Ormond Beach)	524.2 BTEX - TB (Pace Ormond Beach)	SM4500 H+B pH (Pace Ormond Beach)										LAB USE ONLY
1	PW-3	PS	5/12/2022 08:55	10608058001	Water	3	1					X		X										
2	PW-1	PS	5/12/2022 10:00	10608058002	Water	3	1					X		X										
3	PW-2	PS	5/12/2022 10:45	10608058003	Water	6	1					X		X										
4	Trip Blank	PS	5/12/2022 00:00	10608058004	Water	2							X											
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	5/13/22 1455	CJ PACE	5/14/22 1115
2				
3				

Comments

3 VOA Vials with HCL and 3 VOA vials witout HCL due to bubble formation - watch holding time

Drinking Water Certification

Cooler Temperature on Receipt 4.9 °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace

Sample Condition Upon Receipt Form (SCUR)

WO#: 35717836
PM: RNB Due Date: 05/23/22
CLIENT: PACMIN

Project
Project Manage
Client

Date and Initials of person:
Examining contents: RT
Label:
Deliver:
pH:

Thermometer Used: 394 Date: 5/14/22 Time: 11:40 Initials: CG

State of Origin: ☐ For WV projects, all containers verified to ≤6 °C

Cooler #1 Temp.°C 4.6 (Visual) +0.1 (Correction Factor) 4.9 (Actual) ☐ Samples on ice, cooling process has begun
Cooler #2 Temp.°C (Visual) (Correction Factor) (Actual) ☐ Samples on ice, cooling process has begun
Cooler #3 Temp.°C (Visual) (Correction Factor) (Actual) ☐ Samples on ice, cooling process has begun
Cooler #4 Temp.°C (Visual) (Correction Factor) (Actual) ☐ Samples on ice, cooling process has begun
Cooler #5 Temp.°C (Visual) (Correction Factor) (Actual) ☐ Samples on ice, cooling process has begun
Cooler #6 Temp.°C (Visual) (Correction Factor) (Actual) ☐ Samples on ice, cooling process has begun
Recheck for OOT °C (Visual) (Correction Factor) (Actual) Time: Initials:

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Shipping Method: ☐ First Overnight ☑ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ International Priority
☐ Other

Billing: ☐ Recipient ☑ Sender ☐ Third Party ☐ Credit Card ☐ Unknown

Tracking # 6779 8899 9170 XX

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals intact:** ☐ Yes ☐ No **Ice:** (Wet) Blue Melted None

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ one ☐ Other

Samples shorted to lab (If Yes, complete) Shorted Date: Shorted Time: Qty:

		Comments:
Chain of Custody Present	☑Yes ☐ No ☐N/A	
Chain of Custody Filled Out	☑Yes ☐ No ☐N/A	
Relinquished Signature & Sampler Name COC	☑Yes ☐ No ☐N/A	
Samples Arrived within Hold Time	☑Yes ☐ No ☐N/A	
Rush TAT requested on COC	☐Yes ☑ No ☐N/A	
Sufficient Volume	☑Yes ☐ No ☐N/A	
Correct Containers Used	☑Yes ☐ No ☐N/A	
Containers Intact	☑Yes ☐ No ☐N/A	
Sample Labels match COC (sample IDs & date/time of collection)	☑Yes ☐ No ☐N/A	
All containers needing acid/base preservation have been checked.	☐Yes ☐ No ☑N/A	Preservation Information:
All Containers needing preservation are found to be in compliance with EPA recommendation:	☐Yes ☐ No ☑N/A	Preservative: Lot #/Trace #: Date: Time: Initials:
Exceptions: Vials, Microbiology, O&G, PFAS		
Headspace in VOA Vials? (>6mm):	☐Yes ☑ No ☐N/A	
Trip Blank Present:	☐Yes ☑ No ☐N/A	

Comments/ Resolution (use back for additional comments):

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Eaton South Bend
110 S Hill Street
South Bend, IN 46617
Tel: (574)233-4777

Laboratory Job ID: 810-24878-1
Client Project/Site: 10608058

For:
Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, Minnesota 55414

Attn: Martha Hansen

Jessie Brasch

Authorized for release by:
5/23/2022 11:28:38 PM

Jessie Brasch, Senior Project Manager
(574)233-4777
Jessie.Brasch@et.eurofinsus.com

Table of Contents

Definitions/Glossary

Client: Pace Analytical Services, LLC
Project/Site: 10608058

Job ID: 810-24878-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Analyte was present between the method detection limit and reporting limit and should be considered an estimated value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Pace Analytical Services, LLC
Project/Site: 10608058

Job ID: 810-24878-1

Job ID: 810-24878-1

Laboratory: Eurofins Eaton South Bend

Narrative

Job Narrative
810-24878-1

Receipt

The samples were received on 5/17/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Pace Analytical Services, LLC
Project/Site: 10608058

Job ID: 810-24878-1

Client Sample ID: 10608058001/PW-3 — Lab Sample ID: 810-24878-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Iron	0.96		0.010		mg/L	1		200.7 Rev 4.4	Total/NA

Client Sample ID: 10608058002/PW-1 — Lab Sample ID: 810-24878-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Iron	0.40		0.010		mg/L	1		200.7 Rev 4.4	Total/NA

Client Sample ID: 10608058003/PW-2 — Lab Sample ID: 810-24878-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Iron	1.5		0.010		mg/L	1		200.7 Rev 4.4	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Pace Analytical Services, LLC
Project/Site: 10608058

Job ID: 810-24878-1

Client Sample ID: 10608058001/PW-3

Lab Sample ID: 810-24878-1

Date Collected: 05/12/22 08:55
Matrix: Water
Date Received: 05/17/22 10:00

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.96		0.010		mg/L			05/18/22 17:31	1

Client Sample ID: 10608058002/PW-1

Lab Sample ID: 810-24878-2

Date Collected: 05/12/22 10:00
Matrix: Water
Date Received: 05/17/22 10:00

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.40		0.010		mg/L			05/18/22 17:33	1

Client Sample ID: 10608058003/PW-2

Lab Sample ID: 810-24878-3

Date Collected: 05/12/22 10:45
Matrix: Water
Date Received: 05/17/22 10:00

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	1.5		0.010		mg/L		05/18/22 13:20	05/19/22 16:57	1

Client: Pace Analytical Services, LLC
Project/Site: 10608058

Job ID: 810-24878-1

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 810-19487/12
Matrix: Water
Analysis Batch: 19487

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.010		0.010		mg/L			05/18/22 15:56	1

Lab Sample ID: MB 810-19487/44
Matrix: Water
Analysis Batch: 19487

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.010		0.010		mg/L			05/18/22 17:05	1

Lab Sample ID: LCS 810-19487/45
Matrix: Water
Analysis Batch: 19487

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Iron			5.00	5.02		mg/L		100	85 - 115		

Lab Sample ID: LLCS 810-19487/11
Matrix: Water
Analysis Batch: 19487

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

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Iron			0.0100	0.0106		mg/L		106	50 - 150		

Lab Sample ID: MB 810-19631/12
Matrix: Water
Analysis Batch: 19631

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.010		0.010		mg/L			05/19/22 15:59	1

Lab Sample ID: LLCS 810-19631/11
Matrix: Water
Analysis Batch: 19631

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

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Iron			0.0100	0.00880	J	mg/L		88	50 - 150		

Lab Sample ID: MB 810-19460/1-A
Matrix: Water
Analysis Batch: 19631

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 19460

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.010		0.010		mg/L		05/18/22 13:20	05/19/22 16:38	1

Lab Sample ID: LCS 810-19460/4-A
Matrix: Water
Analysis Batch: 19631

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 19460

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Iron			5.00	4.83		mg/L		97	85 - 115		

QC Association Summary

Client: Pace Analytical Services, LLC
Project/Site: 10608058

Job ID: 810-24878-1

Metals

Prep Batch: 19460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-24878-3	10608058003/PW-2	Total Recoverable	Water	200.7	
MB 810-19460/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 810-19460/4-A	Lab Control Sample	Total Recoverable	Water	200.7	

Analysis Batch: 19487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-24878-1	10608058001/PW-3	Total/NA	Water	200.7 Rev 4.4	
810-24878-2	10608058002/PW-1	Total/NA	Water	200.7 Rev 4.4	
MB 810-19487/12	Method Blank	Total/NA	Water	200.7 Rev 4.4	
MB 810-19487/44	Method Blank	Total/NA	Water	200.7 Rev 4.4	
LCS 810-19487/45	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
LLCS 810-19487/11	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	

Analysis Batch: 19631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-24878-3	10608058003/PW-2	Total Recoverable	Water	200.7 Rev 4.4	19460
MB 810-19460/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	19460
MB 810-19631/12	Method Blank	Total/NA	Water	200.7 Rev 4.4	
LCS 810-19460/4-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	19460
LLCS 810-19631/11	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	

Lab Chronicle

Client: Pace Analytical Services, LLC
Project/Site: 10608058

Job ID: 810-24878-1

Client Sample ID: 10608058001/PW-3

Lab Sample ID: 810-24878-1

Date Collected: 05/12/22 08:55

Matrix: Water

Date Received: 05/17/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	200.7 Rev 4.4		1	19487	05/18/22 17:31	AC	EA SB

Client Sample ID: 10608058002/PW-1

Lab Sample ID: 810-24878-2

Date Collected: 05/12/22 10:00

Matrix: Water

Date Received: 05/17/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	200.7 Rev 4.4		1	19487	05/18/22 17:33	AC	EA SB

Client Sample ID: 10608058003/PW-2

Lab Sample ID: 810-24878-3

Date Collected: 05/12/22 10:45

Matrix: Water

Date Received: 05/17/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.7			19460	05/18/22 13:20	NB	EA SB
Total Recoverable	Analysis	200.7 Rev 4.4		1	19631	05/19/22 16:57	AC	EA SB

Laboratory References:

EA SB = Eurofins Eaton South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Accreditation/Certification Summary

Client: Pace Analytical Services, LLC
Project/Site: 10608058

Job ID: 810-24878-1

Laboratory: Eurofins Eaton South Bend

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Minnesota	NELAP	1989807	12-31-22

Method Summary

Client: Pace Analytical Services, LLC
Project/Site: 10608058

Job ID: 810-24878-1

Method	Method Description	Protocol	Laboratory
200.7 Rev 4.4	Metals (ICP)	EPA	EA SB
200.7	Preparation, Total Recoverable Metals	EPA	EA SB

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EA SB = Eurofins Eaton South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: 10608058

Job ID: 810-24878-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
810-24878-1	10608058001/PW-3	Water	05/12/22 08:55	05/17/22 10:00
810-24878-2	10608058002/PW-1	Water	05/12/22 10:00	05/17/22 10:00
810-24878-3	10608058003/PW-2	Water	05/12/22 10:45	05/17/22 10:00

810-24878 Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10608058 **Workorder Name:** 49161528.01 200 205 2022 GMP S **Results Requested By:** 5/26/2022

Report / Invoice To	Subcontract To
Martha Hansen Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-6451 Email: martha.hansen@pacelabs.com	Eurofins 110 South Hll St South Bend, IN 46617 P.O. 10608058

State of Sample Origin: WI LOD/LOQ

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: BP3N	Requested Analysis: 200.7 Iron	pH Acceptable	LAB USE ONLY
1	PW-3	5/12/2022 08:55	10608058001	Water	1	X	✓	
2	PW-1	5/12/2022 10:00	10608058002	Water	1	X	✓	
3	PW-2	5/12/2022 10:45	10608058003	Water	1	X	✓	
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	5/11/22 1300	[signature]	5/11/22 1000
2				
3				

Comments

Drinking water certification in WI required
Include Barr Equis EDD

Client Provided Sample Container 250mL

Cooler Temperature on Receipt 1.4 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 810-24878-1

Login Number: 24878

List Source: Eurofins Eaton South Bend

List Number: 1

Creator: Spurgeon, Sheri

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	False	Client provided containers

Attachment B

Private Well PW-2 Photos

Private Well PW-2 photos taken on May 12, 2022

Enbridge Superior Terminal, Superior, WI

Photo 1: Private Well PW-2, photo facing northwest.

Photo 2: Gap between PW-2 well casing and cover.