

March 4, 2021

Mr. John Sager  
Wisconsin Department of Natural Resources  
1701 N 4<sup>th</sup> Street  
Superior, WI 54880

**Re: Facility-Wide Groundwater Monitoring Plan Update  
Enbridge Energy Superior Terminal, Superior, WI  
WDNR BRRTS Activity #: 16-16-560657**

Dear Mr. Sager:

On behalf of Enbridge Energy, Limited Partnership (Enbridge), Barr Engineering, Company, Inc. (Barr) has prepared this letter to request a modification to the existing groundwater monitoring plan for the above referenced Enbridge Superior Terminal Facility-Wide site (Site). Specifically, this request provides a recommendation for changes to the groundwater monitoring program sampling frequency and is supported by a summary of the groundwater monitoring activities recently provided to WDNR.

## Background

Following Wisconsin Department of Natural Resources (WDNR) approval of the Facility-wide *Site Investigation and Response Action Plan (SI/RAP)* in September 2014, Enbridge began monitoring groundwater at the Site on a semi-annual basis. The most recent *Groundwater Monitoring Program (GMP) Sampling and Analysis Plan (SAP) (Version 2.0)* was submitted to the WDNR in September 2017 as Appendix G of the *Addendum to: Site Investigation and Response Action Plan (Addendum)*. The *Addendum*, including *Version 2.0* of the *GMP SAP* was approved by the WDNR in February 2018 and provided a list of the network wells, described sampling frequency, sampling parameters, sampling methods and procedures, and provided a schedule for data assessment and reporting.

The *SI/RAP and Addendum* were the basis for establishing a Negotiated Agreement (NA) between Enbridge and the WDNR and for developing a facility-wide hydrogeologic performance standard at the Site. The final NA was signed on October 2, 2018. As stated in Article III, Item B, Part 6 of the NA, Enbridge has agreed to "*Monitor the effectiveness of the existing hydrogeology as a response action to ensure that the hydrogeologic performance standard remains protective of human health and the environment and to maintain compliance with Wis. Admin. Code chs. NR 700 – NR 754.*"

In order to monitor the hydrogeologic performance standard and demonstrate protection of human health and the environment, groundwater from the existing monitoring well network consisting of 28 wells is currently sampled twice per year (spring and fall). This network has been sampled for the past five years (2016-2020) at the prescribed frequency.

## Sampling Results Summary

As indicated above, groundwater from the monitoring well network has been sampled semi-annually for the past five years (except for the spring of 2020 when a laboratory handling error caused samples to be received out of temperature). Since semi-annual sampling began in 2016, no analyzed compounds have

been detected at concentrations above the limits of detection in groundwater from the network wells (Barr, 2020). The most recent *2020 Groundwater Monitoring Program Report*, which summarizes the past 5 years of semi-annual data, along with cumulative historical data as far back as 20 year for some wells, has been previously submitted to the WDNR for reference.

## Recommendations

As outlined in *Version 2.0 of the GMP SAP*, if conditions warrant and sampling results suggested little to no seasonal variation, Enbridge may propose annual sampling in the future. Therefore, with a well-established baseline of hydrogeologic and water quality data and the fact that no detections have been observed, we are recommending that the sampling frequency for the Site be changed from semi-annual (spring and fall) to annual (spring only). We feel this change in the monitoring frequency would not result in additional risk to human health or the environment for the following reasons:

- There are no active releases being investigated at the Site.
- There are no recent significant changes to Site operations or activities.
- Enbridge has five years (and in some cases over 20 years) of groundwater data from Site wells.
- Petroleum Volatile Organic Compounds (PVOC) + Naphthalene have not been detected in Site wells above detection limits in the past five years with the exception of a 3.6 µg/L toluene detection at MW-22B in May 2016.
- As detailed in the *SI/RAP and Addendum*, the thickness of the clay aquifer (greater than 100 feet) significantly limits the rate of groundwater flow (laterally and vertically) with a calculated lateral linear velocity of 0.0003 feet/year (ft/yr) and vertical linear velocity of 0.06 ft/yr. At this rate, an annual monitoring frequency would be suitable to detect off-site migration of unknown and previously detected releases at the facility.
- An annual groundwater monitoring frequency aligns with the level of risk associated with the smaller releases that depend on this performance standard as a pathway to closure.
- In the event of a larger release a separate groundwater investigation, one which would not rely on the facility-wide groundwater monitoring network, would likely be requested by the WDNR and completed by Enbridge.

Since the past five years of semi-annual monitoring have not resulted in any detections of analyzed compounds, it has been reasonably demonstrated that the hydrogeologic performance standard is working. In addition, for the same reasons outlined above, a reduced sampling schedule would still meet the intent and goals of the NA which are to monitor the effectiveness of the existing hydrogeology, ensure the hydrogeologic performance standard remains protective of human health and the environment, and to maintain compliance with NR 700 – NR 754. Further, other than a frequency modification, it is Enbridge's intent to continue to perform groundwater sampling in accordance with the *GMP SAP (Version 2.0)*.

If in the event that detections in groundwater are identified during future sampling or if a changed condition at the facility occurs resulting in the presence of subsurface impacts which increase the risk to human health or the environment, it would be Enbridge's intent to reevaluate the sampling program and discuss with WDNR future modifications, if appropriate.

In accordance with NR 749, the WDNR fee for review and approval of a long-term monitoring plan is included with this submittal (\$425). If you have any questions, please contact me at 218-529-7141 or lcarney@barr.com.

Sincerely,

Barr Engineering Company Inc.



Lynette Carney

cc: Karl Beaster, Enbridge Energy  
Nick Larabel, Enbridge Energy