Responsiveness Summary

Enbridge Energy-Line 5-Straits of Mackinac
National Pollutant Discharge Elimination System (NPDES) Permit No. MI0060278

Enbridge Energy submitted an NPDES permit application to the Water Resources Division (WRD) of the Department of Environment, Great Lakes, and Energy (EGLE) for a surface water discharge permit on April 17, 2020. The proposed construction of the tunnel and installation of the pipeline includes a discharge of treated wastewater. The application documents have been available to the public via MiWaters, the WRD's permitting database since April 17, 2020. All updated application documents have been made available within 24 -hours of receipt at https://mienviro.michigan.gov/nsite/default/map/results/detail/10080544/2736.

The proposed discharge of treated wastewater from the construction of the tunnel will originate from two construction sites, one on the north-shore and the other on the south-shore of the Straits of Mackinac (the Straits) with a majority of the construction activity taking place at the south-shore site. The project will withdraw up to 1.9 million gallons of water per day from the Straits. The requested discharge from Outfall 001 on the south-shore is a maximum of 5 million gallons per day with an expected average of 1.4 million gallons per day of treated construction wastewater. The requested discharge from Outfall 003 on the north-shore is a maximum of 1 million gallons per day of treated construction wastewater. The requested discharge from Outfall 002, also on the north-shore, is for peak storm water flows. After construction of the tunnel, the requested discharges are for treated groundwater seepage with estimated maximum flows of 75,000 gallons per day from the south-shore, Outfall 001; and 1,500 gallons per day from the north-shore, Outfall 003. Also, after construction, the applicant requested a one-time discharge of hydrostatic pressure test water from the south-shore site, Outfall 001, as a maximum of 1 million gallons per day. Peak storm water flows are requested for each of the three outfalls for the duration of construction and after construction. All discharges are directed back into the Straits.

A public information session on the NPDES application was held on August 6, 2020, beginning at 6:00 p.m. Public meetings on the draft NPDES permit were held on September 8, 2020, beginning at 6:00 p.m. and on September 15, 2020, beginning at 1:00 p.m. Public hearings were held on the draft NPDES permit on September 29, 2020, beginning at 1:00 p.m. and on October 6, 2020, beginning at 6:00 p.m. An email account was set up for comments on the application and draft permit, and EGLE began receiving emails in May of 2020. A public comment period for the draft NPDES permit occurred from August 28, 2020, through October 19, 2020, via MiWaters.

Thousands of comments and questions were received via the above-mentioned venues and are summarized and addressed below.

Please note the NPDES permitting process does not include a review of the design and specifications of the tunnel or pipeline. The NPDES permit review process is strictly based on the proposed discharge of treated wastewater to the surface waters of the state.

Application updates

A number of commenters expressed concerns that EGLE is allowing additional information to be submitted by the applicant, that the application is incomplete, and a new application should be submitted.

EGLE Response: Enbridge submitted an NPDES permit application initially on April 17, 2020, and submitted multiple amendments through May 28, 2020, at which point EGLE determined that the application was complete. EGLE determined that the information Enbridge provided for the NPDES permit application met state and federal application requirements and was sufficient for EGLE to evaluate the proposed surface water discharge. EGLE used this information to structure an NPDES permit that is protective of water quality standards (WQS) and designated uses. Based upon comments EGLE received and concerns with certain aspects of the treatment system, storage pond capacity, and potential to discharge water treatment additives and drilling process-related materials, EGLE requested that Enbridge provide additional clarification on these items. EGLE through Michigan Department of Transportation also engaged tunnel construction experts to review materials submitted by Enbridge and provide EGLE background information on tunnel construction and its potential impact to water resources through a series of white papers. These six white papers can be found at https://www.michigan.gov/egle/about/featured/line5: After reviewing this information, EGLE confirmed that the proposed NPDES permit contains conditions and effluent limitations appropriate for the expected discharge.

Updates to applications are common for new discharges as information may change during the permitting process. EGLE can ask for additional information at any time during the application review process including before, during, and after the public comment period. Asking for additional information and clarification based on public comments is not uncommon. Some of the following responses are based on additional information requested from the permittee, as noted.

Treatment of wastewater generated from construction process

A number of commenters expressed concerns about the treatment system, the composition of the wastewater, and if the discharge will meet WQS and designated uses.

EGLE Response: The proposed treatment system is described in the application. The proposed treatment system will include:

- Primary Solids Removal Stage - screens and hydro-cyclones will be used to remove the largest and easiest to remove particles.
- Secondary Separation - water treatment additives (such as flocculants and coagulants) will be added to the slurry to cause the smaller particles to clump together, to aid in removal. Centrifuges and/or filter presses will be used to remove these particles.
- Third stage of treatment - the pH of the water will be regulated and sand filtration will be used to polish the treated wastewater to ensure that the discharge complies with permit monitoring requirements. The treated water will then either be reused in the tunneling excavation process or discharged to Lake Michigan. The settled solids will be removed from the treatment system and transported off-site for disposal.

During the review process, monitoring requirements and effluent limitations were developed to ensure the waterbody meets WQS. There is an antidegradation statement

in the permit to explain that there will be a lowering of water quality at the point of discharge. This statement is standard and is included for all new use NPDES permits. While the permit will authorize a discharge of treated wastewater which will lower water quality, the effluent limitations and monitoring requirements specified in the permit will ensure that WQS are still protected at all times.

The NPDES permit specifies effluent limitations and monitoring requirements, protective of WQS and designated uses, but does not include requirements for Enbridge to utilize a specific treatment system. This is consistent with federal NPDES requirements for technology-based effluent limitations. While NPDES permits typically do not include requirements specifying a certain type of treatment system be utilized, or that the design plans of the treatment systems be approved by EGLE, the permit is based upon information submitted in the application. Any change to the proposed treatment system would be considered to be a change to the application and shall be identified in a notification to EGLE as specified in the permit. If necessary, the permit may be modified accordingly. Once the facility is operational, data collected and information provided to determine compliance with permit effluent limitations and conditions will be evaluated. Any violations of limitations and/or conditions will require correction using EGLE's progressive compliance and enforcement process.

To ensure Enbridge complies with permit requirements, EGLE added a permit condition requiring Enbridge to develop and submit for approval an Operations and Maintenance manual that includes the design specifications of the treatment system, the operational and construction procedures to ensure the dewatering and treatment system flow rates are maintained, and an emergency operating plan to initiated if needed. This condition will help ensure that the construction equipment and wastewater treatment plant will operate as designed. EGLE also added a permit condition requiring Enbridge to have the wastewater treatment system approved by a professional engineer. Prior to construction, Enbridge shall submit a document explaining that a professional engineer has reviewed the wastewater treatment system and finds the system appropriate for the proposed work.

Antidegradation demonstration

A number of commenters questioned if the Antidegradation Demonstration submitted by Enbridge meets the requirements of Rule 323.1098.

EGLE Response: The Antidegradation Demonstration (Demonstration) submitted by Enbridge was reviewed by EGLE and found to meet the requirements of rule. EGLE determined that the applicant's Demonstration, based on information required by Subrule (4)(a) of R323.1098, showed that a lowering of water quality, while still being protective of WQS and designated uses, is necessary to support the identified important social and economic development in the area.

Through the Demonstration, Enbridge identified a significant, direct and indirect, short-term increase in local and regional employment and ancillary services, such as lodging, fuel, and food. Enbridge also stated that permitting the surface water discharges will allow the tunnel construction project to proceed which eliminates the need for a pipeline located within waters of the Great Lakes, alleviating a significant environmental concern of the state. Enbridge stated that the Line 5 pipeline serves a vital need for a pipeline transportation service for oil and natural gas liquids in Michigan and the region with an annual average capacity of over 500,000 barrels per day. EGLE requests that

Antidegradation Demonstrations identify alternatives to a surface water discharge and include some explanation as to why the alternatives are not viable. For the evaluation of alternatives, Enbridge included information on water reuse, off-site disposal, injection wells, and municipal sewers that support their request for authorization of a surface water discharge. According to the rule and EGLE guidance, Enbridge is not required to identify or evaluate alternatives to the proposed project itself, nor does it include areas of a permittee's operation outside the scope of the specific project being evaluated.

In evaluating a submitted Demonstration, EGLE evaluates if the submittal meets the requirements of the Rule.

Rule 323.1098 is part of the Part 4 Rules and can be found at the following link: https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/NPDES/part-4-water-quality-standards.pdf. EGLE's procedure used to review an antidegradation demonstration is Procedure No. 14 and is found at the following link: https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/NPDES/antidegradation-antibacksliding-procedure.pdf.

Temperature of the discharge

A number of commenters expressed concerns about the lack of effluent temperature limitations.

EGLE Response: Based on comments received and information provided by commenters, the permit was revised to include a daily maximum acute temperature limit of 85 degrees Fahrenheit to ensure the protection of WQS and designated uses. This limit is based on the protection of *Physella magnalacustris*, which has been identified in the area of the location of proposed Outfall 001. For more information on the species please see the Existing Use Review Enbridge Energy-Line 5-Straits of Mackinac.docx document stored in MiWaters.

A number of commenters expressed concerns about the consideration of a temperature rule, Rule 323.1070, during the permit review process.

EGLE Response: Comments were received during the public comment period concerning whether Rule 323.1070(1) and Rule 323.1070(2) were applied correctly for this permit review. Rule 323.1070(1) states the Great Lakes and connecting waters shall not receive a heat load which would warm the receiving water at the edge of the mixing zone more than three degrees Fahrenheit above the existing natural water temperature. Information provided in the comments indicated that the ambient water temperatures listed in Rule 323.1070(2) are not accurate and the current ambient temperature in the Straits of Mackinac are lower than those listed in the Rule. Based on the additional information provided by commenters, the evaluations under Rule 323.1070(2) were recalculated. During this reevaluation, it was determined that an error existed in the initial temperature review and it was corrected. Estimated temperature values provided by the applicant were compared to the results of the revised calculations completed to determine if the requirements of Rule 1070 would be met. Based on the results of this reevaluation, using ambient data and the corrected equation, EGLE has determined monthly average limits for Thermal Discharge are needed to ensure the discharge complies with Rule 1070 from November through May. The recommended Thermal Discharge limits are now specified in the permit.

A number of commenters expressed concerns about impacts of warmer temperatures being discharged near Whitefish spawning areas.

EGLE Response: Commenters provided information on locations of Whitefish spawning areas in the Straits. The closest Whitefish spawning area shown is approximately two miles from the south-shore discharge area (Outfall 001). Using the following information EGLE determined these offshore spawning locations would not be impacted by the discharge. This information includes: the proposed discharge temperature evaluations under Rule 1070; the addition of an acute temperature limit of 85 degrees Fahrenheit in the permit; the distance of two miles between the discharge and spawning locations, and the complex flow patterns and high flow rates through the Straits which will disperse heat quickly.

Bentonite clay and slurry mixture

A number of commenters expressed concerns about the use, storage, and treatment of bentonite clay. Commentors asked about the possibility of the release of slurry and/or bentonite to waters of the state due to the concern of harming the Straits and the aquatic organisms in the Straits.

EGLE Response: Based on additional follow-up with the permittee, EGLE confirmed that significant amounts of bentonite clay will not be discharged into waters of the state. The permittee will minimize the potential for discharge of bentonite whenever potential exposure exists: during the transportation of bentonite to the site, while bentonite is stored on-site prior to use, and when bentonite is used in the tunnel construction process.

During transportation, exposure of the bentonite clay to precipitation will be greatly reduced because it will be delivered via covered trailer trucks and then stored in a weatherproof steel silo until it is used in the slurry process. The powder will be mixed with water and transported to the face of the tunnel boring machine (TBM) via sealed pipes. When the slurry is pumped back to the surface, any storage of the slurry will be in enclosed tanks, so that at no time will the bentonite powder or slurry be exposed to the outside elements from arrival on-site through the slurry treatment process. Secondary containment will also be installed around the slurry batch plant. Excavated material mixed with bentonite will be separated from the bentonite during treatment, placed in storage pits, and covered in weatherproof enclosures temporarily until they can be hauled away to a landfill. These storage pits are not connected to the storm water ponds and best management practices will be used to ensure materials from these temporary storage ponds will not mix with storm water nor enter the storm water ponds.

Water treatment additives (chemicals)

A number of commenters expressed concerns about the process for approving the discharge of water treatment additives (WTAs) which are proposed for use in the treatment process. Commenters expressed concern that the approval process for WTAs does not require the applicant to submit requests for additives with the application.

EGLE Response: The permit identifies in Part I.A.7., Request for Approval to Use Water Treatment Additives, the requirements for requesting the approval to use and discharge WTAs. WTAs can be submitted at any time during the permitting process or during the effective period of the permit. Permittees commonly change WTAs during the effective period of a permit; therefore, WTA reviews are not tied to permit issuance. WTA reviews are very thorough and may result in the development of water quality criteria for a product, if necessary. To be approved, the expected discharge concentration must comply with WQS and be below the developed criteria. The criteria are developed based on Rule 323.1057 of the Part 4 Rules, which can be found at the following link: https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/NPDES/part-4-water-quality-standards.pdf. In addition, if a WTA cannot be approved as requested using limitations and restrictions included in the issued permit, EGLE can deny the use of the WTA or impose additional monitoring requirements and/or effluent limitations.

Storm water

A number of commenters expressed concerns that there is no requirement for a storm water pollution prevention plan in the permit and that there are no effluent limitations specified for the storm water discharge.

EGLE Response: The Standardized Industrial Classification (SIC) Code for this activity is 1622: Bridge, Tunnel, and Elevated Highway Construction. This SIC code does not trigger the requirements of the industrial storm water pollution prevention plan. Therefore, EGLE does not have any basis to include any storm water-specific requirements in the NPDES permit for the site. When a facility meets the qualification for the industrial storm water program, the NPDES permit requires the use of best management practices and the minimization of storm water from coming into contact with materials at the site. After follow-up questions with Enbridge, they have indicated that the major processes at the site, the slurry plant and wastewater treatment plant, are all covered or otherwise weatherproofed to prevent storm water from coming into contact with the materials and processes at the site. For more information on how it is determined when the storm water pollution prevention plan applies to a site, see the following linked document: https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/Storm-Water-Industrial/determining-if-permit-is-needed.pdf. Much more information on the industrial storm water program is found at the following webpage: Michigan.gov/industrialstormwater.

Storm water basins

A number of commenters note that a discharge of up to 14 million gallons per day from the storm water basins could occur and are asking if there is potential for flooding of the surrounding areas due to extreme weather conditions.

EGLE Response: The storm water basins at the site will be designed to allow collected storm water to infiltrate into the groundwater. During large wet weather events, the ponds will use overflow pipes to allow a surface water discharge into the Straits. Further clarification from Enbridge explains that the storm water ponds on both sites are designed to restrict the 10-year post-development storm to the pre-development 10-year storm release rate. The south-side infiltration basin is sized to handle a 100-year storm event volume which will be released at the pre-development 10-year storm event rate. The storm water basins are only used for storm water from the site; the treated construction wastewater is monitored and discharged separately.

Duration of the permit

A number of commenters requested more information on the duration of the permit because of the following statement in the draft permit, "...until construction is complete or the expiration date of this permit." Commenters also asked what will happen when the permit expires.

EGLE Response: The NPDES permit has five sets of effluent limitations and monitoring requirements based on the different activities requiring a discharge of wastewater to surface waters of the state. There are different permit requirements during the tunnel boring and construction phase as compared to the post-construction phase where the discharge will primarily contain a small volume of groundwater seepage that will be pumped from the tunnel, treated, and discharged. The portions of the permit that pertain only to the construction-related discharge only apply during construction, which is why there are statements indicating that the particular section of the permit applies for that activity or until the permit expires. After construction, those sections apply after construction is complete and until the expiration date of the permit.

NPDES permits can only be issued to be effective for a maximum of five years. The permittee is required to reapply for reissuance of the permit 180 days prior to the expiration date. The application for reissuance is required if the discharge is expected to continue after the expiration date. If a permittee applies prior to the expiration date, the in-effect permit becomes extended if the permit is not reissued prior to the expiration date. The reissuance process requires EGLE to complete a full review of the information in the application, data collected during the permit period, and compliance related reviews. After the reviews are complete a draft permit is prepared for a series of reviews including a public comment period prior to permit reissuance.

Part 201 and 213 site and impacts of water intake structures

A number of commentors raised questions of the existence of Part 201 and Part 213 sites near the areas of the tunnel construction. Concerns pertaining to these sites include if the contaminated groundwater associated with those sites could contaminate groundwater drinking water sources due to the dewatering and tunneling processes.

EGLE Response: Based on conversations with the Redevelopment and Remediation Division of EGLE, there are no active Part 201 or Part 213 sites in the vicinity of either the north-shore site or south-shore site. Also, after speaking with a geology specialist, it was determined that impacts to surrounding groundwater flows from the intake structures and tunnel dewatering process will be insignificant. Geologically speaking, the withdrawal of water from the lake and tunnel will have an insignificant impact on the surrounding groundwater sources and groundwater flows.

Impacts of the post-construction discharge

A number of commenters expressed concerns over the impacts of the long-term discharge of treated groundwater and storm water.

EGLE Response: Following completion of tunnel construction, the NPDES permit authorizes the proposed long-term discharge of groundwater seepage of lake water into the tunnel that will be pumped out and treated prior to discharge. The storm water ponds will collect surface water runoff from the area and hold it for infiltration into the groundwater. Surface water discharges of storm water will only occur during peak storm events if the ponds reach a certain volume, causing a discharge from an overflow pipe; these discharges are not expected to have a significant impact on the Straits.

Citizens in favor of the tunnel and pipeline and against the tunnel and pipeline

Thousands of commenters indicated that they are in favor of the tunnel and pipeline and thousands of commenters indicated they are against the tunnel and pipeline.

EGLE Response: EGLE acknowledges the comments received. The NPDES permit addresses the wastewater discharges to the surface waters of the state and has requirements in place to ensure compliance with WQS. Along with this NPDES permit decision, EGLE is also releasing its permit decision on the potential impacts on natural resources and the Great Lakes under Parts 303, and 325 which address the overall anticipated impact of the project. Many comments raised issues and concerns beyond the scope of EGLE's regulatory authority.

Pipeline Location and Enbridge Energy History

A number of comments were received regarding the history of Enbridge Energy, the location of the pipeline, and Enbridge Energy's compliance record. Many expressed that information provided by Enbridge is untrustworthy.

EGLE Response: EGLE acknowledges the comments received. This permitting action focuses solely on the treatment and discharge of wastewater associated with the construction and post-construction operation of the tunnel at the locations listed in the permit. The permit includes conditions that require prior notification when WQS are violated. The NPDES permitting process does not allow for a company's compliance record to be considered when reviewing an application although an applicant's prior compliance record could be considered if future violations occur.

1953 pipeline easement

A number of comments were received regarding the 1953 easement for the Line 5 pipeline and concerns with potential violations of that easement.

EGLE Response: EGLE acknowledges the comments received. On November 13, 2020, the Governor's office revoked the 1953 easement that authorizes the existing pipeline crossing in the Straits. The proposed tunnel and relocation of the Line 5 pipeline are proposed pursuant to a different easement issued in 2018. The NPDES permit authorizes the discharge of treated wastewater to surface waters of the state. The NPDES permit does not authorize the permittee to use property where other entities have control (see Part II.E.6. of the permit). The NPDES permit states that the issuance of an NPDES permit does not obviate the necessity of the permittee to gain all other required permits, easements, and other similar authorizations for a project which will result in a discharge to surface waters of the state.

Geologic makeup of the Straits and pipeline placement

A number of comments were received regarding the proposed location of the pipeline and construction of the tunnel including the geological makeup of the lakebed and overall safety concerns of placing a tunnel under the Straits of Mackinac.

EGLE Response: EGLE acknowledges the comments received. This permitting action focuses solely on the treatment and discharge of the wastewater associated with the construction of the tunnel at the locations listed in the permit. Along with this NPDES permit decision, EGLE is also releasing its permit decision on the potential impacts on natural resources and the Great Lakes under Parts 303, and 325 which address these issues.