Technical Memorandum

03 March 2023

To	Chris Neville	**Project No.**	010978-MEM-300
Copy to	JART, Kevin Mitchell (CRH), Brian Zeman (MHBC), Ellen Ferris (MHBC), Anthony Goodban (GEC)		
From	Kyle Fritz, Richard Murphy		
Project Name	Dufferin Aggregates Milton Quarry East Extension (MQEE)		
Subject	Potential Dewatering Influence of the MQEE in the Absence of Mitigation		

1. Introduction

GHD has prepared this memorandum on behalf of Dufferin Aggregates in further response to JART comments requesting further clarification of the potential impact on water resources from the development of the Milton Quarry East Extension (MQEE) in the absence of the proposed mitigation measures. The related JART comments are the Groundwater Modelling Comments 23 and 24. A response to these comments was provided in table format on January 25, 2023 and discussed at the JART meeting on February 3, 2023. This memorandum provides further discussion and should also be read in conjunction with the GHD Memorandum entitled Cumulative Dewatering Influence in the MQEE Area (GHD Memo #298, March 3, 2023).

2. Basis for Proposed Mitigation Measures

The proposed MQEE includes mitigation measures to protect and enhance water resources during active bedrock extraction, lake filling, and long-term rehabilitation conditions. These proposed measures are a simple and modest extension of the existing approved mitigation measures that are operating successfully for the Existing Quarry. This comprehensive and proactive mitigation approach is part of the MQEE proposal and the MQEE would not be permitted to operate without this mitigation. As was described in the Terms of Reference (ToR) for the MQEE Studies (refer to ToR for the GWRA, included in Appendix H of the GWRA, pages 2 and 5):

> ***Dufferin has already committed to integrate the subject site into the state-of-the-art water management (WMS) system and AMP that are already in place and have been operating effectively at the Milton Quarry and Milton Quarry Extension since 2007.***

Unlike some other development proposals that may include mitigation measures as optional response actions or contingency measures, the proposed MQEE includes mitigation measures that will be implemented, monitored, and reported to the agencies as requirements. As stated in our January 25, 2023 response to Comments 23 and 24:

> ***Development of the MQEE without extending the mitigation is not proposed and this is not considered to be a remotely realistic scenario. It is acknowledged that proceeding without the***

planned mitigation measures would likely result in undesirable impacts to wetlands in the vicinity and would not achieve the proposed enhancements to some of those wetlands. That is why the mitigation measures are planned to be implemented, not just proposed as potential contingency actions. Therefore, it is not relevant to show potential impacts without mitigation.

These measures are proposed from the outset based on our understanding of the existing and past water resources conditions and the influences from quarry dewatering that have been identified as discussed in GHD Memo 298 regarding the Cumulative Dewatering Influence in the MQEE Area and the GWRA (Sections 6.7 and 6.8).

The studies have identified that historically, prior to the development of the existing water management system, the zone of dewatering influence from the Main Quarry extended to Wetland W36 and Wetland U1 at distances of 275 m (at BH64) and 580 m, respectively, and further at some monitoring locations (e.g., 780 m at OW11-80). Other wetlands to the east of the MQEE include Wetland W41, Wetland W46, and Wetland W56, which are located at distances of 300 m, 500, and 500 m, respectively, from the proposed MQEE limit of extraction. Therefore, these wetlands are within the potential zone of influence in the absence of mitigation measures (such measures as are already required to be in place for the approved Existing Quarry).

The Existing Extension Quarry approvals already require that mitigation measures be used to prevent any negative impacts to Wetland W41, Wetland W46, and Wetland W56. (Therefore, evaluation of scenarios that do not include mitigation to protect these wetlands is not reasonable or necessary since existing approvals already require mitigation.

Without mitigation the proposed MQEE would result in impacts to Wetland U1 and Wetland W36 by shortening the hydroperiod for these wetlands. The proposed MQEE includes operation of the water management system around the perimeter of the MQEE and diffuse discharge mitigation measures to enhance the existing conditions of Wetland U1 and Wetland W36 to provide a more appropriate hydroperiod that reflects historical conditions, which should result in improved wetland function.

3. Commitment to Mitigation

As identified in the ToR, GWRA, AMP, Site Plans, and GHD's January 25, 2023 response to comments, Dufferin is committed to the proactive and protective use of the proposed mitigation measures. Measures that have been in successful operation for the Existing Quarry for 15 years. The associated requirements are to be incorporated in the necessary approvals from NEC (NEPDA), MNRF (ARA Licence), OWRA (PTTW and ECA), and will be incorporated in the amendments to the legal agreements to which CRH, the Region, and Conservation Halton are Parties. These various approvals and agreements, which have been agreed to by all agencies for the Existing Quarry, provide multi-agency oversight and enforcement capacities that ensure Dufferin (or any successor) implements and operates the proposed mitigation. In the future, ownership of the associated lands and water management system will be transferred to Conservation Halton as detailed in the legal agreements. The legal agreements also ensure that Dufferin commits financial assurances such that if/when the relevant lands and responsibilities revert to the others, complete funding is available so that future mitigation costs do not fall to the public.

4. Conclusion

Dufferin's proposed MQEE without mitigation would impact nearby Wetland U1 and Wetland W36. Other water resources such as Wetland W41, Wetland W46, and Wetland W56 may also be impacted if not protected by the groundwater recharge system in place for the existing quarry and proposed to be extended for the MQEE. As a result, Dufferin's has proposed mitigation measures that are a simple and modest extension of the existing approved mitigation measures that are operating successfully for the Existing Quarry. This comprehensive and

proactive mitigation approach is part of the MQEE proposal and the MQEE would not be permitted to operate without this mitigation. As previously stated:

> ***Dufferin has already committed to integrate the subject site into the state-of-the-art water management (WMS) system and AMP that are already in place and have been operating effectively at the Milton Quarry and Milton Quarry Extension since 2007.***
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> ***Development of the MQEE without extending the mitigation is not proposed and this is not considered to be a remotely realistic scenario … Therefore, it is not relevant to show potential impacts without mitigation.***

Regards,

Kyle Fritz, P. Eng.
kyle.fritz@ghd.com

J. Richard Murphy, P.Eng.
richard.murphy@ghd.com