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Proposed Reid Road Reservoir Quarry JART COMMENT SUMMARY TABLE RESPONSE #2

Please accept the following as feedback from the Reid Road Reservoir Quarry Joint Agency Review Team (JART). Fully addressing each comment below will help expedite the potential for resolutions of the consolidated JART comments and individual agency objections. **Additional comments may be provided once a response has been prepared by JDCL to the comments raised below and additional information provided.**

	Initial JART Comments (July 2019)	Page / Section	Applicant Response (December 2019)	JART Response (May 2020)	Applicant Response (October 2020)
Report: Reid Road Quarry Air Quality Assessment – June 2018					
Author: RWDI					
1.	<p>Figures 2a through 2e, indicate that all unpaved roadways were modelled using line sources in AERMOD. As per Section 4.5.3 of the MECP Air Dispersion Modelling Guideline (A-11), the use of line sources to simulate roadways can be inappropriate due to model limitations of this source associated with low release heights and the lack of plume rise. The MECP recommends the use of a series of adjacent or separated volume or area sources. The US EPA provides further guidance on the modelling of haul roads using this methodology.</p>	Figure 2a through 2e	<p>While the figures label these sources as line sources, the AERMOD model does not have a line source option. Line sources are represented by adjacent volume sources, in accordance with MECP Guideline A11. The dimensions of each volume source are defined by the road width and the height of the vehicles (for two-lane haul roads), or the width and height of the vehicle (for single lane haul roads). A table has been attached that provides a summary of all model parameters.</p> <p>The dispersion modelling files are available upon request.</p>	<p>The Best Management Practices Plan completed on behalf of JDCL by RWDI was reviewed as part of the peer review. The general contents were found to follow the Provincially recommended guidance for preparing these plans, as detailed in Section 7.4 of the Procedure for Preparing Emission Summary and Dispersion Modelling Report (Guideline A-10), Version 4.1, March 2018, as issued by the Ministry of Environment, Conservation and Parks. Using this guidance for preparing an appropriate plan for managing dust is the accepted approach for aggregate facilities in Ontario.</p> <p>The site plans to be submitted to the Ministry of Natural Resources and Forestry should reference the Best Management Practices Plan and directly include any activities that are intended to be permanent during operation of the quarry.</p>	<p>Resolved subject to completion of updated site plan.</p> <p>As previously documented: The technical experts agreed that dust from blasting events is not expected to be a problem. There is much less dust generated as compared to a dry rock quarry. While there is a bit of dry rock at the top of the drill holes, there is usually no visible dust generated at a wet quarry and no significant dust emissions.</p>
2.	<p>Figures 2a through 2e, indicate that all loading, crushing, and conveyor transfer points may have been modelled using a series of point sources. No further information is provided in Section 6 of the report detailing the methodology employed to simulate these sources in AERMOD. The use of point sources may be inappropriate as the emissions from these sources are not through the release of a stack. The loading, crushing, and conveyor systems are all best simulated with volume or area sources.</p>	Figure 2a through 2e	<p>The labelling on the figures is incorrect and should indicate "volume sources". These are indeed volume sources, modelled in accordance with guidance from the National Stone Sand and Gravel Association, and MECP Guideline A11. A table has been attached that provides a summary of all model parameters.</p> <p>The dispersion modelling files are available upon request.</p>	<p>Following the October 31st JART meeting, SLR Consulting (Canada) Ltd. (SLR) was to review the air dispersion modeling conducted by JDCL's consultant, RWDI for the air quality assessment. The models were received by SLR, November 1, 2019. The modelling conducted by RWDI follows the methods and general guidance provided by the Province of Ontario for completing air quality assessment for aggregate operations.</p>	Resolved

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3.	<p>Table 1 of the Report indicates that the Guelph monitoring station data was used in the assessment of cumulative impacts from background data. This monitoring station is located in a suburban park well away from industrial sources and major roadways. The Reid Road Reservoir Quarry is located immediately adjacent to the provincial highway 401, where background levels may be more elevated due to major road traffic. Justification for the use of the Guelph monitoring station over other available data sets was not provided.</p>	Table 1	<p>RWDI agrees that this justification should have been provided.</p> <p>The Guelph monitoring station was considered adequate given that the predicted impacts of the proposed quarry are low compared to the relevant AAQCs, leaving room for uncertainties in background levels. In the case of fine particulate matter, background levels in Southern Ontario are not very sensitive to the proximity of major roadways and vary relatively little from one monitoring station to another.</p> <p>The MECP monitoring station at 125 Resources Road in Toronto is located next to one of the busiest sections of the 401 (approximately 150m away from the traffic lanes). The air quality data from this station are in fact comparable to that of the Guelph Station with respect to fine particulate. NO2 levels are higher at Resources Road. This is shown in the revised copy of Table 1: Ambient Air Quality Data, attached to this response (the 5-year averages now reflect 2012-2016, as the 2016 values are now available).</p> <p>A revised version of Table 2: Emission Summary Table - Cumulative Effects Analysis has been attached used the ambient levels from MECP station 35125 Toronto West. Using this version of Table 2, the conclusions of the study remain unchanged.</p>	<p>The site chosen to represent a reasonable background should be independent of the predicted impacts from the quarry operation. Whether the predicted results are low or high, the site chosen for background should be, at the least, representative of the local conditions when local data are not available. As we understand from studies conducted within the Province and within Halton Region, road transportation, with combustion of fossil fuels, is a significant source of particulate matter, and in particular, fine particulate (PM2.5). Please provide a more fulsome clarification of why ambient conditions for fine particulate would not be higher in close proximity to a major transportation route, such as Highway 401.</p> <p>Using the station at 125 Resources Road in Toronto is a reasonable choice for background conditions, considering the proximity to a well travelled portion of Highway 401.</p>	<p>The station at 125 Resources Road was selected because it is in very close proximity to a major transportation route.</p> <p>We agree that the data from 125 Resource Road, while conservative, is a reasonable choice.</p>
4.	<p>Appendix A: Processing Emissions Spreadsheet indicated that no emissions from central plant were estimated as 100% control was assumed because of the water spray bars as lined out in the Best Management Practices Plan. As per Section 8.5 of the Environment Canada Pits and Quarries Reporting Guide, a 50% control factor can be applied due to water spray activities, and 50% can be applied because of wet material. It is our opinion that 100% control should <u>not</u> be assumed and is non-conservative. Justification for the use of a 100% control factor at the Central Plant was not provided.</p>	Appendix A	<p>The washed aggregate leaving the wash screen would contain little to no fine particulate, and would be completely saturated with water. The subsequent processing steps would therefore be fully controlled. The MECP has accepted this approach for ECA applications on numerous occasions, and is consistent with the approach used in other jurisdictions as well. The ECCC reporting guide has no specific section on emissions from wash plant operations.</p>	<p>Comment is adequately addressed in response. Please provide specific instances of where this level of efficiency for this particular control measure has been used.</p>	<p>This is standard practice by air quality practitioners, and in fact, most practitioners screen handling of washed material out as being insignificant. A list of publicly-available reports supporting this approach is provided below:</p> <ul style="list-style-type: none"> Air Quality Assessment – Dufferin Aggregates Acton Quarry Extension (north and South). Report prepared by RWDI, December 1, 2008. The approach was reviewed and accepted by AMEC.

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	<p>Report: Reid Road Quarry Air Quality Assessment – June 2018</p>		<p style="text-align: center;">Author: RWDI</p> <p>A review of available literature (e.g., San Joaquin Valley Air Pollution Control District, University of Minnesota, Golder) show a similar approach in other jurisdictions.</p>		<ul style="list-style-type: none"> • Air Quality Assessment – Proposed Hidden Quarry. Report prepared by RWDI, September 6, 2012. The approach was reviewed and accepted by R.J. Burnside & Associates Limited. • Air Quality Assessment – Proposed Erin Pit Extension. Report prepared by RWDI, December 20, 2016. The approach was reviewed and accepted by SLR Consulting (Canada) Ltd. • Air Quality Assessment for Capital Paving Inc. – Shantz Station Pit. Report prepared by RWDI, May 14, 2019. Reviewed and accepted by Dillon Consulting Limited. <p>Publicly available examples of work prepared by other engineering firms with relevant experience include:</p> <ul style="list-style-type: none"> • Air Quality Study. Dig-Con International Limited – Proposed Hot Mix Asphalt Plant. Report prepared by BCX Environmental Consulting, May 2018. <p>Air Quality Assessment Of The Olszowka Pit. Prepared for St. Marys Cement (Canada) Inc. by SENES Consultants Limited, January 2012.</p>
5.	<p>Appendix A: Processing Emissions Spreadsheet for the screening source at the central plant indicated that the controlled AP 42 emission factor was employed. As AP 42 emission factor for controlled screening sources is estimated from sources employing wet suppression techniques, to then apply a further reduction of 90% due to the use of a wash screen is inappropriate and underestimates the emission rate. Either the uncontrolled emission rate should be used in conjunction with the 90% reduction or the controlled emission rate alone should be used.</p>	Appendix A	<p>A wash plant is not the same as using spray bars to control dust on an otherwise dry screen deck. Wash screens uses much higher volumes of water to completely saturate and wash the aggregate, and is not accurately represented by the ECCC reporting guide (there is no section on wash plants). The MECP has accepted this approach for ECA applications on numerous occasions, and is consistent with the approach used in other jurisdictions as well (e.g., San Joaquin Valley Air Pollution Control District, University of Minnesota, Golder). Common practice is to exclude the wash screen entirely.</p>	<p>Comment is adequately addressed in response. Please provide specific instances of where this level of efficiency for this particular control measure has been used .</p>	<p>See item 4 above, no additional response required.</p>
6.	<p>Appendix B: Bulk Material Handling Emissions Spreadsheet indicated a 90% control factor was applied to the stockpiles due to water application techniques as outlined in the Best Management Practices</p>	Appendix B	<p>The 90% control refers to the washed nature of the material handled, not the application of water (although the material</p>	<p>Please provide specific instances of where this level of efficiency for this</p>	<p>See item 4 above, no additional response required.</p>

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	Plan. Section 13.2.4.4 of the AP 42 chapter on Aggregate Handling and Storage Piles, indicates that <u>up to</u> a 90% control of particulate emissions can be assumed if watering treatment is also coupled with continuous chemical suppressant treatment. The assumed control of 90% may be non-conservative and further justification should be provided.		will indeed also be inherently wet due to the washing process). Our field experience has indicated that dust emissions from this type of material are significantly reduced compared to unwashed materials. We consider 90% control to be conservative. The MECP has accepted this approach for ECA applications on numerous occasions.	particular control measure has been used.	
7.	It is uncertain how the mitigation measures recommended would be regulated. Is the proponent planning to acquire approval from the Ontario Ministry of Environment, Conservation and Parks and will the Best Management Practices Plan for dust management be imbedded in the site plans? There should be a legislative instrument in place that requires the mitigation to be implemented and followed during the life of the facility to ensure compliance with the air quality regulation.	Review of air quality assessment materials	<p>The requirement for a BMPP is included on Page 3 of the Site Plans, and therefore this requirement can be legally enforced by the Ministry of Natural Resources and Forests under the ARA.</p> <p>The site may be exempt from requiring an Environment Compliance Approval (ECA), in accordance with s. 1. (1) 13. iv. of O.Reg. 524/98, provided that a mobile processing plant is operated below grade. In that case, the ARA Site Plans always provide the necessary legislative instrument.</p>	<p>The site plans to be submitted to the Ministry of Natural Resources and Forestry should also directly include any activities that are intended to be permanent during operation of the quarry along with reference on Page 3 of the Site Plans.</p> <p>With respect to an environmental approval, it is requested that JDCL acquire an environmental approval under Section 9 of the Ontario <i>Environmental Protection Act</i>.</p>	Agree. Resolved subject to completion of updated site plan.