

August 6, 2024

Cuesta Planning Consultants Inc.
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Owen Sound, Ontario
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Attention: Genevieve Scott
genevieve@cuestaplanning.com

VIA E-MAIL

**Re: Peer Review of Noise Impact Study
CBM Caledon Pit/Quarry
Caledon, Ontario
VCL File: 123-0459**

Dear Ms. Scott:

We have completed our review of “*Noise Assessment Report, Proposed CBM Caledon Pit/Quarry*”, dated December 2022 (Revised July 2023), prepared by WSP Canada Inc. (WSP). As part of our review of the report, we have also reviewed the Site Plans, prepared by MHBC, dated August 2023 and the Draft Noise Study Peer Review letter, dated August 18, 2023, prepared by Aercoustics Engineering Limited, addressed to St. Marys Cement Inc. (Canada).

Our comments are outlined herein.

- a) The noise study has applied the Ministry of Environment, Conservation and Parks (MECP) noise guidelines. This is considered appropriate.
- b) MECP Publication NPC-300 requires that the noise assessment determine the predictable worst-case impacts at the noise sensitive receptor locations. How were the worst-case operational locations and scenarios determined? In particular, how the simultaneous pit and quarry extraction locations were determined needs to be explained.
- c) In 1.1 Site Description, Phase 1 operations indicate the permanent processing plant will be installed on the quarry floor once adequate space is available. However, the introduction and Site Plans state “*following extraction of Phase 7, the area under the main processing plant will be extracted*”. These statements are contradictory and imply that the main processing plant will not be located on the pit floor which would result in higher off site sound levels.
- d) It is not clear whether quarry operations and pit operations occurring simultaneously were part of the noise assessment. Are the 5 haul truck trips and the loader used for the pit operation in addition to the equipment limits for the quarry operation? If not, which loader has been diverted to the pit operational area?

- e) Section 2.0 of the report outlines the equipment associated with the operations that were considered in the noise assessment. We have these questions regarding the equipment included and the operational information:
- The introduction to the report indicates there will be a separate aggregate recycling area. Equipment associated with the aggregate recycling operation does not appear to have been included in the assessment.
 - The hydraulic breaking of blast rock at the active face does not appear to have been included as a noise source. An appropriate sound level adjustment for this noise source, as per NPC-104, should also be included.
 - Truck movements associated with the aggregate recycling operation do not appear to have been accounted for in the assessment.
 - It is not clear how many haul truck movements (26 or 31) have been included in the assessment.
- f) Regarding Table 1: Site Noise Source Summary:
- The sound power levels used in the model (Noise Source Library in Appendix E) for the screen, primary crusher and secondary crusher are significantly lower than sound power levels indicated in Table 1. Clarification is needed.
 - The highway truck sound power level of 103 dBA is lower than what we typically use and is lower than what we have seen WSP use for other similar applications.
 - The Haul truck PWL of 107 dBA is lower than what we typically see for large, off-road haul trucks. Additional information to support this sound power level is needed.
 - The 26 unloading events in an hour excludes the 5 loads from the pit operation. Why was the pit unloading not included?
 - What time duration was used for the unloading events?
 - As per Note 1, what other adjustments beyond time weighting were included in the assessment?
 - What source heights were used for each of the noise sources?
- g) Regarding Section 4.0 of the report discussing the points of reception:
- The noise guideline limits apply equally at all noise sensitive Points of Reception (POR). What are considered the most sensitive PORs and why are only these being considered?
 - Heritage Impact Assessments appear to have been done for five locations. Why are only two heritage residences considered in the noise study?

- c. What receptor height was used for the heritage residences?
- d. How were the vacant lots included in the assessment?
- e. Why were the individual receptors divided into 14 groups and each not assessed individually?
- f. What is the difference between a potential vacant lot and a vacant lot?
- g. Why are RPOR004 and RPOR012 deemed Class 2 receptors. The northernmost of the dwellings represented by RPOR004 is almost 200 m to the north of Charleston Sideroad and benefits from intervening acoustical screening. RPOR012 appears to be further from Charleston Sideroad than RPOR011 which was deemed Class 3.
- h) Section 5.0 of the report discusses the assessment criteria. For the outdoor PORs, the report states *"the outdoor POR will be protected during the night-time as a consequence of meeting the sound level limit at the adjacent POW"*. It is not clear why only the nighttime is considered for the outdoor POR since there is no nighttime guideline limit at an outdoor POR. During the daytime and evening periods, when there is a MECP noise guideline limit, the outdoor POR is potentially up to 30 m closer to the noise source(s) than the building façade. Confirmation that the daytime guideline limits will be met at all locations considered to be part of the outdoor POR is needed.
- i) In describing the qualitative impact of a change in sound level along the off-site haul route, it is not clear why the report uses guidance provided by the MECP Landfill Guidelines but uses the description provided by Bies and Hansen. The report should rely on the qualitative ratings already contained in the MECP Landfill Guideline where sound level increases of 3 to 5 dBA are deemed noticeable.
- j) To calculate the sound levels at the receptor locations, ground absorption factors of 0.2 and 1.0 were used for the pit/quarry floor and all other areas, respectively. The 0.2 value is considered reasonable and realistic for the pit and quarry floors. However, the value of 1.0 is unrealistically high to be used for all other areas. Using too high a sound absorption coefficient will result in underpredicted sound levels at the receptors.
- k) The report indicates a minimum working face height of 6 m has been accounted for. It is not clear if this is for the pit, the quarry or both. Clarification is needed.
- l) Regarding the proposed noise controls:
 - a. The Temporary Processing Plant scenario requires a gap in the property line sound barrier to allow access to the office and laboratory. The length and location of this gap need to be clearly indicated to ensure the required noise mitigation is not compromised.
 - b. 13 m high sound barriers are to be constructed within 20 m to the north, east and west of the processing plant. How are these sound barriers to be constructed since there does not appear to be adequate space in the 20 m allowance for the side slopes of a berm? Is all equipment within the processing plant to be within 20 m of the barrier?

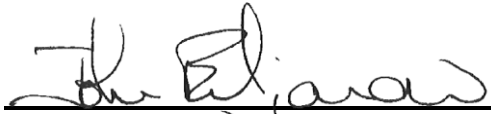
- c. The report states “*the haul truck noise emissions will need to be reduced with the installation of on-equipment noise controls (e.g., intake silencers, acoustic lagging)*”. To what sound power level do the haul truck sound emissions need to be reduced to? Can an example of where this has been successfully implemented in the past be provided.
- m) Sample calculations and background traffic information used to prepare the haul route analysis are missing from the report. In addition, have the truck volumes associated with aggregate recycling been included in the assessment?
- n) Table 9 presents the analysis results with pit operations occurring. It is not clear how the resulting sound levels with the pit operations (Table 9) can be lower than those with just the quarry operating in Phase 6 (Table 8). If the results provided in Table 9 are from the pit operations alone, why have they not been combined with the quarry operations? Clarification is needed.
- o) Regarding the Site Plan Noise Control Notes:
 - a. In addition to limiting the sound power level for equipment to be used on the site, the amount of each type of equipment also needs to be limited.
 - b. Proposed barriers are indicated as potentially being stockpiles. Detail on how stockpiles will be used to provide the required noise mitigation and how the stockpiles will be maintained is needed.
 - c. Drills shall include manufacturer installed noise controls resulting in a maximum sound power level of 116 dBA. Can manufacturers data confirming their mitigation package will achieve the recommended sound power level limit be provided. Also, in the Area 1 and Area 4 scenarios, what sound power level was used for the unmitigated drill?
 - d. The Site Plans should include all of the noise mitigation measures recommended in the noise study. These mitigation measures appear to be missing:
 - (1) The recommended haul truck noise mitigation.
 - (2) Temporary and permanent processing plants are not to operate simultaneously.
 - (3) Changes in location of the processing equipment should be evaluated by a qualified acoustical consultant to ensure the noise guideline limits are met at all noise sensitive receptor locations prior to proceeding.
 - (4) Minimum pit face height.
 - (5) Minimum quarry face height.
- p) The Terms of Reference provided in Appendix A indicate that Golder (now WSP) will complete a noise monitoring program where existing baseline noise levels will be documented. The results and findings from the baseline noise monitoring report are missing from the report.

Based on our review of the noise study prepared in support of the CBM Caledon Pit/Quarry, there are a number of items, as outlined above, that require further clarification.

If there are any questions, please do not hesitate to call.

Yours truly,

VALCOUSTICS CANADA LTD.

Per: 
John Emeljanow, P.Eng.

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