

GRADIENTWIND

ENGINEERS & SCIENTISTS

January 3, 2024

Kehoe Developments Inc.
507 1000 Islands Parkway, P.O. Box 127
Lansdowne, Ontario
K0E 1L0

Attn: Todd Perry
toddp@kehoemarine.com

Re: Stationary Noise Assessment
Peer Review 2nd Round Comments Response Letter
507-515 1000 Islands Parkway, Lansdowne
GW File No.: 23-091 – Response Letter

This letter describes how we have addressed the peer review comments by Valcoustics Canada Ltd., dated December 1, 2023, on the Stationary Noise Assessment provided by Gradient Wind, dated October 31, 2023, for the proposed development located at 507 -515 1000 Islands Parkway, Lansdowne, Ontario. Below is how each of the additional comments has been addressed. For the original response, please refer to the Gradient Wind response letter dated October 31, 2023

VCL 2nd Round Comments 1& 2 *Please provide the sound power levels associated with the air tools and the welder, including details about how the measurements were done and how the sound power levels were calculated.*

Gradient Wind's 2nd Round Response: During the site visit, no activities were occurring by the maintenance repair shop. The dominant source is expected to be from an idling loader or excavator which was measured to have a sound pressure level of 76 dBA at 7 m, which was represented by a point source having a sound power level of 101 dBA in the noise model. Based on our database and a review of published literature air tools and welders would be expected to have a sound power level of 85 – 90 dBA.

VCL 2nd Round Comment 3 *Our original comment asked, “What does the 84 dBA sound level in the table represent and how was it calculated?”*

It is still not clear what the 84 dBA sound power level represents. Clarification is required.

- *Does sound power level in the model represent the maximum sound level from short bursts of tool operations which were then spread over an hour?*

If so, how many minutes out of the hour do the tools operate?

- *Or, was 84 dBA the sound power level that was calculated from the maximum measured sound pressure level?*

Gradient Wind’s 2nd Round Response: The sound power of 84 dBA was derived from taking a 20-minute L_{eq} measurement in front of open doors at the fabrication shop. The sound level meter was placed 10 m from open doors. The measurement point was equally distant from two open doors. The reading was taken while regular work was carried out in the shop, with a variety of tools and activities occurring inside the shop such as grinding, welding, and use of pneumatic and hand tools. The 20 min L_{eq} measured in front of the shop was found to be 64 dBA. During our review, the reported 84 dBA sound power was found to be an error, we have corrected this to 89 dBA based on the review of measurement data.

VCL 2nd Round Comment 4 *It is not clear what the last sentence means (“Testing was also carried out at 4 m which resulted in lower values than at 2 m truck route height.”). Does the statement mean the analysis was also done with the source height modelled at 4 m? If so, since there is reduced ground effect and likely less screening with a source at a higher level, why were the sound levels lower?*

Gradient Wind’s 2nd Round Response: Our investigation of the noise modelling revealed the reason for higher noise levels at the 2 m case, is that more of the sound is reflected off of the buildings on site, and directed towards the receptors across the parkway.

VCL 2nd Round Comment 5 *Our original comment stated, “With the exception of a loader moving near the boat launch ramp, the model does not appear to include any noise sources associated with moving goods to/from the east open storage area. Why is activity across the whole east open storage area not modelled?”*

In the revised report, the model still does not show any activity in the majority of the east open storage area, nor are any additional details provided regarding activities in this area. It is noted that there are dwellings on the north side of 1000 Islands Parkway which may be impacted by activities in this area. The

model should include the activities in the eastern part of the storage area to the east side of the boat launch ramp. The location in question is marked in the figure below.

Gradient Wind's 2nd Round Response: The area indicated in the revision cloud is used for the storage of equipment. The modelling was updated to show the loader (S6) and loader route (S9) in this area as well. The figures have also been revised defining the area as "heavy equipment storage".

VCL 2nd Round Comment 6 Acknowledged by the peer reviewer. No further clarification is required.

VCL 2nd Round Comment 7 *Further clarification is needed. The email description of the material drop-off stated, "Steel and wood are dropped off on the west side of the fabrication shop (Bldg. 3). Granular material and armour stone are dropped off closer to the water at the seawall, also typically on the east side of the Fabrication shop."*

The response does not address the concern that there are activities at the east and west sides of the fabrication shop that have not been modelled.

Gradient Wind's 2nd Round Response: As noted in our meeting, the west side of the fabrication shop is an outdoor parking area and the north side is used as an outdoor storage of raw materials such as wood and steel. See response to comment 9 for further information.

VCL 2nd Round Comment 8 Acknowledged by the peer reviewer. No further clarification is required.

VCL 2nd Round Comment 9 *Page 8 of the report states that "There were no more than 4 impulses expected during any one-hour period" and Table 6 shows that the sound level limits for 4 impulses were used. However, Table 2 shows impulses occurring 4 times/hour at each location. The response above also states that "There were no more than 4 impulses expected during any one-hour period in each location". Since it appears that up to 8 impulses could occur on site during the worst-case hour, the more stringent sound level limits for 8 impulses should be applied.*

Please provide the measured impulse sound levels in dBAI for each of the individual impulse sources.

The email description of the facility operations states that there are also impulses from steel beams being set down. Since there are 8 impulses generated by deliveries from dump trucks in addition to these

impulses from the steel beams, the guideline limit for 9 or more impulses should be used in the assessment of the predictable worst-case scenario.

Gradient Wind's 2nd Round Response: We updated the noise model reflecting the actual activities on site. As the impulses defined in the report do not occur simultaneously, we revised our approach reflecting two scenarios defined below:

Scenario 1 represents the storage area on the north side of the property related to the activities of receiving wood or steel beams. It is anticipated that four (4) impulses could be generated when placing down the materials. However, the operators are trained to avoid damaging materials thus limiting the number of impulses.

Scenario 2 represents aggregate drop-offs on the east side of the fabrication shop. Typically, between 1-2 impulses occur when the dump trucks finish the dropping of the materials and the tailgate slams.

VCL 2nd Round Comment 10 *Please include an impulse scenario with deliveries to the north outdoor storage area only to ensure that the worst-case scenario has been captured. Unlike steady noise source assessments, the scenario with the most activity does not necessarily capture the worst-case scenario for impulses.*

Gradient Wind's 2nd Round Response: See the response above on how the revised modeling was undertaken.

VCL 2nd Round Comment 11 *The email also stated, "Sometimes setting the steel product down on racks produces an impulse sound." Impulses from the steel beams should be included in the model.*

Gradient Wind's 2nd Round Response: As noted above when steel beams are dropped off, other deliveries do not occur. The sound power of 110 dBA was also used to represent the unlikely scenario of a loud impulse from the dropping of a steel beam.

VCL 2nd Round Comment 12 Acknowledged by the peer reviewer. No further clarification is required.

VCL 2nd Round Comment 13 Acknowledged by the peer reviewer. No further clarification is required.

VCL 2nd Round Comment 14 Acknowledged by the peer reviewer. No further clarification is required.

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This concludes our response letter to address the round of comments prepared for the Township of Leeds and the Thousand Islands by Valcoustics Canada Ltd., dated December 1, 2023, for the proposed development located at 515 1000 Islands Parkway, Lansdowne, Ontario. If you have any questions or wish to discuss our findings, please contact the undersigned.

Sincerely,

Gradient Wind Engineering Inc.



Efser Kara, MSc, LEED GA
Acoustic Scientist

Gradient Wind File 23-091 – Response Letter



Joshua Foster, P.Eng.
Lead Engineer