

December 1, 2023

Township of Leeds and the Thousand Islands
P.O. Box 280
1233 Prince Street
Lansdowne, Ontario
K0E 1L0

Attention: Lindsay Lambert
seniorplanner@townshipleeds.on.ca

VIA E-MAIL

**Re: Peer Review of Revised Stationary Noise Assessment and Response Letter
507-515 1000 Islands Parkway
Lansdowne, Ontario
VCL File: 123-0297**

Dear Ms. Lambert:

We have completed our review of the revised “Stationary Noise Assessment, 507-515 1000 Islands Parkway, Lansdowne, Ontario” and the accompanying cover letter, prepared by Gradient Wind, dated October 31, 2023, in response to our letter dated October 6, 2023.

The revised report and letter show that some updates to the acoustical modelling have been done and some typographical errors have been corrected. However, the letter and report do not provide the requested clarifications regarding the facility operations and measurement/modelling procedures. To ensure that the noise emissions have been appropriately assessed, a thorough understanding of the proposed operations and the anticipated noise sources is needed.

Our specific comments regarding Gradient Wind’s updated report and responses in the cover letter are provided herein.

1.0 COMMENTS

Items 1 and 2

Gradient Wind Response

This area is mostly noise-free as the loader and excavators are kept on the water. Only when maintenance is required on the equipment would an excavator or loader move slowly toward the repair shop. Therefore, noise from around the repair shop was assumed to be dominated by idling equipment parked just outside the shop. This idling equipment noise is expected to mask other sources of noise such as air and power tools. Source S5 (Loader) represents noise from this area.

[...]

Repairs are completed on an as-needed basis, but typically 1 or 2 vehicles per day are serviced. A typical service would involve tire removal and replacement (air tools for 60 seconds) and an oil change and inspection which does not generate noise. A welder occasionally is used for a total of 10-15 minutes per day. The occasional hammer strike to remove a rusted bolt may occur a few times daily but is not a constant occurrence. As explained above these lower and infrequent noise occurrences are masked by the idling equipment noise.

VCL Comment

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.

Item 3

Gradient Wind Response

An on-site visit was held to review the conditions as well as get on-site measurements on April 14, 2023. The sound sources were determined based on the results of those measurements. Measurements were taken from a distance outside the fabrication shop doors. These measurement results were correlated with test receptors in the acoustic model at the same location and the sound power levels of sources were then adjusted so the test receptors would match those values measured onsite.

VCL Comment

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?

Item 4

Gradient Wind Response

Typically, radiated noise from the engine cowling is the dominant source which is why it was assumed at 1.5 m. However, the truck route height is changed to 2 metres in the revised assessment to be approximately at the centre of a typical truck height. Testing was also carried out at 4 m which resulted in lower values than at 2 m truck route height.

VCL Comment

It is not clear what the last sentence means. 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?

Item 5

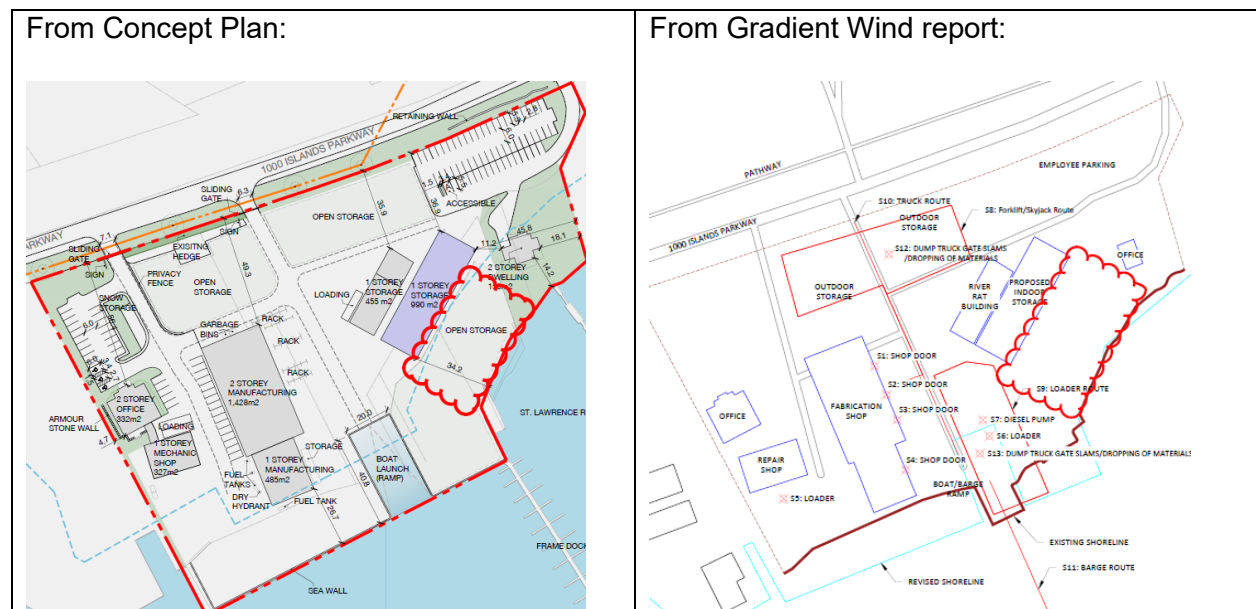
Gradient Wind Response

Activities on the east side of the loading ramp were taken into account by represented noise sources, S6, S7, and S9. The sound power level of these sources was based on on-site measurements (P4). The noise of moving products around the Open North area is represented by S8 (Forklift and Skyjack), which represents the movement of the equipment around the perimeter of the storage area. The far east side of the site is reserved for employee parking.

VCL Comment

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.



Item 6

Gradient Wind Response

The loader is related to the repair activities outside the repair shop. As noted above, the dominant source is expected to be an idling piece of equipment that is under maintenance.

VCL Comment

Acknowledged.

Item 7

Gradient Wind Response

S13 and S14 were placed in the center of each storage area to represent impulses from materials being dropped off. In the revised report, S14 is referred to as S12.

VCL Comment

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 side of the fabrication shop that have not been modelled.

Item 8

Gradient Wind Response

The truck route is extended down to the shoreline in the revised model.

VCL Comment

Acknowledged.

Item 9

Gradient Wind Response

There were no more than 4 impulses expected during any one-hour period in each location. The highest impulses produced on site are from the dump truck gate slams and dropping-off materials. The modeled sound power for both S12 (former S14) and S13 were based on average impulse of the dump truck gate slams and dropping-off materials as a conservative assumption. While materials are generally dropped off as indicated in the email, the assumptions in the model accounts for possibility of materials being dropped off in both locations.

VCL Comment

- 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.

Item 10

Gradient Wind Response

Although the majority of the time, noise generation such as materials drop-off occurs further south (east of the fabrication shop) closer to the shoreline, the location was chosen more conservatively closer to the noise-sensitive dwellings to the north of Thousand Islands Parkway to represent material being dropped off at the outdoor storage area located on the north side of the site.

VCL Comment

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.

Item 11

Gradient Wind Comment

The impulse numbers are based on our observations on-site. As also mentioned in the email, “operators are trained to set down raw materials gently to prevent damaging materials and minimize noise impacts.” Please also refer to the explanation above.

VCL Comment

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.

Item 12

Gradient Wind Response

The receptor heights were revised in the study.

VCL Comment

Acknowledged.

Item 13

Gradient Wind Response

Yes, topography was considered in the model. The site slopes down to the river and the facility is lower than the parkway.

VCL Comment

Acknowledged.

Item 14

Gradient Wind Response

As acknowledged above, the noise levels are below NPC-300 criteria regardless of the background noise levels. Nevertheless, the NPC-300 levels are applied in the revised report.

VCL Comment

Acknowledged.

Additional Comments

There were some errors highlighted in our previous letter that remain in the current report:

- On page 2 of the report, the text states that there are twelve receptor locations. The tables and figures show ten receptors. Where are the other receptor locations?
- On page 4, the evening Outdoor Point of Reception (OPOR) and Plane of Window (POW) limits are reversed in Table 1.
- On page 9, the “Sound Level Limits” in Table 6 shows “N/A” for the OPOR receptors during the evening. There are evening sound level limits for OPORs defined in NPC-300.
- On page 10, the evening and nighttime periods are shown to have the same sound level limits. NPC-300 defines different sound level limits for these two time periods.



2.0 CONCLUSIONS

A review of the updated stationary noise source assessment and the associated cover letter prepared by Gradient Wind has been completed. There still appear to be some inconsistencies between the description of the facility operations and the modelling scenarios shown in the report. Additional information regarding the modelling scenarios is also required before we can agree with their conclusion that the noise emissions from the facility will comply with the MECP noise guideline limits.

If there are any questions or if additional information is needed, please let us know.

Yours truly,

VALCOUSTICS CANADA LTD.

Per: 

Seema Nagaraj, Ph.D., P.Eng.

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