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MEMORANDUM

To: Neil Angus & Peter Lowitt, Devens Enterprise Commission
From: Michael Lannan & Matthew Riegert, Tech Environmental
Date: May 20, 2022
Subject: Approval of BMS Proposed Cooling Towers Ref. 4718

Tech Environmental (Tech) has reviewed the materials provided by the Bristol-Myers Squibb (BMS) project team regarding the noise impacts associated with the Central Utility Building (CUB) equipment expansion. Those materials include a May 2022 Noise Assessment and a Sound Barrier/Mitigation Concept Site Plan dated 5/11/2022.

The Assessment concludes that impacts east of the additional cooling towers would exceed DEC standards, and that BMS does not anticipate that those exceedances will result in noise complaints. As a result, they developed a mitigation plan to meet the noise limits, that could be implemented if, and only when, someone was to complain. The rationale provided for delaying the installation of this mitigation is that the extent of the potential exceedances identified are within an area that has no current permanent sensitive receptors, and unless somehow the landfill is moved, no future sensitive receptors will evolve. Tech agrees with this approach for this specific site.

Overall, the Noise Assessment is conclusive, and Tech recommends approval with a resubmission for the record and conditioning. There are some minor discrepancies between heights and source data that should be resolved for the record in a revised report. As you know, VHB modeled the entire campus for this permitting effort to be consistent with the more standardized approach used for other project approvals, instead of focusing the work strictly on the area of concern. We know from previous project experience that this holistic approach is necessary because if a sound complaint is ever confirmed, having the proper baseline condition is key to resolution.

There are some modeling discrepancies for the holistic modeling effort that should be addressed prior to the data being used for any future development sound modeling efforts. Those comments are included in a separate memorandum, as spatially they do not affect the conclusions for this Application. Those discrepancies need not be resolved today, but ideally would be addressed once this permitting is completed herein, to streamline the base-case for future expansion work. Of course, BMS could elect to simply wait until later to address those sound modeling discrepancies.

The Applicant demonstrated that they could comply with the DEC limits, if necessary, through cooling tower exhaust mitigation (e.g., curtains/panels) and some reasonable noise barriers to the south and east of the cooling towers. Thus, we would recommend approving the project with the condition that the proposed mitigation would be implemented if sound levels from the cooling towers become a source of complaints to the east of the project site. The following summarizes our review which could be considered when preparing conditions for a potential approved permit.

Ambient Sound Levels

The Assessment includes 2006 monitoring data for six (6) locations with insect intrusions appropriately screened out. Although, previous reporting for past projects at BMS presented only four (4) monitoring locations, the numbering of the locations has changed from previous reports, and the locations are slightly different than presented in previous reports. Figures 2 through 7 illustrate the octave band measurements and highlight that there was significant high-frequency intrusion from insects. So, the screening of that insect noise from those measurements is appropriate. This results in slightly lower ambient sound levels utilized in the Assessment and is a conservative approach for demonstrating compliance with the DEC standards. The presented ambient sound levels used for the analysis are consistent with, and slightly less, than those used in previous reporting. Thus, we have no concerns with the ambient sound levels.

Proposed Mitigation

The Assessment determined that future sound levels at receptor location R6, near the site entrance and the cooling towers, would increase more than 10 dBA with the proposed equipment expansion. Therefore, noise control measures for the existing seven (7) and future (2) cooling towers and associated pumps would be needed for future noise levels at that location to comply with DEC limits. And, with the understanding being that noise mitigation only needs to be implemented in this area if there are noise complaints associated with the BMS facility.

The "Mitigation" section of the Assessment (page 20) states that compliance could be obtained at location R6 (if necessary) by installing a 170-feet long and 4-feet tall wall to the east of the cooling towers, and a 75-feet long and 8-feet tall wall to the south of the cooling towers. However, the "Conclusion" section of the Assessment (page 25) states that the walls are 6-feet tall. The Sound Barrier/Mitigation Concept Site Plan dated 5/11/2022 provides dimensions that are consistent with those in the "Mitigation" section of the Assessment, and we are assuming that the statement in the "conclusion" section is a typo.

Cooling Tower Sound Levels

The sound emissions from the cooling towers are summarized in Table A1 of the Appendix and the manufacturer's performance data sheet for the cooling towers is also in the Appendix. Table A1 presents that the cooling tower air inlets emit 68.6 dBA (sound power), and the cased face emits 63.8 dBA (sound power). However, the data sheet states that the air inlets emit 68 dBA at 5-feet (sound pressure), and the cased face emits 64 dBA at 5-feet (sound pressure). VHB should revisit the inputs of the model and confirm that the data used to model the cooling tower air inlets and cased faces is consistent with the manufacturer's data sheet and resubmit the Assessment for the record.