

August 22, 2024

Ms. Heather Kuoppamaki
Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Re: Cleaner Air Oregon (CAO) Emission Inventory Information Request – WWTPH2S

Dear Ms. Kuoppamaki,

By letter dated April 24, 2024, following an initial review, the Oregon Department of Environmental Quality (DEQ) requested additional information from Georgia-Pacific (GP Toledo) pertaining to the CAO Emission Inventory submitted on May 27, 2022. The information request required the additional information be submitted in conjunction with the information request on February 6, 2024 after GP received an extension until August 5, 2024 for a selected portion of the requested information. Upon submission of the requested information on August 5, 2024, DEQ granted GP additional time, until August 22, 2024, to submit the WWTP information from the April 24, 2024 letter. Each item in the request is included below with our responses. Original DEQ questions are shown, followed by GP's responses in red text. Additional supporting information is provided in the files to be transferred electronically.

DEQ has the following comments on the methodology used:

- In the National Council for Air and Stream Improvement (NCASI) Technical Bulletin (TB) 956, concentration measurements downwind and along the perimeter of a given wastewater treatment basin were used to develop an emissions profile. However, the ground level monitoring conducted at the GP Toledo facility does not appear to capture the full downwind component of the emissions profile. DEQ is concerned that with only three monitors on the perimeter of the wastewater treatment plant (WWTP), the ground level measurements are not representative of worst-case emissions from the WWTP.
- NCASI TB 956 examined more simplified pond configurations and the measurements and emission factors produced were specific to individual emission units. The GP Toledo WWTP has numerous emission unit types with varying temperatures, pH levels, and aeration rates. DEQ is concerned that the methodology documented in NCASI TB 956 does not appropriately capture the varying emissions from the different types of emissions units of the GP Toledo facility.

Overall, the methods used in the GP Toledo hydrogen sulfide emissions estimates appear to vary significantly from the NCASI established methods without supporting documentation to justify those variations. DEQ is therefore requesting additional information to determine if a different hydrogen sulfide emissions model, such as H2SSIM or WATER9, may be more appropriate for these emissions units.

Based on the NCASI memorandum dated May 23, 2022, the February 29, 2024, meeting, and the

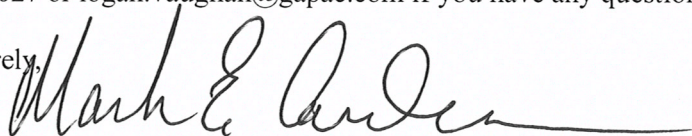
comments above, and in accordance with [Oregon Administrative Rule \(OAR\) 340-245-0030\(2\)](#), DEQ has determined that the following additional information is required by August 5, 2024:

1. Required data inputs, limitations, available outputs, and background methodology for NCASI's H2SSIM program; See attached .pdf files for the inputs and outputs of the H2SSIM program for the treatment plant and TB 1000 for background methodology. There are three main limitations of the H2SSIM model tool:
 - a. It's designed for typical pulp mill WWTP units. Model results are most sensitive to inlet sulfide, pH, anoxic/anaerobic condition and aeration. The ranges of these that we evaluated cover most of the pulp mill systems. As systems become more complex, the accuracy of the tool diminishes.
 - b. The design of the model is simplistic, based on minimal flow and sulfide inputs, and cannot accommodate more than 2 input flows.
 - c. Like most models, it's only as good as the inputs, many of which are grab sample measurements within the WWTP.
2. All liquid parameter measurements taken from any of the emission units or influent streams, from April 2021 until the present. The data should indicate the sampling location, date, and time, and should include but not be limited to: See attachment "GP Toledo Process Data.xlsx"
 - a. Temperature
 - b. pH
 - c. Flow rates of influent streams
 - d. Dissolved oxygen
 - e. Oxygen reduction potential;
3. Indicate if there are additional heat inputs to the thermal ponds; and if so, provide information on those heat sources; and There are no additional heat inputs.
4. Provide details on the liquid sample collection methods used and if those methods were in accordance with NCASI TB 956 and 957. All liquid samples collected for sulfide analysis were collected in accordance with NCASI TB 956 and 957. Process samples comprising the data included in attachment "GP Toledo Process Data.xlsx" were collected via Standard Methods for the Examination of Water and Wastewater.

Georgia-Pacific Toledo is also submitting the presentation given by NCASI during the June 13, 2024 as additional information. Due to the complexity of the Toledo wastewater treatment plant, H2S emissions were estimated as a system-wide total similar to how estimates were generated using the Air Model method for the May 6, 2024 submittal.

We look forward to continued collaboration with DEQ throughout the CAO process. Please contact me at (503) 240-1627 or logan.vaughan@gapac.com if you have any questions regarding the information provided.

Sincerely,



Mark E. Carden
Vice President– Georgia-Pacific Toledo LLC

CC: Michael Eisele, DEQ (via email)
J.R. Giska, DEQ (via email)