PORT of SUNNYSIDE
PO Box 329 • Sunnyside, WA • 98944

March 20, 2019

Mr. Matthew Durkee
Department of Ecology
Central Regional Office
1250 W Alder Street
Union Gap, WA 98903-009

Re: Port of Sunnyside IWWTF

Dear Matt:

This letter is in follow-up to our meeting with you on January 25, 2019 concerning the Port of Sunnyside's (Port) Industrial Wastewater Treatment Facility (IWWTF) and issues and concerns about occasional variances in influent loading and effects on treatment performance and compliance. Since our meeting, we have discussed the issues with our engineering consultant, Parametrix, and with senior management at Darigold with the express purpose of identifying and planning solutions to help mitigate upsets to the IWWTF caused by short-term spikes in influent loading to the anaerobic treatment system (ATS). This letter summarizes our assessment of conditions causing upsets and identifies potential solutions and timeline for implementation.

Description of Conditions Leading to Process Upsets

Parametrix and the Port have analyzed industry monitoring data to ascertain the conditions leading to upsets in ATS performance and we believe the cause to be occasional, short-term spikes in influent loading from the Darigold facility. The spikes generally last for approximately one day and introduce 1.5 times the peak design daily loads for the covered anaerobic lagoon (CAL). Attachment A includes a summary of days during 2017 and 2018 where Darigold discharge exceeded the peak design daily loading for COD and BOD. Spike loading can occur at all times of the year, but the most intense frequency seems to be in the fall and winter months, where daily spikes sometimes occur in successive days or weeks making it especially difficult for the ATS to recover. Based on discussions with Darigold, the spikes are likely from cleaning operations and/or discharge of concentrated off-spec product.

It is important to note that Darigold maintains compliance with their discharge permit the vast majority of the time. Currently, discharge limits are based on monthly loading. The conditions

leading to upset conditions are believed to be from occasional, short-term spikes in daily loading. Because the CAL runs at full design capacity most of the time, these spikes in loading, even though short-term, can have a significant impact on treatment performance. Daily loading limits are note defined in the current discharge permit, but conditions leading to upsets or interference are.

Resultant Effects on NPDES Compliance and Lagoon 4 Holding Capacity

The spike loading conditions described above are well in excess of the ATS peak design loading capacity. This creates diminishing performance in the covered anaerobic lagoon (CAL), which leads to upset conditions (i.e., poor sludge settling and sludge bulking conditions) in the sequencing batch reactors (SBRs). The TSS levels in the SBRs exceed Outfall 001 NPDES limits, so the Port is forced to divert discharge to the holding lagoon (Lagoon 4) until the upset conditions subside. During the last occurrence in which daily spike load from Darigold started in early November 2018 and continued almost weekly into January 2019 (see summary data in Attachment A), the Port had to divert and discharge approximately 40 days or 40 million gallons of flow to Lagoon 4. This consumed approximately 10 percent of the holding capacity of Lagoon 4; this consumes valuable capacity, which needs to be reserved for the other industries during periods when irrigation is prohibited by the State Waste Discharge Permit.

Potential Remedies

The Port, Parametrix, and Darigold have discussed potential solutions and remedies. Those remedies, which initially appear to be most feasible are described below:

- Construct a New Spike Tank on Darigold Property – A new tank suitably sized to store anticipated excursions in daily load. Contents of the spike tank would be metered slowly in with other normal daily flows to the ATS at a pre-established set rate to prevent upset conditions.
- Retrofits to Divert Spike Flows to Holding Lagoons – Design retrofits to existing piping and valves to automatically divert high loading influent flows to holding lagoons. Add flow diversion piping and automated valves to divert flows temporarily to Lagoon 1, Lagoon 2, or Lagoon 3 until spike conditions subside.
- Improve Communication – Develop a communication plan for the Port and Darigold operators to provide improved communication concerning timing and occurrence of spike loading events. Advanced communication before the spike occurs will be essential to the success of constructing a new spike tank, piping diversion retrofits, or other alternatives.

In addition to the above remedies, the Port is considering adding a daily maximum load limit to the Darigold User Agreement. Establishing a reasonably attainable maximum daily load limit for COD and BOD will help avoid upset conditions in the future.

Conclusions

The Port will continue to work with Darigold on remedies described in this letter to ensure future avoidance of upset conditions. A communications plan will be developed over the short term. New spike tank and diversion retrofits will require planning, design, and construction of new infrastructure. The goal will be to have infrastructure improvements in place before the fall/winter of 2019. The Port will continue to keep Ecology informed on progress and schedule of activities.

Sincerely,

Jay Hester
Executive Director

cc: James Leier, Department of Ecology

Brandon Ball, Parametrix