



Oregon

Tina Kotek, Governor

Department of Environmental Quality

Northwest Region Portland Office

700 NE Multnomah St Ste 600

Portland, OR 97232-4100

(503) 229-5263

FAX (503) 229-6957

TTY 711

November 20, 2023

Kelly Madalinski (via email to kelly.madalinski@portofportland.com)
Harbor Environmental Manager
Port of Portland
Portland, OR

Re: DEQ Comments on *Basin K1 Bioinfiltration Basin Operational Year 2 Comprehensive Report*
Terminal 4 Slip 3 Upland Facility
ECSI No. 0272

Dear Mr. Madalinski:

The Department of Environmental Quality (DEQ) has reviewed the document entitled *Basin K1 Bioinfiltration Basin Operational Year 2 Comprehensive Report* dated October 2, 2023, prepared by Maul Foster Alongi (MFA) on behalf of Kinder Morgan, Inc. (Kinder Morgan) for the bulk storage and transfer facility at the Port of Portland Terminal 4 Slip 3. The report and associated appendices describe system performance, inspections, and maintenance performed for the Basin K1 stormwater infiltration system during the second operational year in general accordance with the DEQ-approved O&M Manual. DEQ also provided EPA and the Tribes an opportunity to provide comment but they declined. DEQ offers the following comments on the report:

General Comments

- 1) DEQ appreciates the efforts of Kinder Morgan and MFA to quantitatively evaluate the performance of the bio-infiltration basin in accordance with the approved O&M Plan. However, DEQ is concerned about equipment problems and errors in the placement of equipment persisting into March of the second operational year. Based on descriptions provided in Sections 1.2 and 3.1, these problems and errors have the potential to introduce uncertainty into the performance monitoring results. This and future comprehensive annual monitoring reports should provide a discussion of expected uncertainty stemming from these issues (i.e., as they arise).

Specific Comments

- 2) Section 1.2 Reporting Schedule –
 - a. Although reportedly addressed in October 2022, the inability to record flows under 100 gallons/minute due to flow meter programming is concerning because storm events with precipitation rates at or around 0.2 inches/hour were recorded in July, September and October 2022. Please confirm when in October 2022 the programming issue was repaired and provide an estimate of how much flow was not measured.
 - b. Based on provided dates that fall outside the year 2 performance monitoring period, the second bullet item appears to be a relic of reporting from the year 1 report. Please remove or explain if the inclusion of information from the year 1 monitoring period was intentional.
 - c. The reported date for resolution of the inaccurate run times for one of the pumps falls outside of the monitoring period of July 1, 2022, to June 30, 2023. Please revise as

appropriate or provide explanation for its inclusion in this section. See Specific Comment 2b.

- 3) Section 2.2 Inspection Observations and Maintenance Activities –
 - a. Please provide additional discussion regarding the sheens observed in the puddle (August 29, 2022) and the spill- and flow-control manhole (October 25, 2022) and if there were any subsequent efforts to investigate possible sources.
 - b. Please comment on whether additional best management practices (BMPs) were implemented following the observation of sheen in the spill- and flow-control manhole.
- 4) Section 3.1 Summary of Available Data –
 - a. The hyperlink in this section is broken and not available for reference. Please correct.
 - b. Please provide additional discussion regarding the discovery of anomalies in the pressure transducer data resulting in an observed 4.8-inch differential between the reported basin water levels based on transducer measurements and the basin staff gauge. Was the staff gauge re-surveyed to verify the change in elevation wasn't related to settlement within the basin? Based on the corrected water level information, what is the potential for missed occurrences of overflow?
 - c. Please provide additional discussion regarding the magnitude of non-stormwater-related spikes in basin water levels due to damage to the irrigation sprinkler. What estimated volume of water entering the basin due to the sprinkler problem was ignored as not being related to system performance?
 - d. With regard to the sprinkler, the first sentence of the last paragraph indicates that the sprinkler was "damaged" during the period of May to July 2023. However, in the subsequent sentence, MFA provides information on the program for sprinkler operation without explaining how the sprinkler was damaged. Please provide further discussion regarding the nature of the damage to the sprinkler, how it was discovered, and how it was repaired.
 - e. DEQ is encouraged that there was only one recorded instance of bypass and overflow during the year 2 monitoring. Based on sources of uncertainty in the performance monitoring data (see General Comment 1), please comment on the likelihood that the uncertainties masked bypass and/or overflow during the November 4, 2022, storm event.
- 5) Section 3.2.2 Capture Analysis Data – Please provide discussion regarding the expected uncertainty ($\pm$ %) in the total volume of stormwater captured, length of bypass/overflow and duration of bypass/overflow.
- 6) Section 3.2.3 Infiltration Rates – Please confirm if the variables A_L , A_i and A_{avg} in Equations 1 and 2 represent cross-sectional areas or surface areas.
- 7) Section 3.2.4 Drawdown Time –
 - a. Please provide further discussion regarding the noise in the data that resulted in a minimum threshold of 3 inches being used instead of zero for evaluating drawdown time. What is the source and anticipated magnitude of the data noise? If zero was used as the minimum threshold how would the reported drawdown times compare to those estimated using the threshold of 3 inches?
 - b. Please also discuss differences in the 24-hour rainfall depths between the Year 1 and Year 2 bypass events (or include in the comparison table).

8) Section 4 Summary and Recommendations –

- a. Please provide recommendations regarding whether, based on the results of the year 2 monitoring, maintenance actions are warranted.
- b. Please provide recommendations for addressing the source of the petroleum sheen observed in the spill- and flow-control manhole during each of the first two performance monitoring periods.

Please prepare a Response to Comment and revise the report in accordance with the comments herein provided. DEQ appreciates the continued efforts of Kinder Morgan and the Port to meet their source control obligations.

Please contact me at by phone (503) 229-5024 or email (jeff.schatz@deq.oregon.gov) if you have questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jeff K. Schatz", with a stylized flourish at the end.

Jeff K. Schatz, R.G.
Project Manager and Hydrogeologist
Northwest Region Cleanup Program

cc: Laura Hanna, Remedial Project Manager, EPA Region 10
Josie Clark, Remedial Project Manager, EPA Region 10
Heidi Nelson, Environmental Engineer, DEQ
Sarah Greenfield, Portland Harbor Coordinator, DEQ
David Lacey, Source Control Coordinator, DEQ
Brooke Harmon, P.E., Project Engineer, MFA
ECSI 0272 File

(jks:JKS)