



Oregon

Tina Kotek, Governor

Department of Environmental Quality

Northwest Region

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October 1, 2024

Bob Wyatt
NW Natural
220 NW 2nd Avenue
Portland, OR 97209

via electronic delivery (email)

Re: DEQ Comments on the LNG Basin and Former Koppers Basin Groundwater Evaluation/Fill WBZ Interceptor Trench Performance – Third and Fourth Quarter 2023 Former Gasco Manufactured Gas Plant Operable Unit (Gasco OU) Portland, Oregon ECSI# 84

Dear Bob Wyatt:

The Oregon Department of Environmental Quality (DEQ) reviewed the *LNG Basin and Former Koppers Basin Groundwater Evaluation/Fill WBZ Interceptor Trench Performance – Third and Fourth Quarter 2023*¹ (Report) submitted by Anchor QEA on behalf of NW Natural. The Report was prepared under the Voluntary Agreement for Remedial Investigation/Feasibility Study, as amended^{2,3,4}.

The Report describes the monitoring activities associated with the removal action that was implemented to control groundwater in the Fill water-bearing zone (WBZ) downgradient of the Gasco site Liquefied Natural Gas (LNG) Basin and the Former Koppers Basin. The Report provides monitoring data and sampling results collected during the third and fourth quarter of 2023 to evaluate the performance and effectiveness of the interceptor trench system. The performance monitoring results presented in the Report indicate that the interceptor trench system is generally operating as designed and appears to be controlling groundwater downgradient of the LNG Basin and Former Koppers Basin.

DEQ does not require a revision to the Report; however, we request that NW Natural address the comments below in a comment response format and in future trench performance reports, as applicable. Our comments on the Report are provided below.

General Comments

- 1) Please describe the methodology for estimating the capture zone boundaries shown in the potentiometric contour maps in Attachment D. The estimated capture zone boundaries appear to be based on equipotential lines (i.e., capture zone boundary drawn perpendicular to potentiometric contours). This approach may overestimate the overall capture zone. DEQ notes that the estimated

¹ Anchor QEA. 2024. LNG Basin and Former Koppers Basin Groundwater Evaluation/Fill WBZ Interceptor Trench Performance – Third and Fourth Quarter 2023, Former Gasco Manufactured Gas Plant Operable Unit. Prepared on behalf of NW Natural. July 24.

² DEQ. 1994. Voluntary Agreement for Remedial Investigation/Feasibility Study. DEQ No. WMCVC-NWR-94-13. August 8.

³ DEQ. 2006. First Addendum to Voluntary Agreement for Remedial Investigation/Feasibility Study. DEQ No. WMCVC-NWR-94-13. July 19.

⁴ DEQ. 2016. Second Addendum to Voluntary Agreement for Remedial Investigation/Feasibility Study. DEQ No. WMCVC-NWR-94-13. October 11.

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capture zones depicted in Attachment D figures extend further to the north and east (i.e., towards US Moorings and the river) than estimated during design simulations. The capture zone should delineate the portion of the Fill WBZ where groundwater is physically being captured by the pumping system and should be identified based on groundwater velocities. The downgradient extent of capture is where the natural groundwater seepage velocity equals the opposing velocity caused by the pumping system (i.e., the stagnation points or zone), and depends on the pumping rate, natural groundwater velocity, and the Fill WBZ saturated thickness. Once DEQ reviews and approves the revised groundwater model, future deliverables should use the updated model to simulate capture zones as an additional line of evidence.

- 2) Monitoring well MW-48F appears to be close to the estimated capture zone boundaries presented in Appendix D. Groundwater flow paths (perpendicular to the equipotential lines) suggest that groundwater near MW-48F is not consistently captured. Given the relatively higher benzene, toluene, ethylbenzene, and xylene (BTEX) concentrations at MW-48F, DEQ recommends adding MW-18-30 (located downgradient of MW-48F) to the sampling program to further evaluate capture of groundwater in this area.

Specific Comments

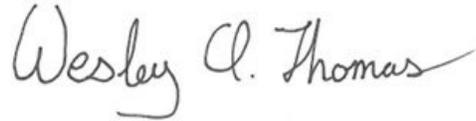
- 3) **Section 4, Third and Fourth Quarter Groundwater Monitoring Evaluation.** This section indicates that wells OW-08-15 and OW-09-25 were not sampled in third quarter 2023 (which matches the data tables). However, Section 5.2.2 (Paragraph 4) indicates the result for BTEX and VOCs at these wells were non-detect in the third quarter. Please clarify whether these wells were sampled in the third and/or fourth quarter.
- 4) **Section 5.3, Contaminant Mass Removed.** The contaminant mass removed estimates reported in this section differ slightly from those provided in Table 3. Please review these estimates to ensure they match in future reports.
- 1) **Table 2, Laboratory Testing Results.** The ‘comprehensive groundwater framework’ indicates that quarterly groundwater monitoring in wells installed for purposes of evaluating the trenches (MW-47F thru MW-53F) includes analysis for total petroleum hydrocarbons (TPH). However, it does not appear that TPH data have been collected for these wells. Please include TPH analysis for future groundwater samples collected from these wells. In addition, DEQ requests that NW Natural begin analyzing TPH in the Pretreatment Plant Expansion influent.
- 2) **Table 3, Concentration and Mass of Contaminants in NW Natural Pretreatment Plant Expansion Influent.** DEQ requests that NW Natural begin estimating TPH mass removal.
- 3) **Attachment C, Figure C-8, Groundwater Elevations – OW-08-15 and River.** The groundwater elevation for OW-08-15 does not appear correct. Please discuss whether this figure reflects a transducer error or a graphing error.
- 4) **Attachment D, Fill WBZ Potentiometric Surface Maps (Monthly Average).** DEQ requests that NW Natural add a table summarizing monthly minimum, average, and maximum pumping rates for the T-50 trench, T-100 trench, and combined trenches.

Please do not hesitate to contact me at (971) 263-8822 or Wesley.Thomas@deq.oregon.gov if you have any questions regarding this letter.

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Sincerely,

A handwritten signature in cursive script that reads "Wesley A. Thomas".

Wesley A. Thomas
Project Manager
NWR Cleanup Section

EC: Heidi Nelson, DEQ
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