

MEMORANDUM | October 3, 2025

TO Wes Thomas and David Lacey, Oregon Department of Environmental Quality (DEQ)

FROM Peter Shanahan, HydroAnalysis LLC (HALLC); Jennifer Hart and Gail Fricano, Industrial Economics, Inc. (IEC)

SUBJECT Five Tribe review of “2024 Hydraulic Control and Containment System Annual Report for the Former Gasco Manufactured Gas Plant (MGP) Operable Unit (OU),” dated August 28, 2025

This memorandum, submitted on behalf of the Five Tribes,¹ reviews the *2024 Hydraulic Control and Containment System Annual Report for the Former Gasco Manufactured Gas Plant (MGP) Operable Unit (OU)* prepared by Anchor QEA on behalf of NW Natural (Anchor QEA 2025a).

Substantive Comments

1. Section 2.3 discusses the cumulative mass removed by the various treatment systems on site. However, the tabulated data show occasional excursions in the monthly values. For example, Table 2-4 shows atypically high benzo(a)pyrene and naphthalene in January, June, and July 2019. In contrast, Table 2-7 shows the mass of iron to be relatively steady from year-to-year and benzene and cyanide to generally decrease over the years. These variations in contaminant masses removed likely reflect on the operations of the Hydraulic Control and Containment (HC&C) System. We therefore recommend that the report discuss the variations in mass over time and offer explanations for the different trends and particularly the high-mass excursions. A particular concern is that these high-mass excursions may indicate mobilization of dense nonaqueous phase liquid (DNAPL).
2. Section 3.1.1.1 and Table 3-2 attribute the apparent loss of hydraulic control at well MW-36U to a “communications error at the control panel which was replaced in August 2024.” Despite this corrective measure, Table 3-2 lists subsequent control loss events in October, November, and December. Section 3.1.1.1 seems to dismiss these events, stating “Following the replacement of the control panel, potentiometric surface maps in Appendices B1 and B2 indicate that there is no loss of hydraulic control based on the water levels in the surrounding wells, so the 3-day average head differences do not represent a condition of concern.” We found this sentence difficult to interpret and recommend that a more precise and comprehensive explanation be provided,

¹ The five tribes are the Confederated Tribes of the Grand Ronde Community of Oregon, the Nez Perce Tribe, the Confederated Tribes of Siletz Indians, the Confederated Tribes of the Umatilla Indian Reservation, and the Confederated Tribes of the Warm Springs Reservation of Oregon.

including pointing out the specific features in specific figures that support the “no loss of hydraulic control” statement.

3. Section 3.1.1.1 includes a footnote describing the Serfes (1991) method as a “three-day rolling average.” This is not strictly correct; it is neither three-day nor a rolling average. It is in fact computed over 71 hours, an even multiple of the 6-hour and 25-minute tidal cycle, and not three days. Nor is it a rolling average, but in fact a more complicated filtering calculation. Although these distinctions may seem trivial, they are significant because the filtering technique is designed to remove tidal fluctuations over the tidal cycle and not the calendar day.
4. Section 3.1.1.2 states “On August 8, 2024, PW-2L was turned off so that it only pumps when necessary to maintain water levels below the river.” If the well was turned off, how can it pump? We recommend the report provide additional explanation.
5. Section 5.1.3 points out, correctly, that concentrations of contaminants in groundwater have tended to be stable over the past eight years. However, many measured concentrations of benzo(a)pyrene and naphthalene, though stable, exceed their solubility limits in water. This indicates that DNAPL is likely nearby and is affecting groundwater quality.² Two locations are noteworthy in this respect: WS-13-69 and WS-23-116 in the Upper Alluvium show concentrations of both benzo(a)pyrene and naphthalene above their solubility limits despite a lack of mapped DNAPL in their immediate vicinity (Anchor QEA, 2025b, Figure 2-3). The reported solubility exceedances suggest that DNAPL may be more widespread than mapped. We recommend the report discuss where water-quality concentrations are indicative of the presence of DNAPL.
6. Sections 5.2.2 and 5.2.3 point out increases in the concentration of benzene, toluene, ethylbenzene, and xylenes (BTEX) and total volatile organic compound (VOCs) in 2019 and 2020 but offer no explanation. We recommend more explanation of these events. Were there events on the ground (e.g., a spill or spills) that caused the increase?

Editorial Comments

7. The last sentence of Section 3.1 makes reference to Section 3.1 when it seems another section is intended.

References

- Anchor QEA. 2025a. 2024 Hydraulic Control and Containment System Annual Report, Prepared for NW Natural. Anchor QEA, Portland, Oregon. August 28.
- Anchor QEA. 2025b. Interim Removal Action Measure Basis of Design Report, Prepared for NW Natural. Anchor QEA, Portland, Oregon; Ede Environmental, LLC, Portland, Oregon; and Severson Environmental Services, Inc., Niagara Falls, New York. May 9.

² U.S. EPA guidance by Kueper and Davies (2009) indicates that concentrations in excess of 1 percent of the effective solubility indicate the presence of DNAPL.

- Kueper, B. H., and K. L. Davies. 2009. Assessment and Delineation of DNAPL Source Zones at Hazardous Waste Sites. Report Number EPA/600/R-09/119. National Risk Management Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, Ohio. September.
- Serfes, M.E. 1991. Determining the Mean Hydraulic Gradient of Groundwater Affected by Tidal Fluctuations. Ground Water, 29(4): 549–555.