

## MEMORANDUM | October 28, 2024

**TO** Katie Daugherty 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 “Arkema Quarter 2, 2024, Groundwater Monitoring Report,” dated September 2024

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This memorandum, submitted on behalf of the Five Tribes,<sup>1</sup> reviews the *Arkema Quarter 2, 2024, Groundwater Monitoring Report* prepared by Environmental Resource Management, Inc. (ERM) on behalf of Legacy Site Services, LLC (LSS) (ERM 2024a).

## General Comments

1. Based on our review of the report, after several quarters of operation, the upgraded groundwater source control measures (SCMs) continue not to perform as intended. The remedial action objectives (RAOs) for the groundwater SCMs include maintaining a landward groundwater gradient from the river to the upland portion of the site (ERM 2010, page 4). Figures 2 through 4 show higher heads on the upland side of the groundwater barrier wall than on the river side, indicating that the groundwater SCMs are not functioning as originally intended, and that the RAOs are not being achieved.
2. Section 3.2.1 states “unstable turbidity did not affect the quality of the data.” We believe this statement to be speculative. At minimum, the statement should be qualified or supported with specific facts.
3. We noted in our review of the groundwater monitoring report for Quarter 1, 2024 (ERM, 2024b) that hydraulic capture appeared to be diminished in Figures 2 through 4 compared to the similar figures for December 2023 (ERM 2024c). This continues to be the case in Quarter 2. In particular, drawdown at the EW-3/EW-4 extraction trench appears to be minimal. We recommend that the report identify this as a change from 2023 and provide additional explanation for why it has occurred.

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<sup>1</sup> 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.

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4. Section 3.2.2.1 reports a substantially higher maximum observed concentration for trichloroethene (TCE) than in the two prior quarters (ERM 2024b and 2024c). We recommend that the increase in concentration be noted and, if possible, explained.

## References

- Environmental Resource Management, Inc. (ERM). 2010. Preliminary Design Report – Groundwater Source Control Measure, Arkema Inc. Facility, Portland, Oregon. Prepared for: Legacy Site Services LLC. Environmental Resources Management, Portland, Oregon. May.
- Environmental Resource Management, Inc. (ERM). 2024a. Arkema Quarter 2, 2024, Groundwater Monitoring Report, Arkema Inc. Facility, Portland, Oregon. Prepared for: Legacy Site Services LLC. Environmental Resources Management, Portland, Oregon. September.
- Environmental Resource Management, Inc. (ERM). 2024b. Arkema Quarter 1, 2024, Groundwater Monitoring Report, Arkema Inc. Facility, Portland, Oregon. Prepared for: Retia USA LLC. Environmental Resources Management, Portland, Oregon. June.
- Environmental Resource Management, Inc. (ERM). 2024c. GWET System Effectiveness Evaluation, Arkema Inc. Facility, Portland, OR. Environmental Resources Management, Inc., Portland, Oregon. March 29.