Oregon
Kate Brown, Governor

Department of Environmental Quality
Northwest Region
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5263
FAX (503) 229-6945
TTY 711

April 5, 2022 *sent via email*

Deborah Taege
The Boeing Company
EHS Remediation
Bldg. 10-20, MC 9U4-26
800 N 6th Street
Renton, WA 98055-1409

RE: 2021 Annual Progress and Five-Year Performance Evaluation Report, Troutdale Gravel Aquifer, Boeing Portland Facility, Gresham, Oregon. ECSI #13

Dear Ms. Taege:

The Oregon Department of Environmental Quality (DEQ) has reviewed the document entitled *2021 Annual Progress and Five-Year Performance Evaluation Report, Troutdale Gravel Aquifer, Boeing Portland Facility, Gresham, Oregon* dated March 15, 2022. This report was prepared on your behalf by Landau Associates' Seattle office. DEQ approves the *2021 Annual Progress Report* with the following comments on section 7.0 Recommendations.

DEQ approves the recommended actions in 7.1 *Treatment System Monitoring*

DEQ approves the recommended actions in 7.2 *Groundwater Performance Monitoring Program, Extraction Wells*

DEQ approves the recommended actions in 7.2 *Groundwater Performance Monitoring Program, Groundwater Monitoring Wells* with the exception of not approving the decommissioning of Coolant Release Area wells LAI-1 through LAI-3 (fourth bullet). From report Figure 7, these three wells are positioned in an east-west array downgradient of the Coolant Release Area and are in a sentinel position to detect possible migration of TPH-Dx hydrocarbons. Two additional monitoring wells, LAI-7 and LAI-4 contained detectable, or slightly elevated, concentrations of TPH-Dx when sampled in 2021. Monitoring wells LAI-7 and LAI-4, are positioned between the presumed coolant release area and the more downgradient (northerly) wells LAI-1 through LAI-3, proposed for decommissioning. At this time, DEQ does not approve the decommissioning of wells LAI-1 through LAI-3, as they may continue to provide useful information to detect TPH-Dx migration. As stated in the report, the elevated TPH-Dx concentrations detected in nearby monitoring well LAI-8, may be an artifact of electron donor injectate in Stagnation Area #2. However, given the time elapsed since the last electron donor injection, these elevated TPH-Dx concentrations are likely indicative of TPH-Dx from the coolant release.

Fifth bullet: DEQ approves the decommissioning of Coolant Release Area injection wells IW-1 through IW-5, as these five wells have clogged well screens from previous reagent slurry injections and are no longer serviceable.

DEQ approves the recommended actions in 7.3 *Enhanced In Situ Bioremediation, Former Vapor Degreaser Source Area* with consideration of the comments below.

The work reported in the *Final SVE Optimization Report, Former Vapor Degreaser Source Area, Boeing Portland, Troutdale Gravel Aquifer, Gresham, Oregon*, dated February 25, 2022, delineated the area of sub slab soils containing halogenated VOCs to a localized area to the west and southwest of the former vapor degreaser location within Boeing building 85-001. The delineated source soils are located a short distance beneath the building foundation and contain adequate contaminants to diffuse elevated VOC vapors to a number of sub slab soil vapor sampling points. Some sub slab soil vapor sampling points exceeded the applicable DEQ Risk-Based Concentration for trichloroethylene (TCE) of 2,900 $\mu g/m^3$ during recent rebound SVE monitoring sampling and analysis.

The *2021 Annual Progress Report* proposes injection of electron donor substrate solution at well BOP-73(i), which is located north of the former vapor degreaser location. Per the approved *SVE Optimization Report*, four vapor extraction wells north and east of former vapor degreaser location are slated to be shut off in 2022. DEQ asks that injection of electron donor substrate solution also be considered at BOP-72(i) in the area of approved enhanced vapor extraction in 2022 and highest soil VOC vapor concentrations and likely source soil location.

Please feel free to call me with questions.

Sincerely,

Kenneth Thiessen, RG, CEG
Northwest Region Cleanup Section
(503) 887-7636

cc: Erin Waibel, PE, Landau Associates
Evelyn Ives, PE, Landau Associates
Clint Jacob, PE, Landau Associates
Dan Hafley, RG, DEQ Northwest Region

ECSI #13