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October 27, 2025
Project No. M8006.63.001

Julia DeGagné
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

Re: Response to DEQ request for information dated August 27, 2025
Eagle Foundry Company

Dear Julia:

On behalf of Eagle Foundry Company (Eagle Foundry), Maul Foster & Alongi (MFA) is providing this response to your letter dated August 27, 2025 (the Letter) in which the Department of Environmental Quality (DEQ) requested additional information as well as changes to Eagle Foundry's air toxics emissions inventory, and Combined Modeling Protocol, Risk Assessment Work Plan, and Risk Assessment Report (the Report). The Letter states that Eagle Foundry must submit responses to the Letter and an updated Cleaner Air Oregon (CAO) emissions inventory and Report no later than October 27, 2025.

This response is organized in the same manner as the information was requested in the Letter. The Letter comments are shown in bold followed by the response. MFA prepared a revised version of the CAO emissions inventory and Report. PDF and Excel versions of the emissions inventory, the updated AQ520 form, and updated Report have been uploaded to YDO.

<u>Emissions Inventory</u>

1. **Submit an updated AQ520 (Emissions Inventory) form including the following revisions, and incorporate changes into the Risk Assessment as applicable:**

    a. **In Worksheet 2, populate Columns C through M for the Reclaimed Bead Overflow Silo (TEU D1-5).**

    Columns C through M in Worksheet 2 of AQ520 for the Reclaimed Bead Overflow Silo (TEU D1-5) have been populated.

    b. **In Worksheet 2, remove the 30-horsepower propane-fired emergency generator (EXEMPT_PROPGEN) if it is a categorically exempt Toxics Emissions Unit (TEU). Based on DEQ's analysis this generator is categorically exempt under OAR 340-245-0060(3)(b)(C)&(JJ) – these emission activities are already included in Eagle Foundry's AQ523 Form for Categorically Exempt TEUs.**

    The 30-horsepower emergency generator is an exempt TEU and has not been included in Form AQ520.

    c. **In Worksheet 2, update the following "Stack or Fugitive ID"s for consistency with the Table 3-5 in the Protocol:**

        i. **For the Small Palmer Bead Silo (TEU D1-1), update to "EP1_1" (small palmer baghouse); and**

The Stack ID for TEU D1-1 in Worksheet 2 of AQ520 has been updated to EP1_1.

ii. **For the Big Palmer Mold Materials (TEUs MOLD_BP_V, MOLD_BP_I, MOLD_BP_C, and MOLD_BP_U), update to "EP2_3" (main foundry baghouse).**

The Stack IDs for TEUs MOLD_BP_V, MOLD_BP_I, MOLD_BP_C, AND MOLD_BP_U in Worksheet 2 of AQ520 have been updated to EP2_3.

d. **In Worksheet 2, confirm the maximum daily activity values for the Silos (TEUs D1-1, D1-3, D1-4, and D1-5). Silo emissions assume 8,760 hours of operation per year but only 20 hours of operation per day.**

Worksheet 2 of AQ520 and supporting calculations now assume 24 hours of operation per day.

e. **In Worksheet 4, update the emission type for Pattern Making (TEU PATTERN) to "fugitive" for consistency with Table 3-6 in the Protocol.**

Worksheet 2 of AQ520 has been updated to show "fugitive" as the emission type for the TEU PATTERN.

2. **Submit an updated workbook showing supporting calculations, in native Excel format.**

An Excel workbook showing supporting calculations has been uploaded to YDO.

<u>Modeling Protocol</u>

3. **Provide the following additional information and incorporate it into the Inventory, Protocol and Risk Assessment and Risk Assessment Report as applicable:**

a. **Documentation demonstrating that welding emissions are fully captured by ducting and routed to a stack. If 100 percent capture cannot be substantiated, update the modeling to assume a justifiable split between fugitive and stack emissions and use release parameters appropriate to each emission type; and**

Videos showing the welding fume capture at all three welding stations will be provided electronically. The videos show that the fume extractors are highly efficient at capturing emissions at the welding stations and routing them to individual stacks (WELD1, WELD2, AND WELD3). Although Eagle Foundry believes that the capture efficiency of the fume extraction system is greater than 95 percent, we have allocated five percent of welding emissions as fugitive emissions. These fugitive emissions were assumed to emit through two of the bay doors in the finishing building (FIN_FUG1, FIN_FUG2).

b. **Update the AQ520 Form to reflect the modeled release parameters – the "Emission Type" column currently describes welding emissions as "Fugitive".**

As described above, the WELD TEU is modeled as both point and volume sources. The AQ520 Form has been updated to reflect that five percent of emissions from welding were assessed as fugitive emissions.

4. **Submit an updated Protocol including the following revisions, and incorporate changes into the Risk Assessment as applicable:**

a. **Update Figure 2-3 ("Process Flow Diagram—Foundry and Finishing") to include Slag Handling (TEU SLAG).**

   Figure 2-3 has been updated to include TEU SLAG and is included in the updated Report.

c. **In the first paragraph of Section 3, update the date of the "TAC emission inventory" used to reflect the most recent version.**

   The date of the TAC emissions inventory in Section 3 of the Report has been updated to October 27, 2025.

d. **In Section 3 ("Emission Estimates and Model Sources"):**

   i. **Include a description of the Small Palmer (TEU S_PALMER);**

      Section 3.4.1 of the Report has been revised to expand the discussion of the Small Palmer TEU.

   ii. **Update the Exit Flowrates and Velocities for the Main Foundry Baghouse (EP2_3) and the Foundry Cooling Bunker (EP2_4) to use site-specific values for actual cubic feet per minute, from the DEQ approved source testing completed in March 2023;**

      The exit flowrates for EP2_3 and EP2_4 have been updated in Table 3-5 of the updated report to match the values in the source test report, *Emissions Test Report, Main Foundry and Cooling Bunker Baghouses Emission Factor Determination and Main Foundry PTE Verification*, dated October 13, 2023, and approved by the DEQ on November 20, 2023. MFA used the minimum outlet velocity for each baghouse to calculate the exit flowrates.

   iii. **Review and confirm the release height of 11.58 meters for emission points HT_1, HT_2, HT_3, and HT_4 – the release height appears to be significantly higher than the building height;**

      The roof vents of the heat treat area of the finishing building are not powered vents, so HT_1, HT_2, HT_3, and HT_4 have been converted to a single volume source HT. The release height has been set to half the building height as recommended in the EPA's *User's Guide for the AMS/EPA Regulatory Model (AERMOD)*, dated November 2024. The updated representation is presented with the other volume sources in Table 3-6 of the updated Report.

   iv. **Include a specific reference for how each exit velocity and non-ambient temperature was determined for the stack release parameters in Table 3-5 and provide supporting documentation as needed; and**

      MFA verified release parameters and measured exit velocities at Eagle Foundry on October 8, 2025. The source parameters in Table 3-5 and Table 3-6 have been updated as necessary. Supporting documentation for the measured parameters has been uploaded to YDO.

   v. **Describe how the release height and length of side for the Pattern Making (Model ID PTRN) were determined in Table 3-6; and**

The release height has been set to half the building height as recommended in the EPA's *User's Guide for the AMS/EPA Regulatory Model (AERMOD)*, dated November 2024. The length of side is based off the dimensions of the wall vent where emissions are assumed to exhaust to atmosphere.

vi. **For the SLAG Model ID in Table 3-6:**

1. **Clarify the units for the Emission Rate for slag handling – these appear to be units of gram per second per meter squared instead of grams per second; and**

   Slag handling is an area source so the unit emission rate is in units of g/s/m^2. Table 3-6 has been revised to clarify the emission rate units for all volume and area sources.

2. **Update the table to the area source dimensions modeled (1.07 meters by 0.814 meters) instead of an Initial Lateral Dimension.**

   Table 3-6 has been updated as requested.

e. **In Section 3-2, update the model ID for Reclamation (TEU REC_R) to "EP2_2" for consistency with the AQ520 form and Table 3-5.**

   The model ID for TEU REC_R has been updated to EP2_2 in Section 3-2 of the Report.

f. **In Section 3.3.1, correct the source test report dates for the Permanent Total Enclosure verification of the Air Arc enclosure – the final test report was dated June 15, 2023, and was approved by DEQ on June 22, 2023.**

   Section 3.3.1 of the Report has been updated with the correct dates of the final test report and DEQ approval date.

g. **Update Section 3.8 to clarify that the Exempt TEUs discussed are those that are exempt under OAR 340-245-0060(3)(a) to differentiate them from TEUs that are categorically exempt under OAR 340-245-0060(3)(b), and remove the 30 hp propane generator from the list if it is exempt under OAR 340-245-0060(3)(b).**

   Section 3.8 of the Report has been updated as requested.

h. **Update the "Total TAC" sums in Tables 3.1 through 3-4 to exclude total chromium (CASRN 7440-47-3) – only Chromium VI (CASRN 18540-29-9) is a TAC included in the risk assessment.**

   The Total TAC sums in Tables 3-1 through 3-4 have been removed.

i. **In Section 4.1, use the most recent version of AERMAP (v. 24142).**

   Table 4-1 has been updated to show that AERMAP Version 24142 was used to process the meteorological data used in the dispersion model.

j. **Update Table 4-4 and the meteorological data processing to reflect that surface data were not collected at an airport.**

   Table 4-4 has been updated to reflect that the surface data were not collected at an airport.

k. **In Table 4-3, indicate the number or percentage of calm hours per quarter.**

   Table 4-3 has been updated to include the percentage of calm hours per quarter.

l. **Update Section 4.2.4 to add further detail regarding the substitution of data from Q1 of 2021 with data from Q1 of 2019:**

   vii. **Describe whether the missing data from Q1 of 2021 is intermittent or more continuous in nature; and**

   Section 4.2.4 has been revised to note that the missing data from Q1 of 2021 was mostly continuous, occurring between February 13th and February 20th.

   viii. **Clarify whether the substitution included all hours from Q1 of 2021 or if only the missing hours were substituted.**

   MFA substituted all hours from Q1 of 2021 with the entire set of hours from Q1 of 2019.

<u>Risk Assessment Work Plan</u>

5. **Submit an updated Work Plan including the following revisions, and incorporate updates into the Risk Assessment as applicable:**

   a. **Renumber Table 4-10 ("Summary Of Statewide Zoning And Exposure Type Categorization") as Table 4-9 to match the text in Section 4.7 (the Work Plan currently does not have a Table 4-9).**

The Summary of Statewide Zoning and Exposure Type Categorization table has been re-numbered to Table 4-9.

6. **Update the Risk Assessment, Figure 4-4, and the "Summary Of Statewide Zoning And Exposure Type Categorization" table as follows:**

   a. **Child exposure locations should be assessed for worker or residential exposure as well, whichever is appropriate (for example, schools should include worker exposure and in-home daycares should include residential exposure).**

   All child locations were also assessed for worker or residential exposure as requested. Child/Worker and Child/Residential locations have been updated in Figure 4-4 and the Crosswalk of Receptors.

   b. **In Table 4-10, update the "Corresponding Exposure Type Classification" for commercially zoned areas from "Non-Residential Worker or Child (if applicable)" to "Non-Residential Worker and Child (if applicable)" because daycares and schools should also include worker exposure.**

   The Corresponding Exposure Type Classification for commercially zoned areas in the Summary of Statewide Zoning and Exposure Type Categorization table (renumbered Table 4-9), has been updated to Non-Residential Worker and Child (if applicable).

   c. **Adjust the receptors so that all receptor distances extend from the property boundary, rather than from the center of the facility (currently only the 25-meter receptors extend out to 200 meters from the property boundary).**

The receptor grid was revised to extend from the property boundary. Receptor spacing is presented in Table 4-8 of the updated Report.

d. **Evaluate Eagle Creek Explorers Nature School and Daycare (24347 SE Filbert Road) as both a child and residential exposure location.**

   Eagle Creek Explorers Nature School and Daycare was assessed as both a child and residential exposure location.

e. **Review the receptors that are outside of the right-of-way and ensure they are assessed appropriately based on the most current Clackamas County zoning information. This includes but is not limited to:**

   i. **Receptors in areas zoned for Exclusive Farm Use: If local zoning laws allow for one or more residential structures, Exclusive Farm Use should be assessed for residential and acute exposure by default.**

      1. **If it can be demonstrated that all allowable residential structures have already been constructed on a taxlot, only the residential portions of the taxlot must be assessed for residential exposure, and an exposure location change request is not required.**

      2. **If all allowable residential structures have not already been constructed on a taxlot, and Eagle Foundry wishes to request the use of an exposure classification other than residential (for example, worker and acute for farm outbuildings or acute-only for farm fields), you must submit the AQ521 Exposure Location Change Request Form and the AQ522 Exposure Location Change Request Table stating the requested changes;1 and**

         Exclusive farm use zoning in Clackamas County is generally restrictive about multiple dwellings on exclusive farm use land, however a second residence may be approved in certain circumstances. Specifically, an accessory farm dwelling may be allowed for non-relatives who are principally engaged in farm use, but it must be located on the same lor or tract as the primary dwelling. Additionally, a relative who is actively working on the farm may be allowed to build a residence, but there must be no other vacant dwellings on that lot that could be used for that purpose. Finally, a temporary hardship dwelling, such as a manufactured home or RV may be allowed, but it must be removed within three months of the end of the hardship period.

         The exclusive farm use lots directly west and south of the facility have residential structures on the lots. These areas were assessed for residential exposure where there is a residential structure, worker exposure for outbuildings, and acute-only for fields. All other exclusive farm use lots have been assessed as all residential.

         See Figures 4-6 and 4-8, and the Crosswalk of Receptors for zoning and exposure categorization details.

   ii. **Receptors in other residentially zoned areas:**

1. If Eagle is proposing to assess any of these as either worker and acute or acute-only exposure, you must submit the AQ521 Exposure Location Change Request Form and the AQ522 Exposure Location Change Request Table stating the requested changes; and
2. This includes but is not limited to the receptors directly north and northeast of the facility that are located within the "Rural Residential Farm Forest 5-Acre" zoning.

   The receptors directly north and northeast of the facility that are located in the Rural Residential Farm Forest 5-acre zoning have been assessed for residential exposure. See Figures 4-6 and 4-8, and the Crosswalk of Receptors for zoning and exposure categorization details.

Risk Assessment

7. Please submit updated Risk Assessment tables and an updated Risk Assessment Result Summary with the following revisions:
   a. Clarify the table references in the second paragraph of Section 6 – gas combustion TEUs are compared to the Risk Action Levels in Table 6-6, and significant TEUs are compared to the Risk Action Levels in Table 6-7.

      Section 6 has been revised to show the results summary for the gas combustion TEU in Table 6-6, and significant TEUs are compared to the Risk Action Levels in Table 6-7.

   b. Update the rounding in Table 6-7 to be consistent with OAR 340-245-0200(4). Specifically, risk that exceeds the Source Permit Level (noncancer hazard index greater than 0.5 or excess cancer risk greater than 5) should be rounded to the nearest whole number.

      The rounding in Table 6-7 has been updated to be consistent with OAR 340-245-0200(4).

   c. In Section 6.3 for acute risk assessments:
      i. In the second bullet, clarify or remove the statement "The Level 3 RA was conducted assuming all sources at the facility are simultaneously operating at maximum capacity for 24 hours" – DEQ did not evaluate whether melting was modeled at the physical capacity of the equipment, and many other TEUs were modeled below their daily physical capacity.

         This section has been revised as requested.

      ii. In the third bullet, remove the reference to "maximum capacity".

         This section has been revised as requested.

   d. In Section 6.3 for cancer and chronic risk assessments:
      i. Update the first bullet to clarify that DEQ's Risk Based Concentrations assume a 70-year, 24-hour per day exposure duration for residential cancer risk only. Child and worker cancer risk RBCs rely on different assumptions (see DEQ's

Recommended Procedures for Toxic Air Contaminant Health Risk Assessments (October 2022)). Chronic noncancer risks for all scenarios are appropriate for exposures longer than one year.

Section 6 has been revised as requested.

ii. **Clarify or remove the second bullet – few of the TEUs were modeled at their maximum annual physical capacity.**

The second bullet of Section 6.3 has been revised as requested.

Thank you for working with us throughout this process. Please contact Greg Lasslett at gregl@eaglefoundryco.com or Leslie Riley at LRiley@maulfoster.com if there are any questions or comments about the information being provided.

Sincerely,

Maul Foster & Alongi, Inc.

Leslie Riley
Senior Air Quality Specialist

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