



Oregon

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Orchid Orthopedic Solutions Oregon, Inc.
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Oregon City, OR 97045
Sent electronically only

Nathan Holwege,

DEQ received the submittal of the Cleaner Air Oregon (CAO) Emissions Inventory (Inventory) for Orthopedic Solutions Oregon, Inc. (Orchid Orthopedics) in Oregon City, OR on November 22, 2024. In accordance with [Oregon Administrative Rule \(OAR\) 340-245-0030\(2\)](#), DEQ issued a written request on March 18, 2025, requiring additional information and a revised Inventory to be submitted by May 19, 2025. Orchid Orthopedics requested an extension to DEQ's deadline and submitted their response to DEQ's request in two parts. Orchid Orthopedics submitted supporting information on May 15, May 16, and May 23, 2025. Additional supporting information and the revised Inventory was received on June 17, 2025.

DEQ has reviewed the Inventory and identified additional updates that are needed before approval. In accordance with [OAR 340-245-0030\(4\)\(b\)](#), DEQ is providing Orchid Orthopedics with a revised deadline for submittal of a revised Inventory. Please submit the information specified below by **60 days** after the issuance date of this letter, or **February 6, 2026**.

General Comment

Actual Emissions: Per [OAR 340-245-0040\(4\)\(a\)\(B\)\(i\)\(I\)](#), existing sources are required to submit actual annual and maximum daily production activities and usage for the calendar year preceding the DEQ call in. Orchid Orthopedics is not required to submit emissions estimates for the Actual activities and these may be omitted from the revised Inventory requested under Specific Comment 2.

Specific Comments

1. **Process Flow Diagram:** Submit to DEQ a revised process flow diagram (PFD) to address the following comments.
 - a. Ensure consistency in naming of Toxics Emissions Units (TEUs) between the AQ520 form and the PFD. The following TEUs have different names in the AQ520 form and the PFD:
 - i. "Knock Out" versus "Knockout" TEU;
 - ii. "Finish Sandblast" versus "Finishing Sandblast" TEU;
 - iii. F-75 Sandblast and 17-4 Sandblast TEUs; and
 - iv. F-75 Grind and 17-4 Grind TEUs.
 - b. Ensure all TEUs from the AQ520 form are included in the PFD. The following TEUs were excluded from the PFD:
 - i. WELD (MIG);
 - ii. CELL 1 SANDBLAST;

- iii. CELL 2 SANDBLAST; and
- iv. FINISHING-POLISHING.

2. **Revised Inventory:** Submit to DEQ a revised AQ520 Inventory Form, along with all supporting calculations in Excel format, as well as all information required under [OAR 340-245-0040\(4\)](#). Include the following updates to the AQ520:

- a. Per the General Comment, Orchid Orthopedics may omit emission estimates for the Actual activity basis from both Worksheets 3 and 5.
- b. DEQ noted updates to the following throughputs or usage rates in Worksheets 2 and 4 of the revised Inventory submitted on June 17, 2025, when compared to the Inventory submitted on November 22, 2024. These changes were not documented in the submittal materials. Confirm that these changes were incorporated intentionally and if not revise as needed.
 - i. Annual PTE and capacity welding usage rates for the following TEUs:
 - 1. WELD (F-75);
 - 2. WELD (17-4); and
 - 3. WELD (MIG);
 - ii. WELD (17-4) TEU: The actual annual usage rate for the 17-4 alloy welding differs from information presented in the previous version of the Inventory and from the usage rates presented in the information presented in supporting workbook “Orchid CAO - UPDATED Supporting Calcs for Emissions (Rev01)-FINAL.xlsx”;
 - iii. Annual PTE and capacity alloy poured for the following TEUs:
 - 1. F-75 CAST;
 - 2. 17-4 CAST;
 - 3. F-75 CUT;
 - 4. 17-4 CUT; and
 - 5. KNOCK OUT; and
 - iv. Annual PTE and capacity material usage rates for the following TEUs:
 - 1. PARTS CLEANING;
 - 2. FLASHFIRE DEWAX;
 - 3. CELL 1 SANDBLAST;
 - 4. CELL 2 SANDBLAST;
 - 5. MACHINING OIL;
 - 6. FINISH SANDBLAST;
 - 7. ROBOT POLISH; and
 - 8. FINISHING-POLISHING.
- c. F-75 Alloy TEUs:
 - i. Review of alloy specifications provided by Orchid Orthopedics shows the F-75 alloy contains manganese (CASRN 7439-96-5). Include emission estimates for manganese from the following TEUs:
 - 1. WELD (F-75);
 - 2. F-75 CAST;
 - 3. F-75 CUT;
 - 4. F-75 GRIND; and
 - 5. F-75 SANDBLAST; and
 - ii. Review of 2023 actual annual alloy poured against information submitted in both the 2023 Annual Report and the Air Toxics Emissions Inventory (ATEI) show

discrepancies. Review and revise throughputs as appropriate to resolve the discrepancy for the following TEUs:

1. F-75 CAST;
2. F-75 CUT;
3. F-75 GRIND; and
4. F-75 SANDBLAST.

d. 17-4 Alloy TEUs: Review of alloy specifications provided by Orchid Orthopedics shows the 17-4 alloy contains phosphorus (DEQ ID 504). Include emission estimates for phosphorus from the following TEUs:

- i. WELD (17-4);
- ii. 17-4 CAST;
- iii. 17-4 CUT;
- iv. 17-4 GRIND; and
- v. 17-4 SANDBLAST.

e. WELD (MIG) TEU: The SDS for this electrode show that it contains copper (CASRN 7440-50-8). Include emission estimates for copper using the calculation methodology outlined in Section 1.1.2 of guidance from San Diego County Air Pollution Control District.¹

f. Casting TEUs (F-75 CAST and 17-4 CAST): DEQ will not accept the assumption of full capture of casting operation emissions (inclusive of emissions from melting, charging & tapping, pouring, and cooling) by control devices DC1, DC2, and DC3. The justification provided is inadequate to support such a high degree of capture for emissions generated from casting activities. Either substantiate a lesser amount of capture by these control devices or remove entirely.

g. 17-4 SANDBLAST TEU: Update TEU name on Worksheet 2 from “17-4 SANSBLAST” to “17-4 SANDBLAST”.

h. FINISH SANDBLAST TEU: Revise the control efficiency for DC6 from 99.9 percent to 99 percent consistent with the control efficiency for DC6 used at the grinding TEUs (F-75 GRIND and 17-4 GRIND). Reference DEQ’s March 18, 2025, letter for DEQ’s comments regarding Orchid Orthopedics’ baghouse control efficiencies.

i. ROBOT POLISH TEU: Update control efficiency of the DC9 filters to reflect the MERV 10 equivalency rating stated by the manufacturer. Additional documentation provided by Orchid Orthopedics in the June 17, 2025, submittal appears to be for a different filter media than is used at DC9 based on a comparison to supporting documentation provided by Orchid Orthopedics with the November 22, 2024, submittal. This is therefore insufficient to justify a control efficiency of 99 percent. DEQ will accept a control efficiency of 80 percent based on the EPA’s minimum stated control efficiency for MERV 10 filters for particulate of size range 3-10 micron. DEQ will accept this higher control efficiency for the robot polishing as it is a mechanical process and is not expected to generate particulate matter of a size less than 3 microns in significant quantities.²

¹ San Diego County Air Pollution Control District. October 16, 1998 (revised July 11, 2022). “Welding Operations.” (<https://www.sdapcd.org/content/dam/sdapcd/documents/permits/emissions-calculation/welding/APCD-Welding-Operations.pdf>).

² EPA. Indoor Air Quality. Updated March 5, 2024. “What is a MERV rating?” (<https://www.epa.gov/indoor-air-quality-iaq/what-merv-rating>)

j. KOLENE TEU: Review of 2023 actual annual usage of the Caustic Soda Beads material against information submitted in the ATEI show discrepancies. Review and revise throughputs as appropriate to resolve the discrepancy.

DEQ requests that you submit additional information to complete your Inventory. If you think that any of that information is confidential, trade secret or otherwise exempt from disclosure, in whole or in part, you must comply with the requirements in [OAR 340-214-0130](#) to identify this information. This includes clearly marking each page of the writing with a request for exemption from disclosure and stating the specific statutory provision under which you claim exemption. Emissions data is not exempt from disclosure.

DEQ remains available to discuss this information request and answer any questions you may have. Failure to provide additional information, corrections, or updates to DEQ by the deadlines in this letter may result in a violation of [OAR 340-245-0030\(4\)\(b\)](#).

If you have any questions regarding this letter please contact me directly at (971) 300-3653 or amy.devita-mcbride@deq.oregon.gov. I look forward to your continued assistance with this process.

Sincerely,

Amy DeVita-McBride

Amy DeVita-McBride
Cleaner Air Oregon Project Engineer

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