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January 6, 2026

Department of Environmental Quality
Cleaner Air Oregon (CAO)
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Attn: Amy DeVita-McBride, Project Engineer

RE: Smoke Testing
Orchid Orthopedic Solutions Oregon, Inc., 13963 S Fir St., Oregon City, OR 97045
ENW Project 1827-23001-06

The purpose of this letter is to summarize recent smoke testing efforts at the above-referenced subject site. The purpose for this smoke testing was to confirm capture of casting operations emissions (i.e., melting, charging, tapping, pouring and cooling) by the baghouse dust control devices (e.g., DC1 through DC3). Smoke testing utilized Superior 5E Smoke Pellets and the pellets were deployed following the manufacturers specifications.

Locations.

On December 3rd, 2025 at 7AM, smoke testing was performed on the roof of the subject site, at two vent locations (see attached figure):

- Vent #6, located above the area where casting operations are performed, and
- Vent #2, located at the far north end of the room where casting operations are performed, furthest distance from the bag house dust control units. The purpose of this location was to test worse-case conditions on makeup air intake into this space.
- Notes:
 - All furnaces were operating at the time this smoke testing was performed. At the time of this testing, winds were light (between 3 and 6 miles per hour) with temperatures around 40F.

On December 18th, 2025 at 6AM, a follow up smoke test was performed in the casting area, to confirm emissions in this area are drawn toward the baghouse dust control units and away from the operating furnaces.

- A smoke pellet was ignited in the area where castings are poured.
- Notes:
 - All furnaces were operating at the time this smoke testing was performed. At the time of this testing, winds were moderate (between 8 and 14 mile per hour) with temperatures around 40F.

Operations.

During both smoke tests, none of the vent fans were operating. Initially, both dampers were in the closed/shut position, and smoke was observed to be drawn into the vent and subsequently

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into the casting room. Opening the dampers increased the flow of smoke into the vent and the casting room. An ENW technician was present on the roof to introduce the smoke using a lit smoke petter within a steel pail at both vent locations, sequentially and independently. Orchid provided video observations of the smoke being drawn into the cast room through the roof vents from the building interior perspective. During both smoke tests, casting operations included: melting, charging, tapping, pouring and cooling. Given the time that casting operations are conducted (between 11PM and 7AM), the only other facility operations being conducted at the time as these smoke tests were the cut off and gate griding operations, which started at 4AM.

Findings.

Smoke was observed to be drawn into the cast room at both vent locations, regardless of whether the dampers were opened or not. Opening the dampers only increased the amount of smoke drawn into the space, suggesting the dampers do not provide an airtight seal, but do provide restriction. The smoke test in the actual casting area showed that air in that area is drawn to the back corner of that space, under the influence of the baghouse dust control devices, and that air is not drawn towards the operating furnaces, even with all four furnaces operating. Based on operations we conclude that emissions from the cast area are drawn to the baghouse dust control devices and are not drawn towards the furnaces or roof vents.

Notes on fan vent operation. Per Orchid, the dampers are typically closed except when air is needed to be drawn into the air space. Fans were not operated during any of the smoke testing. Orchid stated that the fans are operated to pull air into the space during extreme weather conditions where additional makeup air in the space is needed and can run in reverse to pull air out of the space if needed; however, the fans are never during casting operations.

Notes on baghouse dust collection operation. Baghouse dust control units DC1, DC2 and DC3 were all in normal operation during the smoke test observation periods. These baghouse dust control units operate 24/7, and are only shut down during holidays, weekends, and other facility closure events (related to inclement weather such as snow/ice, etc.).

Please let me know if you have any additional questions or comments related to any of the CAO submittal documents for this project or related to this project in general. We appreciate your assistance with this project.

Sincerely,

EVREN Northwest, Inc.



Lisa Kelly Simmons, P.E.
Senior Engineer

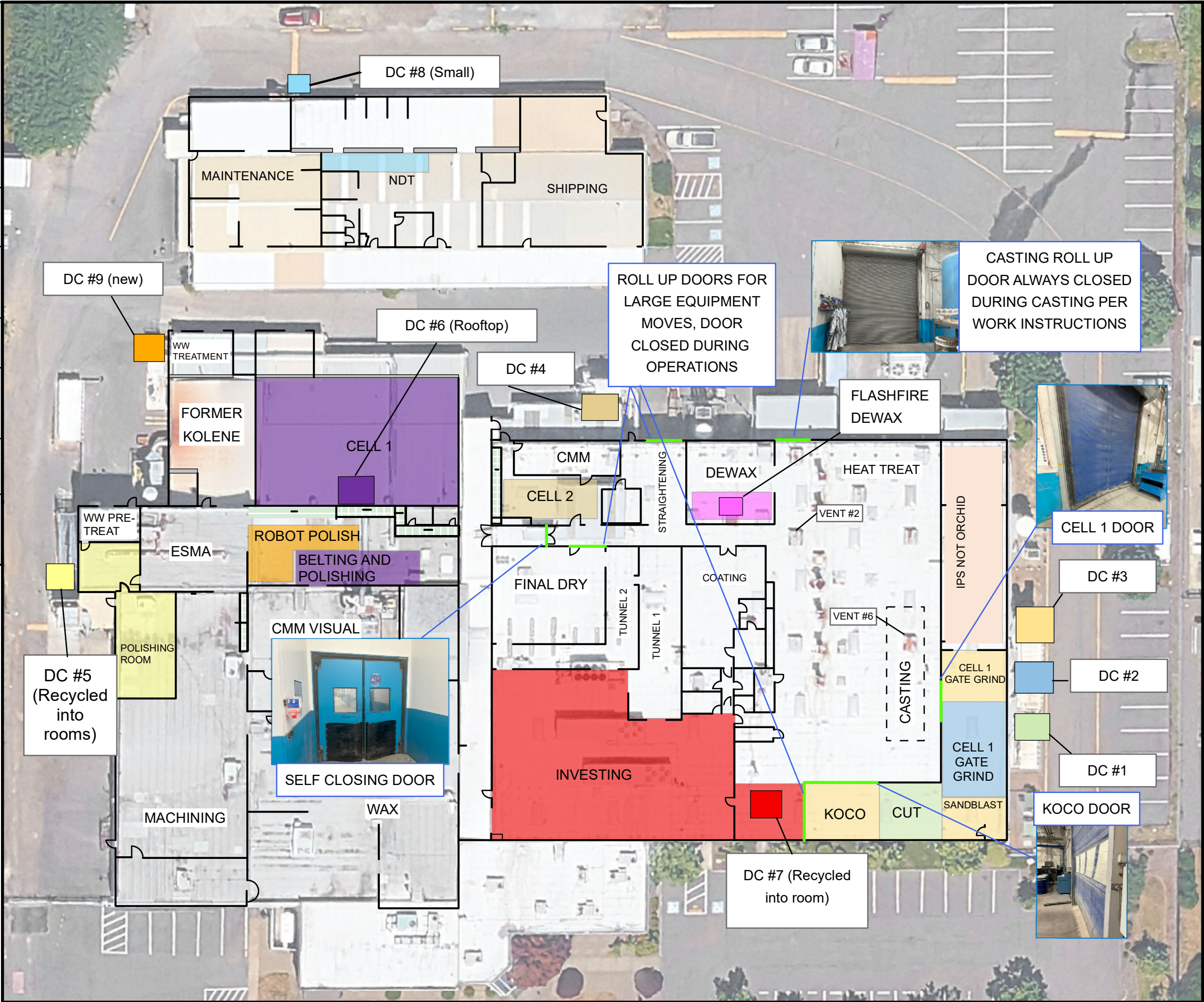


Lynn D. Green, C.E.G.
Principal Engineering Geologist

CC: Nathan Holwege, Orchid Orthopedic Solutions Oregon, Inc.

Attachments:

Figure 1 – Smoke Test Vent Locations



LEGEND:

NOTES:

1. SITE DRAWING PROVIDED BY ORCHID ORTHOPEDIC
2. BASE MAP DEVELOPED FROM AN AERIAL PHOTO (2024).
2. SYMBOLS AND SHADING REPRESENT LOCATION BUT DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION
3. AREAS OF EMISSION CONTROLS ARE COLOR-CODED TO MATCH THEIR CONTROL DEVICE



FIGURE 1

SMOKE TEST VENT
LOCATIONS

ORCHID ORTHOPEDIC
13963 FIR STREET
OREGON CITY, OREGON