



Oregon

Kate Brown, Governor

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December 2, 2022

Wolf Steel Foundry, Inc.
6160 S. Whiskey Hill Rd.
Hubbard, OR 97032
Sent via email only

Bryan Rumpca,

DEQ received the initial submittal of the Cleaner Air Oregon (CAO) Emissions Inventory Form AQ520 (Inventory) for Wolf Steel Foundry, Inc in Hubbard, OR on May 2, 2022, and has completed an initial review.

In accordance with Oregon Administrative Rule (OAR) 340-245-0030(2), DEQ has determined that, in order to approve the Emissions Inventory, the following additional information, corrections, and updates are required by **January 16, 2023**:

1. Capture and control efficiencies
 - a. Provide the basis for using 90% baghouse capture efficiency.
 - b. Provide the basis for attributing 50% building control to fugitive emissions occurring inside a building for “Core Making”, “Core Wash”, “Spend Sand Handling”, and “Scrap Handling”.
 - c. Address the discrepancy between capture efficiencies stated in the AQ520 Inventory and the supporting information workbook for “Mold Making” and “Mold Wash”.
 - i. Mold Making: The supporting information workbook uses 50% capture. The Inventory states 90% capture, but uses the values calculated in the workbook.
 - ii. Mold Wash: The supporting information workbook uses 90% capture. The inventory states 75% capture, but uses the values calculated in the workbook.
 1. Please explain why “Mold Wash” capture efficiency is higher than the 50% capture used for “Mold Making”.
 2. For “Mold Wash”, the AQ520 Inventory states 50% building control for fugitive emissions, but uses the values calculated in the supporting information workbook without this control.
2. Alloy composition
 - a. Provide the compositional analysis for the following:
 - i. “Sample - 10/17/2019”;
 - ii. “Typical Steel”; and
 - iii. “Typical Stainless”.
 - b. Provide background information for how the chronic and acute compositional values were selected; in particular, why values from materials listed in (2)(a) above were used to calculate chronic values and not those listed in the “Mild” and “Stainless Steel Alloys”.

3. Hexavalent chromium emissions. DEQ has information from recent source testing from metal foundry melting operations that indicate a 12% ratio of hexavalent chromium to total chromium for stainless steel melts. Please revise the calculations to reflect this ratio.
4. Emission factors and settling factors for “Scrap Handling”, “Spent Sand Handling”, and “Grinding” come from the 1972 Gutow article in Modern Casting. Please provide this article and the necessary background information for review.
5. Mold Making and Core Making (MM-S,F & CM)
 - a. For naphthalene (CAS#91-20-3) percent composition, use the higher value of the two given in the safety data sheet (SDS): the average from the composition range in Section 3, and SARA 313 in Section 15.
 - i. Pep Set X I 1000 Binder: 3.25%
 - ii. Pep Set X II 2000 Binder: 3.25%
 - iii. Pep Set 3501 Catalyst: 7.5%
6. Mold Wash and Core Wash (MW-S,F & CW)
 - a. Provide support for the 15% over spray (85% transfer efficiency). Otherwise, DEQ recommends a default transfer efficiency of 65%, leading to overspray emissions of 35% for this activity.
7. Sand Handling (SBIN)
 - a. Provide either the SDS or material composition for the sand to demonstrate no trace metals are emitted.
 - b. Clarify which baghouse controls the sand handling. The cover letter, AQ520 Inventory, and supporting information workbook have discrepancies.
8. Melting (MELT-S,F)
 - a. Revise the melting particulate matter (PM) emission factor to 2.06 pounds PM per ton metal melted from the 2012 RTI International “Emission Estimation Protocol for Iron and Steel Foundries”¹. This is the sum of filterable and condensable emission factors for uncontrolled induction melting and charging/tapping.
9. Pouring, Cooling, and Shakeout (PCS-S,F)
 - a. Please separate “Shakeout” and “Pouring and Cooling” emissions into separate TEUs.
 - b. For “Pouring and Cooling” emissions, revise the PM emission factor to 1.377 pounds PM per ton metal melted². This includes both filterable and condensable PM.
10. Arcing and Cutting (ARCT-S,F)
 - a. Provide additional information describing how arcing is performed and a justification for why the AP-42 12.5 machine scarfing emission factor is appropriate.
 - b. Clarify whether torch cutoff is performed, and if so, calculate these emissions using 0.06 pounds total PM per hour cutting time per station, from the American Welding Society for torch cutting of clean, ½-inch steel plate³.
11. Inspection and Welding (INSP)
 - a. Include emissions for aluminum, phosphorus, and vanadium from the following welding wire:
 - i. ER120S-1;
 - ii. ER110S-1; and

¹ Source: RTI International, Emission Estimation Protocol for Iron and Steel Foundries (December, 2012), Table 3-3 “Summary of PM Emission Factors for Melting Furnace Operations”.

² Source: RTI International, Emission Estimation Protocol for Iron and Steel Foundries (December, 2012), Table 5-4 “Summary of PM Emission Factors for PCS Lines”.

³ Source: Versar, Inc. “Title V Applicability Workbook”, 1996, Table D-5 “Torch Cutting Emission Factors”. See excerpt provided as Attachment A.

iii. ER70S-6.

DEQ is requesting 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 the information request with you and answer any questions you may have. Failure to provide additional information, corrections, or updates to DEQ by the deadlines above may result in a violation of OAR 340-245-0030(1).

If you have any questions regarding this letter, please contact me directly at (971-269-8163, Marissa.Meyer@deq.oregon.gov), and I look forward to your continued assistance with this process.

Sincerely,

Marissa Meyer 12/2/2022

Marissa Meyer
Cleaner Air Oregon
New Business and Technical Assistance Coordinator

Cc: Travis Quarles, Bridgewater Group, Inc.
Kent Norville, Bridgewater Group, Inc.
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