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Imerys Perlite USA, Inc.
96078 Industrial Lane,
Lakeview, OR 97630
Submitted online only

David Dooley,

DEQ received the submittal of the Cleaner Air Oregon (CAO) Emissions Inventory for the Imerys Perlite USA, Inc. (Imerys) facility in Lakeview, OR on June 2, 2025, and has completed an initial review. The Emissions Inventory consisted of the AQ520 form (Inventory), Attachment 1 Imerys CAO inventory calculations v1.0 (supporting calculations), AQ523 form, and supporting documentation. In accordance with Oregon Administrative Rule (OAR) 340-245-0030(2), DEQ has determined that the following additional information, corrections, and updates are required to be submitted by October 10, 2025 to approve the Inventory:

1. Provide the following **additional information**:
    a. A copy of the O&M plan referenced in the ACDP 19-001-SI-01[1].
    b. The following SDSs were provided to DEQ but the material usage is not listed on Tab 4 of the AQ520. Please provide clarification on the usage of these materials:
        i. PB Penetrating Catalyst; and
        ii. Cyclo Breakaway Fast Penetrating Oil.
    c. For the Rotary Dryer – Used Oil Burned (TEU RDO):
        i. Source test reports for the Rotary Dryer referenced in Table 17 of the supporting calculations;
        ii. Confirm that the used oil combusted onsite is "re-refined" used oil;
        iii. The entire laboratory report for the used oil. Only page 4 from the 20 total pages were provided in the supporting documentation; and
        iv. Additional information on how the used oil is delivered to the site and if any used oil is stored onsite – onsite used oil storage tanks would be considered a TEU.
    d. For the Drop Points – Active Raw Ore (drop points 1-6) (TEU DP-1):
        i. Additional justification for the moisture content of the raw ore; and
        ii. Meteorological data used to calculate average and maximum wind speed; additionally provide a discussion that includes the location, time period, and representativeness of the data used.
    e. For Stockpiles (TEU AS and TEU IS), provide the meteorological data used to calculate average and maximum wind speed – provide a discussion that includes the location, time period, and representativeness of the data used.
2. Revise and submit **supporting calculations** to resolve the following:

[1] https://deqonline.deq.state.or.us/AQPermitsonline/19-0001-SI-01_P_2020.PDF

a. Rotary Dryer – Used Oil Burned (TEU RDO): For Table 17 of the supporting calculations, correct the source attribution for pyrene (CASRN 129-00-0) and TCE (CASRN 79-01-6) – these emission factors are from AP-42 chapter 1.11-5 and not the permit.
b. Drop Points – Active Raw Ore (drop points 1-6) (TEU DP-1):
    i. Update the emission estimates to account for six independent drop points – the activity should be multiplied by a factor of 6 to account for the separate emission points.
    ii. Provide units for the hourly emissions and annual emissions in Table 10.
    iii. Update the emission estimates to calculate worst case daily emissions using the lowest moisture content and highest wind speeds, per AP-42 chapter 13.2.4.
    iv. Confirm the units for the amount of ore processed per activity period. The units in Tab 2 state that 262,800 *pounds* of ore is processed per year and 720 *pounds* is processed per day. The emission factors used in Tab 3 and calculations provided in the supporting calculations indicate that 262,800/720 *tons* of ore is processed per year/day. Please fix this discrepancy.
c. Stockpiles (TEU AS and TEU IS):
    i. For Table 18, correct the spelling of "Emissin" to "Emission" in the title
    ii. Update the emissions estimates calculations to account for two points of emission (material handling and wind erosion). Each of these points of emission will have different average annual and maximum daily emission factors. Calculate these emission factors using the information below. Submit all calculations conducted to DEQ in Excel format:
        1. Material Handling – use AP-42 chapter 13.2.4[2] equation 1 for loading/unloading the storage piles.
            a. Use the following to calculate the maximum daily emission factor:
                i. Review the rolling 24-hour historical meteorological data to determine the maximum mean daily wind speed; and
                ii. Unless site specific information is available, assume M (material moisture content) is 0.25%. Site specific information could include dust control such as water spraying.
            b. Imerys may also use the Industrial Wind Erosion methodology provided in AP-42 chapter 13.2.5. Please discuss with DEQ if Imerys would prefer to use this method.
        2. Wind erosion – use EPA 1988 "Control of Open Fugitive Dust Sources"[3], Equation 4-9 for Total Suspended Particulate (TSP).
            a. For "s" and "f" use whole number for the percentages (for 20% use 20, not 0.20) in the calculation;

[2] EPA, 2006. "Aggregate Handling and Storage Piles" Available online: https://www.epa.gov/sites/default/files/2020-10/documents/13.2.4_aggregate_handling_and_storage_piles.pdf
[3] EPA, 1988. "Control of Open Fugitive Dust Sources". Available online: https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/19880901_oaqps_epa-450_3-88-008_control_open_fugitive_dust_sources.pdf

b. Use the following to calculate the maximum daily emission factor:
    i. For maximum daily, review rolling 24-hour historical meteorological data to determine the maximum % of time wind exceeds 12 mph in a day.
    ii. Assume 0 for number of days with >0.01 inch of precipitation.

d. Welding emissions (TEU WELD1, TEU WELD2, TEU WELD3 and TEU WELD4):
    i. Include the electrode type used in Tables 4 and 5.
    ii. For WELD1: make the following corrections:
        1. Include quartz (at 3%) as respirable silica, crystalline (respirable) (CASRN 7631-86-9) or provide further documentation that the quartz in the welding rod is not respirable;
        2. Correct the maximum weight percent for aluminum oxide (CASRN 1344-28-1) from 5% to 1% to match the SDS;
        3. Include aluminum oxide (CASRN 1344-28-1) on Tab 3 of the AQ520; and,
        4. Correct emission factors obtained from AP-42 Table 12.19-2. These emission factors are provided in units of 10^{-1} lb/10^{3} lb and should be converted to units of lb/10^{3} lb. This applies to the following TACs:
            a. Manganese (CASRN 7439-96-5) should have an emission factor of 1.03 lb/1000 lb;
            b. Cobalt and compounds (CASRN 7440-48-4) should have an emission factor of 0.001 lb/1000 lb;
            c. Nickel (CASRN 7440-02-0) should have an emission factor of 0.002 lb/1000 lb.
    iii. For WELD3: Include fluorides from lithium fluoride (along with fluorides from barium fluoride) in the calculation for total fluorides (DEQ Seq ID 239).
    iv. For WELD4 the following TACs are listed in Section 15 of the SDS. Include these TACs or provide additional manufacturer information that these TACs will not be emitted during this welding process:
        1. Cobalt and compounds (CASRN 7440-48-4), and
        2. Chromium VI (CASRN 18540-29-9)

e. Material Balance usage should be converted from cans/year to lb/year using material density information provided in the SDS or otherwise provided by the manufacturer. Provide supporting calculations and any additional manufacturer documentation for these conversions.

3. Provide a revised **Process Flow Diagram** with the following updates in accordance with OAR 340-245-0040(4)(b)(C)(i): Include the air pollution control devices and device IDs.

4. Provide a revised **CAO Emissions Inventory AQ520 form**[4] that includes the updates and revisions required below:

[4] CAO has recently published an updated version of AQ520 form. Since the Inventory was started in the previous version, Freres may use the new version or continue to use the old version. The new version, along with a detailed instructions manual, is available in Step 2 of the Step-by-Step Guide for Facilities https://www.oregon.gov/deq/aq/cao/pages/cao-risk-assessment-resources.aspx and is also available on YDO.

a. Item 7 of the 2020 Simple Air Contaminant Discharge Permit (ACDP) Review Report[5] (19-0001-SI-01_RR_2020), states that the "A negligible amount of diesel fuel oil #2 is occasionally mixed with the used oil in order to decrease the fuel viscosity during very cold times". Please include emissions from the diesel usage, as well as any onsite diesel storage, in the AQ520 or provide supporting calculations to justify this as an exempt TEU in accordance with OAR 340-245-0060(3)(a).
b. Tab 2 and Tab 4: Correct the spelling of "fugative" to "fugitive".
c. Tab 3: Correct on instance of "TEU-WELD1" that was input as "TEU WELD1" (missing the "-").
d. Tab 4:
    i. Consider reviewing and revising the maximum daily material usage amounts. The usage amounts are equal to the annual divided by 365. This indicates that the maintenance activities are continuous operations and does not allow for daily variation. Please provide the maximum potential daily usage for these activity levels.
    ii. Update usage amounts calculated in accordance with Comment 2.e.
e. Include fugitive emissions of the following activities or provide supporting documentation why these activities do not materially contribute to risk:
    i. Perlite Crushing prior to drying
    ii. Vehicles on unpaved roads
f. Include uncontrolled emissions (not captured by the onsite baghouses) of the following activities or provide supporting documentation why these activities do not materially contribute to risk:
    i. Rotary Dryer;
    ii. Screening and transfer points;
    iii. Crushing after drying and transfer points;
    iv. Conveyors;
    v. Silos; and
    vi. Truck and rail load-out.
g. Rotary Dryer – Used Oil Burned (TEU RDO):
    i. The ACDP 19-001-SI-011 states that the facility uses a cyclone "between the Rotary Dryer and the Rotary Dryer Baghouse". Include the cyclone in the Control Device[s] column of Tab 2 (Column C).
    ii. If used oil is stored onsite as noted in Comment 1.c.iv, include emissions from TEU.
    iii. In Tab 3 of the AQ520 form, use the attached used oil combustion emission factors for TACs that do not have source testing data.
    iv. In Tab 3 of the AQ520 form, include Total PCBs (CASRN 1336-36-3) at half the method detection limit (0.5 ppm, or 0.00175 lb/Mgal).
h. For the TEUs that handle perlite (TEU RBD, TEU MAIN, TEU New, TEU AS, TEU IS, and TEU DP):
    i. The following TACs must be reported on Tab 3 for these TEUs:
        1. Phosphorus and compounds (DEQ SEQ ID 504) using a concentration of 33 ppm;
        2. Vanadium (CASRN 7440-62-2) using a concentration of 1.5 ppm;

[5] https://deqonline.deq.state.or.us/AQPermitsonline/19-0001-SI-01_RR_2020.PDF

3. Chromium VI (CASRN 18540-29-9) as 7% of total chromium (total chromium was reported at 114 ppm);
4. Aluminum oxide (CASRN 1344-28-1) at a weight percent of 13%; and
5. Molybdenum trioxide (CASRN 1313-27-5). Calculate molybdenum trioxide by multiplying the molybdenum concentration of 3.7 using the ratio of molecular weights of molybdenum trioxide to molybdenum [143.94 (g/mol)/95.95 (g/mol)].

ii. Fix the emission factors for the following compounds used in Tab 3. The weight percent for these compounds appear to refer to an incorrect cell.
1. Lead and compounds (CASRN 7439-92-1);
2. Antimony and compounds (CASRN 7440-36-0);
3. Selenium and compounds (CASRN 7782-49-2);
4. Thallium and compounds (CASRN 7440-28-0);
5. Zinc and compounds (CASRN 7440-66-6);
6. Barium and compounds (CASRN 7440-39-3);
7. Phosphorus pentoxide (CASRN 1314-56-3);
8. Silica, crystalline (respirable) (CASRN 7631-86-9);
9. Sulfur trioxide (CASRN 7446-11-9); and
10. Vanadium pentoxide (CASRN 13141-62-1).

i. Drop Points – Active Raw Ore (drop points 1-6) (TEU DP-1):
i. If necessary, as detailed in Comment 2.b.iv, update the activity units or emission factors used for the amount of ore processed per activity period.
ii. Update the emission estimates in Tab 3 to account for six independent drop points. The emission estimates only account for one drop points. Either the activity usage or the emission factor should be multiplied by a factor of 6 to account for the separate emission points.
iii. Update the emission estimates in Tab 3 to use worst case daily emissions estimates calculated using the lowest moisture content and highest wind speeds, per AP-42 chapter 13.2.4.

j. Stockpiles (TEU AS and TEU IS): Update the emissions estimates in Tab 3 to account for two points of emission (material handling and wind erosion) and different average annual and maximum daily emission factors; using the calculation requirements detailed in Comment 2.c.ii.

k. Welding emissions (TEU WELD1, TEU WELD2, TEU WELD3 and TEU WELD4):
i. Update Tab 2 to say “212” instead of “211”
ii. Correct emissions as detailed in Comment 2.d.i - 2.d.iv.

l. Material Balance emissions:
i. Include emissions from usage of the following materials or provide justification that they are exempt:
1. PB Penetrating Catalyst; and,
2. Cyclo Breakaway Fast Penetrating Oil.

ii. TEU MA4: On Tab 5, for Rustoleum Spray Paint, include Cobalt 2-Ethylhexanoate as Cobalt and compounds (CASRN 7440-48-4).

5. Based on the activity usage and submitted SDSs, DEQ concurs that WELD2, WELD3, MA2, and MA3 material usages are exempt in accordance with OAR 340-245-0060(3)(a). Please update the reference information provided in Tabs 2 and 4 to cite OAR 340-245-0060(3)(a) for the exemption (currently OAR 340-245-0060(3)(*b*) is cited).

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(2).

If you have any questions regarding this letter, please contact me directly at heather.kuoppamaki@deq.oregon.gov or 503-407-7596, and I look forward to your continued assistance with this process.

Sincerely,

Heather Kuoppamaki, P.E.
Cleaner Air Oregon Project Engineer

Encl:
CAO Re-Refined Oil Combustion EF basis_2025

Cc:

Jared Stine, DEQ
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