



Oregon

Kate Brown, Governor

Department of Environmental Quality
Agency Headquarters
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5696
FAX (503) 229-6124
TTY 711

March 17, 2020

Marie E. Piper
Cascade Environmental Management
316 SE Pioneer Way, Suite 294
Oak Harbor, Washington 98277

Ms. Piper,

DEQ received the Cleaner Air Oregon (CAO) Air Toxics Emissions Inventory Form AQ405CAO (Inventory) for the Oil Re-Refining Company facility (ORRICO) in Klamath Falls, OR on December 16, 2019. Based on our review, DEQ requests additional information, corrections and updates to the emissions inventory, in accordance with Oregon Administrative Rule (OAR) 340-245-0030(2), by May 1, 2020. DEQ also requires ORRICO to conduct source testing on the auxiliary boiler by June 15, 2020, pursuant to OAR 340-212-0120, in order to provide a complete emissions inventory for the purposes of the CAO program.

DEQ acknowledges the challenges in establishing an accurate inventory of emissions for this facility. Filling these data gaps is a high priority for further work, and having an accurate representation of current and potential future emissions at this facility will allow DEQ to approve the final risk assessment. DEQ's comments are organized in two sections below: (I) Source Testing and (II) Emissions Inventory.

I. Source Testing

ORRICO's onsite auxiliary boiler combusts recycled fuel oil (RFO), which is of a variable feedstock. The emissions from RFO combustion may include toxic metals, organic compounds, polychlorinated biphenyls (PCBs), and polychlorinated dioxins and furans (PCDD/Fs). ORRICO's auxiliary boiler does not have any pollution controls and, to date, has not been source tested for these compounds. Existing emissions data for these compounds is of poor quality, and one of CAO's primary goals is to develop a comprehensive inventory of emissions of all reportable TACs for each facility called in to the program.

On November 4, 2019, DEQ responded to questions posed by the facility's representative regarding preparation of the facility's emissions inventory. In this email, DEQ stated the following:

It will be difficult to approve an updated emissions inventory (EI) using the emission factors listed in the 2016 EI to complete a comprehensive risk assessment. The factors used in the 2016 EI were satisfactory for screening purposes, but the level of detail required for a CAO risk assessment is much higher. Because emissions from the auxiliary boiler are uncontrolled, variable, and potentially of high toxicity, source testing may be necessary to characterize emissions. One way to characterize emissions may be to review analytical data for halogens, PCBs, metals, etc. for each batch of oil used in the auxiliary boiler.

In response to this request, ORRSCO provided 2018 RFO sampling analysis results indicating that no PCDD/Fs or PCBs were present in the RFO combusted on-site in the auxiliary boiler. Although DEQ appreciates submittal of this RFO feedstock analytical data, it is insufficient for determining emissions of PCBs and PCDD/Fs from combustion activities. PCDD/Fs are formed during combustion activities, and their formation rates are controlled by a number of parameters. Because of the potential variability of the auxiliary boiler RFO feedstock, along with the secondary pollutant formation during combustion, DEQ requires source testing of PCBs and PCDD/Fs, as well as polycyclic aromatic hydrocarbons (PAHs) and metals, to verify actual emission rates from ORRSCO's auxiliary boiler. Pursuant to ORS 468A.070 and OAR 340-212-0120(1)(a), DEQ requires ORRSCO to test the auxiliary boiler 90 days from the notice of this letter as follows:

1. The following sampling methods must be performed:
 - a. EPA Method 23, or similar method upon DEQ approval, must be used to sample for the following TACs:
 - i. Polychlorinated dibenzo-*p*-dioxin (PCDD) - the following selected congeners:
 1. 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD)
 2. 1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin (PeCDD)
 3. 1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin (HxCDD)
 4. 1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin (HxCDD)
 5. 1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin (HxCDD)
 6. 1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin (HpCDD)
 7. Octachlorodibenzo-*p*-dioxin (OCDD)
 - ii. Polychlorinated dibenzofuran (PCDF) - the following selected congeners:
 1. 2,3,7,8-Tetrachlorodibenzofuran (TCDF)
 2. 1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)
 3. 2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)
 4. 1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)
 5. 1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)
 6. 1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)
 7. 1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)
 8. 1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)
 9. Octachlorodibenzofuran (OCDF)
 - b. EPA SW-846 Method 0010, or similar method upon DEQ approval, must be used to sample for the following:
 - i. Polychlorinated biphenyls (PCBs) – all congeners with associated RBCs as provided in OAR 340-245-8040 Table 4.
 - ii. Polycyclic aromatic hydrocarbons (PAHs) and polycyclic aromatic hydrocarbon derivatives (PAH-derivatives) with associated RBCs as provided in OAR 340-245-8040 Table 4.
 - c. EPA Method 29, or similar method upon DEQ approval, must be used to sample for the following TACs:
 - i. Antimony
 - ii. Arsenic
 - iii. Beryllium
 - iv. Cadmium
 - v. Chromium
 - vi. Cobalt
 - vii. Copper
 - viii. Lead

- ix. Manganese
 - x. Mercury
 - xi. Nickel
 - xii. Phosphorus
 - xiii. Selenium
 - xiv. Zinc
- d. EPA SW-846 Method 0061 or a similar method upon DEQ approval, must be used to sample for hexavalent chromium, or the permittee may assume all chromium measured from Method 29 testing is hexavalent chromium.
2. Consistent with section 2.3 of the [DEQ Source Sampling Manual](#), ORRCO must provide the source test plan at least 30 days before conducting the source test. Please review sections 2.7 and 2.8 of the sampling manual when proposing a minimum sample volume for each test method. Please consult with DEQ prior to submittal of the test plan if you have any concerns regarding sample volumes and/or analytical detection limits.
 3. Provide records of the fuel combusted in the auxiliary boiler for the last 12 months to demonstrate the ratios of RFO to distillate oil combusted.
 4. Work with DEQ to determine representative testing conditions; this may require multiple combustion scenarios.
 5. Source test results are due to DEQ within 60 days after the test is completed and must include the information required in Appendix A of the Source Sampling Manual.

II. Emissions Inventory

1. DEQ understands that OAR 340-245-0060(1) states that TEUs must be designated in the same manner as they are listed in the source's operating permit. However, the process flow diagram (PFD) ORRCO provided indicates that storage tanks that are grouped as one emissions device in Section 13.0 of the facility's operating permit operate at different temperatures and therefore may emit different types or amounts of TACs. Additionally, the PFD indicates that there may be additional TEUs onsite that are not listed in your Simple ACDP. Because of these details, DEQ recommends that ORRCO:
 - a. Designate each individual TEU in its emissions inventory as they are labeled on the PFD, including tanks; and
 - b. Provide a separate list of proposed TEUs to aggregate, if any, in accordance with OAR 340-245-0060(2).
2. The PFD submitted to DEQ indicates that all storage tanks are vented to the atmosphere to accommodate movement of fluids into and out of the tanks, unless otherwise noted. DEQ requests that ORRCO:
 - a. Provide the technical data supporting the emissions factors and calculation methods used in the emissions inventory for DEQ review; and
 - b. For any TEUs you determine to be exempt, substantiate that each TEU meets the applicable criteria as defined in OAR 340-245-0060(3).
3. ORRCO's Solid Waste Disposal Permit (SWDP 1364) indicates that tar, asphalt, and asphalt emulsions may be added to the used oil processing system with specific acceptance criteria, but these are not included on the PFD submitted to DEQ. DEQ requests that ORRCO:
 - a. Revise your PFD to include the addition of these chemicals, and consider TAC emissions associated with this aspect of the process; and

- b. Provide the maximum amount of tar, asphalt, and asphalt emulsions ORRCCO projects to use, if you wish to maintain the option of using these materials in the used oil processing system.
4. A future tube-and-shell condenser was included on the PFD. Please explain how this may impact the facility's requested PTE and/or capacity, and its impact on future emissions.
5. The hydrochloric acid emission factor used in the emissions inventory (0.01863 lb/1000 gal) is 10% of the emission factor listed in Table B-2 of South Coast Air Quality Management District's Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory (0.1863 lb/1000 gal). Revise the hydrochloric emission factor to match that listed in Table B-2 or provide rationale for the alternate value.
6. 1,1,2-trichloroethane is misreported in the emissions inventory, and 1,1,1-trichloroethane is not reported. Table 1.3-9 in AP-42 lists a 1,1,1-trichloroethane emission factor as 2.368×10^{-4} lb/1000 gal. Revise the emissions inventory to reflect emissions of 1,1,1-trichloroethane, not 1,1,2-trichloroethane.

Confidential or trade secret information submitted to DEQ

DEQ is requesting that you submit the above additional information to complete your Toxic Air Contaminant Emissions 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.

Submittal Deadlines

Please communicate any questions or clarifications regarding the above comments proactively in order to provide timely submittals. Your submittal due dates are summarized below:

1. Submit the revised emissions inventory excluding auxiliary boiler source testing data by May 1, 2020.
2. Conduct source testing of the auxiliary boiler, analyzing for PCDD/Fs, PCBs, PAHs, and metals as specified above by June 15, 2020. The source test plan is due to DEQ 30 days before the test; the source test results are due to DEQ 60 days after completing the test.

Once auxiliary boiler source testing is complete, the DEQ-approved source testing data will need to be incorporated into your emissions inventory. DEQ remains available during this timeframe to discuss the submittal with you and answer any questions you may have. Failure to provide additional information or corrections required by DEQ by this date may result in a violation of OAR 340-245-0030(1) and OAR 340-245-0040(1).

Please contact me directly at 503.229.5247, billings.kenzie@deq.state.or.us, and we look forward to your continued assistance with this process.

Sincerely,

Kenzie Billings
DEQ CAO Project Manager

Cc: David Archuleta, ORRCO
Eric Moody, ORRCO
Jonathan Bousseilaire, ORRCO
Scott Briggs, ORRCO
Frank Messina, DEQ
J.R. Giska, DEQ
Keith Johnson, DEQ
Mark Bailey, DEQ
Thomas Rhodes, DEQ