



Oregon

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February 12, 2025

James Smith
Mutual Materials Company
2300 SE Hogan Rd
Gresham, OR 67080

Austin Goracke
Montrose Air Quality Services
13585 NE Whitaker Way
Portland, OR 97230

Re: Mutual Materials Company
Permit Number 26-0088-SI-02
2025 Source Test Plan Approval

James Smith and Austin Goracke:

The revised source test plan received on February 11, 2025, for testing at the Mutual Materials facility in Gresham has been reviewed. DEQ understands that the exhaust duct of the Tunnel Kiln will be tested for emissions of hydrogen fluoride (HF), hydrogen chloride (HCl), hydrogen bromide (HBr), chlorine (Cl₂), bromine (Br₂) and total fluoride (F⁻). Testing is being conducted to satisfy the source testing requirements of the DEQ issued information request letter dated November 18, 2024. Test results will be used for the following purposes: to determine applicability of state and federal air quality regulations, verify HF mass balance approach to calculating annual HF emissions, verify toxic air contaminant emission factors (EF), and will establish a source specific EF for total fluorides. Total reportable fluoride emissions will be considered total fluoride emissions as determined using EPA Method 13B minus HF emissions (as F⁻) using EPA Method 26. The test plan is approved with the conditions listed below.

GENERAL PROCESS CONDITIONS

1. Only regular operating staff may adjust the production process and emission control parameters during the source performance tests and within two (2) hours prior to the tests. Any operating adjustments made during the source performance tests, which are a result of consultation during the tests with source testing personnel, equipment vendors or consultants, may render the source performance test invalid.
2. It is acceptable to postpone a scheduled test or suspend a test in progress if the discontinuation is due to equipment failure beyond the facility's control, construction delays beyond the facility's control, severe meteorological conditions, and situations that would jeopardize the safety of the testing contractors and/or operators. If the test is underway, the permittee should make every effort to complete the test run. All recoverable test information (process & sample data) must be available for DEQ review.

It is unacceptable to postpone or suspend a test run in progress if it is discontinued because the source is not able to comply with an emission limit or verify an emission

factor. The permittee must provide DEQ written documentation explaining the reasons for the postponement or stoppage, and any data collected prior to the stoppage.

3. Testing must be conducted while operating at levels that equal or exceed normal maximum operating rate. Normal maximum operating rate is defined as the 90th percentile of the average hourly operating rates during the past 12-month period, $\pm 10\%$. The test report must document that conditions tested are representative of normal maximum operating conditions.
4. Lime flower must not be added during testing to reduce HF emissions. Conditions tested should be representative of current and past operating conditions and represent worst case operating conditions for F⁻ and HF emissions. Additional testing may be conducted at a later date to demonstrate that the addition of lime flower reduces HF/F⁻ emissions.
5. DEQ understands a total of six (6) brick samples will be collected as part of this testing campaign for purposes of verifying mass balance emission calculations. Three samples should be of dried brick (post dryer but pre kiln) which would otherwise be going into the kiln during testing and three samples of fired brick (post kiln) which were in the Kiln during testing. Care should be taken to choose as representative samples as possible. The test report must include the full lab report and report fluoride emissions in units of lb fluoride emitted/ton of fired brick.
6. During source testing the following process parameters must be monitored and recorded. All process parameters are to be reported for each individual test run and averaged for all test runs if appropriate.
 - Facility production parameters:
 - Kiln production rate (tons fired brick/hr)
 - Kiln temperature(s) (°F)
 - Percent recycled brick (grog) in feedstock
 - Product produced
 - Natural gas usage (MMscf/hr)

EPA METHODS 1-4 CONDITIONS

7. The Kiln exhaust duct measurement location must meet the EPA Method 1 criteria unless otherwise approved by DEQ. Documentation including clear diagrams must be provided in the source test report.
8. The Kiln exhaust duct must be checked for cyclonic flow prior to testing. Documentation of the cyclonic flow evaluation must be included in the test report.
9. The use of an integrated bag sample with analysis by calibrated analyzers for molecular weight determination is approved.
10. Moisture content of the exhaust stack gas must be determined by EPA Method 4 (incorporated into EPA Method 13B) for each test run.

EPA METHOD 13B CONDITIONS

11. Analysis by ion-chromatography in lieu of ion specific electrode is approved.

12. Following the preliminary velocity traverse, select an appropriate nozzle size to ensure isokinetic sampling rates can be maintained below 1.0 cfm.
13. During sampling the filter and probe temperatures must be maintained at $248 \pm 25^{\circ}\text{F}$.
14. Fluoride emissions should be reported as both 13B fluoride (as measured) and total reportable fluoride (13B fluorides – HF (as F^{-}) by Method 26.
15. Fluoride emissions must be reported as indicated below for each individual test run and averaged for all three test runs. Hand calculations must be provided for at least one test run.
 - mg/dscm (13B fluoride & total reportable fluoride)
 - lb/hour (13B fluoride & total reportable fluoride)
 - lb emitted/lb ton of fired brick (total reportable fluoride)

EPA METHOD 26 or MODIFIED METHOD 26 CONDITIONS

16. The Method 26 list of target analytes must include HCl, HBr, HF, Cl_2 and Br_2 .
17. DEQ approves of an option to modify the Method 26 sampling system to incorporate full size impingers and filter. Essentially, this option allows testing to be performed following Method 26A, with the exception that sampling will be conducted at a single point and at a constant rate. If this modification is utilized, a minimum sample volume of **30 dscf** must be collected during each run (sampling rate > 0.5 dscf/min). Other method modifications not specifically addressed in the pretest plan, or this approval letter, must be pre-approved by DEQ.
18. If measured values are below the detection limit, results shall be reported as less than the detection limit.
19. Probe and filter temperatures shall be maintained between 120°C and 134°C (248°F and 273°F).
20. Test results for HF, HCl, HBr, Cl_2 and Br_2 must be reported as follows for each test run and averaged for all three test runs. Example calculations should be provided for at least one test run.
 - mg/dscm
 - ppmvd
 - lb/hr
 - lb emitted/lb ton of fired brick

GENERAL TESTING CONDITIONS

21. The DEQ must be notified of any changes in the source test plan and/or the specified methods prior to testing. Significant changes not acknowledged by the DEQ could be the basis for invalidating a test run and potentially the entire testing program. Documentation of any deviations must include an evaluation of the impact of the deviation on the test data.
22. Method-specific quality assurance/quality control (QA/QC) procedures must be performed to ensure that the data is valid for determining source compliance. This must be done whether or not DEQ representatives are on-site to observe the testing and whether or not

a QA/QC requirement has been specifically acknowledged and approved by DEQ. Only method-specific requirements explicitly exempted by the EPA and/or DEQ need not be performed. Documentation of the procedures and results shall be presented in the source test report for review. Omission of this critical information will result in rejection of the data, requiring a retest.

23. In general, the unanalyzed portions (aliquots) of the source test samples must be preserved up to the maximum holding times as specified by test method.
24. Sampling replicate(s) will not be accepted if separated by duration of twenty-four (24) hours or more, unless prior authorization is granted by DEQ.
25. STAR Reports: The Certification Form (only) of the Source Test Audit Reports (STAR) shall be completed and submitted with the Source Test Report. Submittal of the method-specific STAR reports is no longer required. Copies of STAR forms are available electronically from your regional source test coordinator.
26. The permittee must submit the test report through Your DEQ Online (YDO), DEQ's online portal for environmental permitting programs, within 60 days following the completion of testing. An electronic test report (searchable PDF) including the STAR report must be uploaded to YDO and submitted by the permittee's responsible official. The Your DEQ Online Helpdesk, which can be found at <https://yourdeqonlinehelp.oregon.gov> is available to help answer questions or concerns. The maximum file size which can be uploaded to YDO is 50 MB.

DEQ understands that source testing has been scheduled for February 19, 2025.

If you have any questions or concerns, please contact me at (971) 349-0956.

Sincerely,



Josh Muswieck
Source Test Coordinator
Environmental Engineer
DEQ Portland Office

cc: Stephen Wozab, DEQ AQ-NWR
Katie Eagleson, DEQ AQ-CAO