



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

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Sherry Uchytel
PCC Structural, Inc.
4600 SE Harney Drive
Portland, OR 97206

Ms. Uchytel,

DEQ received the submittal of the Baghouse Testing Conceptual Plan (Conceptual Plan) and Baghouse Testing Matrix (Matrix) for the PCC Structural, Inc. Large Parts Campus (PCC-LPC) in Portland, Oregon, on December 3 and December 22, 2021, respectively, and has completed our review. In accordance with Oregon Administrative Rule (OAR) 340-245-0030(2), DEQ has determined that additional information, corrections, and updates are required in order to approve the Conceptual Plan that PCC-LPC may use to prepare a Source Test Plan.

PCC-LPC organized baghouses into three categories based on processes controlled: high throughput/low metal content, grinding, and cutting and hot work. High throughput processes include shotblast, sandblast, knockout, investing, etc. Grinding activities include grinding during cleaning and finishing operations and sometimes may include sawing. Cutting and hot work include cutting (sawing), torch cut, plasma and air arc cut, burnoff, and casting.

PCC used the following prioritization criteria to propose baghouses to source test in the Conceptual Plan:

- Amount of material collected by baghouses, prioritizing baghouses known to collect substantially more material than others in a category.
- Baghouses that typically control emissions with elevated toxic air contaminant (TAC) metal concentrations; however, nickel was the only TAC considered in the Matrix.
- Processes controlled by the baghouse. PCC-LPC proposed to test baghouses controlling titanium alloy casting only, based on throughputs; citing an assumption that baghouses controlling titanium alloy processes will perform similar to those controlling steel super alloy processes.

DEQ's responses to proposed baghouse testing conditions and methods are below.

I. PROPOSED BAGHOUSE SELECTION AND SAMPLING DURATION

1. PCC-LPC proposes to test baghouse (BH) 8687, 8901, and 9203, completing a single test run (eight hours minimum) at each baghouse stack. Due to potential variation in source test results, a single test run is not adequate for evaluating TAC emissions. Generally, three valid test runs are required to evaluate emissions. Due to the challenge of completing long test runs, DEQ will accept two valid test runs from each source.
2. DEQ agrees that baghouses controlling similar titanium alloy processes will have a performance similar to that of the steel super alloy baghouses tested. PCC-LPC proposed to source test BH 8687, which controls shotblast activities on titanium alloy materials. Comparatively speaking, dust collected in baghouses controlling titanium alloy processes contain significantly lower TAC

concentrations than steel super alloy materials; therefore, DEQ considers testing steel super alloy baghouses a higher priority than testing titanium alloy baghouses and requires the Conceptual Plan to be revised to include a baghouse controlling shotblasting activities of super steel alloy materials. Results from this source testing may be applied to baghouses controlling similar titanium alloy processes.

3. PCC-LPC did not propose to test baghouses that control air and vacuum casting of steel parts and ingots, based on testing PCC-LPC completed in 2016 for filterable particulate matter (PM) that did not yield detectable particulate emissions. However, this testing was only for filterable PM, and DEQ has requested that PCC-LPC test for metals emitted from baghouses using testing methods that require significantly smaller sample masses than those required in the previous sampling performed by PCC-LPC – i.e., the mass of sample required for EPA Method 29 analysis is on the order of micrograms, not milligrams. In some instances, DEQ has observed a considerable portion of PM emitted by similar processes is condensable PM. Therefore, DEQ requests that PCC-LPC source test BH 9256, which collects the most dust of baghouses controlling casting processes, and also discharges exhaust at the maximum temperature presented in the Matrix.
4. PCC-LPC proposed to source test BH 8901, which controls grinding and cutting (sawing). DEQ agrees that BH 8901 is a good candidate to represent grinding and cutting (sawing) of steel super alloy.
5. PCC-LPC also proposed to test two of the six stacks on BH 9203, which controls grinding, cutting (sawing), torch cut, and burnoff. For all devices that have multiple stacks, flow rates must be measured at all stacks. If this is not possible, then all stacks must be tested for TACs. DEQ agrees that BH 9203 is a good candidate for source testing for the high throughput/low metal category of baghouses.

II. PRODUCTION

1. PCC-LPC stated that they will take reasonable action to plan production on the day of testing to achieve a representative maximum loading rate to the baghouses being tested. PCC-LPC stated that it is not feasible to require processing of a specific alloy during testing. DEQ understands that production schedules are variable; however, Section 2.9 of DEQ's Source Sampling Manual states that "An owner or operator should conduct the source test while operating under typical worst-case conditions that generate the highest emissions." PCC-LPC must test while operating under conditions that are expected to generate the highest emissions and plan appropriately for source testing.

III. TEST METHODS

1. DEQ requested that upcoming source testing be completed using both EPA Method 29 and SW-846 Method 0061. PCC-LPC stated that EPA Method 29 is listed as being applicable to all of the metal species requested, with the exception of aluminum and vanadium. Aluminum and vanadium are reportable TACs under OAR 340-245-0040(1) and must be reported. Both aluminum and vanadium must be included in the EPA Method 29 sample analyses collected.
2. PCC-LPC expressed concerns over the accuracy of SW-846 Method 0061 due to presence of manganese oxides in their emissions. PCC-LPC cited research indicating significant conversion of Cr(III) to Cr(VI) in the presence of manganese oxides from chromium-contaminated sludge, aqueous solutions, and soil^{1,2}. While DEQ appreciates the literature review provided, these studies do not accurately reflect conditions present in stack emissions from your facility (e.g., not the liquid and liquid/solid media in these studies, nor the pH ranges, as compared to the requirements in EPA SW-846 Method 0061) and DEQ is not satisfied that they are grounds to invalidate the use of EPA SW-846 Method 0061. Therefore, DEQ maintains the requirement for

¹ <https://pubmed.ncbi.nlm.nih.gov/16297546/>

² <https://access.onlinelibrary.wiley.com/doi/epdf/10.2136/sssaj2002.3060>

testing hexavalent chromium emissions using this method.

DEQ remains available to discuss the information request with you and answer any questions you may have. If you have any questions regarding this letter, please contact me directly at 503-866-8741 or kenzie.billings@deq.state.or.us, and I look forward to your continued assistance with this process. Please provide a revised Conceptual Plan for DEQ review no later than March 11, 2022.

Sincerely,

Kenzie Billings
Air Toxics Project Manager

Cc: Brian McCampbell, PCC
Brian Eagle, MFA
Tom Wood, Stoel Rives
David Graiver, DEQ
Matthew Davis, DEQ
Keith Johnson, DEQ
J.R. Giska, DEQ
Thomas Rhodes, DEQ
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