

Particulate Matter and Metals Emissions Test Report

PCC Structural, Inc.
Large Parts Campus
Baghouse 8901
5001 SE Johnson Creek Blvd.
Milwaukie, Oregon 97222
Project No. M253113
July 29 through August 1, 2025





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**PCC Structurals, Inc.
Large Parts Campus
Baghouse 8901
5001 SE Johnson Creek Blvd.
Milwaukie, Oregon 97222
July 29 through August 1, 2025**

**Report Submittal Date
October 17, 2025**

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Mostardi Platt

Project No. M253113

SOURCE TESTING AUDIT REPORT: CERTIFICATION FORM

Facility: PCC Structurals, Inc. Large Parts Campus **Permit #:** 26-1687 **Test Dates:** 7/29/25-8/1/25

Emission Unit: Baghouse 8901 **Sampling Location:** Baghouse Inlet and Outlet

SECTION 1: TESTING PROGRAM CERTIFICATION INFORMATION

ITEM OF INQUIRY	Yes	No	EXPLANATION
A. Is the purpose(s) for the testing clearly defined within the test report?	X		
B. Did testing include all pollutants specified within the Source Test Plan (STP)?	X		
C. Were all issues within the Department's response to the STP fully addressed?	X		
D. Was the source operating within $\pm 10\%$ of normal maximum capacity?	X		
E. Are all appropriate operating conditions documented?	X		
F. Were there any test interruptions?	X		Pauses for plant personnel breaks and shift changes
G. Were there any variances or modifications to the STP? (if Yes; reply to i & ii)		X	
i. Were the variances or modifications approved by the Department?		X	
ii. Does the report include an evaluation of the impact the variances or modifications had on the test data?		X	

SECTION 2: SOURCE SAMPLING REPORT AUDITOR CERTIFICATION:

I hereby certify that to the best of my knowledge, the information provided within this source sampling audit report is complete and factual.

Name: Eric L. Ehlers

Title: EVP, AET Field Operations

Signature: 

Date: 10/17/2025

SECTION 3: PERMITTEE REPRESENTATIVE CERTIFICATION:

I hereby certify that to the best of my knowledge, the information provided within this source sampling audit report is complete and factual.

Name: BRANDON M. HADZYNSKY Title: DIVISION ENVIRONMENTAL ENGINEER

Signature: 

Date: 10/17/2025

SECTION 4: DEPARTMENT REPRESENTATIVE:

The Oregon Department of Environmental Quality has evaluated the Source Sampling Audit Report and has determined that the information provided is sufficient for accepting the results originating from the testing program. Although no deficiencies were exposed by the Source Sampling Audit Report, additional errors and/or inconsistencies may be detected through additional Departmental review at a later date, which may lead to a retest or an enforcement action against the permittee.

Name: _____ Title: _____

Signature: _____ Date: _____

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1.0 EXECUTIVE SUMMARY

Mostardi Platt conducted a particulate matter (PM) and metals emissions test program for PCC Structural, Inc. (PCC) at their Large Parts Campus (LPC) facility located at 5001 SE Johnson Creek Blvd. in Milwaukie, Oregon. Testing was performed to demonstrate removal efficiencies across each baghouse system as well as mass emission rates of particulate and several metals, including hexavalent chrome (Cr⁺⁶), from the baghouse inlet and HEPA exhaust outlet.

The test locations, test dates, and test parameters are summarized below.

TEST INFORMATION		
Test Locations	Test Dates	Test Parameters
8901 Baghouse Inlet & Outlet	7/29/2025 – 7/30/2025	Aluminum (Al), Arsenic (As), Antimony (Sb), Beryllium (Be), Cadmium (Cd), Chromium (Cr), Cobalt (Co), Copper (Cu), Lead (Pb), Manganese (Mn), Mercury (Hg), Nickel (Ni), Phosphorus (P), Selenium (Se), Silver (Ag), Thallium (Tl), Vanadium (V), Zinc (Zn), and Hexavalent Chromium (Cr ⁺⁶)
	7/31/2025 – 8/1/2025	Filterable Particulate Matter (FPM), Total Particulate Matter (TPM)

2.0 PROCESS DESCRIPTION

Baghouse/HEPA 8901 (BH8901) controls emissions from ingot finishing operations in the Alloy Service Center, which include cutting and grinding activities.

2.1 Project Contact Information

Location	Address	Contact
Test Consultant	Maul Foster & Alongi, Inc. 6 Centerpointe Drive, Suite 360 Lake Oswego, OR 97035	Brian Eagle Senior Consultant (971) 713-3571 beagle@maulfoster.com
Test Facility	PCC Structural, Inc. 5001 SE Johnson Creek Blvd. Milwaukie, OR 97222	Brandon Hadzinsky Division Environmental Affairs (503) 724-3036 Brandon.hadzinsky@pccstructurals.com
Test Company Representative	Mostardi Platt 5464 Stephanie Steet Las Vegas, Nevada 89122	Christopher S. Eldridge AET Lead, Pacific Northwest (630) 699-7690 celdridge@mp-mail.com

The test crew consisted of A. Ibarra Robles, A. Montez, E. Ehlers, D. Vasquez, J. Colston, R. Sollars, and C. Eldridge of Mostardi Platt.

Thomas Rhodes of the Oregon Department of Environmental Quality (ODEQ) observed a portion of the test program.

3.0 OVERVIEW OF TEST RESULTS

“ADL” refers to both fractions of the sample analyses were above the detection limit. “DLL” refers to one fraction of the sample analyses was below the detection limit. “BDL” refers to both fractions of the sample analyses were below the detection limit.

Method 29 blanks were subtracted at the inlet and outlet per Section 12.6.3 of the method; Method 0061 blanks were subtracted per Section 7.6.4; ODEQ Method 5 blanks were subtracted per Section 9.6, 9.8, and 9.10 of ODEQ Method 5 and 12.7 of USEPA Method 5. Reagent blanks were taken from the original reagent bottles on site for liquid solutions, filters were taken from the same lots of the sample filters. No additional blanks (proof, field, train, etc.) were collected.

Method 5 method detection limits are reported as method detection limits (MDL) in order to calculate outlet particulate matter more accurately and to quantify removal efficiency. Front half weights are based on the filter and probe wash combined.

Selected results of the test program are summarized below. A complete summary of emission test results follows the narrative portion of this report. Operating data was provided by PCC and is found in Appendix E.

3.1 8901 Baghouse System Run 1

Measured Parameter	Inlet Emission Rate lb/hr	Outlet Emission Rate lb/hr	Inlet Emission Factor lb/ton metal processed	Outlet Emission Factor lb/ton metal processed	Removal Efficiency %
Al	2.31E-03	2.45E-04	1.19E-03	1.26E-04	89.4%
Sb ¹	≤1.85E-06	≤1.73E-06	≤9.55E-07	≤8.94E-07	N/A
As ¹	≤3.49E-06	≤3.83E-06	≤1.80E-06	≤1.98E-06	N/A
Ba	1.52E-05	1.18E-05	7.87E-06	6.07E-06	22.4%
Be ²	3.63E-07	≤1.21E-07	1.87E-07	≤6.22E-08	N/A
Cd ³	5.78E-07	5.96E-07	2.98E-07	3.08E-07	N/A
Cr	6.06E-03	4.33E-06	3.13E-03	2.24E-06	99.9%
Co ⁴	≤4.44E-03	≤1.43E-06	≤2.29E-03	≤7.39E-07	99.9%
Cu	4.07E-05	2.45E-05	2.10E-05	1.27E-05	39.8%
Pb	6.55E-06	5.73E-06	3.38E-06	2.96E-06	12.5%
Mn	3.94E-05	1.96E-05	2.03E-05	1.01E-05	50.3%
Hg ²	≤3.49E-07	≤5.27E-07	≤1.80E-07	≤2.72E-07	N/A
Ni	1.92E-02	8.87E-05	9.91E-03	4.58E-05	99.5%
P	2.17E-04	6.03E-05	1.12E-04	3.11E-05	77.2%
Se ¹	≤1.47E-05	≤7.12E-06	≤7.59E-06	≤3.67E-06	N/A
Ag ¹	≤6.09E-06	≤9.49E-07	≤3.14E-06	≤4.90E-07	N/A
Tl ¹	≤6.00E-05	≤4.75E-06	≤3.10E-05	≤2.45E-06	N/A
V ²	≤4.35E-06	4.60E-07	≤2.25E-06	2.38E-07	N/A
Zn	2.29E-04	3.82E-05	1.18E-04	1.97E-05	83.3%
Cr ⁺⁶	2.61E-06	8.39E-07	1.35E-06	4.33E-07	67.9%
FPM	4.74E-02	4.54E-03	2.77E-02	2.65E-03	90.4%
CPM	1.69E-02	4.50E-03	9.86E-03	2.63E-03	73.4%
TPM	6.43E-02	9.04E-03	3.76E-02	5.28E-03	85.9%

¹ Sample at inlet and outlet “DLL” or “BDL”, no removal efficiency calculated

² Inlet or outlet location were “DLL”, no removal efficiency calculated

³ Emissions at inlet and outlet near DL, no removal efficiency calculated

⁴ Emissions at inlet “DLL”, outlet “BDL”, inlet emissions minimal impact of DLL, removal efficiency calculated

3.2 8901 Baghouse System Run 2

Measured Parameter	Inlet Emission Rate lb/hr	Outlet Emission Rate lb/hr	Inlet Emission Factor lb/ton metal processed	Outlet Emission Factor lb/ton metal processed	Removal Efficiency %
Al	7.42E-04	1.76E-04	3.96E-04	9.37E-05	76.3%
Sb ⁵	≤1.68E-06	≤1.71E-06	≤8.96E-07	≤9.14E-07	N/A
As ⁵	≤3.24E-06	≤3.30E-06	≤1.73E-06	≤1.76E-06	N/A
Ba	6.64E-06	4.29E-06	3.54E-06	2.29E-06	35.4%
Be ⁵	≤5.76E-07	≤1.15E-07	≤2.47E-07	≤6.12E-08	N/A
Cd ⁶	1.65E-07	≤1.03E-07	8.79E-08	≤5.50E-07	N/A
Cr	2.63E-03	1.02E-05	1.40E-03	5.46E-06	99.6%
Co	4.40E-04	≤3.00E-06	2.35E-04	≤1.60E-06	99.3%
Cu	2.45E-05	8.85E-06	1.31E-05	4.72E-06	63.9%
Pb	1.89E-06	1.23E-06	1.01E-06	6.59E-07	34.9%
Mn ⁷	2.87E-05	3.71E-05	1.53E-05	1.98E-05	N/A
Hg ⁵	≤2.77E-07	≤3.43E-07	≤1.48E-07	≤1.83E-07	N/A
Ni	8.67E-03	6.71E-05	7.27E-03	3.58E-05	99.0%
P	6.55E-05	4.98E-05	3.49E-05	2.65E-05	24.0%
Se ⁵	≤6.96E-06	≤7.08E-06	≤3.71E-06	≤3.77E-06	N/A
Ag ⁵	≤4.48E-06	≤2.84E-06	≤2.39E-06	≤1.51E-06	N/A
Tl ⁵	≤9.49E-06	≤4.72E-06	≤5.06E-06	≤2.52E-06	N/A
V ⁵	≤3.65E-06	≤1.97E-07	≤1.94E-06	≤1.05E-07	N/A
Zn	1.07E-04	1.90E-05	5.73E-05	1.01E-05	82.2%
Cr ⁺⁶	2.64E-06	9.06E-07	1.41E-06	4.83E-07	65.7%
FPM	1.54E-01	1.06E-03	8.09E-02	5.55E-04	99.3%
CPM ⁷	1.15E-02	1.20E-02	6.05E-03	6.32E-03	N/A
TPM	1.65E-01	1.32E-02	8.69E-02	6.97E-03	92.0%

⁵ Sample at inlet and outlet “DLL” or “BDL”, no removal efficiency calculated

⁶ Emissions at inlet near DL, outlet “DLL”, no removal efficiency calculated

⁷ No removal demonstrated

3.3 8901 Baghouse System Average

Measured Parameter	Inlet Emission Rate lb/hr	Outlet Emission Rate lb/hr	Inlet Emission Factor lb/ton metal processed	Outlet Emission Factor lb/ton metal processed	Removal Efficiency %
Al	1.53E-03	2.10E-04	7.95E-04	1.10E-04	86.3%
Sb ⁸	≤1.77E-06	≤1.72E-06	≤9.25E-07	≤9.04E-07	N/A
As ⁸	≤3.37E-06	≤3.57E-06	≤1.76E-06	≤1.87E-06	N/A
Ba	1.09E-05	8.02E-06	5.70E-06	4.18E-06	26.4%
Be ⁹	≤4.70E-07	≤1.18E-07	≤2.47E-07	≤6.17E-08	N/A
Cd ⁹	3.71E-07	≤3.50E-07	1.93E-07	≤1.81E-07	N/A
Cr	4.35E-03	7.28E-06	2.27E-03	3.85E-06	99.8%
Co ¹⁰	≤2.44E-03	≤2.21E-06	≤1.26E-03	≤1.17E-06	99.9%
Cu	3.26E-05	1.67E-05	1.70E-05	8.69E-06	48.8%
Pb	4.22E-06	3.48E-06	2.19E-06	1.81E-06	17.5%
Mn	3.41E-05	2.83E-05	1.78E-05	1.49E-05	47.8%
Hg ⁸	≤3.13E-07	≤4.35E-07	≤1.64E-07	≤2.27E-07	N/A
Ni	1.39E-02	8.86E-05	7.27E-03	4.65E-05	99.4%
P	1.41E-04	5.50E-05	7.35E-05	2.88E-05	61.0%
Se ⁸	≤1.08E-05	≤7.10E-06	≤5.65E-06	≤3.72E-06	N/A
Ag ⁸	≤5.28E-06	≤1.89E-06	≤2.77E-06	≤1.00E-06	N/A
Tl ⁸	≤3.47E-05	≤4.73E-06	≤1.80E-05	≤2.48E-06	N/A
V ⁹	≤4.00E-06	≤3.29E-07	≤2.10E-06	≤1.71E-07	N/A
Zn	1.68E-04	2.86E-05	8.78E-05	1.49E-05	82.9%
Cr ⁺⁶	2.62E-06	8.72E-07	1.38E-06	4.58E-07	66.7%
FPM	1.01E-01	2.80E-03	5.43E-02	1.60E-03	97.2%
CPM	1.42E-02	8.25E-03	7.95E-03	4.47E-03	41.9%
TPM	1.15E-01	1.10E-02	6.22E-02	6.08E-03	90.4%

⁸ Sample at inlet and outlet “DLL” or “BDL”, no removal efficiency calculated

⁹ Minimum of one sample at inlet or outlet location were “DLL”, no removal efficiency calculated

¹⁰ One fraction at inlet “DLL”, with minimum impact on total results

4.0 TEST METHODOLOGY

Emission testing was conducted following the United States Environmental Protection Agency (USEPA) methods specified in 40CFR60, Appendix A in addition the Mostardi Platt Quality Manual. Schematics of the test section diagrams and sampling trains used are included in Appendix A and B respectively. Calculation and nomenclature are included in Appendix C. Laboratory analysis for each test run are included in Appendix H. The electronic reference method test data is included in Appendix D.

The following methodologies were used during the test program:

4.1 Method 1 Sample and Velocity Traverse Determination

Test measurement points were selected in accordance with Method 1, 40 CFR, Part 60, Appendix A. The characteristics of each measurement location is summarized in the table below. A null-point pitot traverse was performed prior to testing to ensure the absence of cyclonic flow.

Sample Point Selection

Test Location	Stack Diameter	Upstream Diameters	Downstream Diameters	Test Parameters	Number of Sampling Points
BH8901 Inlet	12"	8.5	20	Cr ⁶ , Metals, TPM	12
BH8901 Outlet	12"	3.0	3.0	Cr ⁶ , Metals, TPM	24

4.2 Method 2 Volumetric Flow Rate Determination

Gas velocity was measured following Method 2, 40 CFR, Part 60, Appendix A, for purposes of calculating gas volumetric flow rate and emission rates on a lb/hr and lb/ton metal processed basis. An S-type pitot tube, as a component of the isokinetic sampling train, differential pressure gauge, thermocouple, and temperature readout were used to determine gas velocity at each sample point. All of the equipment used was calibrated in accordance with the specifications of the Method. Calibration data is presented in Appendix G of this report.

4.3 Method 29 Metals Determination

Metals concentrations and emission rates were determined in accordance with Method 29.

Impingers one and two were loaded with 100 mL each of 5% HNO₃/10% H₂O₂. The third impinger remained empty. The fourth and fifth impinger were loaded with 100mL of 10% H₂SO₄/5% KMnO₄. The sixth impinger was filled with silica gel. The impingers were weighed prior to and after each test run in order to determine moisture content of the stack gas. Impingers were recovered as proscribed in the method, with 0.1N HNO₃ used on impingers 1 and 2, 0.1N HNO₃ also used on impinger three (in a separate sample container), and 10% H₂SO₄/5% KMnO₄, DI water, and 8N HCl for impingers four and five.

Inlet samples utilized a heated Teflon flexible sampling line connection between the filter and impingers maintained at a temperature of 248°F +/- 25°F.

The filter media were Whatman quartz microfiber filters exhibiting a 99.97% efficiency on 0.3-micron DOP smoke particles in accordance with ASTM Standard Method D-2986-71.

Sample analysis was conducted by Alliance Technical Group for particle bound metals from the nozzle, probe, and filter catch, and analyzed for vapor phase metals from the impinger catch.

4.4 Method 0061 Cr⁺⁶ Determination

Hexavalent chromium (Cr⁺⁶) concentrations were determined in accordance with SW-846 Method 0061. The sample was extracted isokinetically from the gas stream and passed through a 0.5N potassium hydroxide (KOH) solution, which was also recirculated through the first impinger to the sample nozzle. The sample train consisted of a glass nozzle, and five impingers. The first three impingers contained the KOH solution (150 mL in impinger one, approximately 75mL each in impingers two and three, the fourth impinger remained empty, and the fifth impinger contained silica gel to absorb any remaining moisture). Inlet samples were collected utilizing a Teflon flexible sampling line connection between the filter and impingers. The pH of the first impinger was checked and verified to be greater than 8.5. A post-test nitrogen purge was performed on the impinger train for thirty minutes at 10 liters/minute. Once this purge was complete, samples were filtered and recovered utilizing deionized water and stored in Nalgene sample containers.

4.5 Oregon Method 5 Particulate Matter Determination

Flue gas total particulate matter concentrations and emission rates were determined in accordance with Oregon Method 5. The probe and filter housing were maintained at a temperature of 248°F +/- 25°F. The back half of the sample train consisted of four impingers, the first two each containing 100mL of deionized water, the third remained empty, and the fourth contained approximately 200 grams of silica gel. Inlet samples utilized a heated Teflon flexible sampling line connection between the filter and impingers maintained at a temperature of 248°F +/- 25°F. The impingers were weighed prior to and after each test run in order to determine moisture content of the stack gas per USEPA Method 4 requirements.

Filterable particulate matter in the sample probe was recovered utilizing acetone; a minimum of three passes of the probe brush through the entire probe was performed, followed by a visual inspection of the acetone exiting the probe. If the acetone solution exiting the probe was clear, the wash is considered complete; if not, another pass of the brush through the probe was made and inspected until the solution is clear. The nozzle was then removed from the probe and cleaned in a similar manner, utilizing an appropriately sized nozzle brush. The filter housing was washed a minimum of three times with acetone and inspected for cleanliness, and the filter was placed in its corresponding petri dish. The acetone wash and the filter were labeled and marked, then analyzed off site at an approved laboratory.

The back half impinger catch was placed in a sample container. All sample-exposed surfaces between the filter and the fourth impinger were thoroughly rinsed with deionized (DI) water and placed into the impinger catch container. Following the water rinse, all sample-exposed surfaces were thoroughly rinsed with acetone and placed in a separate container. The organic and aqueous fractions were dried and the residues weighed. The back half catch was the sum of the impinger catch and the back half acetone rinse weights. The samples were analyzed off site according to the procedures in Oregon Method 5.

5.0 TEST RESULT SUMMARIES

5.1 Baghouse Inlet Method 29 Summary

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Test Method: 29

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	76.1	74.9	75.5
Flue Gas Moisture, percent by volume	1.6%	1.7%	1.7%
Average Flue Pressure, in. Hg	29.62	29.62	29.62
Gas Sample Volume, dscf	365.930	363.260	364.595
Average Gas Velocity, ft/sec	78.289	77.442	77.866
Gas Volumetric Flow Rate, acfm	3,689	3,649	3,669
Gas Volumetric Flow Rate, dscfm	3,539	3,507	3,523
Gas Volumetric Flow Rate, scfm	3,596	3,566	3,581
Isokinetic Variance	101.3	101.5	101.4
Tons of metal processed	15.5	15.0	15.3
Aluminum (Al) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	1809.40	581.30	1195.35
ppb	155.56	50.34	102.95
ug/dscm	174.62	56.51	115.57
lb/hr	2.31E-03	7.42E-04	1.53E-03
lb/ton of metal processed	1.19E-03	3.96E-04	7.95E-04
Antimony (Sb) Emissions			
Detection Limit Qualifier	BDL	BDL	
ug of sample collected	≤ 1.45	≤ 1.32	≤ 1.38
ppb	≤ 0.03	≤ 0.03	≤ 0.03
ug/dscm	≤ 0.14	≤ 0.13	≤ 0.14
lb/hr	≤ 1.85E-06	≤ 1.68E-06	≤ 1.77E-06
lb/ton of metal processed	≤ 9.55E-07	≤ 8.96E-07	≤ 9.25E-07
Arsenic (As) Emissions			
Detection Limit Qualifier	BDL	BDL	
ug of sample collected	≤ 2.73	≤ 2.54	≤ 2.64
ppb	≤ 0.09	≤ 0.08	≤ 0.08
ug/dscm	≤ 0.26	≤ 0.25	≤ 0.26
lb/hr	≤ 3.49E-06	≤ 3.24E-06	≤ 3.37E-06
lb/ton of metal processed	≤ 1.80E-06	≤ 1.73E-06	≤ 1.76E-06
Barium (Ba) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	11.92	5.20	8.56
ppb	0.20	0.09	0.14
ug/dscm	1.15	0.51	0.83
lb/hr	1.52E-05	6.64E-06	1.09E-05
lb/ton of metal processed	7.87E-06	3.54E-06	5.70E-06
Beryllium (Be) Emissions			
Detection Limit Qualifier	ADL	DLL	
ug of sample collected	0.28	≤ 0.45	≤ 0.37
ppb	0.07	≤ 0.12	≤ 0.10
ug/dscm	0.03	≤ 0.04	≤ 0.04
lb/hr	3.63E-07	≤ 5.76E-07	≤ 4.70E-07
lb/ton of metal processed	1.87E-07	≤ 3.07E-07	≤ 2.47E-07
Cadmium (Cd) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	0.45	0.13	0.29
ppb	0.01	0.00	0.01
ug/dscm	0.04	0.01	0.03
lb/hr	5.78E-07	1.65E-07	3.71E-07
lb/ton of metal processed	2.98E-07	8.79E-08	1.93E-07

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Test Method: 29

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	76.1	74.9	75.5
Flue Gas Moisture, percent by volume	1.6%	1.7%	1.7%
Average Flue Pressure, in. Hg	29.62	29.62	29.62
Gas Sample Volume, dscf	365.930	363.260	364.595
Average Gas Velocity, ft/sec	78.289	77.442	77.866
Gas Volumetric Flow Rate, acfm	3,689	3,649	3,669
Gas Volumetric Flow Rate, dscfm	3,539	3,507	3,523
Gas Volumetric Flow Rate, scfm	3,596	3,566	3,581
Isokinetic Variance	101.3	101.5	101.4
Tons of metal processed	15.5	15.0	15.3
Chromium (Cr) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	4741.00	2057.20	3399.10
ppb	211.48	92.44	151.96
ug/dscm	457.54	199.99	328.77
lb/hr	6.06E-03	2.63E-03	4.35E-03
lb/ton of metal processed	3.13E-03	1.40E-03	2.27E-03
Cobalt (Co) Emissions			
Detection Limit Qualifier	DLL	ADL	
ug of sample collected	≤ 3469.09	344.64	≤ 1906.86
ppb	≤ 136.54	13.67	≤ 75.10
ug/dscm	≤ 334.79	33.50	≤ 184.15
lb/hr	≤ 4.44E-03	4.40E-04	≤ 2.44E-03
lb/ton of metal processed	≤ 2.29E-03	2.35E-04	≤ 1.26E-03
Copper (Cu) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	31.82	19.21	25.52
ppb	1.16	0.71	0.93
ug/dscm	3.07	1.87	2.47
lb/hr	4.07E-05	2.45E-05	3.26E-05
lb/ton of metal processed	2.10E-05	1.31E-05	1.70E-05
Lead (Pb) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	5.12	1.48	3.30
ppb	0.06	0.02	0.04
ug/dscm	0.49	0.14	0.32
lb/hr	6.55E-06	1.89E-06	4.22E-06
lb/ton of metal processed	3.38E-06	1.01E-06	2.19E-06
Manganese (Mn) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	30.79	22.51	26.65
ppb	1.30	0.96	1.13
ug/dscm	2.97	2.19	2.58
lb/hr	3.94E-05	2.87E-05	3.41E-05
lb/ton of metal processed	2.03E-05	1.53E-05	1.78E-05
Mercury (Hg) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 0.27	≤ 0.22	≤ 0.24
ppb	≤ 0.00	≤ 0.00	≤ 0.00
ug/dscm	≤ 0.03	≤ 0.02	≤ 0.03
lb/hr	≤ 3.49E-07	≤ 2.77E-07	≤ 3.13E-07
lb/ton of metal processed	≤ 1.80E-07	≤ 1.48E-07	≤ 1.64E-07

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Test Method: 29

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	76.1	74.9	75.5
Flue Gas Moisture, percent by volume	1.6%	1.7%	1.7%
Average Flue Pressure, in. Hg	29.62	29.62	29.62
Gas Sample Volume, dscf	365.930	363.260	364.595
Average Gas Velocity, ft/sec	78.289	77.442	77.866
Gas Volumetric Flow Rate, acfm	3,689	3,649	3,669
Gas Volumetric Flow Rate, dscfm	3,539	3,507	3,523
Gas Volumetric Flow Rate, scfm	3,596	3,566	3,581
Isokinetic Variance	101.3	101.5	101.4
Tons of metal processed	15.5	15.0	15.3
Nickel (Ni) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	14995.50	6792.59	10894.04
ppb	592.64	270.42	431.53
ug/dscm	1447.16	660.35	1053.76
lb/hr	1.92E-02	8.67E-03	1.39E-02
lb/ton of metal processed	9.91E-03	4.63E-03	7.27E-03
Phosphorus (P) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	169.76	51.30	110.53
ppb	12.71	3.87	8.29
ug/dscm	16.38	4.99	10.69
lb/hr	2.17E-04	6.55E-05	1.41E-04
lb/ton of metal processed	1.12E-04	3.49E-05	7.35E-05
Selenium (Se) Emissions			
Detection Limit Qualifier	DLL	BDL	
ug of sample collected	≤ 11.49	≤ 5.45	≤ 8.47
ppb	≤ 0.34	≤ 0.16	≤ 0.25
ug/dscm	≤ 1.11	≤ 0.53	≤ 0.82
lb/hr	≤ 1.47E-05	≤ 6.96E-06	≤ 1.08E-05
lb/ton of metal processed	≤ 7.59E-06	≤ 3.71E-06	≤ 5.65E-06
Silver (Ag) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 4.76	≤ 3.51	≤ 4.13
ppb	≤ 0.10	≤ 0.08	≤ 0.09
ug/dscm	≤ 0.46	≤ 0.34	≤ 0.40
lb/hr	≤ 6.09E-06	≤ 4.48E-06	≤ 5.28E-06
lb/ton of metal processed	≤ 3.14E-06	≤ 2.39E-06	≤ 2.77E-06
Thallium (Tl) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 46.90	≤ 7.43	≤ 27.17
ppb	≤ 0.53	≤ 0.09	≤ 0.31
ug/dscm	≤ 4.53	≤ 0.72	≤ 2.63
lb/hr	≤ 6.00E-05	≤ 9.49E-06	≤ 3.47E-05
lb/ton of metal processed	≤ 3.10E-05	≤ 5.06E-06	≤ 1.80E-05
Vanadium (V) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 3.40	≤ 2.86	≤ 3.13
ppb	≤ 0.16	≤ 0.13	≤ 0.14
ug/dscm	≤ 0.33	≤ 0.28	≤ 0.31
lb/hr	≤ 4.35E-06	≤ 3.65E-06	≤ 4.00E-06
lb/ton of metal processed	≤ 2.25E-06	≤ 1.94E-06	≤ 2.10E-06
Zinc (Zn) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	179.12	84.12	131.62
ppb	8.16	3.86	6.01
ug/dscm	17.29	8.18	12.74
lb/hr	2.29E-04	1.07E-04	1.68E-04
lb/ton of metal processed	1.18E-04	5.73E-05	8.78E-05

5.2 Baghouse Inlet Method 0061 Summary

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Test Method: 0061

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	76.9	75.7	76.3
Flue Gas Moisture, percent by volume	1.6%	1.7%	1.7%
Average Flue Pressure, in. Hg	29.62	29.55	29.59
Gas Sample Volume, dscf	368.194	368.315	368.255
Average Gas Velocity, ft/sec	77.107	77.153	77.130
Gas Volumetric Flow Rate, acfm	3,634	3,636	3,635
Gas Volumetric Flow Rate, dscfm	3,480	3,478	3,479
Gas Volumetric Flow Rate, scfm	3,537	3,539	3,538
Average %CO ₂ by volume, dry basis	0.0	0.0	0.0
Average %O ₂ by volume, dry basis	0.0	0.0	0.0
Isokinetic Variance	101.3	101.4	101.4
Tons of metal processed	15.5	15.0	15.3
Hexavalent Chromium (Cr+6) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	2.09	2.11	2.10
ppb	0.09	0.09	0.09
ug/dscm	0.20	0.20	0.20
lb/hr	2.61E-06	2.64E-06	2.62E-06
lb/ton metal processed	1.35E-06	1.41E-06	1.38E-06

5.3 Baghouse Inlet Oregon Method 5 Summary

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Test Method: ODEQ 5

	Source Condition	Batch Process	Batch Process
	Date	7/31/25	8/1/25
	Start Time	6:05	6:05
	End Time	15:45	16:51
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	70.6	74.5	72.6
Flue Gas Moisture, percent by volume	1.0%	1.2%	1.1%
Average Flue Pressure, in. Hg	29.52	29.52	29.52
Gas Sample Volume, dscf	369.556	369.789	369.673
Average Gas Velocity, ft/sec	76.654	77.311	76.983
Gas Volumetric Flow Rate, acfm	3,612	3,643	3,628
Gas Volumetric Flow Rate, dscfm	3,512	3,506	3,509
Gas Volumetric Flow Rate, scfm	3,546	3,550	3,548
Isokinetic Variance	100.8	101.0	100.9
Tons of metal processed	13.7	15.2	14.5
Filterable Particulate Matter (ODEQ Method 5)			
grams collected	0.03774	0.12252	0.08013
grains/acf	0.0015	0.0049	0.0032
grains/dscf	0.0016	0.0051	0.0034
lb/hr	4.74E-02	1.54E-01	1.01E-01
lb/ton of metal processed	2.77E-02	8.09E-02	5.43E-02
Condensable Particulate Matter (ODEQ Method 5)			
grams collected	0.01343	0.00915	0.01129
grains/acf	0.0005	0.0004	0.0005
grains/dscf	0.0006	0.0004	0.0005
lb/hr	1.69E-02	1.15E-02	1.42E-02
lb/ton of metal processed	9.86E-03	6.04E-03	7.95E-03
Total Particulate Matter (ODEQ Method 5)			
grams collected	0.05117	0.13167	0.09142
grains/acf	0.0020	0.0053	0.0037
grains/dscf	0.0022	0.0055	0.0039
lb/hr	6.43E-02	1.65E-01	1.15E-01
lb/ton of metal processed	3.76E-02	8.69E-02	6.22E-02

5.4 Baghouse Outlet Method 29 Summary

Client: PCC Structural, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Test Method: 29

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	82.0	80.5	81.3
Flue Gas Moisture, percent by volume	1.5%	1.1%	1.3%
Average Flue Pressure, in. Hg	30.06	30.06	30.06
Gas Sample Volume, dscf	321.649	341.910	331.780
Average Gas Velocity, ft/sec	68.677	72.811	70.744
Gas Volumetric Flow Rate, acfm	3,236	3,431	3,334
Gas Volumetric Flow Rate, dscfm	3,119	3,332	3,226
Gas Volumetric Flow Rate, scfm	3,168	3,368	3,268
Isokinetic Variance	101.0	100.5	100.8
Tons of metal processed	15.5	15.0	15.3
Aluminum (Al) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	191.07	136.37	163.72
ppb	18.69	12.55	15.62
ug/dscm	20.98	14.08	17.53
lb/hr	2.45E-04	1.76E-04	2.10E-04
lb/ton of metal processed	1.26E-04	9.37E-05	1.10E-04
Antimony (Sb) Emissions			
Detection Limit Qualifier	BDL	BDL	
ug of sample collected	≤ 1.35	≤ 1.33	≤ 1.34
ppb	≤ 0.03	≤ 0.03	≤ 0.03
ug/dscm	≤ 0.15	≤ 0.14	≤ 0.15
lb/hr	≤ 1.73E-06	≤ 1.71E-06	≤ 1.72E-06
lb/ton of metal processed	≤ 8.94E-07	≤ 9.14E-07	≤ 9.04E-07
Arsenic (As) Emissions			
Detection Limit Qualifier	DLL	BDL	
ug of sample collected	≤ 2.99	≤ 2.56	≤ 2.78
ppb	≤ 0.11	≤ 0.09	≤ 0.10
ug/dscm	≤ 0.33	≤ 0.26	≤ 0.30
lb/hr	≤ 3.83E-06	≤ 3.30E-06	≤ 3.57E-06
lb/ton of metal processed	≤ 1.98E-06	≤ 1.76E-06	≤ 1.87E-06
Barium (Ba) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	9.17	3.33	6.25
ppb	0.18	0.06	0.12
ug/dscm	1.01	0.34	0.68
lb/hr	1.18E-05	4.29E-06	8.02E-06
lb/ton of metal processed	6.07E-06	2.29E-06	4.18E-06
Beryllium (Be) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 0.09	≤ 0.09	≤ 0.09
ppb	≤ 0.03	≤ 0.03	≤ 0.03
ug/dscm	≤ 0.01	≤ 0.01	≤ 0.01
lb/hr	≤ 1.21E-07	≤ 1.15E-07	≤ 1.18E-07
lb/ton of metal processed	≤ 6.22E-08	≤ 6.12E-08	≤ 6.17E-08
Cadmium (Cd) Emissions			
Detection Limit Qualifier	ADL	DLL	
ug of sample collected	0.47	≤ 0.08	≤ 0.27
ppb	0.01	≤ 0.00	≤ 0.01
ug/dscm	0.05	≤ 0.01	≤ 0.03
lb/hr	5.96E-07	≤ 1.03E-07	≤ 3.50E-07
lb/ton of metal processed	3.08E-07	≤ 5.50E-08	≤ 1.81E-07

Client: PCC Structural, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Test Method: 29

Source Condition	Batch Process		Average
	Date	Date	
Start Time	7/29/25	7/30/25	
End Time	6:20	6:25	
	16:32	16:45	
	Run 1	Run 2	
Stack Conditions			
Average Gas Temperature, °F	82.0	80.5	81.3
Flue Gas Moisture, percent by volume	1.5%	1.1%	1.3%
Average Flue Pressure, in. Hg	30.06	30.06	30.06
Gas Sample Volume, dscf	321.649	341.910	331.780
Average Gas Velocity, ft/sec	68.677	72.811	70.744
Gas Volumetric Flow Rate, acfm	3,236	3,431	3,334
Gas Volumetric Flow Rate, dscfm	3,119	3,332	3,226
Gas Volumetric Flow Rate, scfm	3,168	3,368	3,268
Isokinetic Variance	101.0	100.5	100.8
Tons of metal processed	15.5	15.0	15.3
Chromium (Cr) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	3.38	7.94	5.66
ppb	0.17	0.38	0.28
ug/dscm	0.37	0.82	0.60
lb/hr	4.33E-06	1.02E-05	7.28E-06
lb/ton of metal processed	2.24E-06	5.46E-06	3.85E-06
Cobalt (Co) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 1.12	≤ 2.33	≤ 1.72
ppb	≤ 0.05	≤ 0.10	≤ 0.07
ug/dscm	≤ 0.12	≤ 0.24	≤ 0.18
lb/hr	≤ 1.43E-06	≤ 3.00E-06	≤ 2.21E-06
lb/ton of metal processed	≤ 7.39E-07	≤ 1.60E-06	≤ 1.17E-06
Copper (Cu) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	19.11	6.87	12.99
ppb	0.79	0.27	0.53
ug/dscm	2.10	0.71	1.41
lb/hr	2.45E-05	8.85E-06	1.67E-05
lb/ton of metal processed	1.27E-05	4.72E-06	8.69E-06
Lead (Pb) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	4.47	0.96	2.71
ppb	0.06	0.01	0.03
ug/dscm	0.49	0.10	0.30
lb/hr	5.73E-06	1.23E-06	3.48E-06
lb/ton of metal processed	2.96E-06	6.59E-07	1.81E-06
Manganese (Mn) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	15.26	28.79	22.02
ppb	0.73	1.30	1.02
ug/dscm	1.67	2.97	2.32
lb/hr	1.96E-05	3.71E-05	2.83E-05
lb/ton of metal processed	1.01E-05	1.98E-05	1.49E-05
Mercury (Hg) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 0.41	≤ 0.27	≤ 0.34
ppb	≤ 0.01	≤ 0.00	≤ 0.00
ug/dscm	≤ 0.05	≤ 0.03	≤ 0.04
lb/hr	≤ 5.27E-07	≤ 3.43E-07	≤ 4.35E-07
lb/ton of metal processed	≤ 2.72E-07	≤ 1.83E-07	≤ 2.27E-07

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Test Method: 29

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	82.0	80.5	81.3
Flue Gas Moisture, percent by volume	1.5%	1.1%	1.3%
Average Flue Pressure, in. Hg	30.06	30.06	30.06
Gas Sample Volume, dscf	321.649	341.910	331.780
Average Gas Velocity, ft/sec	68.677	72.811	70.744
Gas Volumetric Flow Rate, acfm	3,236	3,431	3,334
Gas Volumetric Flow Rate, dscfm	3,119	3,332	3,226
Gas Volumetric Flow Rate, scfm	3,168	3,368	3,268
Isokinetic Variance	101.0	100.5	100.8
Tons of metal processed	15.5	15.0	15.3
Nickel (Ni) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	69.14	52.03	60.59
ppb	3.11	2.20	2.66
ug/dscm	7.59	5.37	6.48
lb/hr	8.87E-05	6.71E-05	7.79E-05
lb/ton of metal processed	4.58E-05	3.58E-05	4.08E-05
Phosphorus (P) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	46.99	38.60	42.79
ppb	4.00	3.09	3.55
ug/dscm	5.16	3.99	4.58
lb/hr	6.03E-05	4.98E-05	5.50E-05
lb/ton of metal processed	3.11E-05	2.65E-05	2.88E-05
Selenium (Se) Emissions			
Detection Limit Qualifier	BDL	BDL	
ug of sample collected	≤ 5.55	≤ 5.49	≤ 5.52
ppb	≤ 0.19	≤ 0.17	≤ 0.18
ug/dscm	≤ 0.61	≤ 0.57	≤ 0.59
lb/hr	≤ 7.12E-06	≤ 7.08E-06	≤ 7.10E-06
lb/ton of metal processed	≤ 3.67E-06	≤ 3.77E-06	≤ 3.72E-06
Silver (Ag) Emissions			
Detection Limit Qualifier	BDL	DLL	
ug of sample collected	≤ 0.74	≤ 2.20	≤ 1.47
ppb	≤ 0.02	≤ 0.05	≤ 0.03
ug/dscm	≤ 0.08	≤ 0.23	≤ 0.16
lb/hr	≤ 9.49E-07	≤ 2.84E-06	≤ 1.89E-06
lb/ton of metal processed	≤ 4.90E-07	≤ 1.51E-06	≤ 1.00E-06
Thallium (Tl) Emissions			
Detection Limit Qualifier	BDL	BDL	
ug of sample collected	≤ 3.70	≤ 3.66	≤ 3.68
ppb	≤ 0.05	≤ 0.04	≤ 0.05
ug/dscm	≤ 0.41	≤ 0.38	≤ 0.40
lb/hr	≤ 4.75E-06	≤ 4.72E-06	≤ 4.73E-06
lb/ton of metal processed	≤ 2.45E-06	≤ 2.52E-06	≤ 2.48E-06
Vanadium (V) Emissions			
Detection Limit Qualifier	ADL	DLL	
ug of sample collected	0.36	≤ 0.15	≤ 0.26
ppb	0.02	≤ 0.01	≤ 0.01
ug/dscm	0.04	≤ 0.02	≤ 0.03
lb/hr	4.60E-07	≤ 1.97E-07	≤ 3.29E-07
lb/ton of metal processed	2.38E-07	≤ 1.05E-07	≤ 1.71E-07
Zinc (Zn) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	29.82	14.74	22.28
ppb	1.55	0.72	1.13
ug/dscm	3.27	1.52	2.40
lb/hr	3.82E-05	1.90E-05	2.86E-05
lb/ton of metal processed	1.97E-05	1.01E-05	1.49E-05

5.5 Baghouse Outlet Method 0061 Summary

Client: PCC Structural, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Test Method: 0061

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	83.9	83.2	83.6
Flue Gas Moisture, percent by volume	1.1%	3.8%	2.5%
Average Flue Pressure, in. Hg	30.06	30.08	30.07
Gas Sample Volume, dscf	483.595	492.150	487.873
Average Gas Velocity, ft/sec	76.790	76.863	76.827
Gas Volumetric Flow Rate, acfm	3,619	3,622	3,621
Gas Volumetric Flow Rate, dscfm	3,492	3,404	3,448
Gas Volumetric Flow Rate, scfm	3,530	3,539	3,535
Isokinetic Variance	98.8	103.2	101.0
Tons of metal processed	15.5	15.0	15.3
Hexavalent Chromium (Cr+6) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	0.88	0.99	0.93
ppb	0.03	0.03	0.03
ug/dscm	0.06	0.07	0.07
lb/hr	8.39E-07	9.06E-07	8.72E-07
lb/ton metal processed	4.33E-07	4.83E-07	4.58E-07

5.6 Baghouse Outlet Oregon Method 5 Summary

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Test Method: ODEQ 5

	Source Condition	Batch Process	Batch Process
	Date	7/31/25	8/1/25
	Start Time	6:05	6:05
	End Time	15:45	16:51
		Run 1	Run 2
			Average
Stack Conditions			
Average Gas Temperature, °F	76.5	80.0	78.3
Flue Gas Moisture, percent by volume	1.1%	1.4%	1.3%
Average Flue Pressure, in. Hg	30.04	30.04	30.04
Gas Sample Volume, dscf	412.607	413.675	413.141
Average Gas Velocity, ft/sec	72.583	73.287	72.935
Gas Volumetric Flow Rate, acfm	3,420	3,454	3,437
Gas Volumetric Flow Rate, dscfm	3,341	3,343	3,342
Gas Volumetric Flow Rate, scfm	3,379	3,390	3,385
Isokinetic Variance	102.6	102.8	102.7
Tons of metal processed	13.7	15.2	14.5
Filterable Particulate Matter (ODEQ Method 5)			
grams collected	0.00424	0.00099	0.00261
grains/acf	0.0002	0.0000	0.0001
grains/dscf	0.0002	0.0000	0.0001
lb/hr	4.54E-03	1.06E-03	2.80E-03
lb/ton of metal processed	2.65E-03	5.55E-04	1.60E-03
Condensable Particulate Matter (ODEQ Method 5)			
grams collected	0.00420	0.01123	0.00772
grains/acf	0.0002	0.0004	0.0003
grains/dscf	0.0002	0.0004	0.0003
lb/hr	4.50E-03	1.20E-02	8.25E-03
lb/ton of metal processed	2.63E-03	6.32E-03	4.47E-03
Total Particulate Matter (ODEQ Method 5)			
grams collected	0.00844	0.01222	0.01033
grains/acf	0.0004	0.0004	0.0004
grains/dscf	0.0004	0.0004	0.0004
lb/hr	9.04E-03	1.31E-02	1.10E-02
lb/ton of metal processed	5.28E-03	6.87E-03	6.08E-03

6.0 CERTIFICATION

Mostardi Platt is pleased to have been of service to PCC Structurals, Inc. If you have any questions regarding this test report, please do not hesitate to contact us at 630-993-2100.

As the program manager, I hereby certify that this test report represents a true and accurate summary of emissions test results and the methodologies employed to obtain those results. The test program was performed in accordance with the test methods and the Mostardi Platt Quality Manual, as applicable.

MOSTARDI PLATT



Christopher S. Eldridge

Program Manager



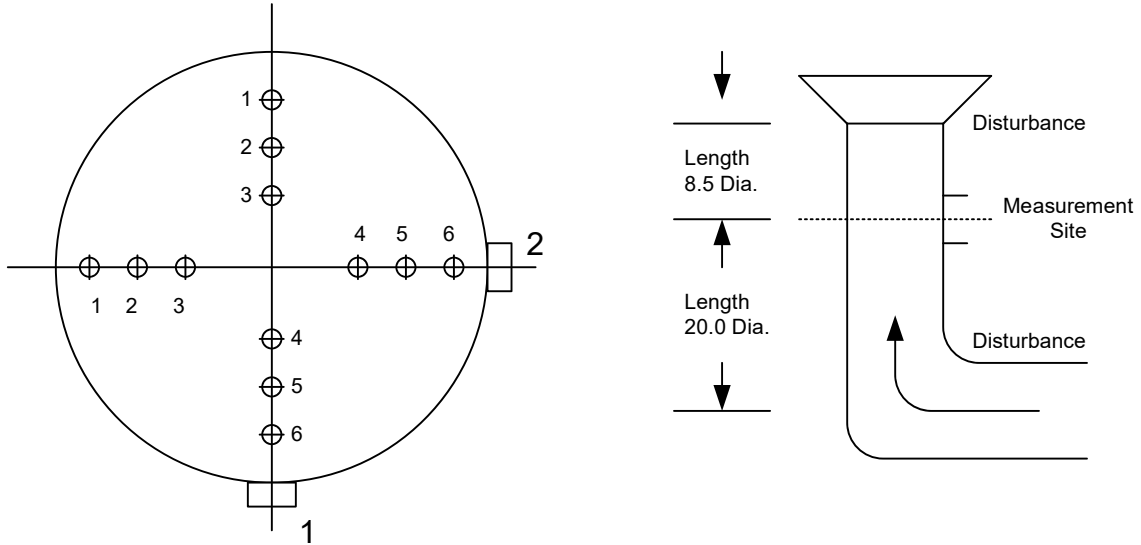
Eric L. Ehlers

Quality Assurance

APPENDICES

Appendix A - Test Section Diagrams

EQUAL AREA TRAVERSE FOR ROUND DUCTS



Job: PCC Structurals, Inc.
Large Parts Campus
Milwaukie, Oregon

Test Location: BH8901 Inlet

Duct Diameter: 1.0 Foot

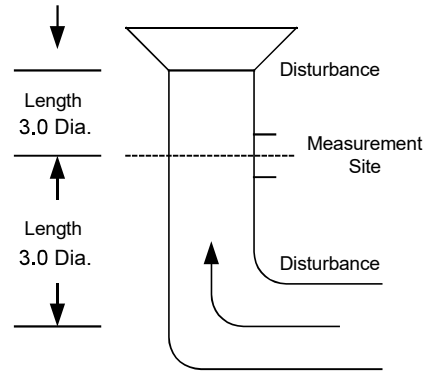
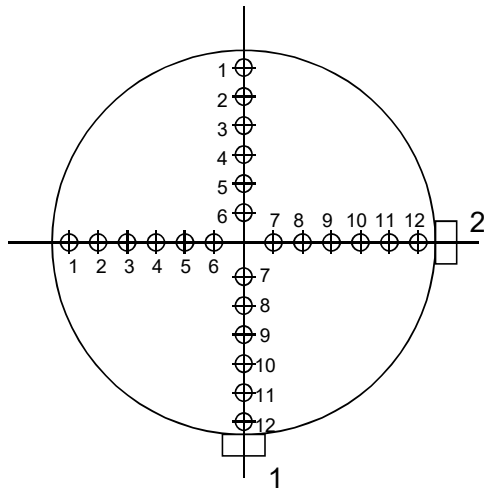
Duct Area: 0.785 Square Feet

No. Points Across Diameter: 6

No. of Ports: 2

Port Length: 4.0 Inches

EQUAL AREA TRAVERSE FOR ROUND DUCTS



Project: PCC Structurals, Inc.
Large Parts Campus
Milwaukie, Oregon

Unit: BH8901 Outlet

Stack Diameter: 1.0 Foot

Stack Area: 0.785 Square Feet

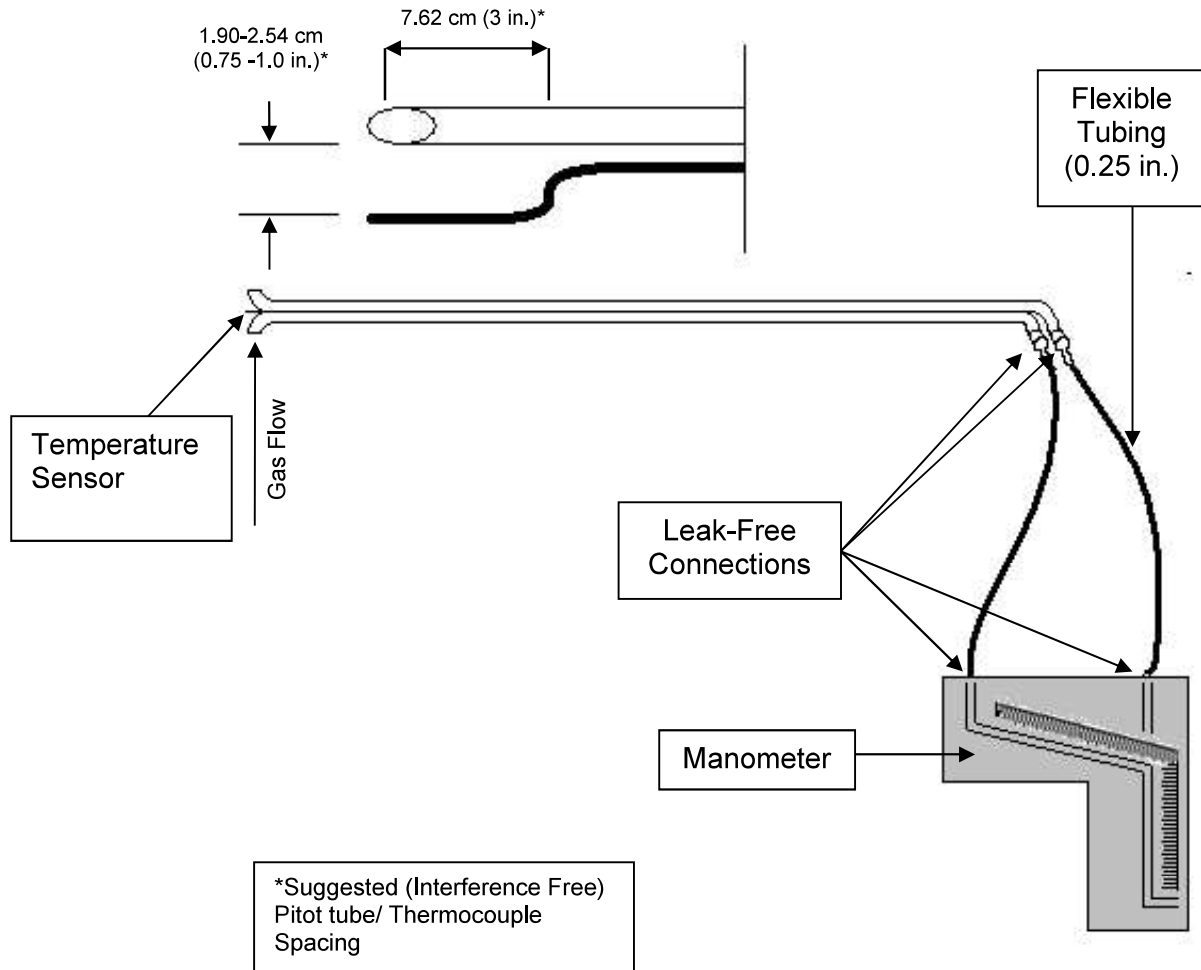
No. Points Across Diameter: 12

No. of Ports: 2

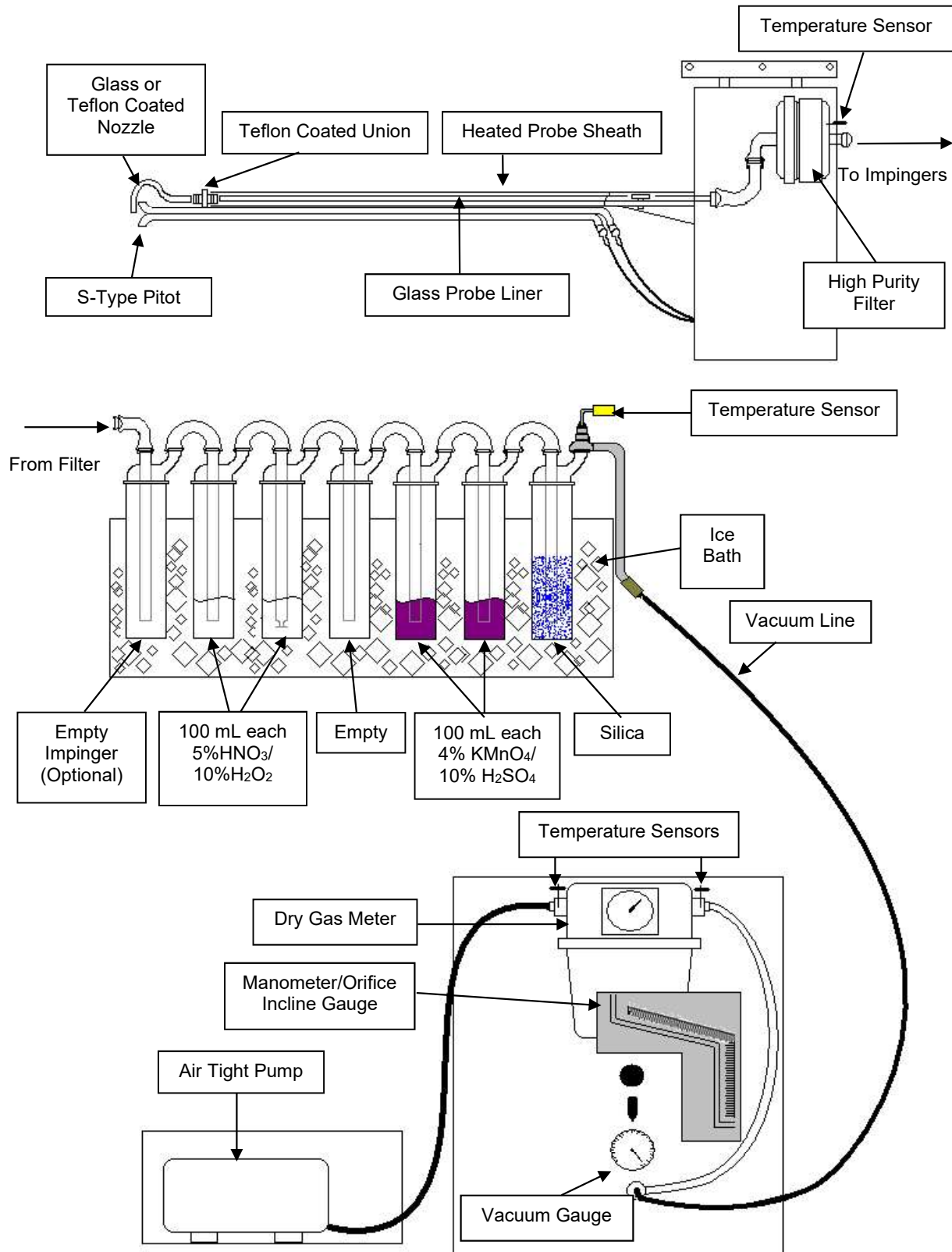
Port Length: 3.0 Inches

Appendix B - Sample Train Diagrams

USEPA Method 2 – Type S Pitot Tube Manometer Assembly



USEPA Method 29- Metals Sample Train Diagram (with Hg)

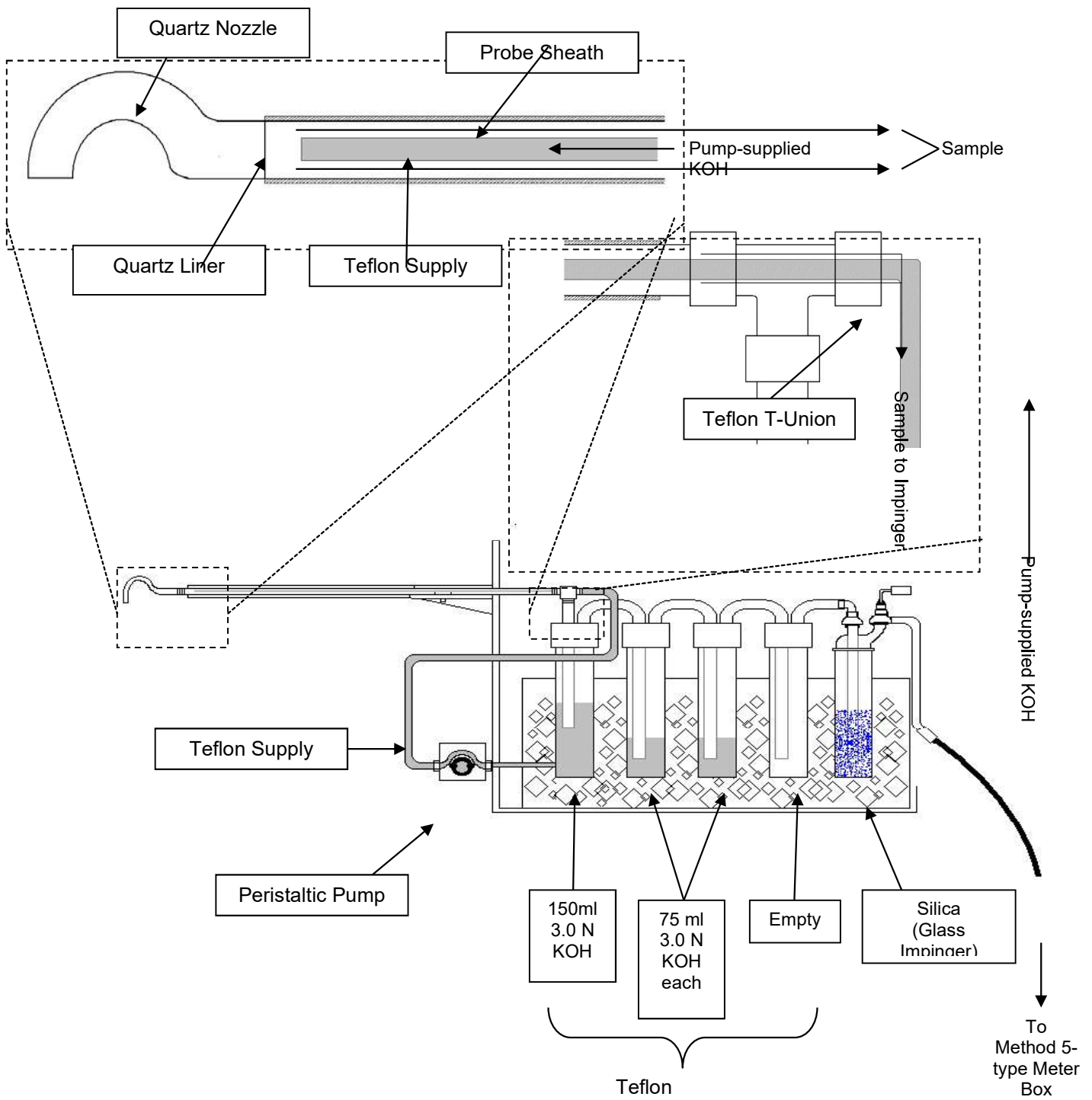


ATD-070 USEPA Method 29 (with Hg)

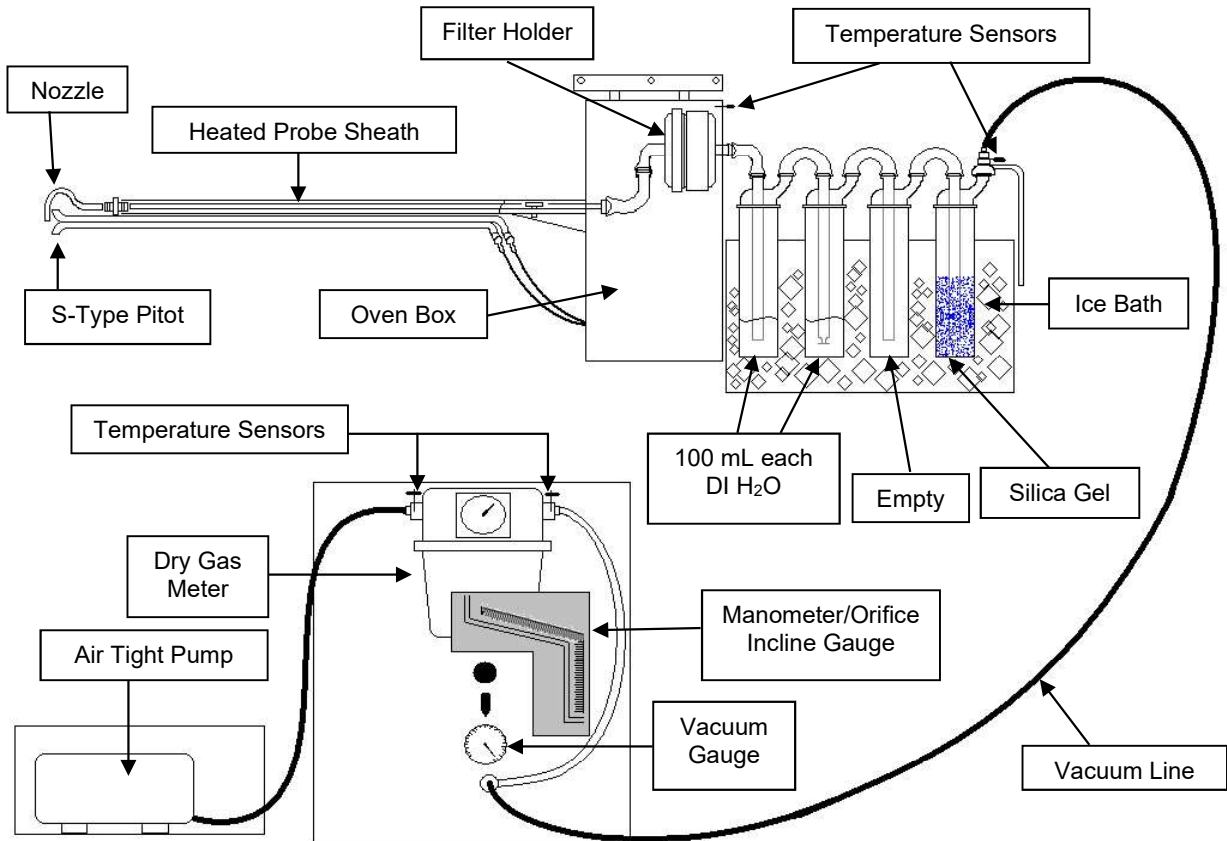
Rev. 1.2

1/1/2021

Method 0061- Hexavalent Chromium Sampling Train



Oregon Method 5- Particulate Matter Sample Train Diagram



Appendix C - Calculation Nomenclature and Formulas

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Run: 1
 Date: 7/29/2025
 Method: 29
 Source Condition: Batch

Dry Molecular Weight

$$M_d = \underline{29.000}$$

Wet Molecular Weight

$$M_s = M_d \times (1 - B_{ws}) + (18.0 \times B_{ws})$$

$$M_d = \underline{29.000} \quad B_{ws} = \underline{0.016}$$

$$M_s = \underline{28.823}$$

Meter Volume at Standard Conditions

$$V_m(\text{std}) = 17.636 \times Y \times V_m \times \frac{(P_{\text{bar}} + DH/13.6)}{T_m}$$

$$Y = \frac{0.991}{1.9} \quad V_m = \frac{376.042}{542.0}$$

$$P_{\text{bar}} = \underline{30.0}$$

$$V_m(\text{std}) = \underline{365.930}$$

Volume of Water Vapor Condensed

$$V_w(\text{std}) = 0.0471 \times (\text{net H}_2\text{O gain})$$

$$\text{Net H}_2\text{O} = \underline{126.7}$$

$$V_w(\text{std}) = \underline{5.968}$$

Moisture Content

$$B_{ws} = \frac{V_w(\text{std})}{V_w(\text{std}) + V_m(\text{std})}$$

$$V_w(\text{std}) = \underline{5.968} \quad V_m(\text{std}) = \underline{365.930}$$

$$B_{ws} = \underline{0.016}$$

Client: PCC Structural, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Run: 1
 Date: 7/29/2025
 Method: 29
 Source Condition: Batch

Average Duct Velocity

$$Vs = 85.49 \times Cp \times \text{Sqrt DP (avg)} \times (Ts \text{ (avg)} + 460 / (Ps \times Ms))^{1/2}$$

$$\begin{array}{l}
 Cp = \frac{0.840}{29.62} \quad Ts \text{ (avg)} = \frac{76.1}{28.823} \quad \text{Sqrt DP (avg)} = \underline{1.376} \\
 Vs = \underline{78.289}
 \end{array}$$

Volumetric Flow Rate (Actual Basis)

$$Q = Vs \times A \times 60$$

$$\begin{array}{l}
 Vs = \underline{78.289} \quad A = \underline{0.785} \\
 Q = \underline{3,689}
 \end{array}$$

Volumetric Flow Rate (Standard Basis)

$$Qstd = 17.636 \times Q \times \frac{Ps}{Ts \text{ (avg)} + 460}$$

$$\begin{array}{l}
 Q = \underline{3,689} \quad Ps = \underline{29.62} \quad Ts \text{ (avg)} = \underline{76.1} \\
 Qstd = \underline{3,596}
 \end{array}$$

Volumetric Flow Rate (Standard Dry Basis)

$$Qstd(\text{dry}) = Qstd \times (1 - Bws)$$

$$\begin{array}{l}
 Qstd = \underline{3,596} \quad Bws = \underline{0.016} \\
 Qstd(\text{dry}) = \underline{3,539}
 \end{array}$$

Isokinetic Variation:

$$\%ISO = \frac{0.0945 \times (Ts + 460) \times Vm(\text{std})}{Vs \times \theta \times An \times Ps \times (1 - Bws)}$$

$$\begin{array}{l}
 Ts = \underline{76.1} \quad Vm(\text{std}) = \underline{365.930} \quad Vs = \underline{78.289} \\
 An = \underline{0.0001670} \quad \theta = \underline{480} \quad Ps = \underline{29.62} \\
 Bws = \underline{0.016} \\
 \%ISO = \underline{101.3}
 \end{array}$$

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Run: 1
Date: 7/29/2025
Method: 29
Source Condition: Batch

Aluminum (Al) Concentration:

$$\mu\text{g}/\text{m}^3 = \frac{\mu\text{g of Aluminum (Al)}}{\text{Vm(std)} \times 0.02832 \text{ m}^3/\text{ft}^3}$$

$$\mu\text{g} = \underline{1809.40} \quad \text{Vm(std)} = \underline{365.930}$$

$$\mu\text{g}/\text{m}^3 = \underline{174.62}$$

Aluminum (Al) Emission Rate:

$$\text{lb of Aluminum (Al)} = \frac{\mu\text{g of sample} \times 10^{-6} \text{ grams}/\mu\text{g}}{453.6 \text{ grams}/\text{lb}}$$

$$\text{lb of Aluminum (Al)} = \underline{3.99\text{E-}06} \quad \text{dscfm} = \underline{3,539}$$

$$\text{Emission Rate lb/hr} = \frac{\text{lb of Aluminum (Al)}}{\text{Vm(std)}} \times \text{dscfm} \times 60 \text{ min/hr}$$

$$\text{Emission Rate lb/hr} = \underline{2.31\text{E-}03}$$

Client: PCC Structural, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Run: 1
Date: 7/31/2025
Method: ODEQ 5
Source Condition: Batch Process

Dry Molecular Weight

$$Md = \underline{29.000}$$

Wet Molecular Weight

$$Ms = Md \times (1 - Bws) + (18.0 \times Bws)$$

$$Md = \underline{29.000} \quad Bws = \underline{0.010}$$

$$Ms = \underline{28.894}$$

Meter Volume at Standard Conditions

$$Vm(std) = 17.636 \times Y \times Vm \times \frac{(Pbar + DH/13.6)}{Tm}$$

$$Y = \underline{0.991} \quad Vm = \underline{377.858} \quad Pbar = \underline{29.92}$$

$$DH = \underline{1.95} \quad Tm = \underline{537.6}$$

$$Vm(std) = \underline{369.556}$$

Volume of Water Vapor Condensed

$$Vw(std) = 0.0471 \times (\text{net H}_2\text{O gain})$$

$$\text{Net H}_2\text{O} = \underline{76.4}$$

$$Vw(std) = \underline{3.598}$$

Moisture Content

$$Bws = \frac{Vw(std)}{Vw(std) + Vm(std)}$$

$$Vw(std) = \underline{3.598} \quad Vm(std) = \underline{369.556}$$

$$Bws = \underline{0.010}$$

Client: PCC Structural, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Run: 1
 Date: 7/31/2025
 Method: ODEQ 5
 Source Condition: Batch Process

Average Duct Velocity

$$V_s = 85.49 \times C_p \times \text{Sqrt DP (avg)} \times (T_s \text{ (avg)} + 460 / (P_s \times M_s))^{1/2}$$

$$C_p = \frac{0.840}{29.52} \quad T_s \text{ (avg)} = \frac{70.6}{28.894} \quad \text{Sqrt DP (avg)} = \frac{1.354}{1}$$

$$V_s = \frac{76.654}{1}$$

Volumetric Flow Rate (Actual Basis)

$$Q = V_s \times A \times 60$$

$$V_s = \frac{76.654}{1} \quad A = \frac{0.785}{1}$$

$$Q = \frac{3,612}{1}$$

Volumetric Flow Rate (Standard Basis)

$$Q_{std} = 17.636 \times Q \times \frac{P_s}{T_s \text{ (avg)} + 460}$$

$$Q = \frac{3,612}{1} \quad P_s = \frac{29.52}{1} \quad T_s \text{ (avg)} = \frac{70.6}{1}$$

$$Q_{std} = \frac{3,546}{1}$$

Volumetric Flow Rate (Standard Dry Basis)

$$Q_{std}(\text{dry}) = Q_{std} \times (1 - Bws)$$

$$Q_{std} = \frac{3,546}{1} \quad Bws = \frac{0.010}{1}$$

$$Q_{std}(\text{dry}) = \frac{3,512}{1}$$

Isokinetic Variation:

$$\%ISO = \frac{0.0945 \times (T_s + 460) \times V_m(\text{std})}{V_s \times \theta \times A_n \times P_s \times (1 - Bws)}$$

$$T_s = \frac{70.6}{1} \quad V_m(\text{std}) = \frac{369.556}{1} \quad V_s = \frac{76.654}{1}$$

$$A_n = \frac{0.0001709}{1} \quad \theta = \frac{480}{1} \quad P_s = \frac{29.52}{1}$$

$$Bws = \frac{0.010}{1}$$

$$\%ISO = \frac{100.8}{1}$$

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Run: 1
Date: 7/31/2025
Method: ODEQ 5
Source Condition: Batch Process

PM Concentration:

This example represents the filterable fraction. For other fractions, use the obtained mn for that particulate fraction.

$$Co = \frac{m_n \times 15.43}{Vm(std)}$$

$$m_n (g) = \underline{0.03774} \quad Vm(std) = \underline{369.556}$$

$$Co = \underline{0.0016} \text{ gr/dscf}$$

PM Emission Rate:

$$\text{Emission Rate lb/hr} = \frac{Co}{7,000} \times Qstd(dry) \times 60$$

$$Co = \underline{0.0016} \quad Qstd(dry) = \underline{3,512}$$

$$\text{Emission Rate lb/hr} = \underline{0.047} \text{ lb/hr}$$

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Run: 1
Date: 7/29/2025
Method: 0061
Source Condition: Batch

Dry Molecular Weight

$$M_d = \underline{29.000}$$

Wet Molecular Weight

$$M_s = M_d \times (1 - B_{ws}) + (18.0 \times B_{ws})$$

$$M_d = \underline{29.000} \quad B_{ws} = \underline{0.016}$$

$$M_s = \underline{28.824}$$

Meter Volume at Standard Conditions

$$V_m(\text{std}) = 17.636 \times Y \times V_m \times \frac{(P_{\text{bar}} + DH/13.6)}{T_m}$$

$$Y = \frac{1.006}{2.0} \quad V_m = \frac{375.972}{546.8}$$

$$P_{\text{bar}} = \underline{30.0}$$

$$V_m(\text{std}) = \underline{368.194}$$

Client: PCC Structural, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Run: 1
 Date: 7/29/2025
 Method: 0061
 Source Condition: Batch

Average Duct Velocity

$$Vs = 85.49 \times Cp \times \text{Sqrt DP (avg)} \times (Ts \text{ (avg)} + 460 / (Ps \times Ms))^{1/2}$$

$$\begin{array}{l}
 Cp = \frac{0.840}{29.62} \quad Ts \text{ (avg)} = \frac{76.9}{28.824} \quad \text{Sqrt DP (avg)} = \underline{1.354} \\
 Ps = \underline{29.62} \quad Ms = \underline{28.824} \\
 Vs = \underline{77.107}
 \end{array}$$

Volumetric Flow Rate (Actual Basis)

$$Q = Vs \times A \times 60$$

$$\begin{array}{l}
 Vs = \underline{77.107} \quad A = \underline{0.785} \\
 Q = \underline{3,634}
 \end{array}$$

Volumetric Flow Rate (Standard Basis)

$$Qstd = 17.636 \times Q \times \frac{Ps}{Ts \text{ (avg)} + 460}$$

$$\begin{array}{l}
 Q = \underline{3,634} \quad Ps = \underline{29.62} \quad Ts \text{ (avg)} = \underline{76.9} \\
 Qstd = \underline{3,537}
 \end{array}$$

Volumetric Flow Rate (Standard Dry Basis)

$$Qstd(\text{dry}) = Qstd \times (1 - Bws)$$

$$\begin{array}{l}
 Qstd = \underline{3,537} \quad Bws = \underline{0.016} \\
 Qstd(\text{dry}) = \underline{3,480}
 \end{array}$$

Isokinetic Variation:

$$\%ISO = \frac{0.0945 \times (Ts + 460) \times Vm(\text{std})}{Vs \times \theta \times An \times Ps \times (1 - Bws)}$$

$$\begin{array}{l}
 Ts = \underline{76.9} \quad Vm(\text{std}) = \underline{368.194} \quad Vs = \underline{77.107} \\
 An = \underline{0.0001709} \quad \theta = \underline{480} \quad Ps = \underline{29.62} \\
 Bws = \underline{0.016} \\
 \%ISO = \underline{101.3}
 \end{array}$$

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Run: 1
 Date: 7/29/2025
 Method: 0061
 Source Condition: Batch

Hexavalent Chromium (Cr+6) Concentration:

$$\mu\text{g}/\text{m}^3 = \frac{\mu\text{g of Hexavalent Chromium (Cr+6)}}{\text{Vm(std)} \times 0.02832 \text{ m}^3/\text{ft}^3}$$

$$\mu\text{g} = \underline{2.09} \quad \text{Vm(std)} = \underline{368.194}$$

$$\mu\text{g}/\text{m}^3 = \underline{0.20}$$

Hexavalent Chromium (Cr+6) Emission Rate:

$$\text{lb of Hexavalent Chromium (Cr+6)} = \frac{\mu\text{g of sample} \times 10^{-6} \text{ grams}/\mu\text{g}}{453.6 \text{ grams}/\text{lb}}$$

$$\text{lb of Hexavalent Chromium (Cr+6)} = \underline{4.60\text{E-}09} \quad \text{dscfm} = \underline{3,480}$$

$$\text{Emission Rate lb/hr} = \frac{\text{lb of Hexavalent Chromium (Cr+6)}}{\text{Vm(std)}} \times \text{dscfm} \times 60 \text{ min/hr}$$

$$\text{Emission Rate lb/hr} = \underline{2.61\text{E-}06}$$

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Volumetric Flow Nomenclature

- A = Cross-sectional area of stack or duct, ft²
- B_{ws} = Water vapor in gas stream, proportion by volume
- C_p = Pitot tube coefficient, dimensionless
- M_d = Dry molecular weight of gas, lb/lb-mole
- M_s = Molecular weight of gas, wet basis, lb/lb-mole
- M_w = Molecular weight of water, 18.0 lb/lb-mole
- P_{bar} = Barometric pressure at testing site, in. Hg
- P_g = Static pressure of gas, in. Hg (in. H₂O/13.6)
- DH = Static pressure of gas, in. H₂O
- P_s = Absolute pressure of gas, in. Hg = P_{bar} + P_g
- P_{std} = Standard absolute pressure, 29.92 in. Hg
- A_{cfm} = Actual volumetric gas flow rate
- Sc_{fm} = Volumetric gas flow rate, corrected to standard conditions
- D_{scfm} = Standard volumetric flow rate, corrected to dry conditions
- R = Ideal gas constant, 21.85 in. Hg-ft³/°R-lb-mole
- T_s = Average stack gas temperature, °F
- T_m = Average dry gas meter temperature, °F
- T_{std} = Standard absolute temperature, 528°R
- v_s = Gas velocity, ft/sec
- V_{m(std)} = Volume of gas sampled, corrected to standard conditions, scf
- V_{w(std)} = Volume of water vapor in gas sample, corrected to standard conditions, scf
- V_{lc} = Volume of liquid collected
- Y = Dry gas meter calibration factor
- Δp = Velocity head of gas, in. H₂O
- K₁ = 17.647 °R/in. Hg
- %EA = Percent excess air
- %CO₂ = Percent carbon dioxide by volume, dry basis
- %O₂ = Percent oxygen by volume, dry basis
- %N₂ = Percent nitrogen by volume, dry basis
- 0.264 = Ratio of O₂ to N₂ in air, v/v
- 0.28 = Molecular weight of N₂ or CO, divided by 100
- 0.32 = Molecular weight of O₂ divided by 100
- 0.44 = Molecular weight of CO₂ divided by 100
- 13.6 = Specific gravity of mercury (Hg)

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Volumetric Air Flow Calculations

$$Vm (std) = 17.647 \times Vm \times \left[\frac{(P_{bar} + \left[\frac{DH}{13.6} \right])}{(460 + Tm)} \right] \times Y$$

$$Vw (std) = 0.0471 \times Vlc$$

$$Bws = \left[\frac{Vw (std)}{Vw (std) + Vm (std)} \right]$$

$$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + [0.28 \times (100 - \%CO_2 - \%O_2)]$$

$$Ms = Md \times (1 - Bws) + (18 \times Bws)$$

$$Vs = \sqrt{\frac{(Ts + 460)}{Ms \times Ps}} \times \sqrt{DP} \times Cp \times 85.49$$

$$Acfm = Vs \times Area \text{ (of stack or duct)} \times 60$$

$$Scfm = Acfm \times 17.647 \times \left[\frac{Ps}{(460 + Ts)} \right]$$

$$Scfh = Scfm \times 60 \frac{min}{hr}$$

$$Dscfm = Scfm \times (1 - Bws)$$

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Isokinetic Nomenclature

- A = Cross-sectional area of stack or duct, square feet
A_n = Cross-sectional area of nozzle, square feet
B_{ws} = Water vapor in gas stream, by volume
C_a = Acetone blank residue concentration, g/g
C_{acf} = Concentration of particulate matter in gas stream at actual conditions, gr/acf
C_p = Pitot tube coefficient
C_s = Concentration of particulate matter in gas stream, dry basis, corrected to standard conditions, gr/dscf
IKV = Isokinetic sampling variance, must be 90.0 % ≤ IKV ≤ 110.0%
M_d = Dry molecular weight of gas, lb/lb-mole
M_s = Molecular weight of gas, wet basis, lb/lb-mole
M_w = Molecular weight of water, 18.0 lb/lb-mole
m_a = Mass of residue of acetone after evaporation, grams
P_{bar} = Barometric pressure at testing site, inches mercury
P_g = Static pressure of gas, inches mercury (inches water/13.6)
P_s = Absolute pressure of gas, inches mercury = P_{bar} + P_g
P_{std} = Standard absolute pressure, 29.92 inches mercury
Q_{acfm} = Actual volumetric gas flow rate, acfm
Q_{sd} = Dry volumetric gas flow rate corrected to standard conditions, dscfh
R = Ideal gas constant, 21.85 inches mercury cubic foot/°R-lb-mole
T_m = Dry gas meter temperature, °R
T_s = Gas temperature, °R
T_{std} = Absolute temperature, 528°R
V_a = Volume of acetone blank, ml
V_{aw} = Volume of acetone used in wash, ml
W_a = Weight of residue in acetone wash, grams
m_n = Total amount of particulate matter collected, grams
V_{1c} = Total volume of liquid collected in impingers and silica gel, ml
V_m = Volume of gas sample as measured by dry gas meter, dcf
V_{m(std)} = Volume of gas sample measured by dry gas meter, corrected to standard conditions, dscf
V_s = Gas velocity, ft/sec
V_{w(std)} = Volume of water vapor in gas sample, corrected to standard conditions, scf
Y = Dry gas meter calibration factor
ΔH = Average pressure differential across the orifice meter, inches water
Δp = Velocity head of gas, inches water
ρ_a = Density of acetone, 0.7855 g/ml (average)
ρ_w = Density of water, 0.002201 lb/ml
θ = Total sampling time, minutes
K₁ = 17.647 °R/in. Hg
K₂ = 0.04707 ft³/ml
K₄ = 0.09450/100 = 0.000945
K_p = Pitot tube constant, $85.49 \frac{ft}{sec} \left[\frac{(lb/lb-mole)(in. Hg)}{(^{\circ}R)(in. H_2O)} \right]^{1/2}$
%EA = Percent excess air
%CO₂ = Percent carbon dioxide by volume, dry basis
%O₂ = Percent oxygen by volume, dry basis
%CO = Percent carbon monoxide by volume, dry basis
%N₂ = Percent nitrogen by volume, dry basis
0.264 = Ratio of O₂ to N₂ in air, v/v
28 = Molecular weight of N₂ or CO
32 = Molecular weight of O₂
44 = Molecular weight of CO₂
13.6 = Specific gravity of mercury (Hg)

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Isokinetic Calculation Formulas

$$1. V_{w(std)} = V_{lc} \left(\frac{\rho_w}{M_w} \right) \left(\frac{RT_{std}}{P_{std}} \right) = K_2 V_{lc}$$

$$2. V_{m(std)} = V_m Y \left(\frac{T_{std}}{T_m} \right) \left(\frac{(P_{bar} + (\frac{\Delta H}{13.6}))}{P_{std}} \right) = K_1 V_m Y \frac{(P_{bar} + (\frac{\Delta H}{13.6}))}{T_m}$$

$$3. B_{ws} = \frac{V_{w(std)}}{(V_{m(std)} + V_{w(std)})}$$

$$4. M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2)$$

$$5. M_s = M_d(1 - B_{ws}) + 18.0(B_{ws})$$

$$6. C_a = \frac{m_a}{V_a \rho_a}$$

$$7. W_a = C_a V_{aw} \rho_a$$

$$8. C_{acf} = 15.43 K_i \left(\frac{m_n P_s}{(V_{w(std)} + V_{m(std)}) T_s} \right)$$

$$9. C_s = (15.43 \text{ grains/gram}) (m_n / V_{m(std)})$$

$$10. v_s = K_p C_p \sqrt{\frac{\Delta P T_s}{P_s M_s}}$$

$$11. Q_{acfm} = v_s A (60_{\text{sec/min}})$$

$$12. Q_{sd} = (3600_{\text{sec/hr}})(1 - B_{ws}) v_s \left(\frac{T_{std} P_s}{T_s P_{std}} \right) A$$

$$13. E \text{ (emission rate, lbs/hr)} = Q_{std} (C_s / 7000 \text{ grains/lb})$$

$$14. IKV = \frac{T_s V_{m(std)} P_{std}}{T_{std} v_s \theta A_n P_s 60(1 - B_{ws})} = K_4 \frac{T_s V_{m(std)}}{P_s v_s A_n \theta (1 - B_{ws})}$$

$$15. \%EA = \left(\frac{\%O_2 - (0.5 \%CO)}{0.264 \%N_2 - (\%O_2 - 0.5 \%CO)} \right) \times 100$$

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Moisture Calculations

$$V_{wc(std)} = \frac{(V_f - V_i)\rho_w RT_{std}}{P_{std}M_w} = 0.04707(V_f - V_i)$$

$$V_{wsg(std)} = \frac{(W_f - W_i)\rho_w RT_{std}}{P_{std}M_w} = 0.04715(W_f - W_i)$$

$$V_{m(std)} = 17.64 V_m Y \frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}$$

$$B_{ws} = \frac{V_{wc(std)} + V_{wsg(std)}}{V_{wc(std)} + V_{wsg(std)} + V_{m(std)}}$$

Where:

B_{ws} = Water vapor in gas stream, proportion by volume

M_w = Molecular weight of water, 18.015 lb/lb-mole

P_{bar} = Barometric pressure at the testing site, in. Hg

P_{std} = Standard absolute pressure, 29.92 in. Hg

R = Ideal gas constant, $0.048137 \text{ (in. Hg)(ft}^3\text{)/(g-mole)(}^\circ\text{R)} =$
 $[21.8348 \text{ (in. Hg)(ft}^3\text{)/(lb-mole)(}^\circ\text{R)}]/453.592 \text{ g-mole/lb-mole}$

T_m = Absolute average dry gas meter temperature, $^\circ\text{R}$

T_{std} = Standard absolute temperature, 528 $^\circ\text{R}$

V_f = Final volume of condenser water, ml

V_i = Initial volume of condenser water, ml

V_m = Dry gas volume measured by dry gas meter, dcf

$V_{m(std)}$ = Dry gas volume measured by dry gas meter, corrected to standard conditions, scf

$V_{wc(std)}$ = Volume of condensed water vapor, corrected to standard conditions, scf

$V_{wsg(std)}$ = Volume of water vapor collected in silica gel, corrected to standard conditions, scf

W_f = Final weight of silica gel, g

W_i = Initial weight of silica gel, g

Y = Dry gas meter calibration factor

ΔH = Average pressure exerted on dry gas meter outlet by gas sample bag, in. H_2O

ρ_w = Density of water, 0.9982 g/ml

13.6 = Specific gravity of mercury (Hg)

17.64 = T_{std}/P_{std}

0.04707 = ft^3/ml 0.04715 = ft^3/g

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Trace Metal (Including Mercury) Sample Calculations

Concentration

$$\frac{\mu g}{m^3} = \frac{\mu g \text{ of trace metal}}{dscf \text{ volume sampled} \times 0.02832 \frac{m^3}{ft^3}}$$

Emission Rate

$$\frac{\mu g \text{ of sample} \times \frac{1 \times 10^{-6} \text{ grams}}{\mu g}}{453.6 \text{ gr/lb}} = \text{lbs of trace metal}$$
$$\frac{\text{lbs of trace metal}}{V_m(\text{std})\text{sample}} \times dscfm \times 60 \frac{\text{min}}{\text{hr}} = \text{lbs of trace metal/hr}$$

Appendix D - Reference Method Test Data

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Project #: M253113
Test Method: 29
Test Engineer: AIR
Test Technician: JSC

	<u>Run 1</u>	<u>Run 2</u>
Meter ID:	CM43	CM43
Pitot ID:	1883	1883
Nozzle Diameter (Inches):	0.175	0.175
Meter Calibration Date:	7/2/2025	7/2/2025
Meter Calibration Factor (Y):	0.991	0.991
Meter Orifice Setting (Delta H):	1.826	1.826
Nozzle Kit ID Number and Material:	Glass #23 (573)	Glass #23 573

Leak Checks

Pre Pitot Leak Check	0.0 @ 4.3 "H₂O	0.0 @ 5.2 "H₂O
Post Pitot Leak Check	0.0 @ 5.2 "H₂O	0.0 @ 6.0 "H₂O
Pre Nozzle Leak Check	0.000 @ 8 "Hg	0.000 @ 9 "Hg
Post Nozzle Leak Check	0.000 @ 12 "Hg	0.000 @ 15 "Hg

Pitot Tube Coefficient: 0.840
Probe Length (Feet): 3.0
Probe Liner Material: Glass
Sample Plane: Horizontal
Port Length (Inches): 4.00
Port Size (Diameter, Inches): 4.00
Port Type: Nipple
Duct Shape: Circular
Diameter (Feet): 1.00
Duct Area (Square Feet): 0.785
Upstream Diameters: 8.5
Downstream Diameters: 20.0
Number of Ports Sampled: 2
Number of Points per Port: 6
Minutes per Point: 40.0
Minutes per Reading: 10.0
Total Number of Traverse Points: 12
Test Length (Minutes): 480
Train Type: Hot Box
Source Condition: Batch Process
Moisture Balance ID: S10-07
of Runs 2

Method 1 and 2 Cyclonic Flow Check Data

Project Number	M253113	Source Condition:	Batch Process
Client:	PCC Structurals, Inc.	Run No.:	1
Facility:	Large Parts Campus Facility - Milwaukee, OR	Date:	7/29/2025
Location:	Baghouse 8901 Inlet	Start Time:	5:15
Pitot ID:	1883	End Time:	5:45
Pitot Coefficient:	0.840	RM Testers:	AIR
Probe Length:	3	Port Length:	4.00

Port	Point	DP (in. H ₂ O)	Sqrt. DP	Temp (°F)	Yaw Angle (°)	DP (in. H ₂ O) at Null Point	Velocity (V)	DP (in. H ₂ O)	Sqrt. DP	Temp (°F)	Yaw Angle (°)	DP (in. H ₂ O) at Null Point	Velocity (V)
A	1	1.90	1.3784	65.0	0.0	0.00	77.85	1.90	1.3784	65.0	0.0	0.00	77.85
A	2	1.90	1.3784	65.0	2.0	0.00	77.85	1.80	1.3416	65.0	2.0	0.00	75.77
A	3	2.00	1.4142	65.0	3.0	0.00	79.87	1.90	1.3784	65.0	2.0	0.00	77.85
A	4	2.00	1.4142	65.0	4.0	0.00	79.87	1.90	1.3784	65.0	1.0	0.00	77.85
A	5	2.10	1.4491	65.0	2.0	0.00	81.84	2.00	1.4142	65.0	0.0	0.00	79.87
A	6	2.00	1.4142	65.0	1.0	0.00	79.87	2.00	1.4142	65.0	3.0	0.00	79.87

Average Yaw Angle 1.7 °

Run 1 - Method 29

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 7/29/25
 Start Time: 6:20
 End Time: 16:32

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.93	in. H ₂ O		Static Pressure	-5.50	in. H ₂ O	
Meter Temperature, Tm:	82.0	°F		Flue Pressure (Ps):	29.62	in. Hg. abs.	
Sqrt ΔP:	1.376	in. H ₂ O					
Stack Temperature, Ts:	76.1	°F					
Meter Volume, Vm:	376.042	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	365.930	dscf		Gas Weight wet, Ms:	28.823	lb/lb mole	
Meter Volume, Vwstd:	5.968	wscf					
Isokinetic Variance:	101.3	%					
				Gas Velocity, Vs:	78.289	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,689	acfm	
Nozzle Diameter:	0.175	in inches		Volumetric Flow:	3,539	dscfm	
Barometric Pressure:	30.02	in Hg		Volumetric Flow:	3,596	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	4327.6	ml	Silica Initial Wt.	868.7	grams
Final Impinger Content:	4428.0	ml	Silica Final Wt.	895.0	grams
Impinger Difference:	100.4	ml	Silica Difference:	26.3	grams
Total Water Gain:	126.7		Moisture, Bws:	0.016	
			Supersaturation Value, Bws:	0.031	

Port-Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Probe	Filter	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Temp °F	Exit Temp °F	Exit Temp °F
1-1	6:20:00	2.00	2.03	233.509	68	72	72	5	250	250	57
1-1	6:30:00	2.00	2.04	241.486	65	73	73	5	260	260	57
1-1	6:40:00	2.00	2.05	249.484	65	74	74	5	260	260	59
1-1	6:50:00	2.00	2.05	257.494	65	75	75	5	260	260	60
1-2	7:00:00	2.10	2.14	265.527	68	75	75	5	260	260	43
1-2	7:10:00	2.10	2.15	273.736	67	76	76	5	260	260	40
1-2	7:20:00	2.10	2.15	281.964	66	76	76	5	260	260	40
1-2	7:30:00	2.10	2.16	290.197	65	76	76	5	260	260	40
1-3	7:40:00	1.90	1.95	298.445	65	76	76	5	260	260	40
1-3	7:50:00	1.90	1.95	306.284	66	77	77	5	260	260	41
1-3	8:00:00	1.90	1.95	314.131	66	77	77	5	260	260	41
1-3	8:10:00	1.90	1.94	321.982	68	77	77	5	260	260	44
1-4	8:20:00	2.00	2.05	329.816	66	77	77	5	260	260	50
1-4	8:30:00	2.00	2.05	337.867	67	77	77	5	260	260	53
1-4	8:40:00	2.00	2.05	345.912	68	77	77	5	260	260	56
1-4	8:50:00	2.00	2.05	353.954	68	78	78	5	260	260	58
1-5	9:00:00	1.80	1.84	362.006	68	78	78	5	260	260	60
1-5	9:10:00	1.80	1.84	369.347	69	79	79	5	260	260	63
1-5	9:20:00	1.80	1.84	377.294	70	79	79	5	260	260	66
1-5	9:30:00	1.80	1.84	384.937	70	79	79	5	260	260	66
1-6	9:40:00	1.70	1.74	392.564	71	80	80	5	260	260	64
1-6	9:50:00	1.70	1.74	400.009	72	80	80	5	260	260	63
1-6	10:00:00	1.70	1.74	407.423	72	81	81	5	260	260	63
1-6	10:10:00	1.70	1.74	414.859	73	81	81	5	260	260	62
	10:20:00			422.288							
2-1	12:00:00	2.10	2.12	423.271	78	79	79	5	260	260	62
2-1	12:10:00	2.10	2.12	431.468	78	80	80	5	260	260	63
2-1	12:20:00	2.10	2.11	439.673	82	81	81	5	260	260	64
2-1	12:30:00	2.10	2.12	447.862	80	82	82	5	260	260	64
2-2	12:40:00	1.80	1.82	456.087	80	83	83	5	260	260	50
2-2	12:50:00	1.80	1.82	463.713	80	84	84	5	260	260	49
2-3	13:00:00	1.80	1.83	471.346	79	85	85	5	260	260	50
2-3	13:10:00	1.80	1.82	479.008	83	85	85	5	260	260	55
2-4	13:20:00	1.90	1.91	486.637	85	86	86	5	260	260	60
2-4	13:30:00	1.90	1.92	494.475	85	87	87	5	260	260	61
	13:40:00			502.331							
2-5	13:50:00	1.80	1.82	502.331	84	87	87	5	260	260	62
2-5	14:00:00	1.80	1.82	509.993	84	87	87	5	260	260	64
2-6	14:10:00	1.90	1.92	517.642	85	88	88	5	260	260	63
2-6	14:20:00	1.90	1.92	525.513	85	88	88	5	260	260	63
	14:30:00			533.381							
2-6	14:40:00	1.90	1.91	533.381	88	89	89	5	260	260	64
2-6	14:50:00	1.90	1.91	541.253	90	89	89	5	260	260	61

Run 1 - Method 29

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 7/29/25
 Start Time: 6:20
 End Time: 16:32

DRY GAS METER CONDITIONS				STACK CONDITIONS		
ΔH:	1.93	in. H ₂ O		Static Pressure	-5.50	in. H ₂ O
Meter Temperature, Tm:	82.0	°F		Flue Pressure (Ps):	29.62	in. Hg. abs.
Sqrt ΔP:	1.376	in. H ₂ O				
Stack Temperature, Ts:	76.1	°F				
Meter Volume, Vm:	376.042	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vmstd:	365.930	dscf		Gas Weight wet, Ms:	28.823	lb/lb mole
Meter Volume, Vwstd:	5.968	wscf				
Isokinetic Variance:	101.3	%				
				Gas Velocity, Vs:	78.289	fps
Test Length:	480.00	in mins.		Volumetric Flow:	3,689	acfm
Nozzle Diameter:	0.175	in inches		Volumetric Flow:	3,539	dscfm
Barometric Pressure:	30.02	in Hg		Volumetric Flow:	3,596	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	4327.6	ml	Silica Initial Wt.	868.7	grams
Final Impinger Content:	4428.0	ml	Silica Final Wt.	895.0	grams
Impinger Difference:	100.4	ml	Silica Difference:	26.3	grams
Total Water Gain:	126.7		Moisture, Bws:	0.016	Supersaturation Value, Bws: 0.031

Port- Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Probe	Filter	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Temp °F	Exit Temp °F	Exit Temp °F
2-5	15:00:00	2.00	2.02	549.097	87	90	90	5	260	260	58
2-5	15:10:00	2.00	2.02	557.184	88	90	90	5	260	260	56
	15:20:00			565.273							
2-4	15:32:00	1.80	1.82	565.273	88	91	91	5	260	260	60
2-4	15:42:00	1.80	1.82	572.561	88	91	91	5	260	260	61
2-3	15:52:00	1.70	1.72	580.649	87	91	91	5	260	260	63
2-3	16:02:00	1.70	1.72	588.116	87	91	91	5	260	260	64
2-2	16:12:00	1.70	1.72	595.581	88	92	92	5	260	260	65
2-2	16:22:00	1.70	1.72	603.067	88	92	92	5	260	260	63
	16:32:00			610.534							
Total	8:00:00			376.042		82.0	82.0				
Average			1.93		76.1	82.0		5			
Min			1.72		65.0	72.0		5			
Max			2.16		90.0	92.0		5			

Impinger Weight Sheet - Run 1

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukee
Test Location: Baghouse 8901 Inlet
Project #: M253113
Date: 7/29/2025
Test Method: 29
Weighed/Measured By: RICHS
Balance ID: S10-07

Scale Calibration Check Date: 7/29/2025
Scale Calibration Check (see QS-6.05C for procedure)
 must be within $\pm 0.5g$ of certified mass

<u>Certified Weight, grams</u>	<u>Result, grams</u>
250	<u>250.0</u>
500	<u>500.0</u>
750	<u>750.0</u>

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
HNO3/H2O2	733.5	758.5	-25.0
HNO3/H2O2	713.8	644.5	69.3
Empty	612.1	598.5	13.6
KMnO4/H2SO4	765.5	753.4	12.1
KMnO4/H2SO4	763.5	752.7	10.8
Silica Gel	895.0	868.7	26.3
Silica Gel	839.6	820.0	19.6

<u>4,428.0</u> Liquid Final	<u>4,327.6</u> Liquid Initial	<u>100.4</u> Liquid Gain
<u>895.0</u> Silica Final	<u>868.7</u> Silica Initial	<u>26.3</u> Silica Gain

Run 2 - Method 29

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 7/30/25
 Start Time: 6:25
 End Time: 16:45

DRY GAS METER CONDITIONS				STACK CONDITIONS		
ΔH:	1.89	In. H ₂ O		Static Pressure	-5.50	in. H ₂ O
Meter Temperature, Tm:	81.1	°F		Flue Pressure (Ps):	29.62	in. Hg. abs.
Sqrt ΔP:	1.363	In. H ₂ O				
Stack Temperature, Ts:	74.9	°F				
Meter Volume, Vm:	372.657	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vmstd:	363.260	dscf		Gas Weight wet, Ms:	28.818	lb/lb mole
Meter Volume, Vwstd:	6.109	wscf				
Isokinetic Variance:	101.5	%				
				Gas Velocity, Vs:	77.442	fps
Test Length:	480.00	in mins.		Volumetric Flow:	3,649	acfm
Nozzle Diameter:	0.175	in inches		Volumetric Flow:	3,507	dscfm
Barometric Pressure:	30.02	in Hg		Volumetric Flow:	3,566	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	4328.7	ml	Silica Initial Wt.	870.5	grams
Final Impinger Content:	4426.8	ml	Silica Final Wt.	902.1	grams
Impinger Difference:	98.1	ml	Silica Difference:	31.6	grams
Total Water Gain:	129.7		Moisture, Bws:	0.017	Supersaturation Value, Bws: 0.029

Port-Point No.	Clock Time	Velocity Head Δp in. H ₂ O	Orifice ΔH in. H ₂ O	Actual Meter Vol. ft ³	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
1-1	6:25:00	1.80	1.83	610.911	67	72	72	5	260	260	52
1-1	6:35:00	1.80	1.83	618.488	67	72	72	5	260	260	48
1-1	6:45:00	1.80	1.83	626.056	67	73	73	5	260	260	48
1-1	6:55:00	1.80	1.83	633.642	68	74	74	5	260	260	48
1-2	7:05:00	1.70	1.73	641.237	68	75	75	5	260	260	49
1-2	7:15:00	1.70	1.74	648.629	68	76	76	5	260	260	50
1-2	7:25:00	1.70	1.74	656.034	68	77	77	5	260	260	51
1-2	7:35:00	1.70	1.74	663.456	68	77	77	5	260	260	52
1-3	7:45:00	1.90	1.94	670.873	69	77	77	5	260	260	53
1-3	7:55:00	1.90	1.94	678.708	69	78	78	5	260	260	54
1-3	8:05:00	1.90	1.94	686.554	69	78	78	5	260	260	54
1-3	8:15:00	1.90	1.94	694.407	69	78	78	5	260	260	55
	8:25:00			702.253							
1-4	9:00:00	1.80	1.84	702.253	70	78	78	5	260	260	57
1-4	9:10:00	1.80	1.84	709.894	71	79	79	5	260	260	60
1-4'	9:20:00	1.80	1.84	717.536	71	79	79	5	260	260	61
1-4'	9:30:00	1.80	1.84	725.179	71	80	80	5	260	260	61
1-5	9:40:00	1.80	1.84	732.837	71	80	80	5	260	260	61
1-5	9:50:00	1.80	1.84	740.483	71	80	80	5	260	260	62
1-5'	10:00:00	1.80	1.84	748.145	72	81	81	5	260	260	63
1-5'	10:10:00	1.80	1.84	755.810	72	81	81	5	260	260	63
1-6	10:20:00	2.00	2.04	763.467	73	81	81	5	260	260	65
1-6	10:30:00	2.00	2.04	771.533	73	81	81	5	260	260	64
1-6'	10:40:00	2.00	2.04	779.608	73	81	81	5	260	260	63
1-6'	10:50:00	2.00	2.04	787.675	73	81	81	5	260	260	60
	11:00:00			795.743							
2-1	11:45:00	1.70	1.70	796.371	81	79	79	5	260	260	58
2-1	11:55:00	1.70	1.72	803.737	76	79	79	5	260	260	58
2-1'	12:05:00	1.70	1.72	811.126	77	80	80	5	260	260	60
2-1'	12:15:00	1.70	1.72	818.524	77	81	81	5	260	260	62
2-2'	12:25:00	1.80	1.82	825.938	78	82	82	5	260	260	63
2-2'	12:35:00	1.80	1.83	833.569	78	83	83	5	260	260	64
2-2'	12:45:00	1.80	1.83	841.216	78	83	83	5	260	260	65
2-2'	12:55:00	1.80	1.83	848.867	79	84	84	5	260	260	66
2-3'	13:05:00	2.00	2.03	856.518	79	84	84	5	260	260	66
2-3'	13:15:00	2.00	2.03	864.588	79	84	84	5	260	260	64
	13:25:00			872.653							
2-3'	13:45:00	2.00	2.03	872.653	80	84	84	5	260	260	60
2-3'	13:55:00	2.00	2.03	880.726	80	84	84	5	260	260	61
2-4'	14:05:00	1.90	1.92	888.783	80	84	84	5	260	260	62
	14:15:00			896.645							
2-4'	14:55:00	1.90	1.92	896.645	80	84	84	5	260	260	63
2-4'	15:05:00	1.90	1.92	904.514	81	85	85	5	260	260	64

Run 2 - Method 29

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 7/30/25
 Start Time: 6:25
 End Time: 16:45

DRY GAS METER CONDITIONS				STACK CONDITIONS		
ΔH:	1.89	In. H ₂ O		Static Pressure	-5.50	in. H ₂ O
Meter Temperature, Tm:	81.1	°F		Flue Pressure (Ps):	29.62	in. Hg. abs.
Sqrt ΔP:	1.363	In. H ₂ O				
Stack Temperature, Ts:	74.9	°F				
Meter Volume, Vm:	372.657	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vmstd:	363.260	dscf		Gas Weight wet, Ms:	28.818	lb/lb mole
Meter Volume, Vwstd:	6.109	wscf				
Isokinetic Variance:	101.5	%				
				Gas Velocity, Vs:	77.442	fps
Test Length:	480.00	in mins.		Volumetric Flow:	3,649	acfm
Nozzle Diameter:	0.175	in inches		Volumetric Flow:	3,507	dscfm
Barometric Pressure:	30.02	in Hg		Volumetric Flow:	3,566	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	4328.7	ml	Silica Initial Wt.	870.5	grams
Final Impinger Content:	4426.8	ml	Silica Final Wt.	902.1	grams
Impinger Difference:	98.1	ml	Silica Difference:	31.6	grams
Total Water Gain:	129.7		Moisture, Bws:	0.017	Supersaturation Value, Bws: 0.029

Port- Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Probe	Filter	Impinger
		Head Δp in. H2O	ΔH in. H2O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Temp °F	Exit Temp °F	Exit Temp °F
2-4'	15:15:00	1.90	1.93	912.376	81	86	86	5	260	260	64
2-5'	15:25:00	1.90	1.93	920.253	81	86	86	5	260	260	62
2-5'	15:35:00	1.90	1.93	928.137	81	86	86	5	260	260	63
2-5'	15:45:00	1.90	1.93	936.011	82	87	87	5	260	260	63
2-5'	15:55:00	1.90	1.93	943.898	82	87	87	5	260	260	61
2-6'	16:05:00	2.00	2.03	951.782	82	87	87	5	260	260	60
2-6'	16:15:00	2.00	2.03	959.873	81	87	87	5	260	260	60
2-6'	16:25:00	2.00	2.04	967.965	81	88	88	5	260	260	60
2-6'	16:35:00	2.00	2.04	976.083	81	88	88	5	260	260	60
	16:45:00			984.196							
Total	8:00:00			372.657		81.1	81.1				
Average			1.89		74.9	81.1		5			
Min			1.70		67.0	72.0		5			
Max			2.04		82.0	88.0		5			

Impinger Weight Sheet - Run 2

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukee
Test Location: Baghouse 8901 Inlet
Project #: M253113
Date: 7/30/2025
Test Method: 29
Weighed/Measured By: RICHS
Balance ID: S10-07

Scale Calibration Check Date: 7/29/2025
Scale Calibration Check (see QS-6.05C for procedure)
 must be within $\pm 0.5g$ of certified mass

<u>Certified Weight, grams</u>	<u>Result, grams</u>
250	250.0
500	500.0
750	750.0

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
HNO3/H2O2	728.3	761.2	-32.9
HNO3/H2O2	716.2	648.3	67.9
Empty	610.0	592.2	17.8
KMnO4/H2SO4	770.9	751.9	19.0
KMnO4/H2SO4	766.2	750.0	16.2
Silica Gel	902.1	870.5	31.6
Silica Gel	835.2	825.1	10.1

4,426.8	4,328.7	98.1
Liquid Final	Liquid Initial	Liquid Gain
902.1	870.5	31.6
Silica Final	Silica Initial	Silica Gain

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Project #: M253113
Test Method: 0061
Test Engineer: JSC
Test Technician: AEIR

	<u>Run 1</u>	<u>Run 2</u>
Meter ID:	CM53	CM53
Pitot ID:	025	025
Nozzle Diameter (Inches):	0.177	0.177
Meter Calibration Date:	7/10/2025	7/10/2025
Meter Calibration Factor (Y):	1.006	1.006
Meter Orifice Setting (Delta H):	1.829	1.829
Nozzle Kit ID Number and Material:	Glass #23 (799)	Glass #23 (799)

Leak Checks

Pre Pitot Leak Check	0.0	@	4.1	"H₂O	0.0	@	3.5	"H₂O
Post Pitot Leak Check	0.0	@	3.7	"H₂O	0.0	@	3.7	"H₂O
Pre Nozzle Leak Check	0.019	@	13	"Hg	0.002	@	14	"Hg
Post Nozzle Leak Check	0.015	@	11	"Hg	0.000	@	11	"Hg

Pitot Tube Coefficient: 0.840
Probe Length (Feet): 3.0
Probe Liner Material: Glass
Sample Plane: Horizontal
Port Length (Inches): 4.00
Port Size (Diameter, Inches): 4.00
Port Type: Nipple
Duct Shape: Circular
Diameter (Feet): 1.00
Duct Area (Square Feet): 0.785
Upstream Diameters: 8.5
Downstream Diameters: 20.0
Number of Ports Sampled: 2
Number of Points per Port: 6
Minutes per Point: 40.0
Minutes per Reading: 10.0
Total Number of Traverse Points: 12
Test Length (Minutes): 480
Train Type: Hot Box
Source Condition: Batch Process
Moisture Balance ID: S10-07
of Runs 2

Method 1 and 2 Cyclonic Flow Check Data

Project Number	M253113	Source Condition:	Batch Process
Client:	PCC Structurals, Inc.	Run No.:	1
Facility:	Large Parts Campus Facility - Milwaukie, OR	Date:	7/29/2025
Location:	Baghouse 8901 Inlet	Start Time:	5:30
Pitot ID:	025	End Time:	5:50
Pitot Coefficient:	0.840	RM Testers:	JSC/AEIR
Probe Length:	3	Port Length:	4.00

Port Point	DP (in. H ₂ O)	Sqrt. DP	Temp (°F)	Yaw Angle (°)	DP (in. H ₂ O) at Null Point	Velocity (V)	Port Point	DP (in. H ₂ O)	Sqrt. DP	Temp (°F)	Yaw Angle (°)	DP (in. H ₂ O) at Null Point	Velocity (V)
A 1	1.65	1.2845	65.0	1.0	0.00	72.60	B 1	1.80	1.3416	65.0	1.0	0.00	75.83
A 2	1.80	1.3416	64.0	2.0	0.00	75.75	B 2	1.70	1.3038	66.0	0.0	0.00	73.76
A 3	1.70	1.3038	64.0	1.0	0.00	73.62	B 3	1.80	1.3416	65.0	1.0	0.00	75.83
A 4	1.95	1.3964	65.0	0.0	0.00	78.92	B 4	2.00	1.4142	65.0	3.0	0.00	79.93
A 5	2.00	1.4142	65.0	2.0	0.00	79.93	B 5	1.90	1.3784	65.0	4.0	0.00	77.90
A 6	1.90	1.3784	65.0	1.0	0.00	77.90	B 6	1.95	1.3964	65.0	1.0	0.00	78.92

Average Yaw Angle 1.4°

Run 1 - Method 0061

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 7/29/25
 Start Time: 6:20
 End Time: 16:32

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.97	in. H ₂ O		Static Pressure	-5.50	in. H ₂ O	
Meter Temperature, Tm:	86.8	°F		Flue Pressure (Ps):	29.62	in. Hg. abs.	
Sqrt ΔP:	1.354	in. H ₂ O					
Stack Temperature, Ts:	76.9	°F					
Meter Volume, Vm:	375.972	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	368.194	dscf		Gas Weight wet, Ms:	28.824	lb/lb mole	
Meter Volume, Vwstd:	0.000	wscf					
Isokinetic Variance:	101.3	%					
				Gas Velocity, Vs:	77.107	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,634	acfm	
Nozzle Diameter:	0.177	in inches		Volumetric Flow:	3,480	dscfm	
Barometric Pressure:	30.02	in Hg		Volumetric Flow:	3,537	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams
Final Impinger Content:	0.0	ml	Silica Final Wt.	0.0	grams
Impinger Difference:	0.0	ml	Silica Difference:	0.0	grams
Total Water Gain:	0.0		Moisture, Bws:	0.016	Supersaturation Value, Bws: 0.031

Port- Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Exit Temp °F
1-1	6:20:00	1.90	2.04	627.750	66	75	75	4	55
1-1	6:30:00	1.90	2.04	635.630	65	76	76	4	55
1-1	6:40:00	1.90	2.05	643.533	65	78	78	4	57
1-1	6:50:00	1.90	2.05	651.465	65	79	79	4	58
1-2	7:00:00	1.85	2.00	659.412	66	80	80	4	59
1-2	7:10:00	1.85	2.00	667.260	68	81	81	5	59
1-2	7:20:00	1.85	2.00	675.108	66	81	81	5	60
1-2	7:30:00	1.85	2.00	682.971	67	82	82	5	60
1-3	7:40:00	2.00	2.17	690.842	66	83	83	5	59
1-3	7:50:00	2.00	2.17	699.407	68	83	83	5	59
1-3	8:00:00	2.00	2.17	707.238	68	83	83	5	59
1-3	8:10:00	2.00	2.16	715.428	70	84	84	5	60
1-4	8:20:00	1.80	1.95	723.618	68	84	84	5	59
1-4	8:30:00	1.80	1.95	731.402	68	84	84	5	59
1-4	8:40:00	1.80	1.95	739.187	69	84	84	5	59
1-4	8:50:00	1.80	1.95	746.964	69	85	85	5	60
1-5	9:00:00	1.75	1.90	754.755	70	85	85	5	60
1-5	9:10:00	1.75	1.90	762.430	69	85	85	5	60
1-5	9:20:00	1.75	1.90	770.112	71	86	86	5	60
1-5	9:30:00	1.75	1.90	777.794	71	86	86	5	60
1-6	9:40:00	1.70	1.83	785.476	73	86	86	5	62
1-6	9:50:00	1.70	1.83	793.033	74	87	87	5	62
1-6	10:00:00	1.70	1.83	800.597	74	87	87	5	61
1-6	10:10:00	1.70	1.83	808.161	74	87	87	5	62
	10:20:00			815.735					
2-1	12:00:00	2.00	2.13	817.253	78	85	85	5	66
2-1	12:10:00	2.00	2.13	825.191	79	84	84	6	63
2-1	12:20:00	2.00	2.11	833.518	83	84	84	6	65
2-1	12:30:00	2.00	2.13	841.609	80	85	85	7	65
2-2	12:40:00	1.80	1.91	849.738	81	86	86	7	61
2-2	12:50:00	1.80	1.91	857.456	81	86	86	7	61
2-3	13:00:00	1.70	1.81	865.175	81	87	87	7	56
2-3	13:10:00	1.70	1.80	872.690	86	88	88	7	57
2-4	13:20:00	1.80	1.91	880.184	85	89	89	7	55
2-4	13:30:00	1.80	1.92	887.916	84	91	91	7	57
	13:40:00			895.684					
2-5	13:50:00	1.70	1.82	895.684	84	92	92	7	59
2-5	14:00:00	1.70	1.82	903.247	84	92	92	7	55
2-6	14:10:00	1.85	1.97	910.809	86	92	92	7	56
2-6	14:20:00	1.85	1.97	918.684	85	92	92	7	58
	14:30:00			926.556					
2-6	14:40:00	1.85	1.96	926.556	90	92	92	7	59
2-6	14:50:00	1.85	1.95	934.402	91	93	93	7	58

Run 1 - Method 0061

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 7/29/25
 Start Time: 6:20
 End Time: 16:32

DRY GAS METER CONDITIONS				STACK CONDITIONS		
ΔH:	1.97	in. H ₂ O		Static Pressure	-5.50	in. H ₂ O
Meter Temperature, Tm:	86.8	°F		Flue Pressure (Ps):	29.62	in. Hg. abs.
Sqrt ΔP:	1.354	in. H ₂ O				
Stack Temperature, Ts:	76.9	°F				
Meter Volume, Vm:	375.972	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vmstd:	368.194	dscf		Gas Weight wet, Ms:	28.824	lb/lb mole
Meter Volume, Vwstd:	0.000	wscf				
Isokinetic Variance:	101.3	%I				
				Gas Velocity, Vs:	77.107	fps
Test Length:	480.00	in mins.		Volumetric Flow:	3,634	acfm
Nozzle Diameter:	0.177	in inches		Volumetric Flow:	3,480	dscfm
Barometric Pressure:	30.02	in Hg		Volumetric Flow:	3,537	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams
Final Impinger Content:	0.0	ml	Silica Final Wt.	0.0	grams
Impinger Difference:	0.0	ml	Silica Difference:	0.0	grams
Total Water Gain:	0.0		Moisture, Bws:	0.016	Supersaturation Value, Bws: 0.031

Port-Point No.	Clock Time	Velocity Head Δp in. H ₂ O	Orifice ΔH in. H ₂ O	Actual Meter Vol. ft ³	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Impinger Exit Temp °F
2-5	15:00:00	1.85	1.97	942.241	87	94	94	7	57
2-5	15:10:00	1.85	1.97	950.151	88	95	95	7	57
	15:20:00			958.054					
2-4	15:32:00	1.90	2.02	958.877	88	94	94	7	59
2-4	15:42:00	1.90	2.03	966.872	88	95	95	7	57
2-3	15:52:00	1.80	1.92	974.881	88	95	95	7	57
2-3	16:02:00	1.80	1.92	982.676	88	95	95	7	57
2-2	16:12:00	1.80	1.92	990.472	88	95	95	7	57
2-2	16:22:00	1.80	1.92	998.267	88	95	95	7	57
	16:32:00			1006.063					

Total	8:00:00			375.972		86.8	86.8		
Average			1.97		76.9	86.8		6	
Min			1.80		65.0	75.0		4	
Max			2.17		91.0	95.0		7	

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 7/30/25
 Start Time: 6:25
 End Time: 16:45

DRY GAS METER CONDITIONS				STACK CONDITIONS		
ΔH:	1.96	in. H ₂ O		Static Pressure	-5.50	in. H ₂ O
Meter Temperature, Tm:	82.8	°F		Flue Pressure (Ps):	29.55	in. Hg. abs.
Sqrt ΔP:	1.355	in. H ₂ O				
Stack Temperature, Ts:	75.7	°F				
Meter Volume, Vm:	374.218	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vmstd:	368.315	dscf		Gas Weight wet, Ms:	28.813	lb/lb mole
Meter Volume, Vwstd:	0.000	wscf				
Isokinetic Variance:	101.4	%I				
				Gas Velocity, Vs:	77.153	fps
Test Length:	480.00	in mins.		Volumetric Flow:	3,636	acfm
Nozzle Diameter:	0.177	in inches		Volumetric Flow:	3,478	dscfm
Barometric Pressure:	29.95	in Hg		Volumetric Flow:	3,539	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams
Final Impinger Content:	0.0	ml	Silica Final Wt.	0.0	grams
Impinger Difference:	0.0	ml	Silica Difference:	0.0	grams
Total Water Gain:	0.0		Moisture, Bws:	0.017	Supersaturation Value, Bws: 0.030

Port- Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Exit Temp °F
1-1	6:25:00	1.80	1.91	6.847	69	72	72	4	50
1-1	6:35:00	1.80	1.91	14.461	69	72	72	4	45
1-1	6:45:00	1.80	1.91	22.075	69	73	73	5	44
1-1	6:55:00	1.80	1.91	29.704	69	73	73	5	43
1-2	7:05:00	1.70	1.80	37.332	70	74	74	5	44
1-2	7:15:00	1.70	1.81	44.753	70	75	75	5	44
1-2	7:25:00	1.70	1.81	52.187	70	76	76	5	44
1-2	7:35:00	1.70	1.81	59.635	70	76	76	5	44
1-3	7:45:00	2.00	2.13	67.084	70	77	77	5	45
1-3	7:55:00	2.00	2.13	75.178	70	77	77	5	44
1-3	8:05:00	2.00	2.14	83.271	70	79	79	5	45
1-3	8:15:00	2.00	2.14	91.395	70	79	79	5	45
	8:25:00			99.519					
1-4	9:00:00	1.80	1.92	99.519	72	79	79	5	46
1-4	9:10:00	1.80	1.92	107.212	72	79	79	5	44
1-4	9:20:00	1.80	1.92	114.904	72	80	80	5	45
1-4	9:30:00	1.80	1.93	122.611	72	81	81	5	47
1-5	9:40:00	1.75	1.87	130.332	72	81	81	5	46
1-5	9:50:00	1.75	1.88	137.945	72	82	82	5	46
1-5	10:00:00	1.75	1.87	145.573	72	81	81	5	46
1-5	10:10:00	1.75	1.87	153.186	75	82	82	5	47
1-6	10:20:00	1.90	2.03	160.791	74	82	82	5	47
1-6	10:30:00	1.90	2.03	168.724	75	83	83	5	48
1-6	10:40:00	1.90	2.04	176.664	74	84	84	5	47
1-6	10:50:00	1.90	2.03	184.625	74	83	83	5	46
	11:00:00			192.572					
2-1	11:45:00	1.60	1.69	194.933	79	82	82	5	53
2-1	11:55:00	1.60	1.70	202.178	77	83	83	5	49
2-1	12:05:00	1.60	1.70	209.451	77	83	83	5	51
2-1	12:15:00	1.60	1.71	216.723	77	85	85	5	50
2-2	12:25:00	1.75	1.87	224.022	78	85	85	5	52
2-2	12:35:00	1.75	1.87	231.649	78	86	86	5	52
2-2	12:45:00	1.75	1.87	239.289	79	86	86	5	51
2-2	12:55:00	1.75	1.87	246.923	80	87	87	5	53
2-3	13:05:00	1.90	2.03	254.563	80	87	87	5	53
2-3	13:15:00	1.90	2.03	262.524	79	88	88	5	53
	13:25:00			270.507					
2-3	13:45:00	1.90	2.03	270.507	80	87	87	5	56
2-3	13:55:00	1.90	2.03	278.468	80	87	87	5	53
2-4	14:05:00	2.00	2.13	286.429	80	86	86	5	54
	14:15:00			294.582					
2-4	14:55:00	2.00	2.13	294.582	81	86	86	5	55
2-4	15:05:00	2.00	2.13	302.880	81	86	86	5	56

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 7/30/25
 Start Time: 6:25
 End Time: 16:45

DRY GAS METER CONDITIONS				STACK CONDITIONS		
ΔH:	1.96	In. H ₂ O		Static Pressure	-5.50	in. H ₂ O
Meter Temperature, Tm:	82.8	°F		Flue Pressure (Ps):	29.55	in. Hg. abs.
Sqrt ΔP:	1.355	In. H ₂ O				
Stack Temperature, Ts:	75.7	°F				
Meter Volume, Vm:	374.218	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vmstd:	368.315	dscf		Gas Weight wet, Ms:	28.813	lb/lb mole
Meter Volume, Vwstd:	0.000	wscf				
Isokinetic Variance:	101.4	%I				
				Gas Velocity, Vs:	77.153	fps
Test Length:	480.00	in mins.		Volumetric Flow:	3,636	acfm
Nozzle Diameter:	0.177	in inches		Volumetric Flow:	3,478	dscfm
Barometric Pressure:	29.95	in Hg		Volumetric Flow:	3,539	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams
Final Impinger Content:	0.0	ml	Silica Final Wt.	0.0	grams
Impinger Difference:	0.0	ml	Silica Difference:	0.0	grams
Total Water Gain:	0.0		Moisture, Bws:	0.017	Supersaturation Value, Bws: 0.030

Port- Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Impinger
		Head Δp in. H2O	ΔH in. H2O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Exit Temp °F
2-4	15:15:00	2.00	2.13	310.950	81	86	86	5	57
2-5	15:25:00	1.85	1.97	319.018	82	89	89	5	57
2-5	15:35:00	1.85	1.98	326.888	82	90	90	5	56
2-5	15:45:00	1.85	1.98	334.772	81	90	90	5	58
2-5	15:55:00	1.85	1.98	342.663	82	91	91	5	58
2-6	16:05:00	2.00	2.14	350.562	82	92	92	5	58
2-6	16:15:00	2.00	2.15	358.789	82	91	91	5	58
2-6	16:25:00	2.00	2.14	367.002	82	91	91	5	58
2-6	16:35:00	2.00	2.14	375.214	82	91	91	5	58
	16:45:00			383.426					

Total	8:00:00			374.218		82.8	82.8		
Average			1.96		75.7	82.8		5	
Min			1.69		69.0	72.0		4	
Max			2.15		82.0	92.0		5	

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Project #: M253113
Test Method: ODEQ 5
Test Engineer: JSC
Test Technician: AEIR

	<u>Run 1</u>	<u>Run 2</u>
Meter ID:	CM43	CM43
Pitot ID:	1883	1883
Filter ID:	22792	22721
Filter Pre-Weight (grams):	0.48057	0.47634
Nozzle Diameter (Inches):	0.177	0.177
Meter Calibration Date:	7/2/2025	7/2/2025
Meter Calibration Factor (Y):	0.991	0.991
Meter Orifice Setting (Delta H):	1.826	1.826
Nozzle Kit ID Number and Material:	Glass #23 (799)	Glass #23 (799)

Leak Checks

Pre Pitot Leak Check	0.0	@	3.8	"H₂O	0.0	@	3.5	"H₂O
Post Pitot Leak Check	0.0	@	4.0	"H₂O	0.0	@	4.1	"H₂O
Pre Nozzle Leak Check	0.008	@	17	"Hg	0.000	@	15	"Hg
Post Nozzle Leak Check	0.000	@	14	"Hg	0.001	@	13	"Hg

Pitot Tube Coefficient: 0.840
Probe Length (Feet): 3.0
Probe Liner Material: Glass
Sample Plane: Horizontal
Port Length (Inches): 4.00
Port Size (Diameter, Inches): 4.00
Port Type: Nipple
Duct Shape: Circular
Diameter (Feet): 1.00
Duct Area (Square Feet): 0.785
Upstream Diameters: 8.5
Downstream Diameters: 20.0
Number of Ports Sampled: 2
Number of Points per Port: 6
Minutes per Point: 40.0
Minutes per Reading: 10.0
Total Number of Traverse Points: 12
Test Length (Minutes): 480
Train Type: Hot Box
Source Condition: Batch Process
Moisture Balance ID: S10-07
of Runs 2

Run 1 - Method ODEQ 5

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 7/31/25
 Start Time: 6:05
 End Time: 15:45

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.95	in. H ₂ O		Static Pressure	-5.50	in. H ₂ O	
Meter Temperature, Tm:	77.6	°F		Flue Pressure (Ps):	29.52	in. Hg. abs.	
Sqrt ΔP:	1.354	in. H ₂ O					
Stack Temperature, Ts:	70.6	°F					
Meter Volume, Vm:	377.858	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	369.556	dscf		Gas Weight wet, Ms:	28.894	lb/lb mole	
Meter Volume, Vwstd:	3.598	wscf					
Isokinetic Variance:	100.8	%					
				Gas Velocity, Vs:	76.654	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,612	acfm	
Nozzle Diameter:	0.177	in inches		Volumetric Flow:	3,512	dscfm	
Barometric Pressure:	29.92	in Hg		Volumetric Flow:	3,546	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	2150.7	ml	Silica Initial Wt.	894.1	grams
Final Impinger Content:	2181.2	ml	Silica Final Wt.	940.0	grams
Impinger Difference:	30.5	ml	Silica Difference:	45.9	grams
Total Water Gain:	76.4		Moisture, Bws:	0.010	
			Supersaturation Value, Bws:	0.026	

Port-Point No.	Clock Time	Velocity Head Δp in. H ₂ O	Orifice ΔH in. H ₂ O	Actual Meter Vol. ft ³	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
1-1	6:05:00	1.90	2.01	984.833	67	69	69	2	260	260	59
1-1	6:15:00	1.90	1.99	992.748	71	69	69	2	260	260	61
1-1	6:25:00	1.90	2.01	1000.634	68	70	70	2	260	260	58
1-1	6:35:00	1.90	2.01	1008.557	67	71	71	2	260	260	51
1-2	6:45:00	1.80	1.91	1016.502	66	72	72	2	260	260	51
1-2	6:55:00	1.80	1.92	1024.257	66	73	73	2	260	260	54
1-2	7:05:00	1.80	1.92	1032.027	66	74	74	2	260	260	55
1-2	7:15:00	1.80	1.92	1039.811	66	75	75	2	260	260	55
1-3	7:25:00	2.00	2.14	1047.610	66	75	75	2	260	260	54
1-3	7:35:00	2.00	2.14	1055.831	66	76	76	2	260	260	56
1-3	7:45:00	2.00	2.14	1064.068	66	76	76	2	260	260	56
1-3	7:55:00	2.00	2.15	1072.304	66	77	77	2	260	260	57
	8:05:00			1080.555							
1-4	8:15:00	1.90	2.04	1080.555	66	77	77	2	260	260	50
1-4	8:25:00	1.90	2.04	1088.598	66	76	76	2	260	260	52
1-4	8:35:00	1.90	2.04	1096.625	67	77	77	2	260	260	53
1-4	8:45:00	1.90	2.04	1104.660	67	77	77	2	260	260	54
1-5	8:55:00	1.75	1.87	1112.695	67	77	77	2	260	260	57
1-5	9:05:00	1.75	1.87	1120.407	68	77	77	2	260	260	57
1-5	9:15:00	1.75	1.87	1128.111	68	77	77	2	260	260	60
1-5	9:25:00	1.75	1.87	1135.815	68	77	77	2	260	260	58
1-6	9:35:00	1.80	1.93	1143.519	68	78	78	2	260	260	59
1-6	9:45:00	1.80	1.93	1151.347	68	78	78	2	260	260	58
1-6	9:55:00	1.80	1.92	1159.175	69	78	78	2	260	260	60
1-6	10:05:00	1.80	1.92	1166.995	69	78	78	2	260	260	60
	10:15:00			1174.816							
2-1	10:42:00	1.70	1.81	1175.315	71	77	77	2	260	260	56
2-1	10:52:00	1.70	1.81	1182.887	71	77	77	2	260	260	56
2-1	11:02:00	1.70	1.81	1190.458	71	78	78	2	260	260	58
2-1	11:12:00	1.70	1.79	1198.044	77	78	78	2	260	260	60
2-2	11:22:00	1.80	1.91	1205.588	73	79	79	2	260	260	62
2-2	11:32:00	1.80	1.91	1213.393	73	79	79	2	260	260	62
	11:42:00			1221.199							
2-2	12:00:00	1.80	1.92	1221.199	72	79	79	2	260	260	54
2-2	12:10:00	1.80	1.92	1229.012	72	79	79	2	260	260	50
2-3	12:20:00	1.90	2.02	1236.825	72	79	79	2	260	260	47
2-3	12:30:00	1.90	2.02	1244.852	75	80	80	2	260	260	49
2-3	12:40:00	1.90	2.02	1252.871	73	79	79	2	260	260	48
2-3	12:50:00	1.90	2.02	1260.890	73	80	80	2	260	260	48
2-4	13:00:00	1.80	1.91	1268.925	73	79	79	2	260	260	47
2-4	13:10:00	1.80	1.91	1276.730	73	79	79	2	260	260	47
2-4	13:20:00	1.80	1.91	1284.536	74	80	80	2	260	260	47
2-4	13:30:00	1.80	1.91	1292.349	74	80	80	2	260	260	46

Run 1 - Method ODEQ 5

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 7/31/25
 Start Time: 6:05
 End Time: 15:45

DRY GAS METER CONDITIONS				STACK CONDITIONS		
ΔH:	1.95	in. H ₂ O		Static Pressure	-5.50	in. H ₂ O
Meter Temperature, Tm:	77.6	°F		Flue Pressure (Ps):	29.52	in. Hg. abs.
Sqrt ΔP:	1.354	in. H ₂ O				
Stack Temperature, Ts:	70.6	°F				
Meter Volume, Vm:	377.858	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vmstd:	369.556	dscf		Gas Weight wet, Ms:	28.894	lb/lb mole
Meter Volume, Vwstd:	3.598	wscf				
Isokinetic Variance:	100.8	%				
				Gas Velocity, Vs:	76.654	fps
Test Length:	480.00	in mins.		Volumetric Flow:	3,612	acfm
Nozzle Diameter:	0.177	in inches		Volumetric Flow:	3,512	dscfm
Barometric Pressure:	29.92	in Hg		Volumetric Flow:	3,546	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	2150.7	ml	Silica Initial Wt.	894.1	grams
Final Impinger Content:	2181.2	ml	Silica Final Wt.	940.0	grams
Impinger Difference:	30.5	ml	Silica Difference:	45.9	grams
Total Water Gain:	76.4		Moisture, Bws:	0.010	Supersaturation Value, Bws: 0.026

Port- Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Probe	Filter	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Temp °F	Exit Temp °F	Exit Temp °F
2-5	13:40:00	1.90	2.02	1300.161	74	81	81	2	260	260	46
2-5	13:50:00	1.90	2.02	1308.203	74	81	81	2	260	260	46
	14:00:00			1316.245							
2-5	14:45:00	1.90	2.02	1316.245	75	81	81	2	260	260	49
2-5	14:55:00	1.90	2.02	1324.279	76	81	81	2	260	260	42
2-6	15:05:00	1.75	1.85	1332.306	78	82	82	2	260	260	43
2-6	15:15:00	1.75	1.86	1340.009	78	83	83	2	260	260	42
2-6	15:25:00	1.75	1.86	1347.726	78	84	84	2	260	260	42
2-6	15:35:00	1.75	1.86	1355.458	78	84	84	2	260	260	42
	15:45:00			1363.190							

Total	8:00:00			377.858		77.6	77.6				
Average			1.95		70.6	77.6		2			
Min			1.79		66.0	69.0		2			
Max			2.15		78.0	84.0		2			

Impinger Weight Sheet - Run 1

<p>Client: PCC Structurals, Inc. Facility: Large Parts Campus Facility - Milwaukee Test Location: Baghouse 8901 Inlet Project #: M253113 Date: 7/31/2025 Test Method: ODEQ 5 Weighed/Measured By: RICHS Balance ID: S10-07</p>	<p>Scale Calibration Check Date: <u>7/31/2025</u> <u>Scale Calibration Check (see QS-6.05C for procedure)</u> must be within $\pm 0.5g$ of certified mass</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; border-bottom: 1px solid black;"><u>Certified Weight, grams</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>Result, grams</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">250</td> <td style="text-align: center; border-bottom: 1px solid black;">250.0</td> </tr> <tr> <td style="text-align: center;">500</td> <td style="text-align: center; border-bottom: 1px solid black;">500.0</td> </tr> <tr> <td style="text-align: center;">750</td> <td style="text-align: center; border-bottom: 1px solid black;">750.0</td> </tr> </tbody> </table>	<u>Certified Weight, grams</u>	<u>Result, grams</u>	250	250.0	500	500.0	750	750.0
<u>Certified Weight, grams</u>	<u>Result, grams</u>								
250	250.0								
500	500.0								
750	750.0								

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
DI Water	709.7	730.0	-20.3
DI Water	792.6	775.0	17.6
Empty	678.9	645.7	33.2
Silica Gel	940.0	894.1	45.9

<u>2,181.2</u>	<u>2,150.7</u>	<u>30.5</u>
Liquid Final	Liquid Initial	Liquid Gain
<u>940.0</u>	<u>894.1</u>	<u>45.9</u>
Silica Final	Silica Initial	Silica Gain

Run 2 - Method ODEQ 5

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 8/1/25
 Start Time: 6:05
 End Time: 16:51

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.96	In. H ₂ O		Static Pressure	-5.50	in. H ₂ O	
Meter Temperature, Tm:	78.1	°F		Flue Pressure (Ps):	29.52	in. Hg. abs.	
Sqrt ΔP:	1.360	In. H ₂ O					
Stack Temperature, Ts:	74.5	°F					
Meter Volume, Vm:	378.487	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	369.789	dscf		Gas Weight wet, Ms:	28.864	lb/lb mole	
Meter Volume, Vwstd:	4.644	wscf					
Isokinetic Variance:	101.0	%I					
				Gas Velocity, Vs:	77.311	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,643	acfm	
Nozzle Diameter:	0.177	in inches		Volumetric Flow:	3,506	dscfm	
Barometric Pressure:	29.92	in Hg		Volumetric Flow:	3,550	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	2083.0	ml	Silica Initial Wt.	860.2	grams
Final Impinger Content:	2124.8	ml	Silica Final Wt.	917.0	grams
Impinger Difference:	41.8	ml	Silica Difference:	56.8	grams
Total Water Gain:	98.6		Moisture, Bws:	0.012	
			Supersaturation Value, Bws:	0.029	

Port-Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Probe	Filter	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Temp °F	Exit Temp °F	Exit Temp °F
1-1	6:05:00	2.00	2.09	366.702	70	67	67	2	260	260	53
1-1	6:15:00	2.00	2.10	374.769	68	67	67	2	260	260	56
1-1	6:25:00	2.00	2.11	382.852	66	68	68	2	260	260	58
1-1	6:35:00	2.00	2.11	390.965	66	69	69	2	260	260	58
1-2	6:45:00	1.90	2.01	399.094	66	70	70	2	260	260	58
	6:55:00			407.032							
1-2	7:30:00	1.90	2.02	407.032	65	72	72	2	260	260	46
1-2	7:40:00	1.90	2.02	415.007	67	72	72	2	260	260	45
1-2	7:50:00	1.90	2.02	422.968	66	73	73	2	260	260	47
1-3	8:00:00	2.00	2.13	430.950	66	74	74	2	260	260	47
1-3	8:10:00	2.00	2.13	439.156	67	74	74	2	260	260	48
1-3	8:20:00	2.00	2.13	447.354	67	74	74	2	260	260	48
1-3	8:30:00	2.00	2.13	455.551	67	75	75	2	260	260	49
1-4	8:40:00	1.85	1.97	463.764	67	75	75	2	260	260	47
	8:50:00			471.663							
1-4	9:15:00	1.85	1.97	471.663	67	74	74	2	260	260	44
1-4	9:25:00	1.85	1.97	479.547	69	75	75	2	260	260	45
1-4	9:35:00	1.85	1.97	487.431	68	76	76	2	260	260	47
1-5	9:45:00	1.70	1.81	495.338	69	76	76	2	260	260	46
1-5	9:55:00	1.70	1.81	502.910	69	77	77	2	260	260	46
1-5	10:05:00	1.70	1.81	510.496	70	77	77	2	260	260	45
1-5	10:15:00	1.70	1.81	518.075	70	77	77	2	260	260	46
1-6	10:25:00	1.75	1.87	525.653	70	78	78	2	260	260	47
1-6	10:35:00	1.75	1.86	533.357	70	78	78	2	260	260	46
1-6	10:45:00	1.75	1.86	541.054	72	78	78	2	260	260	45
1-6	10:55:00	1.75	1.85	548.750	75	78	78	2	260	260	45
	11:05:00			556.418							
2-1	11:10:00	1.90	2.02	557.058	73	79	79	2	260	260	47
2-1	11:20:00	1.90	2.02	565.077	74	79	79	2	260	260	46
2-1	11:30:00	1.90	2.02	573.089	73	80	80	2	260	260	48
	11:40:00			581.124							
2-1	12:10:00	1.90	1.98	581.124	82	78	78	2	260	260	54
2-2	12:20:00	2.00	2.11	589.062	76	78	78	2	260	260	49
2-2	12:30:00	2.00	2.11	597.251	77	79	79	2	260	260	49
2-2	12:40:00	2.00	2.11	605.448	77	79	79	2	260	260	50
2-2	12:50:00	2.00	2.11	613.645	78	80	80	2	260	260	50
2-3	13:00:00	1.80	1.90	621.850	78	81	81	2	260	260	51
2-3	13:10:00	1.80	1.91	629.648	78	82	82	2	260	260	51
	13:20:00			637.461							
2-3	14:14:00	1.80	1.90	637.461	80	81	81	2	260	260	55
2-3	14:24:00	1.80	1.89	645.245	81	81	81	2	260	260	49
	14:34:00			653.021							
2-4	14:51:00	1.75	1.84	653.021	81	82	82	2	260	260	55
2-4	15:01:00	1.75	1.84	660.703	82	83	83	2	260	260	51

Run 2 - Method ODEQ 5

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Source Condition: Batch Process

Date: 8/1/25
 Start Time: 6:05
 End Time: 16:51

DRY GAS METER CONDITIONS

STACK CONDITIONS

ΔH:	1.96	In. H ₂ O	Static Pressure	-5.50	in. H ₂ O
Meter Temperature, Tm:	78.1	°F	Flue Pressure (Ps):	29.52	in. Hg. abs.
Sqrt ΔP:	1.360	In. H ₂ O			
Stack Temperature, Ts:	74.5	°F			
Meter Volume, Vm:	378.487	ft ³			
Meter Volume, Vmstd:	369.789	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	4.644	wscf	Gas Weight wet, Ms:	28.864	lb/lb mole
Isokinetic Variance:	101.0	%I			
			Gas Velocity, Vs:	77.311	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,643	acfm
Nozzle Diameter:	0.177	in inches	Volumetric Flow:	3,506	dscfm
Barometric Pressure:	29.92	in Hg	Volumetric Flow:	3,550	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	2083.0	ml	Silica Initial Wt.	860.2	grams
Final Impinger Content:	2124.8	ml	Silica Final Wt.	917.0	grams
Impinger Difference:	41.8	ml	Silica Difference:	56.8	grams
Total Water Gain:	98.6		Moisture, Bws:	0.012	
			Supersaturation Value, Bws:	0.029	

Port-Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Probe	Filter	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Temp °F	Exit Temp °F	Exit Temp °F
2-4	15:11:00	1.75	1.84	668.392	82	83	83	2	260	260	51
2-4	15:21:00	1.75	1.85	676.080	82	84	84	2	260	260	52
2-5	15:31:00	1.85	1.95	683.783	82	84	84	2	260	260	52
2-5	15:41:00	1.85	1.94	691.704	86	85	85	2	260	260	53
2-5	15:51:00	1.85	1.93	699.909	89	85	85	2	260	260	53
2-5	16:01:00	1.85	1.93	707.493	89	85	85	2	260	260	53
2-6	16:11:00	1.70	1.79	715.377	86	86	86	2	260	260	54
2-6	16:21:00	1.70	1.80	722.969	84	87	87	2	260	260	53
2-6	16:31:00	1.70	1.79	730.589	86	88	88	2	260	260	56
2-6	16:41:00	1.70	1.80	738.029	84	87	87	2	260	260	52
	16:51:00			745.829							

Total	8:00:00			378.487		78.1	78.1				
Average			1.96		74.5	78.1		2			
Min			1.79		65.0	67.0		2			
Max			2.13		89.0	88.0		2			

Impinger Weight Sheet - Run 2

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukee
Test Location: Baghouse 8901 Inlet
Project #: M253113
Date: 8/1/2025
Test Method: ODEQ 5
Weighed/Measured By: RICHS
Balance ID: S10-07

Scale Calibration Check Date: 7/31/2025
Scale Calibration Check (see QS-6.05C for procedure)
 must be within $\pm 0.5g$ of certified mass

<u>Certified Weight, grams</u>	<u>Result, grams</u>
250	<u>250.0</u>
500	<u>500.0</u>
750	<u>750.0</u>

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
DI Water	713.0	728.3	-15.3
DI Water	741.9	707.4	34.5
Empty	669.9	647.3	22.6
Silica Gel	917.0	860.2	56.8

<u>2,124.8</u> Liquid Final	<u>2,083.0</u> Liquid Initial	<u>41.8</u> Liquid Gain
<u>917.0</u> Silica Final	<u>860.2</u> Silica Initial	<u>56.8</u> Silica Gain

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Outlet
Project #: M253113
Test Method: 29
Test Engineer: DV
Test Technician: RICHS

	<u>Run 1</u>	<u>Run 2</u>
Meter ID:	CM7	CM7
Pitot ID:	4032	4032
Nozzle Diameter (Inches):	0.175	0.175
Meter Calibration Date:	7/2/2025	7/2/2025
Meter Calibration Factor (Y):	1.016	1.016
Meter Orifice Setting (Delta H):	1.509	1.509
Nozzle Kit ID Number and Material:	Glass Set #1 (#23)	Glass Set #1 (#23)

Leak Checks

Pre Pitot Leak Check	0.0 @ 4.5 "H₂O	0.0 @ 4.0 "H₂O
Post Pitot Leak Check	0.0 @ 4.8 "H₂O	0.0 @ 4.3 "H₂O
Pre Nozzle Leak Check	0.000 @ 15 "Hg	0.000 @ 15 "Hg
Post Nozzle Leak Check	0.000 @ 15 "Hg	0.000 @ 16 "Hg

Pitot Tube Coefficient: 0.840
Probe Length (Feet): 3.0
Probe Liner Material: Glass
Sample Plane: Horizontal
Port Length (Inches): 3.00
Port Size (Diameter, Inches): 3.00
Port Type: Nipple
Duct Shape: Circular
Diameter (Feet): 1.00
Duct Area (Square Feet): 0.785
Upstream Diameters: 3.0
Downstream Diameters: 3.0
Number of Ports Sampled: 2
Number of Points per Port: 12
Minutes per Point: 20.0
Minutes per Reading: 10.0
Total Number of Traverse Points: 24
Test Length (Minutes): 480
Train Type: Anderson Box
Source Condition: Batch Process
Moisture Balance ID: S10-07
of Runs 2

Run 1 - Method 29

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 7/29/25
 Start Time: 6:20
 End Time: 16:32

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.27	in. H ₂ O		Static Pressure	2.20	in. H ₂ O	
Meter Temperature, Tm:	87.2	°F		Flue Pressure (Ps):	30.06	in. Hg. abs.	
Sqrt ΔP:	1.210	in. H ₂ O					
Stack Temperature, Ts:	82.0	°F					
Meter Volume, Vm:	327.314	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	321.649	dscf		Gas Weight wet, Ms:	28.830	lb/lb mole	
Meter Volume, Vwstd:	5.035	wscf					
Isokinetic Variance:	101.0	%I					
				Gas Velocity, Vs:	68.677	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,236	acfm	
Nozzle Diameter:	0.175	in inches		Volumetric Flow:	3,119	dscfm	
Barometric Pressure:	29.90	in Hg		Volumetric Flow:	3,168	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	4518.7	ml	Silica Initial Wt.	909.4	grams
Final Impinger Content:	4605.9	ml	Silica Final Wt.	929.1	grams
Impinger Difference:	87.2	ml	Silica Difference:	19.7	grams
Total Water Gain:	106.9		Moisture, Bws:	0.015	
			Supersaturation Value, Bws:	0.037	

Port-Point No.	Clock Time	Velocity Head Δp in. H ₂ O	Orifice ΔH in. H ₂ O	Actual Meter Vol. ft ³	Stack Temp °F	Meter Temp		Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
						Inlet °F	Outlet °F				
1-1	6:20:00	1.10	0.92	322.735	68	64	62	5	249	249	62
1-1	6:30:00	1.10	0.92	328.454	68	64	62	5	250	251	62
1-2	6:40:00	1.00	0.84	334.172	68	66	62	4	249	251	61
1-2	6:50:00	1.00	0.84	339.634	69	67	62	4	250	250	61
1-3	7:00:00	1.10	0.93	345.097	69	75	64	3	250	250	60
1-3	7:10:00	1.10	0.93	350.880	70	71	65	3	251	249	60
1-4	7:20:00	1.20	1.02	356.642	70	74	67	3	250	250	61
1-4	7:30:00	1.20	1.02	362.688	70	74	68	3	250	250	61
1-5	7:40:00	1.40	1.19	368.741	71	75	69	4	250	250	60
1-5	7:50:00	1.40	1.19	375.284	72	76	69	4	252	250	60
1-6	8:00:00	2.20	1.87	381.827	72	77	71	3	249	250	59
1-6	8:10:00	2.20	1.87	390.052	73	78	72	3	251	250	58
1-7	8:20:00	2.00	1.71	398.285	72	80	73	4	250	249	58
1-7	8:30:00	2.00	1.71	406.165	73	82	75	3	252	250	58
1-8	8:40:00	1.40	1.20	414.066	73	82	75	3	253	249	58
1-8	8:50:00	1.40	1.20	420.677	74	82	76	3	249	251	58
1-9	9:00:00	1.20	1.03	427.267	74	84	77	3	248	250	60
1-9	9:10:00	1.20	1.03	433.425	74	84	78	3	251	250	60
1-10	9:20:00	1.10	0.94	439.568	75	84	78	3	250	251	61
1-10	9:30:00	1.10	0.94	445.444	76	84	78	3	249	250	62
1-11	9:40:00	1.00	0.86	451.368	77	85	80	3	249	251	62
1-11	9:50:00	1.00	0.86	456.976	78	86	81	3	252	251	62
1-12	10:00:00	1.00	0.86	462.589	78	87	82	3	251	251	63
1-12	10:10:00	1.00	0.86	468.212	79	90	82	3	249	250	63
	10:20:00			473.845							
2-1	12:00:00	1.20	1.02	477.625	84	86	86	3	249	250	60
2-1	12:10:00	1.20	1.02	483.769	84	89	86	3	249	250	57
2-2	12:20:00	1.10	0.94	489.928	86	90	87	3	250	251	56
2-2	12:30:00	1.10	0.94	495.825	86	93	88	3	251	250	57
2-3	12:40:00	2.00	1.71	501.744	86	94	91	3	249	250	58
2-4	12:50:00	2.00	1.71	509.753	89	97	92	3	250	248	60
2-5	13:00:00	2.00	1.72	517.770	86	97	93	3	250	252	60
2-6	13:10:00	2.20	1.90	525.816	87	99	94	3	248	250	61
2-7	13:20:00	2.20	1.89	534.269	91	100	95	3	253	250	61
2-8	13:30:00	2.00	1.72	542.707	90	102	97	3	251	250	64
	13:40:00			550.789							
2-9	13:50:00	1.50	1.29	550.789	91	102	98	3	248	251	64
2-10	14:00:00	1.50	1.29	557.789	91	103	98	3	250	252	63
2-11	14:10:00	1.50	1.29	564.794	93	105	100	3	248	249	62
2-12	14:20:00	1.50	1.29	571.823	93	106	101	3	250	249	63
	14:30:00			578.841							
2-12	14:40:00	1.60	1.37	578.841	97	103	101	3	250	249	56
2-11	14:50:00	1.60	1.37	586.057	96	103	100	3	252	248	58

Run 1 - Method 29

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 7/29/25
 Start Time: 6:20
 End Time: 16:32

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.27	in. H ₂ O		Static Pressure	2.20	in. H ₂ O	
Meter Temperature, Tm:	87.2	°F		Flue Pressure (Ps):	30.06	in. Hg. abs.	
Sqrt ΔP:	1.210	in. H ₂ O					
Stack Temperature, Ts:	82.0	°F					
Meter Volume, Vm:	327.314	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	321.649	dscf		Gas Weight wet, Ms:	28.830	lb/lb mole	
Meter Volume, Vwstd:	5.035	wscf					
Isokinetic Variance:	101.0	%I					
				Gas Velocity, Vs:	68.677	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,236	acfm	
Nozzle Diameter:	0.175	in inches		Volumetric Flow:	3,119	dscfm	
Barometric Pressure:	29.90	in Hg		Volumetric Flow:	3,168	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	4518.7	ml	Silica Initial Wt.	909.4	grams
Final Impinger Content:	4605.9	ml	Silica Final Wt.	929.1	grams
Impinger Difference:	87.2	ml	Silica Difference:	19.7	grams
Total Water Gain:	106.9		Moisture, Bws:	0.015	
			Supersaturation Value, Bws:	0.037	

Port- Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Probe	Filter	Impinger
		Head Δp in. H2O	ΔH in. H2O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Temp °F	Exit Temp °F	Exit Temp °F
2-10	15:00:00	1.50	1.29	593.272	96	105	101	3	250	250	60
2-9	15:10:00	2.00	1.72	600.276	95	107	101	3	251	249	60
	15:20:00			608.386							
2-8	15:32:00	2.00	1.73	608.386	95	108	103	3	250	250	62
2-7	15:42:00	2.00	1.73	616.518	95	109	103	3	250	249	56
2-6	15:52:00	1.80	1.56	624.657	95	110	103	3	250	251	55
2-5	16:02:00	1.60	1.39	632.385	95	112	104	3	249	250	56
2-4	16:12:00	1.50	1.30	639.690	96	112	105	3	250	249	57
2-3	16:22:00	1.50	1.30	646.763	96	111	105	3	250	252	57
	16:32:00			653.829							
Total	8:00:00			327.314		89.9	84.6				
Average			1.27		82.0	87.2		3			
Min			0.84		68.0	62.0		3			
Max			1.90		97.0	112.0		5			

Impinger Weight Sheet - Run 1

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukee
Test Location: Baghouse 8901 Outlet
Project #: M253113
Date: 7/29/2025
Test Method: 29
Weighed/Measured By: RICHS
Balance ID: S10-07

Scale Calibration Check Date: 7/29/2025
Scale Calibration Check (see QS-6.05C for procedure)
 must be within $\pm 0.5g$ of certified mass

<u>Certified Weight, grams</u>	<u>Result, grams</u>
250	250.0
500	500.0
750	750.0

IMPINGER	FINAL	INITIAL	GAIN
CONTENTS	MLS / GRAMS	MLS / GRAMS	MLS / GRAMS
HNO3/H2O2	754.5	774.7	-20.2
HNO3/H2O2	785.8	739.5	46.3
Empty	700.2	631.3	68.9
KMnO4/H2SO4	743.2	722.6	20.6
KMnO4/H2SO4	720.9	778.9	-58.0
Silica Gel	929.1	909.4	19.7
Silica Gel	901.3	871.7	29.6

4,605.9	4,518.7	87.2
Liquid Final	Liquid Initial	Liquid Gain
929.1	909.4	19.7
Silica Final	Silica Initial	Silica Gain

Run 2 - Method 29

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 7/30/25
 Start Time: 6:25
 End Time: 16:45

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.42	In. H ₂ O		Static Pressure	2.20	in. H ₂ O	
Meter Temperature, Tm:	85.8	°F		Flue Pressure (Ps):	30.06	in. Hg. abs.	
Sqrt ΔP:	1.286	In. H ₂ O					
Stack Temperature, Ts:	80.5	°F					
Meter Volume, Vm:	346.891	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	341.910	dscf		Gas Weight wet, Ms:	28.882	lb/lb mole	
Meter Volume, Vwstd:	3.721	wscf					
Isokinetic Variance:	100.5	%					
				Gas Velocity, Vs:	72.811	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,431	acfm	
Nozzle Diameter:	0.175	in inches		Volumetric Flow:	3,332	dscfm	
Barometric Pressure:	29.90	in Hg		Volumetric Flow:	3,368	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	3643.9	ml	Silica Initial Wt.	855.2	grams
Final Impinger Content:	3676.9	ml	Silica Final Wt.	901.2	grams
Impinger Difference:	33.0	ml	Silica Difference:	46.0	grams
Total Water Gain:	79.0		Moisture, Bws:	0.011	
			Supersaturation Value, Bws:	0.035	

Port-Point No.	Clock Time	Velocity Head Δp in. H ₂ O	Orifice ΔH in. H ₂ O	Actual Meter Vol. ft ³	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
1-1	6:25:00	1.50	1.25	656.910	73	64	63	3	251	249	41
1-1	6:35:00	1.50	1.25	663.563	73	67	64	3	249	252	44
1-2	6:45:00	1.50	1.26	670.241	73	71	65	3	250	249	45
1-2	6:55:00	1.60	1.35	676.950	73	73	65	3	250	248	44
1-3	7:05:00	1.80	1.52	683.891	74	75	67	3	249	251	46
1-3	7:15:00	1.80	1.52	691.277	73	75	69	3	250	253	42
1-4	7:25:00	1.60	1.35	698.682	75	77	69	3	250	249	43
1-4	7:35:00	1.60	1.36	705.664	74	78	70	3	250	249	43
1-5	7:45:00	2.00	1.69	712.665	74	78	70	3	248	252	43
1-5	7:55:00	2.00	1.70	720.494	74	80	71	3	248	249	45
1-6	8:05:00	2.10	1.79	728.344	75	82	72	3	249	250	43
1-6	8:15:00	2.10	1.80	736.402	74	84	74	3	249	250	46
	8:25:00			744.499							
1-7	9:00:00	2.20	1.86	744.499	76	77	75	3	248	249	51
1-7'	9:10:00	2.20	1.87	752.725	76	82	76	3	250	250	47
1-8	9:20:00	2.00	1.70	760.997	77	84	77	3	250	251	49
1-8'	9:30:00	2.00	1.71	768.898	76	85	77	3	249	251	49
1-9	9:40:00	1.50	1.28	776.814	76	85	77	3	249	251	50
1-9'	9:50:00	1.60	1.37	783.669	77	86	78	3	248	250	50
1-10	10:00:00	1.50	1.28	790.754	78	88	80	3	249	251	52
1-10'	10:10:00	1.50	1.29	797.636	78	89	81	3	252	251	53
1-11	10:20:00	1.20	1.03	804.529	78	90	82	3	250	250	55
1-11'	10:30:00	1.20	1.03	810.705	79	90	83	3	249	250	55
1-12	10:40:00	1.60	1.37	816.882	79	88	82	3	250	251	55
1-12'	10:50:00	1.60	1.37	823.995	80	88	82	3	251	248	57
	11:00:00			831.101							
2-1	11:45:00	1.50	1.28	831.310	81	84	82	3	249	251	40
2-1'	11:55:00	1.50	1.28	838.160	82	88	84	3	250	251	45
2-2	12:05:00	1.80	1.55	845.040	82	93	87	3	251	251	44
2-2'	12:15:00	1.80	1.55	852.632	83	96	90	3	250	249	47
2-3	12:25:00	2.00	1.73	860.258	83	99	92	3	249	252	47
2-3'	12:35:00	2.00	1.74	868.333	83	101	93	3	250	250	48
2-4	12:45:00	1.80	1.56	876.430	84	100	94	3	251	252	50
2-4'	12:55:00	1.80	1.56	884.105	85	99	93	3	250	250	51
2-5	13:05:00	1.80	1.56	891.759	85	99	95	3	251	250	49
2-5'	13:15:00	1.80	1.56	899.427	85	99	96	3	252	250	50
	13:25:00			907.101							
2-6	13:45:00	2.00	1.72	907.101	86	94	92	3	252	251	50
2-6'	13:55:00	2.00	1.72	915.119	86	95	91	3	250	250	50
2-7	14:05:00	1.60	1.37	923.136	86	95	91	3	251	250	50
	14:15:00			930.306							
2-7'	14:55:00	1.60	1.37	930.306	85	92	89	3	252	250	52
2-8'	15:05:00	1.60	1.37	937.452	86	94	89	3	250	249	59

Run 2 - Method 29

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 7/30/25
 Start Time: 6:25
 End Time: 16:45

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.42	In. H ₂ O		Static Pressure	2.20	in. H ₂ O	
Meter Temperature, Tm:	85.8	°F		Flue Pressure (Ps):	30.06	in. Hg. abs.	
Sqrt ΔP:	1.286	In. H ₂ O					
Stack Temperature, Ts:	80.5	°F					
Meter Volume, Vm:	346.891	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	341.910	dscf		Gas Weight wet, Ms:	28.882	lb/lb mole	
Meter Volume, Vwstd:	3.721	wscf					
Isokinetic Variance:	100.5	%I					
				Gas Velocity, Vs:	72.811	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,431	acfm	
Nozzle Diameter:	0.175	in inches		Volumetric Flow:	3,332	dscfm	
Barometric Pressure:	29.90	in Hg		Volumetric Flow:	3,368	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	3643.9	ml	Silica Initial Wt.	855.2	grams
Final Impinger Content:	3676.9	ml	Silica Final Wt.	901.2	grams
Impinger Difference:	33.0	ml	Silica Difference:	46.0	grams
Total Water Gain:	79.0		Moisture, Bws:	0.011	
			Supersaturation Value, Bws:	0.035	

Port-Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Probe	Filter	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Temp °F	Exit Temp °F	Exit Temp °F
2-8'	15:15:00	1.60	1.37	944.603	86	94	89	3	250	250	60
2-9'	15:25:00	1.50	1.29	951.527	86	97	90	3	250	248	60
2-9'	15:35:00	1.50	1.29	958.703	86	99	91	3	248	251	61
2-10'	15:45:00	1.40	1.21	965.671	87	101	92	3	253	250	60
2-10'	15:55:00	1.30	1.12	972.414	88	103	95	3	251	250	60
2-11'	16:05:00	1.20	1.04	978.936	88	103	95	3	252	250	62
2-11'	16:15:00	1.20	1.04	985.202	88	104	97	3	248	251	60
2-12'	16:25:00	1.20	1.04	991.484	88	103	96	3	250	251	57
2-12'	16:35:00	1.20	1.03	997.756	88	100	96	3	251	250	54
	16:45:00			1004.010							
Total	8:00:00			346.891		88.9	82.7				
Average			1.42		80.5	85.8		3			
Min			1.03		73.0	63.0		3			
Max			1.87		88.0	104.0		3			

Impinger Weight Sheet - Run 2

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukee
Test Location: Baghouse 8901 Outlet
Project #: M253113
Date: 7/30/2025
Test Method: 29
Weighed/Measured By: RICHS
Balance ID: S10-07

Scale Calibration Check Date: 7/29/2025
Scale Calibration Check (see QS-6.05C for procedure)
 must be within $\pm 0.5g$ of certified mass

<u>Certified Weight, grams</u>	<u>Result, grams</u>
250	<u>250.0</u>
500	<u>500.0</u>
750	<u>750.0</u>

IMPINGER	FINAL	INITIAL	GAIN
CONTENTS	MLS / GRAMS	MLS / GRAMS	MLS / GRAMS
HNO3/H2O2	749.0	746.8	2.2
HNO3/H2O2	792.5	770.0	22.5
Empty	669.2	650.0	19.2
KMnO4/H2SO4	736.2	735.0	1.2
KMnO4/H2SO4	730.0	742.1	-12.1
Silica Gel	901.2	855.2	46.0

<u>3,676.9</u> Liquid Final	<u>3,643.9</u> Liquid Initial	<u>33.0</u> Liquid Gain
<u>901.2</u> Silica Final	<u>855.2</u> Silica Initial	<u>46.0</u> Silica Gain

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Outlet
Project #: M253113
Test Method: 0061
Test Engineer: EE
Test Technician: RICHS

	<u>Run 1</u>	<u>Run 2</u>
Meter ID:	CM23	CM23
Pitot ID:		0
Nozzle Diameter (Inches):	0.205	0.205
Meter Calibration Date:	7/16/2025	7/16/2025
Meter Calibration Factor (Y):	1.003	1.003
Meter Orifice Setting (Delta H):	1.863	1.863
Nozzle Kit ID Number and Material:	Glass #5	Glass #5

Leak Checks

Pre Pitot Leak Check	0.0	@	3.6	"H₂O	0.0	@	3.7	"H₂O
Post Pitot Leak Check	0.0	@	4.4	"H₂O	0.0	@	3.3	"H₂O
Pre Nozzle Leak Check	0.012	@	12	"Hg	0.004	@	10	"Hg
Post Nozzle Leak Check	0.004	@	10	"Hg	0.002	@	10	"Hg

Pitot Tube Coefficient: 0.840
Probe Length (Feet): 3.0
Probe Liner Material: Glass
Sample Plane: Horizontal
Port Length (Inches): 3.25
Port Size (Diameter, Inches): 3.00
Port Type: Nipple
Duct Shape: Circular
Diameter (Feet): 1.00
Duct Area (Square Feet): 0.785
Upstream Diameters: 3.0
Downstream Diameters: 3.0
Number of Ports Sampled: 2
Number of Points per Port: 12
Minutes per Point: 20.0
Minutes per Reading: 10.0
Total Number of Traverse Points: 24
Test Length (Minutes): 480
Train Type: Anderson Box
Source Condition: Batch Process
Moisture Balance ID: S10-07
of Runs 2

Run 1 - Method 0061

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 7/29/25
 Start Time: 6:20
 End Time: 16:32

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	3.61	in. H ₂ O		Static Pressure	2.20	in. H ₂ O	
Meter Temperature, Tm:	94.3	°F		Flue Pressure (Ps):	30.06	in. Hg. abs.	
Sqrt ΔP:	1.352	in. H ₂ O					
Stack Temperature, Ts:	83.9	°F					
Meter Volume, Vm:	502.047	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	483.595	dscf		Gas Weight wet, Ms:	28.883	lb/lb mole	
Meter Volume, Vwstd:	5.181	wscf					
Isokinetic Variance:	98.8	%					
				Gas Velocity, Vs:	76.790	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,619	acfm	
Nozzle Diameter:	0.205	in inches		Volumetric Flow:	3,492	dscfm	
Barometric Pressure:	29.90	in Hg		Volumetric Flow:	3,530	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams
Final Impinger Content:	100.0	ml	Silica Final Wt.	10.0	grams
Impinger Difference:	100.0	ml	Silica Difference:	10.0	grams
Total Water Gain:	110.0		Moisture, Bws:	0.011	
			Supersaturation Value, Bws:	0.039	

Port- Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Exit Temp °F
1-1	6:20:00	2.10	4.10	550.849	68	70	68	2	62
1-1	6:30:00	2.00	3.90	561.560	73	78	68	3	61
1-2	6:40:00	1.80	3.50	571.820	73	81	70	3	63
1-2	6:50:00	1.80	3.50	582.470	73	83	70	3	63
1-3	7:00:00	2.00	3.90	591.220	75	84	73	3	63
1-3	7:10:00	2.00	3.90	603.180	75	84	73	3	66
1-4	7:20:00	1.80	3.50	614.910	75	85	74	3	62
1-4	7:30:00	1.90	3.70	624.220	75	86	74	3	62
1-5	7:40:00	2.00	3.90	635.710	74	87	76	3	58
1-5	7:50:00	2.10	4.10	646.720	74	86	76	3	56
1-6	8:00:00	2.00	3.90	657.870	74	87	77	3	58
1-6	8:10:00	2.00	3.90	669.030	74	87	77	3	58
1-7	8:20:00	1.90	3.70	680.340	75	89	80	3	61
1-7	8:30:00	1.90	3.70	690.720	75	90	81	3	61
1-8	8:40:00	2.00	3.90	701.610	76	91	83	3	60
1-8	8:50:00	2.00	3.90	712.280	76	92	83	3	59
1-9	9:00:00	1.80	3.50	722.770	76	93	84	3	61
1-9	9:10:00	1.80	3.50	733.250	77	93	85	3	62
1-10	9:20:00	1.60	3.10	742.960	77	94	86	3	63
1-10	9:30:00	1.60	3.10	753.220	78	94	87	3	64
1-11	9:40:00	1.70	3.30	763.020	78	94	88	3	64
1-11	9:50:00	1.70	3.30	772.000	78	94	88	3	65
1-12	10:00:00	1.60	3.10	781.360	78	94	88	3	66
1-12	10:10:00	1.60	3.10	791.230	77	94	88	3	66
	10:20:00			800.508					
2-1	12:00:00	1.70	3.40	811.212	86	93	93	5	60
2-1	12:10:00	1.70	3.40	821.120	86	96	93	5	57
2-2	12:20:00	1.80	3.60	830.590	87	102	95	5	55
2-2	12:30:00	1.70	3.40	841.500	89	103	96	5	55
2-3	12:40:00	1.60	3.20	852.350	89	105	98	5	57
2-4	12:50:00	1.80	3.60	862.230	89	106	99	5	59
2-5	13:00:00	1.80	3.60	872.800	89	107	100	5	59
2-6	13:10:00	1.80	3.60	882.634	89	107	100	5	60
2-7	13:20:00	1.80	3.60	893.560	94	108	101	5	61
2-8	13:30:00	1.80	3.60	904.510	92	108	102	5	62
	13:40:00			915.111					
2-9	13:50:00	1.80	3.60	915.111	91	109	102	5	64
2-10	14:00:00	1.90	3.80	925.080	91	109	103	5	64
2-11	14:10:00	1.70	3.40	936.360	95	110	103	5	62
2-12	14:20:00	1.80	3.60	947.200	93	111	104	5	61
	14:30:00			956.876					
2-12	14:40:00	1.90	3.80	957.276	96	106	104	5	65
2-11	14:50:00	1.90	3.80	966.180	96	106	104	5	60

Run 1 - Method 0061

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 7/29/25
 Start Time: 6:20
 End Time: 16:32

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	3.61	in. H ₂ O		Static Pressure	2.20	in. H ₂ O	
Meter Temperature, Tm:	94.3	°F		Flue Pressure (Ps):	30.06	in. Hg. abs.	
Sqrt ΔP:	1.352	in. H ₂ O					
Stack Temperature, Ts:	83.9	°F					
Meter Volume, Vm:	502.047	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	483.595	dscf		Gas Weight wet, Ms:	28.883	lb/lb mole	
Meter Volume, Vwstd:	5.181	wscf					
Isokinetic Variance:	98.8	%I					
				Gas Velocity, Vs:	76.790	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,619	acfm	
Nozzle Diameter:	0.205	in inches		Volumetric Flow:	3,492	dscfm	
Barometric Pressure:	29.90	in Hg		Volumetric Flow:	3,530	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams
Final Impinger Content:	100.0	ml	Silica Final Wt.	10.0	grams
Impinger Difference:	100.0	ml	Silica Difference:	10.0	grams
Total Water Gain:	110.0		Moisture, Bws:	0.011	Supersaturation Value, Bws: 0.039

Port- Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Exit Temp °F
2-10	15:00:00	1.80	3.60	978.330	96	109	104	5	62
2-9	15:10:00	1.90	3.80	987.020	96	111	104	5	62
	15:20:00			1000.150					
2-8	15:32:00	1.90	3.80	1000.150	97	114	106	5	62
2-7	15:42:00	1.90	3.80	1011.450	96	115	106	5	62
2-6	15:52:00	1.80	3.60	1022.020	96	115	106	5	57
2-5	16:02:00	1.90	3.80	1033.030	96	117	107	5	56
2-4	16:12:00	1.80	3.60	1043.870	96	116	107	5	56
2-3	16:22:00	1.60	3.20	1054.330	96	117	107	5	57
	16:32:00			1064.000					

Total	8:00:00			502.047		98.1	90.4		
Average			3.61		83.9	94.3		4	
Min			3.10		68.0	68.0		2	
Max			4.10		97.0	117.0		5	

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 7/30/25
 Start Time: 6:25
 End Time: 16:45

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	3.53	In. H ₂ O		Static Pressure	2.00	in. H ₂ O	
Meter Temperature, Tm:	89.9	°F		Flue Pressure (Ps):	30.08	in. Hg. abs.	
Sqrt ΔP:	1.347	In. H ₂ O					
Stack Temperature, Ts:	83.2	°F					
Meter Volume, Vm:	506.453	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	492.150	dscf		Gas Weight wet, Ms:	28.582	lb/lb mole	
Meter Volume, Vwstd:	5.181	wscf					
Isokinetic Variance:	103.2	%					
				Gas Velocity, Vs:	76.863	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,622	acfm	
Nozzle Diameter:	0.205	in inches		Volumetric Flow:	3,404	dscfm	
Barometric Pressure:	29.93	in Hg		Volumetric Flow:	3,539	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams
Final Impinger Content:	100.0	ml	Silica Final Wt.	10.0	grams
Impinger Difference:	100.0	ml	Silica Difference:	10.0	grams
Total Water Gain:	110.0		Moisture, Bws:	0.110	Supersaturation Value, Bws: 0.038

Port- Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Exit Temp °F
1-1	6:25:00	1.90	3.70	64.710	76	66	65	7	55
1-1	6:35:00	1.80	3.50	75.120	76	70	65	7	58
1-2	6:45:00	2.10	4.10	84.920	76	74	67	7	64
1-2	6:55:00	2.10	4.10	96.180	76	77	68	7	67
1-3	7:05:00	1.70	3.30	107.930	77	81	70	6	58
1-3	7:15:00	1.80	3.50	117.750	76	81	71	6	50
1-4	7:25:00	2.00	3.90	127.850	77	83	72	7	51
1-4	7:35:00	2.00	3.90	138.970	77	85	74	7	50
1-5	7:45:00	1.70	3.30	150.700	77	85	74	6	50
1-5	7:55:00	1.80	3.50	160.920	77	85	75	6	52
1-6	8:05:00	1.80	3.50	170.710	77	86	76	6	52
1-6	8:15:00	1.70	3.30	181.840	77	88	78	6	52
	8:25:00			191.966					
1-7	9:00:00	2.00	3.90	191.966	79	87	82	7	49
1-7	9:10:00	2.00	3.90	203.440	79	90	82	7	52
1-8	9:20:00	2.00	3.90	214.630	79	91	83	7	53
1-8	9:30:00	2.00	3.90	225.520	79	92	83	6	54
1-9	9:40:00	1.90	3.70	236.890	79	92	84	6	54
1-9	9:50:00	2.00	3.90	247.160	79	93	84	6	54
1-10	10:00:00	1.80	3.50	258.330	81	96	86	6	58
1-10	10:10:00	1.90	3.70	268.220	82	96	87	6	59
1-11	10:20:00	1.90	3.70	279.650	81	97	89	6	57
1-11	10:30:00	1.80	3.50	289.950	81	96	88	6	57
1-12	10:40:00	1.80	3.50	301.060	82	95	88	6	57
1-12	10:50:00	1.80	3.50	311.450	82	95	87	6	57
	11:00:00			321.820					
2-1	11:45:00	1.80	3.50	322.090	84	86	86	7	62
2-1	11:55:00	1.70	3.30	332.590	86	91	87	6	60
2-2	12:05:00	1.70	3.30	342.830	88	95	88	6	63
2-2	12:15:00	1.70	3.30	353.330	88	97	89	6	64
2-3	12:25:00	1.80	3.50	363.350	86	100	93	7	66
2-3	12:35:00	1.80	3.50	374.120	86	102	95	7	67
2-4	12:45:00	1.70	3.30	384.500	86	103	96	7	67
2-4	12:55:00	1.70	3.30	394.510	88	104	98	7	64
2-5	13:05:00	2.00	3.90	404.890	88	105	99	7	62
2-5	13:15:00	1.90	3.70	415.630	87	105	99	7	59
	13:25:00			425.789					
2-6	13:45:00	1.90	3.70	425.789	88	96	96	7	61
2-6	13:55:00	2.00	3.90	437.210	89	96	96	7	54
2-7	14:05:00	1.80	3.50	448.650	89	99	94	7	56
	14:15:00			458.756					
2-7	14:55:00	1.60	3.10	458.756	88	91	91	6	55
2-8	15:05:00	1.70	3.30	468.520	88	94	91	6	56

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 7/30/25
 Start Time: 6:25
 End Time: 16:45

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	3.53	In. H ₂ O		Static Pressure	2.00	in. H ₂ O	
Meter Temperature, Tm:	89.9	°F		Flue Pressure (Ps):	30.08	in. Hg. abs.	
Sqrt ΔP:	1.347	In. H ₂ O					
Stack Temperature, Ts:	83.2	°F					
Meter Volume, Vm:	506.453	ft ³					
Meter Volume, Vmstd:	492.150	dscf		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vwstd:	5.181	wscf		Gas Weight wet, Ms:	28.582	lb/lb mole	
Isokinetic Variance:	103.2	%l					
				Gas Velocity, Vs:	76.863	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,622	acfm	
Nozzle Diameter:	0.205	in inches		Volumetric Flow:	3,404	dscfm	
Barometric Pressure:	29.93	in Hg		Volumetric Flow:	3,539	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams
Final Impinger Content:	100.0	ml	Silica Final Wt.	10.0	grams
Impinger Difference:	100.0	ml	Silica Difference:	10.0	grams
Total Water Gain:	110.0		Moisture, Bws:	0.110	
			Supersaturation Value, Bws:	0.038	

Port- Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Impinger
		Head Δp in. H2O	ΔH in. H2O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Exit Temp °F
2-8	15:15:00	1.80	3.50	478.500	88	99	92	7	59
2-9	15:25:00	1.80	3.50	489.200	88	101	92	7	60
2-9	15:35:00	1.70	3.30	499.750	89	103	93	7	61
2-10	15:45:00	1.60	3.10	510.270	89	105	95	6	63
2-10	15:55:00	1.60	3.10	520.590	90	107	96	6	67
2-11	16:05:00	1.70	3.30	530.830	90	108	97	6	64
2-11	16:15:00	1.70	3.30	541.120	90	108	99	6	59
2-12	16:25:00	1.60	3.10	551.280	90	107	99	6	58
2-12	16:35:00	1.60	3.10	561.230	90	107	99	6	58
	16:45:00			571.433					

Total	8:00:00			506.453		93.5	86.2		
Average			3.53		83.2	89.9		6	
Min			3.10		76.0	65.0		6	
Max			4.10		90.0	108.0		7	

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Outlet
Project #: M253113
Test Method: ODEQ 5
Test Engineer: ASM1
Test Technician: DV

	<u>Run 1</u>	<u>Run 2</u>
Meter ID:	CM7	CM7
Pitot ID:	4032	4032
Filter ID:	22790	22762
Filter Pre-Weight (grams):	0.47948	0.47833
Nozzle Diameter (Inches):	0.190	0.190
Meter Calibration Date:	7/2/2025	7/2/2025
Meter Calibration Factor (Y):	1.016	1.016
Meter Orifice Setting (Delta H):	1.509	1.509
Nozzle Kit ID Number and Material:	Glass set #5 (848)	Glass set #5 (848)

Leak Checks

Pre Pitot Leak Check	0.0 @ 4.5 "H₂O	0.0 @ 3.8 "H₂O
Post Pitot Leak Check	0.0 @ 4.0 "H₂O	0.0 @ 4.0 "H₂O
Pre Nozzle Leak Check	0.000 @ 15 "Hg	0.000 @ 14 "Hg
Post Nozzle Leak Check	0.000 @ 15 "Hg	0.000 @ 15 "Hg

Pitot Tube Coefficient: 0.840
Probe Length (Feet): 3.0
Probe Liner Material: Glass
Sample Plane: Horizontal
Port Length (Inches): 3.00
Port Size (Diameter, Inches): 3.00
Port Type: Nipple
Duct Shape: Circular
Diameter (Feet): 1.00
Duct Area (Square Feet): 0.785
Upstream Diameters: 3.0
Downstream Diameters: 3.0
Number of Ports Sampled: 2
Number of Points per Port: 12
Minutes per Point: 20.0
Minutes per Reading: 10.0
Total Number of Traverse Points: 24
Test Length (Minutes): 480
Train Type: Anderson Box
Source Condition: Batch Process
Moisture Balance ID: S10-07
of Runs 2

Run 1 - Method ODEQ 5

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 7/31/25
 Start Time: 6:05
 End Time: 15:45

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.96	in. H ₂ O		Static Pressure	2.00	in. H ₂ O	
Meter Temperature, Tm:	78.2	°F		Flue Pressure (Ps):	30.04	in. Hg. abs.	
Sqrt ΔP:	1.286	in. H ₂ O					
Stack Temperature, Ts:	76.5	°F					
Meter Volume, Vm:	412.385	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	412.607	dscf		Gas Weight wet, Ms:	28.877	lb/lb mole	
Meter Volume, Vwstd:	4.668	wscf					
Isokinetic Variance:	102.6	%					
				Gas Velocity, Vs:	72.583	fps	
Test Length:	480.00	in mins.		Volumetric Flow:	3,420	acfm	
Nozzle Diameter:	0.190	in inches		Volumetric Flow:	3,341	dscfm	
Barometric Pressure:	29.89	in Hg		Volumetric Flow:	3,379	scfm	

MOISTURE DETERMINATION

Initial Impinger Content:	2057.0	ml	Silica Initial Wt.	837.3	grams
Final Impinger Content:	2099.8	ml	Silica Final Wt.	893.6	grams
Impinger Difference:	42.8	ml	Silica Difference:	56.3	grams
Total Water Gain:	99.1		Moisture, Bws:	0.011	Supersaturation Value, Bws: 0.031

Port-Point No.	Clock Time	Velocity Head Δp in. H ₂ O	Orifice ΔH in. H ₂ O	Actual Meter Vol. ft ³	Stack Temp °F	Meter Temp		Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
						Inlet °F	Outlet °F				
1-1	6:05:00	1.50	1.72	4.735	74	62	61	4	257	250	45
1-1	6:15:00	1.50	1.73	12.553	74	65	62	4	251	250	48
1-2	6:25:00	1.50	1.73	20.400	74	67	62	4	244	249	49
1-2	6:35:00	1.50	1.74	28.263	72	69	63	4	240	250	45
1-3	6:45:00	1.80	2.10	36.643	72	71	64	4	252	251	47
1-3	6:55:00	1.80	2.10	45.471	72	73	65	4	253	250	45
1-4	7:05:00	2.00	2.34	54.324	72	73	66	4	255	251	48
1-4	7:15:00	2.00	2.34	63.664	72	74	67	4	265	249	49
1-5	7:25:00	2.10	2.46	73.022	72	74	68	4	230	251	52
1-5	7:35:00	2.10	2.47	82.621	72	77	68	4	230	251	55
1-6	7:45:00	2.00	2.35	92.246	72	74	69	4	270	249	54
1-6	7:55:00	2.00	2.35	101.622	72	75	69	4	269	250	55
	8:05:00			111.007							
1-7	8:15:00	1.80	2.11	111.007	72	71	69	4	269	251	54
1-7	8:25:00	1.80	2.11	119.878	72	72	69	4	253	251	55
1-8	8:35:00	1.60	1.88	128.756	72	75	70	4	262	251	50
1-8	8:45:00	1.60	1.89	137.157	72	76	71	4	242	249	49
1-9	8:55:00	1.50	1.77	145.575	73	80	72	4	262	252	49
1-9	9:05:00	1.50	1.76	153.756	73	78	72	4	267	249	51
1-10	9:15:00	1.50	1.77	161.321	74	79	73	4	238	249	51
1-10	9:25:00	1.50	1.77	170.094	74	78	73	4	255	248	51
1-11	9:35:00	1.20	1.42	178.260	74	78	74	4	235	251	51
1-11	9:45:00	1.20	1.42	185.570	74	80	74	4	260	250	52
1-12	9:55:00	1.20	1.42	192.894	74	80	75	4	230	251	52
1-12	10:05:00	1.20	1.42	200.225	75	81	75	4	246	250	52
	10:15:00			207.555							
2-1	10:42:00	1.60	1.89	207.555	76	81	77	4	249	250	51
2-1	10:52:00	1.60	1.89	216.029	77	82	77	4	241	249	56
2-2	11:02:00	1.50	1.77	224.501	77	83	78	4	238	251	58
2-2	11:12:00	1.50	1.76	232.720	81	84	79	4	246	250	60
2-3	11:22:00	1.50	1.76	240.922	81	84	79	4	245	251	60
2-3	11:32:00	1.50	1.77	249.125	79	84	80	4	244	250	61
	11:42:00			257.352							
2-4	12:00:00	1.60	1.89	257.352	78	81	79	4	249	250	60
2-4	12:10:00	1.60	1.89	265.825	77	83	79	4	255	252	62
2-5	12:20:00	1.80	2.13	274.322	78	84	79	4	246	252	63
2-5	12:30:00	1.80	2.13	283.333	80	87	80	4	251	250	65
2-6	12:40:00	2.00	2.37	292.361	79	88	81	4	254	250	62
2-6	12:50:00	2.00	2.38	301.903	79	89	82	4	252	250	50
2-7	13:00:00	2.00	2.37	308.612	80	88	83	4	257	249	50
2-7	13:10:00	2.00	2.38	315.932	80	90	83	4	256	250	48
2-8	13:20:00	2.10	2.49	324.422	80	88	83	4	251	249	50
2-8	13:30:00	2.10	2.49	332.325	81	87	83	4	261	250	49

Run 1 - Method ODEQ 5

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 7/31/25
 Start Time: 6:05
 End Time: 15:45

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.96	in. H ₂ O		Static Pressure	2.00	in. H ₂ O	
Meter Temperature, Tm:	78.2	°F		Flue Pressure (Ps):	30.04	in. Hg. abs.	
Sqrt ΔP:	1.286	in. H ₂ O					
Stack Temperature, Ts:	76.5	°F					
Meter Volume, Vm:	412.385	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	412.607	dscf		Gas Weight wet, Ms:	28.877	lb/lb mole	
Meter Volume, Vwstd:	4.668	wscf					
Isokinetic Variance:	102.6	%l		Gas Velocity, Vs:	72.583	fps	
				Volumetric Flow:	3,420	acfm	
Test Length:	480.00	in mins.		Volumetric Flow:	3,341	dscfm	
Nozzle Diameter:	0.190	in inches		Volumetric Flow:	3,379	scfm	
Barometric Pressure:	29.89	in Hg					

MOISTURE DETERMINATION

Initial Impinger Content:	2057.0	ml	Silica Initial Wt.	837.3	grams
Final Impinger Content:	2099.8	ml	Silica Final Wt.	893.6	grams
Impinger Difference:	42.8	ml	Silica Difference:	56.3	grams
Total Water Gain:	99.1		Moisture, Bws:	0.011	Supersaturation Value, Bws: 0.031

Port-Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Probe	Filter	Impinger
		Head Δp in. H2O	ΔH in. H2O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Temp °F	Exit Temp °F	Exit Temp °F
2-9	13:40:00	2.00	2.37	346.512	80	88	83	4	230	251	49
2-9	13:50:00	2.00	2.37	352.112	80	87	84	4	260	250	47
	14:00:00			369.241							
2-10	14:45:00	1.50	1.78	369.214	82	89	84	4	244	250	55
2-10	14:55:00	1.50	1.78	377.486	82	92	85	4	241	251	55
2-11	15:05:00	1.50	1.78	385.788	84	94	87	4	254	249	56
2-11	15:15:00	1.40	1.67	394.105	84	96	88	4	239	251	56
2-12	15:25:00	1.20	1.43	402.162	85	96	89	4	240	251	60
2-12	15:35:00	1.20	1.43	409.620	85	97	90	4	239	250	57
	15:45:00			417.093							
Total	8:00:00			412.385		80.9	75.5				
Average			1.96		76.5	78.2		4			
Min			1.42		72.0	61.0		4			
Max			2.49		85.0	97.0		4			

Impinger Weight Sheet - Run 1

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukee
Test Location: Baghouse 8901 Outlet
Project #: M253113
Date: 7/31/2025
Test Method: ODEQ 5
Weighed/Measured By: RICHS
Balance ID: S10-07

Scale Calibration Check Date: 8/1/2025
Scale Calibration Check (see QS-6.05C for procedure)
 must be within $\pm 0.5g$ of certified mass

<u>Certified Weight, grams</u>	<u>Result, grams</u>
250	250.0
500	500.0
750	750.0

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
DI Water	686.1	730.0	-43.9
DI Water	771.5	707.5	64.0
Empty	642.2	619.5	22.7
Silica Gel	893.6	837.3	56.3

<u>2,099.8</u> Liquid Final	<u>2,057.0</u> Liquid Initial	<u>42.8</u> Liquid Gain
<u>893.6</u> Silica Final	<u>837.3</u> Silica Initial	<u>56.3</u> Silica Gain

Run 2 - Method ODEQ 5

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 8/1/25
 Start Time: 6:05
 End Time: 16:51

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.99	In. H ₂ O		Static Pressure	2.00	in. H ₂ O	
Meter Temperature, Tm:	83.0	°F		Flue Pressure (Ps):	30.04	in. Hg. abs.	
Sqrt ΔP:	1.293	In. H ₂ O					
Stack Temperature, Ts:	80.0	°F					
Meter Volume, Vm:	417.132	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	413.675	dscf		Gas Weight wet, Ms:	28.849	lb/lb mole	
Meter Volume, Vwstd:	5.770	wscf					
Isokinetic Variance:	102.8	%I		Gas Velocity, Vs:	73.287	fps	
				Volumetric Flow:	3,454	acfm	
Test Length:	480.00	in mins.		Volumetric Flow:	3,343	dscfm	
Nozzle Diameter:	0.190	in inches		Volumetric Flow:	3,390	scfm	
Barometric Pressure:	29.89	in Hg					

MOISTURE DETERMINATION

Initial Impinger Content:	2019.9	ml	Silica Initial Wt.	816.6	grams
Final Impinger Content:	2106.8	ml	Silica Final Wt.	852.2	grams
Impinger Difference:	86.9	ml	Silica Difference:	35.6	grams
Total Water Gain:	122.5		Moisture, Bws:	0.014	Supersaturation Value, Bws: 0.034

Port-Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Probe	Filter	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Temp °F	Exit Temp °F	Exit Temp °F
1-1	6:05:00	1.50	1.73	419.785	72	62	60	4	225	242	50
1-1	6:15:00	1.50	1.73	427.745	72	66	61	4	238	251	50
1-2	6:25:00	1.60	1.86	435.742	71	69	62	4	249	251	53
1-2	6:35:00	1.60	1.87	444.042	71	71	63	4	228	256	50
1-3	6:45:00	1.80	2.10	452.364	71	72	64	4	231	251	51
	6:55:00			461.209							
1-3'	7:30:00	1.80	2.10	461.209	71	67	65	4	251	248	47
1-4	7:40:00	2.00	2.33	470.021	71	69	65	4	229	249	46
1-4'	7:50:00	2.00	2.34	479.326	72	72	66	4	228	250	47
1-5	8:00:00	2.10	2.46	488.658	72	73	67	4	238	250	46
1-5'	8:10:00	2.10	2.46	498.238	72	74	68	4	228	251	48
1-6	8:20:00	2.00	2.35	507.836	72	74	68	4	236	250	48
1-6'	8:30:00	2.00	2.34	517.203	73	73	69	4	243	251	49
1-7	8:40:00	1.80	2.11	526.562	72	74	69	4	226	253	51
	8:50:00			535.455							
1-7'	9:15:00	1.80	2.11	535.455	73	72	72	4	255	257	56
1-8'	9:25:00	1.60	1.88	544.351	74	76	72	4	257	249	53
1-8'	9:35:00	1.60	1.89	552.759	74	79	74	4	245	249	53
1-9'	9:45:00	1.50	1.77	561.209	75	79	75	4	242	249	53
1-9'	9:55:00	1.50	1.78	569.390	74	80	76	4	246	253	54
1-10'	10:05:00	1.40	1.66	577.594	75	81	76	4	241	249	56
1-10'	10:15:00	1.40	1.67	585.519	76	84	81	4	251	252	58
1-11'	10:25:00	1.40	1.66	593.496	76	84	80	4	246	250	57
1-11'	10:35:00	1.40	1.67	601.465	76	85	81	4	250	250	59
1-12'	10:45:00	1.20	1.43	609.448	77	86	82	4	258	261	58
1-12'	10:55:00	1.20	1.42	616.847	79	86	83	4	255	250	58
	11:05:00			624.240							
2-1	11:10:00	1.50	1.78	630.525	79	87	84	4	251	255	61
2-1'	11:20:00	1.50	1.78	638.805	79	87	84	4	247	258	61
2-2	11:30:00	1.60	1.91	647.062	79	88	85	4	244	249	63
	11:40:00			655.628							
2-2'	12:10:00	1.60	1.89	655.628	83	86	85	4	254	254	68
2-3'	12:20:00	1.80	2.14	664.148	82	89	85	4	257	247	61
2-3'	12:30:00	1.80	2.13	673.218	83	87	85	4	247	250	57
2-4	12:40:00	2.00	2.37	682.262	83	89	87	4	240	252	55
2-4'	12:50:00	2.00	2.37	691.829	84	90	86	4	240	248	55
2-5	13:00:00	2.10	2.49	701.389	84	90	87	4	246	255	57
2-5'	13:10:00	2.10	2.49	711.195	85	91	87	4	237	260	63
	13:20:00			720.999							
2-6'	14:14:00	2.00	2.38	720.999	87	94	92	4	251	252	64
2-6'	14:24:00	2.00	2.38	730.620	87	96	93	4	251	257	64
	14:34:00			740.267							
2-7'	14:51:00	2.00	2.38	740.267	88	97	93	4	252	248	65
2-7'	15:01:00	2.00	2.38	749.914	88	98	93	4	243	245	64

Run 2 - Method ODEQ 5

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Source Condition: Batch Process

Date: 8/1/25
 Start Time: 6:05
 End Time: 16:51

DRY GAS METER CONDITIONS				STACK CONDITIONS			
ΔH:	1.99	In. H ₂ O		Static Pressure	2.00	in. H ₂ O	
Meter Temperature, Tm:	83.0	°F		Flue Pressure (Ps):	30.04	in. Hg. abs.	
Sqrt ΔP:	1.293	In. H ₂ O					
Stack Temperature, Ts:	80.0	°F					
Meter Volume, Vm:	417.132	ft ³		Gas Weight dry, Md:	29.000	lb/lb mole	
Meter Volume, Vmstd:	413.675	dscf		Gas Weight wet, Ms:	28.849	lb/lb mole	
Meter Volume, Vwstd:	5.770	wscf					
Isokinetic Variance:	102.8	%I		Gas Velocity, Vs:	73.287	fps	
				Volumetric Flow:	3,454	acfm	
Test Length:	480.00	in mins.		Volumetric Flow:	3,343	dscfm	
Nozzle Diameter:	0.190	in inches		Volumetric Flow:	3,390	scfm	
Barometric Pressure:	29.89	in Hg					

MOISTURE DETERMINATION

Initial Impinger Content:	2019.9	ml	Silica Initial Wt.	816.6	grams
Final Impinger Content:	2106.8	ml	Silica Final Wt.	852.2	grams
Impinger Difference:	86.9	ml	Silica Difference:	35.6	grams
Total Water Gain:	122.5		Moisture, Bws:	0.014	Supersaturation Value, Bws: 0.034

Port-Point No.	Clock Time	Velocity	Orifice	Actual	Stack	Meter Temp		Pump	Probe	Filter	Impinger
		Head Δp in. H ₂ O	ΔH in. H ₂ O	Meter Vol. ft ³	Temp °F	Inlet °F	Outlet °F	Vacuum "Hg	Temp °F	Exit Temp °F	Exit Temp °F
2-8'	15:11:00	1.80	2.14	759.569	89	100	93	4	256	249	64
2-8'	15:21:00	1.80	2.14	768.737	90	101	94	4	240	253	67
2-9'	15:31:00	1.60	1.91	777.913	90	102	95	4	254	254	66
2-9'	15:41:00	1.60	1.91	786.580	90	102	95	4	259	251	67
2-10'	15:51:00	1.50	1.78	795.270	94	102	95	4	251	256	68
2-10'	16:01:00	1.50	1.79	803.607	92	102	96	4	253	251	67
2-11'	16:11:00	1.40	1.67	811.991	91	102	96	4	251	255	68
2-11'	16:21:00	1.40	1.67	820.098	91	103	96	4	260	247	68
2-12'	16:31:00	1.20	1.43	828.212	91	103	96	4	247	252	67
2-12'	16:41:00	1.20	1.42	835.724	92	99	96	4	248	251	68
	16:51:00			843.202							

Total	8:00:00			417.132			85.3	80.8			
Average			1.99		80.0		83.0		4		
Min			1.42		71.0		60.0		4		
Max			2.49		94.0		103.0		4		

Impinger Weight Sheet - Run 2

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukee
Test Location: Baghouse 8901 Outlet
Project #: M253113
Date: 8/1/2025
Test Method: ODEQ 5
Weighed/Measured By: RICHS
Balance ID: S10-07

Scale Calibration Check Date: 8/1/2025
Scale Calibration Check (see QS-6.05C for procedure)
 must be within $\pm 0.5g$ of certified mass

<u>Certified Weight, grams</u>	<u>Result, grams</u>
250	<u>250.0</u>
500	<u>500.0</u>
750	<u>750.0</u>

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
DI Water	678.5	708.3	-29.8
DI Water	788.0	686.7	101.3
Empty	640.3	624.9	15.4
Silica Gel	852.2	816.6	35.6

<u>2,106.8</u> Liquid Final	<u>2,019.9</u> Liquid Initial	<u>86.9</u> Liquid Gain
<u>852.2</u> Silica Final	<u>816.6</u> Silica Initial	<u>35.6</u> Silica Gain

Appendix E - Plant Operating Data

BH 8901 Production Data

Date	Number of Ingots Processed	Total Mass Processed (lb)	Total Mass Processed (tons)
7/29/2025	185	30,936	15.5
7/30/2025	192	29,938	15.0
7/31/2025	179	27,490	13.7
8/1/2025	190	30,486	15.2

Time	Differential Pressure (inches w.c.)	
	Primary	HEPA
7/29/2025		
6:20AM	2.4	0.6
6:50AM	2.4	0.6
7:20AM	2.4	0.6
7:50AM	2.5	0.6
8:20AM	2.5	0.6
8:50AM	2.4	0.6
9:20AM	2.4	0.6
9:50AM	2.4	0.6
10:20AM	2.5	0.6
12:00PM	1.5	0.6
12:30PM	1.5	0.6
1:00PM	1.6	0.6
1:30PM	1.6	0.6
2:00PM	1.7	0.6
2:40PM	1.7	0.6
3:10PM	1.8	0.6
3:32PM	1.8	0.6
4:02PM	1.8	0.6
4:32PM	1.8	0.6

Time	Differential Pressure (inches w.c.)	
	Primary	HEPA
7/30/2025		
6:25AM	2.1	0.6
6:55AM	2.1	0.6
7:25AM	2.1	0.6
7:55AM	2.1	0.6
8:25AM	2.1	0.6
9:00AM	2.1	0.6
9:30AM	2.1	0.6
10:00AM	2.1	0.6
10:30AM	2.1	0.6
11:00AM	2.1	0.6
11:45AM	2.1	0.6
12:15PM	2.2	0.6
12:45PM	2.1	0.6
1:15PM	2.2	0.6
1:25PM	2.2	0.6
1:45PM	2.2	0.6
2:15PM	2.2	0.6
2:55PM	2.3	0.6
3:25PM	2.3	0.6
3:55PM	2.3	0.6
4:25PM	2.3	0.6
4:55PM	2.5	0.6

Time	Differential Pressure (inches w.c.)	
	Primary	HEPA
7/31/2025		
6:05AM	1.6	0.6
6:35AM	1.8	0.6
7:05AM	1.8	0.6
7:35AM	1.8	0.6
8:05AM	1.8	0.6
8:15AM	1.8	0.6
8:45AM	1.8	0.6
9:15AM	1.8	0.6
9:45AM	1.8	0.6
10:15AM	1.9	0.6
10:42AM	1.8	0.6
11:12AM	1.8	0.6
11:42AM	1.9	0.6
12:00PM	1.9	0.6
12:30PM	1.8	0.6
1:00PM	1.9	0.6
1:30PM	2	0.6
2:00PM	1.9	0.6
2:45PM	2	0.6
3:15PM	2	0.6
3:45PM	2	0.6

Time	Differential Pressure (inches w.c.)	
	Primary	HEPA
8/1/2025		
6:05AM	2.3	0.6
6:35AM	2.3	0.6
6:55AM	2.3	0.6
7:30AM	2.4	0.6
8:00AM	2.4	0.6
8:30AM	2.4	0.6
8:50AM	2.4	0.6
9:15AM	2.4	0.6
9:45AM	2.4	0.6
10:15AM	2.4	0.6
10:45AM	2.4	0.6
11:05AM	2.5	0.6
11:10AM	1.6	0.6
11:40AM	1.6	0.6
12:10PM	1.6	0.6
12:40PM	1.6	0.6
1:10PM	1.7	0.6
1:20PM	1.7	0.6
2:14PM	1.7	0.6
2:34PM	1.6	0.6
2:51PM	1.6	0.6
3:21PM	1.6	0.6
3:51PM	1.7	0.6
4:21PM	1.7	0.6
4:51PM	1.8	0.6

Appendix F - Field Data Sheets

Isokinetic Sampling Cover Sheet

Client:	PCC Structures inc	Pitot Tube Cp:	.840
Facility:	Large parts campus facility	Probe Length (Feet):	3.0
Test Location:	Bag house 8901 inlet	Probe Liner Material:	Glass
Project #:	M253113	Sample Plane:	Hor. or Vert.
Test Method(s):	29	Port Length ("):	4.00
Test Engineer:	Aze	Port Diameter ("):	4.00
Test Technician:	JSC	Port Type:	Nipple
Upstream Diameters:	8.5	Duct Shape:	Circ or Rect.
Downstream Diameters:	20.0	Diameter (Feet):	1.00
# of Ports Sampled:	2	Length (Feet):	-
# of Points per Port:	6	Width (Feet):	-
Source Condition:	Normal Batch Process	Duct Area (Sq. Feet):	0.785
Diluent Model/SN:		Minutes per Point:	40
Mid Gas ID/concentration:	%CO2 %O2	Total Traverse Points:	12
High Gas ID/concentration:	%CO2 %O2	Test Length (Min.):	480
Moisture Balance ID:	S10-7	Train Type:	Hot Box

	R# 1	R# 2	R#
Meter ID:	CM43	CM43	
Pitot ID:	1883	1883	
Filter ID:	N/A	N/A	
Filter Pre-Weight (g):	N/A	N/A	
Nozzle Diameter ("):	.175	.175	
Meter Cal Factor (Y):	.991	.991	
Meter Orifice Setting (DH):	1.826	1.826	
Nozzle Kit ID:	Glass #23	Glass #23	
Individual Nozzle ID:	573	573	
Pre Pitot Leak Check:	0.0 @ 4.3 "H2O	0.0 @ 5.2 "H2O	@ "H2O
Post Pitot Leak Check:	0.0 @ 5.2 "H2O	0.0 @ 6.0 "H2O	@ "H2O
Pre Nozzle Leak Check:	0.000 @ 8 "Hg	0.000 @ 9 "Hg	@ "Hg
Post Nozzle Leak Check:	0.000 @ 12 "Hg	0.000 @ 15 "Hg	@ "Hg
Barometric Pressure, "Hg:	30.02	30.02	
Static Pressure, "H2O:	-5.50	-5.50	
CO2 %:	0	0	
O2 %:	20.90	20.90	

Comments: did since swap at Port change new leak checks

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7-25-25 Test Number: 1
 Client: PCC Structural Ins Test Location: Baghouse 8901 inlet Operator: Aze Test Tech: Am
 Plant: Leak tests cement facility Test Method: 29 Page Number: 1 of 2

Port-Point #	Time	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	Square Root, ΔP	K-Calcs (Optional)		
												K=	x	Theoretical Meter Volume (V _m) ft ³ , per point
1-1	6:20	2.00	233.509	68	72	72	5	250	250	57				
1	6:30	2.00	241.486	65	73	73	5	260	260	57				
1	6:40	2.00	249.484	65	74	74	5	260	260	57				
1	6:50	2.00	257.414	65	75	75	5	260	260	60				
1-2	7:00	2.10	265.527	68	75	75	5	260	260	43				
2	7:10	2.10	273.736	67	76	76	5	260	260	40				
2	7:20	2.10	291.944	66	76	76	5	260	260	40				
2	7:30	2.10	290.197	65	76	76	5	260	260	40				
1-3	7:40	1.90	298.445	65	76	76	5	260	260	40				
3	7:50	1.90	306.284	66	77	77	5	260	260	41				
3	8:00	1.90	314.131	66	77	77	5	260	260	41				
3	8:10	1.90	321.982	68	77	77	5	260	260	44				
1-4	8:20	2.00	329.816	66	77	77	5	260	260	50				
4	8:30	2.00	327.867	67	77	77	5	260	260	53				
4	8:40	2.00	345.512	68	77	77	5	260	260	56				
4	8:50	2.00	353.454	68	78	78	5	260	260	58				
1-5	9:00	1.80	362.006	68	78	78	5	260	260	60				
5	9:10	1.80	365.635	69	79	79	5	260	260	59				
5	9:20	1.80	377.882	70	79	79	5	260	260	66				
5	9:30	1.80	384.937	70	79	79	5	260	260	66				
1-6	9:40	1.70	392.504	71	80	80	5	260	260	64				
6	9:50	1.70	400.209	72	80	80	5	260	260	63				
6	10:00	1.70	407.493	72	81	81	5	260	260	63				
6	10:10	1.70	414.859	73	81	81	5	260	260	62				
	10:20		422.1860											

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7-29-25 Test Number: 1
 Client: PEC Structural Inc Test Location: Baghouse Effol mfo Operator: AZR Test Tech: AM
 Plant: Large Parts Casafactory Test Method: 25 Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	K-Calcs (Optional)		Theoretical Meter Volume, (V _m) ft ³ , total
												Square Root, ΔP	Meter Rate, Cubic Feet/Min.	
2-1	12:00	2.10	2.11	423.271	79	74	74	5	260	260	62			
1	12:10	2.10	2.12	431.469	79	80	80	5	260	260	63			
1	12:20	2.10	2.11	434.673	82	81	81	5	260	260	64			
1	12:30	2.10	2.12	447.862	80	82	82	5	260	260	64			
2-2	12:40	1.80	1.82	456.887	80	83	83	5	260	260	50			
2	12:50	1.80	1.82	463.713	80	84	84	5	260	260	49			
2.3	13:00	1.90	1.83	471.346	79	85	85	5	260	260	50			
3	13:10	1.80	1.81	475.088	83	85	85	5	260	260	55			
2-4	13:20	1.90	1.91	486.637	85	86	86	5	260	260	60			
4	13:30	1.90	1.92	494.475	85	87	87	5	260	260	61			
2-5	13:40			502.337										
2-5	13:50	1.80	1.82	502.831	84	87	87	5	260	260	62			
2-5	14:00	1.80	1.82	509.970	84	87	87	5	260	260	64			
6	14:10	1.90	1.92	517.642	85	88	88	5	260	260	63			
6	14:20	1.90	1.92	525.513	85	88	88	5	260	260	63			
2-6	14:30			533.381										
-6	14:40	1.90	1.91	533.381	80	89	89	5	260	260	64			
-6	14:50	1.90	1.90	541.253	90	89	89	5	260	260	61			
-5	15:00	2.00	2.02	549.077	87	90	90	5	260	260	58			
-5	15:10	2.00	2.02	557.184	88	90	90	5	260	260	56			
2-7	15:20			565.272										
-7	15:32	1.80	1.82	565.272	88	91	91	5	260	260	60			
-7	15:42	1.80	1.82	572.561	88	91	91	5	260	260	61			
-3	15:52	1.70	1.72	580.649	87	91	91	5	260	260	63			
-3	16:07	1.70	1.72	588.116	87	91	91	5	260	260	64			
-2	16:12	1.70	1.72	595.591	88	92	92	5	260	260	65			
-2	16:22	1.70	1.72	603.067	88	92	92	5	260	260	67			
-2	16:32	1.70	1.72	610.534										

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7-30-25 Test Number: 2
 Client: PCC Structural Inc Test Location: Baghouse Ep901 inc Operator: AM Test Tech: AM
 Plant: Large Parts Campus Test Method: 29 Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	Square Root, ΔP	K-Calcs (Optional)		Theoretical Meter Volume, (V _m) ft ³ , total
													K=	x	
1-1	6:25	1.80	1.83	610.971	67	72	72	5	260	260	52				
1	6:25	1.80	1.83	618.488	67	72	72	5	260	260	43				
1	6:45	1.80	1.82	626.056	67	73	73	5	260	260	48				
1	6:55	1.80	1.83	633.642	68	74	74	5	260	260	43				
1-2	7:05	1.76	1.73	641.237	68	75	75	5	260	260	49				
2	7:15	1.70	1.73	646.624	68	76	76	5	260	260	50				
2	7:25	1.70	1.74	656.034	68	77	77	5	260	260	51				
2	7:35	1.70	1.74	663.486	68	77	77	5	260	260	52				
1-3	7:45	1.90	1.94	670.873	69	77	77	5	260	260	53				
3	7:55	1.90	1.94	678.708	69	78	78	5	260	260	54				
3	8:05	1.90	1.94	686.554	69	78	78	5	260	260	54				
3	8:15	1.90	1.94	694.407	69	78	78	5	260	260	55				
4	8:25			702.253											
4	9:00	1.80	1.84	702.253	70	78	78	5	260	260	57				
4	9:10	1.80	1.84	709.894	71	79	79	5	260	260	60				
4	9:20	1.80	1.84	717.536	71	79	79	5	260	260	61				
4	9:30	1.80	1.84	725.179	71	80	80	5	260	260	61				
5	9:40	1.80	1.84	732.837	71	80	80	5	260	260	61				
5	9:50	1.80	1.84	740.483	71	80	80	5	260	260	62				
5	10:00	1.80	1.84	748.145	72	81	81	5	260	260	63				
5	10:10	1.80	1.84	755.810	72	81	81	5	260	260	63				
5	10:20	2.00	2.04	763.467	73	81	81	5	260	260	63				
6	10:30	2.00	2.04	771.533	73	81	81	5	260	260	64				
6	10:40	2.00	2.04	779.608	73	81	81	5	260	260	63				
6	10:50	2.00	2.04	787.675	73	81	81	5	260	260	60				
	11:00			795.743											

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7.30.25 Test Number: 2
 Client: PC Structures inc Test Location: Byhouse 890 (inc) Operator: AKK Test Tech: AKK
 Plant: Large Plants complex facility Test Method: ZR Page Number: 2 of 2

Port-Point #	Time	Time (ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	Square Root, ΔP	K-Calcs (Optional)		
													K=	x	Theoretical Meter Volume, (V _m) ft ³ , per point
2-1	11:45	1.70	1.70	796.371	81	79	79	5	260	260	58				
1	11:55	1.70	1.72	803.757	76	79	79	5	260	260	58				
1	12:05	1.70	1.72	811.126	77	80	80	5	260	260	60				
1	12:15	1.70	1.72	819.524	77	81	81	5	260	260	62				
2-2	12:25	1.80	1.82	825.938	78	82	82	5	260	260	63				
2	12:35	1.80	1.82	833.829	78	83	83	5	260	260	64				
2	12:45	1.80	1.82	841.716	78	83	83	5	260	260	65				
2	12:55	1.80	1.82	849.607	79	84	84	5	260	260	66				
2-3	13:05	2.00	2.03	856.519	79	84	84	5	260	260	66				
3	13:15	2.00	2.03	864.588	79	84	84	5	260	260	67				
3	13:25	2.00	2.03	872.653	80	84	84	5	260	260	67				
3	13:45	2.00	2.02	880.726	80	84	84	5	260	260	67				
3	13:55	2.00	2.02	888.783	80	84	84	5	260	260	67				
2-4	14:05	1.90	1.92	896.645	80	84	84	5	260	260	67				
4	14:15	1.90	1.92	896.645	80	84	84	5	260	260	67				
4	14:55	1.90	1.92	904.514	81	85	85	5	260	260	67				
4	15:05	1.90	1.93	912.376	81	86	86	5	260	260	67				
4	15:15	1.90	1.93	920.253	81	86	86	5	260	260	67				
2-5	15:25	1.90	1.93	928.137	81	86	86	5	260	260	67				
5	15:35	1.90	1.93	936.011	82	87	87	5	260	260	67				
5	15:45	1.90	1.93	943.898	82	87	87	5	260	260	67				
5	15:55	1.90	1.93	951.782	82	87	87	5	260	260	67				
2-6	16:05	2.00	2.03	959.673	81	87	87	5	260	260	67				
6	16:15	2.00	2.03	967.565	81	88	88	5	260	260	67				
6	16:25	2.00	2.03	975.458	81	88	88	5	260	260	67				
6	16:35	2.00	2.03	983.351	81	88	88	5	260	260	67				
6	16:45	2.00	2.03	991.244	81	88	88	5	260	260	67				

Isokinetic Sampling Cover Sheet

Client:	pk structures, inc	Pitot Tube Cp:	0.840
Facility:	large campus pants facility	Probe Length (Feet):	3.0
Test Location:	bag house 8901 inlet	Probe Liner Material:	g1-53
Project #:	M25-3113	Sample Plane:	Horiz. or Vert.
Test Method(s):	0061	Port Length ("):	4.0
Test Engineer:	JSL	Port Diameter ("):	4.0
Test Technician:	ASM	Port Type:	n:ppk
Upstream Diameters:	8.5	Duct Shape:	Circ or Rect.
Downstream Diameters:	20.0	Diameter (Feet):	1.0 0.785
# of Ports Sampled:	2	Length (Feet):	—
# of Points per Port:	6	Width (Feet):	—
Source Condition:	batch process	Duct Area (Sq. Feet):	0.785
Diluent Model/SN:		Minutes per Point:	40
Mid Gas ID/concentration:	1%CO2 %O2	Total Traverse Points:	12
High Gas ID/concentration:	1%CO2 %O2	Test Length (Min.):	480
Moisture Balance ID:	S10-7	Train Type:	0061

7129 JL

R# 1

R# 2

R#

Meter ID:	CM53	CM53	
Pitot ID:	025	025	
Filter ID:	—	—	
Filter Pre-Weight (g):	—	—	
Nozzle Diameter ("):	0.177	0.177	
Meter Cal Factor (Y):	1.006	1.006	
Meter Orifice Setting (DH):	1.829	1.829	
Nozzle Kit ID:	g1253 23	g1253 23	
Individual Nozzle ID:	799	799	
Pre Pitot Leak Check:	0.0 @ 4.1 "H2O	0.0 @ 3.5 "H2O	@ "H2O
Post Pitot Leak Check:	0.0 @ 3.7 "H2O	0.0 @ 3.7 "H2O	@ "H2O
Pre Nozzle Leak Check:	0.0020 @ 13 "Hg	0.0020 @ 14 "Hg	@ "Hg
Post Nozzle Leak Check:	0.0020 @ 11 "Hg	0.0000 @ 11 "Hg	@ "Hg
Barometric Pressure, "Hg:	30.02	29.95	
Static Pressure, "H2O:	-5.50	-5.50	
CO2 %:			
O2 %:			

Comments: leak checked w/ port change

passed at 15:20:00 to add ^{100ml} and leak check

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/22/2025 Test Number:
 Client: PLC Materials, Inc. Test Location: Large Bags 8901 Miller Operator:
 Plant: Large Bags Impvs facility mil warkic OK Test Method: DOB1 Page Number: 1 of 2
 Test Tech: CSM

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	K-Calcs (Optional)		
												Square Root, ΔP	Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point
1-1	6:20:00	1.90	2.04	627.750	66	75	73	4			53			
1-1	6:30:00	1.90	2.04	635.630	65	76	76	4			53			
1-1	6:40:00	1.90	2.05	643.553	65	78	76	4			57			
1-1	6:50:00	1.90	2.05	651.415	65	79	79	4			58			
1-2	7:00:00	1.86	2.00	659.412	66	80	60	4			59			
1-2	7:10:00	1.85	2.00	667.260	64	81	81	5			60			
1-2	7:20:00	1.85	2.00	675.108	66	82	81	5			60			
1-2	7:30:00	1.85	2.00	682.971	67	82	82	5			60			
1-3	7:40:00	2.00	2.17	690.842	66	83	83	5			59			
1-3	7:50:00	2.00	2.17	699.407	68	83	83	5			59			
1-3	8:00:00	2.00	2.17	707.258	68	83	83	5			59			
1-3	8:10:00	2.00	2.16	715.428	70	84	84	5			60			
1-4	8:20:00	1.80	1.95	723.618	64	84	84	5			60			
1-4	8:30:00	1.80	1.95	731.402	68	84	84	5			60			
1-4	8:40:00	1.80	1.95	739.147	69	84	84	5			60			
1-4	8:50:00	1.80	1.95	746.944	69	85	85	5			60			
1-5	9:00:00	1.75	1.90	754.755	70	85	85	5			60			
1-5	9:10:00	1.75	1.90	762.430	69	85	85	5			60			
1-5	9:20:00	1.75	1.90	770.112	71	86	86	5			60			
1-5	9:30:00	1.75	1.90	777.794	71	86	86	5			60			
1-6	9:40:00	1.70	1.83	785.416	73	86	86	5			60			
1-6	9:50:00	1.70	1.83	793.033	74	87	87	5			60			
1-6	10:00:00	1.70	1.83	800.597	74	87	87	5			60			
1-6	10:10:00	1.70	1.83	808.161	74	87	87	5			60			
1-6	10:20:00	1.70	1.83	815.725	74	87	87	5			60			
2-1	16:00:00	2.00	2.13	417.353	78	85	85	5			66			
2-1	16:10:00	2.00	2.13	425.101	79	84	84	6			63			
2-1	16:20:00	2.00	2.11	432.516	83	84	84	6			65			
2-1	16:30:00	2.00	2.13	440.609	80	85	85	7			65			
2-6	12:40:00	1.80	2.91	449.734	81	86	86	7			61			

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/12/15 Test Number: _____
 Client: CCC Structures, LLC Test Location: Long House 8901 minor Operator: _____
 Plant: Long House 8901 Test Method: ISO 1 Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	Square Root, ΔP	K-Calcs (Optional)	
													K= Meter Rate, Cubic Feet/Min.	x Theoretical Meter Volume, (V _m) ft ³ , per point
Z-2	12:50:00	2.80	1.91	457.457	81	86	86	7			61			
Z-3	13:00:00	1.70	1.41	465.175	81	87	87	7			56			
Z-2	13:10:00	1.70	1.50	612.690	86	86	86	7			57			
Z-4	13:20:00	1.50	1.91	440.144	85	89	89	7			55			
Z-4	13:30:00	1.40	1.92	887.916	89	91	91	7			57			
Z-5	13:40:00			495.654										
Z-5	13:50:00	1.70	1.82	495.654	84	92	92	7			59			
Z-5	14:00:00	1.70	1.82	903.247	84	92	92	7			55			
Z-6	14:10:00	1.85	1.97	910.809	86	92	92	7			56			
Z-6	14:20:00	1.85	1.97	96.654	85	92	92	7			56			
Z-6	14:30:00			926.556										
Z-6	14:40:00	1.95	1.96	926.556	90	92	92	7			57			
Z-6	14:50:00	1.45	1.95	934.402	91	93	93	7			56			
Z-5	15:00:00	1.85	1.97	942.241	87	94	94	7			57			
Z-5	15:10:00	1.85	1.97	950.151	88	95	95	7			57			
Z-5	15:20:00			958.054										
Z-4	15:30:00	1.90	2.02	958.054	88	94	94	7			59			
Z-4	15:40:00	1.90	2.03	966.872	86	95	95	7			57			
Z-3	15:50:00	1.60	1.92	974.881	86	95	95	7			57			
Z-3	16:00:00	1.40	1.94	982.676	88	95	95	7			57			
Z-2	16:10:00	1.80	1.92	990.472	88	95	95	7			57			
Z-2	16:20:00	1.80	1.92	998.267	84	95	95	7			57			
Z-2	16:30:00			1006.063										

Isokinetic Sampling Field Data Sheet

Project Number: M253117 Date: 7/30/25 Test Number: 2
 Client: PCB Structures, Inc. Test Location: Big house 8901 mile/Operator.
 Plant: Large Parts Campus A: 144 Milwaukee WI Test Method: DOGI Page Number: 1 of 2
 JSL Test Tech: AMS

Port-Point #	Time (ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	K-Calcs (Optional)		
											Square Root, ΔP	K= Meter Rate, Cubic Feet/Min.	x Theoretical Meter Volume, (V _m) ft ³ , per point
1-1	6:25:00	1.90	6.447	69	72	72	4			50			
1-1	6:35:00	1.80	14.461	69	72	72	4			45			
1-1	6:45:00	1.80	22.075	67	73	73	5			44			
1-1	6:55:00	1.60	29.704	69	73	73	5			43			
1-2	7:05:00	1.70	37.332	70	74	74	5			44			
1-2	7:15:00	1.70	44.753	70	75	75	5			44			
1-2	7:25:00	1.70	52.197	70	76	76	5			44			
1-2	7:35:00	1.70	59.635	70	76	76	5			44			
1-3	7:45:00	2.00	67.084	70	77	77	5			45			
1-3	7:55:00	2.00	75.174	70	77	77	5			44			
1-3	8:05:00	2.00	83.271	70	79	79	5			45			
1-3	8:15:00	2.00	91.395	70	79	79	5			45			
	8:25:00		99.579										
1-4	9:00:00	1.80	27.519	72	79	79	5			46			
1-4	9:10:00	1.60	107.212	72	79	79	5			44			
1-4	9:20:00	1.40	114.904	72	80	80	5			45			
1-4	9:30:00	1.50	122.611	72	81	81	5			47			
1-5	9:40:00	1.75	130.322	72	81	81	5			46			
1-5	9:50:00	1.75	137.945	72	82	82	5			46			
1-5	10:00:00	1.75	145.573	72	81	81	5			46			
1-5	10:10:00	1.75	153.186	75	82	82	5			47			
1-6	10:20:00	1.90	160.791	74	82	82	5			47			
1-6	10:30:00	1.90	168.114	75	83	83	5			48			
1-6	10:40:00	1.90	176.664	74	84	84	5			47			
1-6	10:50:00	1.90	184.625	74	83	83	5			46			
	11:00:00		192.572										
2-1	11:45:00	1.60	194.936	79	82	82	5			50			
2-1	11:55:00	1.60	202.176	77	83	83	5			49			
2-1	12:05:00	1.60	209.451	77	83	83	5			51			
2-1	12:15:00	1.60	216.723	77	85	85	5			50			

Isokinetic Sampling Cover Sheet

Client:	PLC Structures	Pitot Tube Cp:	0.840
Facility:	Large ports campus facility OR	Probe Length (Feet):	3
Test Location:	Bag house 8901 inlet	Probe Liner Material:	glass
Project #:	M253113	Sample Plane:	Horizl or Vert
Test Method(s):	5	Port Length ("):	4
Test Engineer:	JSK	Port Diameter ("):	4
Test Technician:	AEIR	Port Type:	Apple
Upstream Diameters:	4.5	Duct Shape:	Circ or Rect
Downstream Diameters:	20.0	Diameter (Feet):	1.00
# of Ports Sampled:	2	Length (Feet):	—
# of Points per Port:	6	Width (Feet):	—
Source Condition:	batch process	Duct Area (Sq. Feet):	0.785
Diluent Model/SN:		Minutes per Point:	40
Mid Gas ID/concentration:	1%CO2 %O2	Total Traverse Points:	12
High Gas ID/concentration:	1%CO2 %O2	Test Length (Min.):	480
Moisture Balance ID:	S10-7	Train Type:	hot box

R# 1

R# 2

R# _____

	R# <u>1</u>	R# <u>2</u>	R# _____
Meter ID:	CM 43	CM 43	
Pitot ID:	1483	1483	
Filter ID:	22792	22721	
Filter Pre-Weight (g):	0.45057	0.47634	
Nozzle Diameter ("):	0.177	0.177	
Meter Cal Factor (Y):	0.991	0.991	
Meter Orifice Setting (DH):	1.826	1.826	
Nozzle Kit ID:	glass #23	glass #23	
Individual Nozzle ID:	799	799	
Pre Pitot Leak Check:	0.0 @ 3.8 "H2O	0.0 @ 3.5 "H2O	@ "H2O
Post Pitot Leak Check:	0.0 @ 4.0 "H2O	0.0 @ 4.1 "H2O	@ "H2O
Pre Nozzle Leak Check:	0.0080 @ 17 "Hg	0.0000 @ 15 "Hg	@ "Hg
Post Nozzle Leak Check:	0.0000 @ 17 "Hg	0.0010 @ 13 "Hg	@ "Hg
Barometric Pressure, "Hg:	29.92	30.01	
Static Pressure, "H2O:	-5.50	-5.50	
CO2 %:			
O2 %:			

Comments: leaks checked at port change run 1 leak checked at port change run 2

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/31/25 Test Number: 1
 Client: PCC Structures Test Location: 629 hawc 9901 imh Operator: Test Tech: AEIR
 Plant: large pump compress facility Test Method: 5 Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	Square Root, ΔP	K-Calcs (Optional)	
													Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point
1-1	6:05:00	1.90	2.01	984.843	67	69	69	2	260	260	59			
1-1	6:15:00	1.90	1.99	992.748	71	69	69	2	260	260	61			
1-1	6:25:00	1.90	2.01	1000.634	64	70	70	2	260	260	58			
1-1	6:35:00	1.90	2.01	1008.557	67	71	71	2	260	260	57			
1-2	6:45:00	1.80	1.91	1016.502	66	72	72	2	260	260	57			
1-2	6:55:00	1.80	1.92	1024.257	66	73	73	2	260	260	54			
1-2	7:05:00	1.80	1.92	1032.027	66	74	74	2	260	260	58			
1-2	7:15:00	1.80	1.92	1039.811	66	75	75	2	260	260	55			
1-3	7:25:00	2.00	2.04	1047.610	66	76	76	2	260	260	54			
1-3	7:35:00	2.00	2.14	1055.431	66	76	76	2	260	260	56			
1-3	7:45:00	2.00	2.14	1064.068	66	76	76	2	260	260	56			
1-3	7:55:00	2.00	2.15	1072.304	66	77	77	2	260	260	57			
	8:05:00			1080.555										
1-4	8:15:00	1.90	2.04	1080.535	66	77	77	2	260	260	50			
1-4	8:25:00	1.90	2.04	1088.594	66	76	76	2	260	260	52			
1-4	8:35:00	1.90	2.04	1096.625	67	77	77	2	260	260	53			
1-4	8:45:00	1.90	2.04	1104.660	67	77	77	2	260	260	54			
1-5	8:55:00	1.75	1.77	1112.695	67	77	77	2	260	260	57			
1-5	9:05:00	1.75	1.87	1120.407	64	77	77	2	260	260	57			
1-5	9:15:00	1.75	1.87	1128.111	68	77	77	2	260	260	60			
1-5	9:25:00	1.75	1.87	1135.815	68	77	77	2	260	260	58			
1-6	9:35:00	1.80	1.93	1143.519	68	78	78	2	260	260	59			
1-6	9:45:00	1.80	1.93	1151.347	69	78	78	2	260	260	58			
1-6	9:55:00	1.80	1.92	1159.175	69	78	78	2	260	260	60			
1-6	10:05:00	1.80	1.92	1166.995	69	78	78	2	260	260	60			
	10:15:00			1174.816										
2-1	10:42:00	1.70	1.81	1175.315	71	77	77	2	260	260	56			
2-1	10:52:00	1.70	1.81	1182.647	71	77	77	2	260	260	56			
2-1	11:02:00	1.70	1.81	1190.454	71	74	74	2	260	260	58			
2-1	11:12:00	1.70	1.78	1198.044	71	78	78	2	260	260	60			

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/31/25 Test Number: 1
 Client: PLC Structures Test Location: baghouse 8901 MAT Operator: AEIR
 Plant: large parts area facility Test Method: 5 Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	Square Root, ΔP	K-Calcs (Optional)		Theoretical Meter Volume, (V _m) ft ³ , total
													K=	x	
Z-2	11:22:00	1.60	1.91	1205.586	73	79	79	2	260	260	62				
Z-2	11:39:00	1.50	1.91	1213.393	73	79	79	2	260	260	62				
Z-2	11:42:00			1221.199											
Z-2	12:05:00	1.40	1.92	1221.179	72	79	79	2	260	260	54				
Z-2	12:10:00	1.42	1.92	1229.012	72	79	79	2	260	260	50				
Z-3	12:10:00	1.90	2.02	1236.825	72	79	79	2	260	260	47				
Z-3	12:30:00	1.70	2.02	1244.452	75	80	80	2	260	260	49				
Z-3	12:40:00	1.90	2.02	1252.471	73	79	79	2	260	260	48				
Z-3	12:50:00	1.90	2.02	1260.490	73	80	80	2	260	260	47				
Z-4	13:00:00	1.80	1.91	1266.925	73	79	79	2	260	260	48				
Z-4	13:10:00	1.80	1.91	1276.730	73	79	79	2	260	260	47				
Z-4	13:20:00	1.70	1.91	1284.536	74	80	80	2	260	260	47				
Z-4	13:30:00	1.40	1.91	1292.349	74	80	80	2	260	260	46				
Z-5	13:40:00	1.90	2.02	1300.161	74	81	81	2	260	260	46				
Z-5	13:50:00	1.90	2.02	1308.203	74	81	81	2	260	260	46				
Z-5	14:00:00			1316.245											
Z-5	14:05:00	1.90	2.02	1316.245	75	81	81	2	260	260	49				
Z-5	14:55:00	1.90	2.02	1324.279	76	81	81	2	260	260	42				
Z-6	15:05:00	1.75	1.85	1332.306	76	82	82	2	260	260	43				
Z-6	15:15:00	1.75	1.86	1340.009	78	83	83	2	260	260	42				
Z-6	15:25:00	1.75	1.86	1347.726	78	84	84	2	260	260	42				
Z-6	15:35:00	1.75	1.86	1355.458	74	84	84	2	260	260	42				
				1363.190											

Isokinetic Sampling Field Data Sheet

2

Project Number: M753113 Date: 8/1/2025 Test Number: _____
 Client: PIC STRUHLAND Test Location: bag house 9th inlet Operator: _____
 Plant: LINE PAPER COMPANY FACILITY Test Method: _____ Page Number: _____
JSL Test Tech: AETR
 _____ of _____

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	K-Calcs (Optional)		
												Square Root, ΔP	Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point
1-1	6:05:00	2.00	2.09	316.702	70	67	67	2	260	260	53			
1-1	6:15:00	2.00	2.10	374.769	68	67	67	2	260	260	56			
1-1	6:25:00	2.00	2.11	362.582	66	68	64	2	260	260	58			
1-1	6:35:00	2.00	2.11	370.965	66	69	69	2	260	260	58			
1-2	6:45:00	1.90	2.01	399.091	61	70	70	2	260	260	58			
1-2	6:55:00			407.032										
1-2	7:05:00	1.90	2.02	407.032	65	72	72	2	260	260	46			
1-2	7:10:00	1.90	2.02	415.007	67	72	72	2	260	260	45			
1-2	7:20:00	1.90	2.02	422.964	66	73	73	2	260	260	47			
1-3	8:00:00	2.00	2.13	430.950	66	74	74	2	260	260	47			
1-3	8:10:00	2.00	2.13	439.156	67	74	74	2	260	260	48			
1-3	8:20:00	2.00	2.13	447.354	67	74	74	2	260	260	48			
1-3	8:30:00	2.00	2.13	455.551	67	75	75	2	260	260	49			
1-4	8:40:00	1.85	1.97	463.764	67	75	75	2	260	260	47			
1-4	8:50:00			471.663										
1-4	9:00:00	1.85	1.97	471.663	67	74	74	2	260	260	44			
1-4	9:10:00	1.85	1.97	479.547	69	75	75	2	260	260	45			
1-4	9:20:00	1.85	1.97	487.431	68	76	76	2	260	260	47			
1-5	9:30:00	1.70	1.81	495.334	69	76	76	2	260	260	46			
1-5	9:40:00	1.70	1.81	502.910	69	77	77	2	260	260	46			
1-5	9:50:00	1.70	1.81	510.496	70	77	77	2	260	260	45			
1-5	10:00:00	1.70	1.81	518.075	70	77	77	2	260	260	46			
1-6	10:10:00	1.75	1.87	525.653	70	78	78	2	260	260	47			
1-6	10:20:00	1.75	1.86	533.237	70	78	78	2	260	260	46			
1-6	10:30:00	1.75	1.86	541.054	72	78	78	2	260	260	45			
1-6	10:40:00	1.75	1.85	548.750	75	78	74	2	260	260	45			
1-6	10:50:00			556.446										
2-1	11:00:00	1.90	2.02	557.058	73	79	79	2	260	260	47			
2-1	11:10:00	1.90	2.02	565.071	74	79	79	2	260	260	46			
2-1	11:20:00	1.90	2.02	573.089	73	80	80	2	260	260	48			

JL
8/1

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 4/1/2025 Test Number: 2
 Client: PLC Structures Test Location: by house 4901 n14 Operator: AEIP
 Plant: 1416 parts campus facility Test Method: 5 Page Number: 2 of 2

Port-Point #	Time	Time (ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	K-Calcs (Optional)		
												Square Root, ΔP	Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point
2-1	11:40:00			581.124	82	74	74	2	260	260	54			
2-2	12:10:00	1.90	1.94	581.174	82	74	74	2	260	260	49			
2-2	12:20:00	2.00	2.11	589.062	76	74	74	2	260	260	49			
2-2	12:30:00	2.00	2.11	597.251	77	79	79	2	260	260	50			
2-2	12:40:00	2.00	2.11	605.440	77	79	79	2	260	260	50			
2-2	12:50:00	2.00	2.11	613.645	74	80	80	2	260	260	51			
2-3	13:00:00	1.40	1.90	621.450	74	81	81	2	260	260	51			
2-3	13:10:00	1.40	1.91	629.646	74	82	82	2	260	260	51			
2-3	13:20:00			637.461										
2-3	14:14:00	1.40	1.70	637.461	80	81	81	2	260	260	55			
2-3	14:24:00	1.40	1.90	645.205	81	81	81	2	260	260	49			
	14:34:00			653.021										
2-4	14:51:00	1.75	1.84	653.021	81	82	82	2	260	260	55			
2-4	15:01:00	1.75	1.84	662.703	82	83	83	2	260	260	57			
2-4	15:11:00	1.75	1.84	674.392	82	83	83	2	260	260	57			
2-4	15:21:00	1.75	1.84	676.780	82	84	84	2	260	260	52			
2-5	15:31:00	1.65	1.95	683.743	82	84	84	2	260	260	52			
2-5	15:41:00	1.95	1.94	691.704	86	85	85	2	260	260	53			
2-5	15:51:00	1.65	1.93	699.909	49	85	85	2	260	260	53			
2-5	16:01:00	1.45	1.93	707.437	69	85	85	2	260	260	53			
2-6	16:11:00	1.70	1.79	715.377	86	86	86	2	260	260	54			
2-6	16:21:00	1.70	1.80	722.969	44	87	87	2	260	260	53			
2-6	16:31:00	1.70	1.79	730.562	81	86	86	2	260	260	56			
2-6	16:41:00	1.70	1.80	734.029	84	87	87	2	260	260	52			
				745.879										

Isokinetic Sampling Cover Sheet

Client:	PCU STRUCTURALS, INC.	Pitot Tube Cp:	0.840
Facility:	LARGE PARTS CAMPUS FACILITY	Probe Length (Feet):	3.0
Test Location:	BAG HOUSE 8901 INLET	Probe Liner Material:	GLASS
Project #:	M253113	Sample Plane:	Hztl. or Vert.
Test Method(s):	29	Port Length ("):	3.00
Test Engineer:	DV	Port Diameter ("):	3.00
Test Technician:	PICHS	Port Type:	NIPPLE
Upstream Diameters:	3.0	Duct Shape:	Circ. or Rect.
Downstream Diameters:	3.0	Diameter (Feet):	1.00
# of Ports Sampled:	2	Length (Feet):	
# of Points per Port:	12	Width (Feet):	
Source Condition:	BATCH PROCESS	Duct Area (Sq. Feet):	0.785
Diluent Model/SN:		Minutes per Point:	20
Mid Gas ID/concentration:	%CO2 %O2	Total Traverse Points:	24
High Gas ID/concentration:	%CO2 %O2	Test Length (Min.):	480
Moisture Balance ID:	S10-7	Train Type:	ANDERSON BOX

	R# 1	R#	R#
Meter ID:	CM7	CM7	
Pitot ID:	4032	4032	
Filter ID:			
Filter Pre-Weight (g):			
Nozzle Diameter ("):	0.175	0.175	
Meter Cal Factor (Y):	1.016	1.016	
Meter Orifice Setting (DH):	1.509	1.509	
Nozzle Kit ID:	GLASS SET #1	GLASS SET #01	
Individual Nozzle ID:	#23	#23	
Pre Pitot Leak Check:	0.0 @ 4.5 "H2O	0.0 @ 4.0 "H2O	@ "H2O
Post Pitot Leak Check:	0.0 @ 48 "H2O	0.0 @ 4.3 "H2O	@ "H2O
Pre Nozzle Leak Check:	0.000 @ 15 "Hg	0.000 @ 15 "Hg	@ "Hg
Post Nozzle Leak Check:	0.000 @ 15 "Hg	0.000 @ 16 "Hg	@ "Hg
Barometric Pressure, "Hg:	29.9	29.9	
Static Pressure, "H2O:	2.2	2.2	
CO2 %:			
O2 %:			

Comments: LEAK CHECK DURING PORT CHANGE R1-R2

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/29/2025 Test Number: 1
 Client: PEC SERVICES INC Test Location: BAGHOUSE 8901 OUTLET Operator: RICH
 Plant: CAMPBELL'S CAMPUS FACILITY Test Method: M29 Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	K-Calcs (Optional)		
												Square Root, ΔP	K= Meter Rate, Cubic Feet/Min.	x Theoretical Meter Volume, (V _m) ft ³ , per point
1-1	6:20	1.10	0.92	322.735	68	64	62	5	249	249	62			
1-1	6:30	1.10	0.92	328.454	68	64	62	5	250	251	62			
1-2	6:40	1.00	0.84	334.172	68	66	62	4	249	251	61			
1-2	6:50	1.00	0.84	339.634	69	67	62	4	250	250	61			
1-3	7:00	1.10	0.93	345.097	69	75	64	3	250	250	60			
1-3	7:10	1.10	0.93	350.880	70	71	65	3	251	249	60			
1-4	7:20	1.20	1.02	356.042	70	74	67	3	250	250	61			
1-4	7:30	1.20	1.02	362.888	70	74	68	3	250	250	61			
1-5	7:40	1.40	1.19	368.741	71	75	69	4	252	250	60			
1-5	7:50	1.40	1.19	375.284	72	76	69	4	249	250	59			
1-6	8:00	2.20	1.87	381.827	72	77	71	3	251	250	58			
1-6	8:10	2.20	1.87	390.052	73	78	72	3	250	249	58			
1-7	8:20	2.00	1.71	398.285	72	80	73	4	252	250	58			
1-7	8:30	2.00	1.71	406.165	73	82	75	3	252	250	58			
1-8	8:40	1.40	1.20	414.066	73	82	75	3	253	249	58			
1-8	8:50	1.40	1.19	420.677	74	82	76	3	249	251	58			
1-9	9:00	1.20	1.03	427.267	74	84	77	3	248	250	60			
1-9	9:10	1.20	1.03	433.425	74	84	78	3	251	250	60			
1-10	9:20	1.10	0.94	439.568	75	84	78	3	250	251	61			
1-10	9:30	1.10	0.95	445.444	76	84	78	3	249	250	62			
1-11	9:40	1.00	0.85	451.868	77	85	80	3	249	251	62			
1-11	9:50	1.00	0.85	458.976	78	86	81	3	252	251	62			
1-12	10:00	1.00	0.86	462.589	79	87	82	3	251	251	63			
1-12	10:10	1.00	0.86	468.212	79	90	82	3	249	250	62			
1-12	10:20			473.845										
2-1	12:00	1.20	1.02	477.625	84	86	86	3	249	250	60			
2-1	12:10	1.20	1.02	483.769	84	89	86	3	249	250	57			
2-2	12:20	1.10	0.93	489.928	86	90	87	3	250	251	56			
2-2	12:30	1.10	0.94	495.825	86	93	88	3	251	250	57			
2-3	12:40	2.00	1.71	501.744	86	94	91	3	249	250	58			

Isokinetic Sampling Field Data Sheet

Project Number: M253113

Date: 7/29/2025

Test Number: 1

Client: REC'D FAVORABLES INC

Test Location: BAYHOUSE 8901 OUTLET

Operator: DK

Test Tech: RICH S

Plant: LARSEN PAPER CORP FACILITY

Test Method: M29

Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	K-Calcs (Optional)		
												Square Root, ΔP	Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point
2-4	1250	2.00	1.71	509.753	89	97	92	3	250	248	60			
2-5	1300	2.00	1.72	517.770	86	97	93	3	250	252	60			
2-6	1310	2.20	1.89	525.816	87	99	94	3	248	250	61			
2-7	1320	2.20	1.88	534.269	91	100	95	3	253	250	61			
2-8	1330	2.00	1.72	542.707	90	102	97	3	251	250	64			
2-9	1340			550.789										
2-9	1350	1.50	1.29	550.789	91	102	98	3	248	251	64			
2-10	1400	1.50	1.29	557.789	91	103	98	3	250	252	63			
2-11	1410	1.50	1.30	564.774	93	105	100	3	248	249	62			
2-12	1420	1.50	1.29	571.823	93	106	101	3	250	249	63			
2-12	1430			578.841										
2-12	1440	1.60	1.36	578.841	97	103	101	3	250	249	56			
2-10	1450	1.60	1.37	586.057	96	103	100	3	252	248	58			
2-10	1500	1.50	1.28	593.272	96	105	101	3	250	250	60			
2-9	1510	2.00	1.72	600.276	95	107	101	3	251	249	60			
2-8	1520	2.00		608.386	95	108	103	3	250	250	62			
2-8	1532	2.00	1.72	608.386	95	108	103	3	250	250	62			
2-7	1542	2.00	1.72	615.518	95	109	103	3	250	249	56			
2-6	1552	1.80	1.55	624.657	95	110	103	3	250	251	55			
2-5	1602	1.60	1.38	632.885	95	112	104	3	249	250	56			
2-4	1612	1.50	1.30	639.690	96	112	105	3	250	249	57			
2-3	1622	1.50	1.30	646.703	96	111	105	3	250	252	57			
	1632			653.809										

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 9/30/2025 Test Number: 2
 Client: Pro Structures Inc Test Location: Baghouse 8901 Outhouse Operator: PV Test Tech: Rich
 Plant: LARGE PAPERS CAMPAUS FACILITY Test Method: 1029 Page Number: 1 of 2

Port-Point #	Time	Time (ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	K-Calcs (Optional)		
												Square Root, ΔP	K= Meter Rate, Cubic Feet/Min.	X Theoretical Meter Volume, (V _m) ft ³ , per point
1-1	625	1.50	1.25	656.910	73	64	63	3	251	249	41			
1-1	635	1.50	1.25	663.563	73	67	64	3	249	252	44			
1-2	645	1.50	1.26	670.241	73	71	65	3	250	249	45			
1-2	655	1.60	1.34	676.950	73	73	65	3	250	248	44			
1-3	705	1.80	1.51	683.891	74	75	67	3	249	251	46			
1-3	715	1.80	1.52	691.277	73	75	69	3	250	253	42			
1-4	725	1.60	1.35	698.682	75	77	69	3	250	249	43			
1-4	735	1.60	1.35	705.664	74	78	70	3	250	249	43			
1-5	745	2.00	1.69	712.665	74	78	70	3	248	252	43			
1-5	755	2.00	1.71	720.494	74	80	71	3	248	249	45			
1-6	805	2.10	1.78	718.344	75	82	72	3	249	250	43			
1-6	815	2.10	1.79	736.402	75	84	74	3	249	250	46			
1-7	825			744.499										
1-7	900	2.20	1.86	744.499	76	77	75	3	248	249	51			
1-7	910	2.20	1.87	752.725	76	82	76	3	250	250	47			
1-8	920	2.00	1.70	760.997	77	84	77	3	250	251	49			
1-8	930	2.00	1.71	768.898	76	85	77	3	249	251	49			
1-9	940	1.60	1.28	776.814	76	85	77	3	249	251	50			
1-9	950	1.60	1.37	783.669	77	86	78	3	248	250	50			
1-10	1000	1.50	1.20	790.794	78	88	80	3	249	251	52			
1-10	1010	1.50	1.28	797.636	78	89	81	3	252	251	53			
1-11	1020	1.20	1.03	804.524	78	90	82	3	250	250	55			
1-11	1030	1.20	1.03	810.705	79	90	83	3	249	250	55			
1-12	1040	1.60	1.37	816.882	79	88	82	3	250	251	55			
1-12	1050	1.60	1.37	823.995	80	88	82	3	251	248	57			
	1100			831.101										

Isokinetic Sampling Field Data Sheet

Project Number: M253113
 Date: 7/30/2025 Test Number: 2
 Client: PER STRUCTURES INC Test Location: BAGHOUSE #901 OUTLET Operator: RV Test Tech: RJCHS
 Plant: LARGE PAPER CAMPAIS FACILITY Test Method: M29 Page Number: 2 of 2

Port-Point #	Time	(IP)	Orifice Setting (AH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	Square Root, \P	K-Calcs (Optional)		Theoretical Meter Volume, (V _m) ft ³ , total
													K=	X	
2-1	1145	1.50	1.27	831.310	81	84	82	3	249	251	40				
2-1	1155	1.50	1.28	838.160	82	88	84	3	250	251	45				
2-2	1205	1.80	1.54	845.040	82	92	87	3	251	251	44				
2-2	1215	1.80	1.55	852.632	83	96	90	3	250	249	47				
2-3	1225	2.00	1.74	860.258	83	99	92	3	249	252	47				
2-3	1235	2.00	1.75	868.333	83	101	93	3	250	250	48				
2-4	1245	1.80	1.56	876.430	84	100	94	3	251	252	50				
2-4	1255	1.80	1.55	884.105	85	99	93	3	250	250	51				
2-5	1305	1.80	1.56	891.759	85	99	95	3	251	250	49				
2-5	1315	1.80	1.56	899.427	85	99	96	3	252	250	50				
2-6	1325			907.101											
2-6	1345	2.00	1.71	907.101	86	94	92	3	252	251	50				
2-6	1355	2.00	1.71	915.119	86	95	91	3	250	250	50				
2-7	1405	1.80	1.37	923.136	86	95	91	3	251	250	50				
2-7	1415	1.60		930.306											
2-7	1455	1.60	1.37	930.306	85	92	89	3	252	250	52				
2-8	1505	1.60	1.37	937.452	86	94	89	3	250	249	59				
2-8	1515	1.50	1.37	944.603	86	94	89	3	250	250	60				
2-9	1525	1.50	1.29	951.527	86	97	90	3	250	248	60				
2-9	1535	1.50	1.29	958.709	86	99	91	3	248	251	61				
2-10	1545	1.40	1.20	965.691	87	101	92	3	253	250	60				
2-10	1555	1.30	1.12	972.414	88	103	95	3	251	250	60				
2-11	1605	1.20	1.03	978.936	88	103	95	3	252	250	62				
2-11	1615	1.20	1.04	985.202	88	104	97	3	248	251	60				
2-12	1625	1.20	1.04	991.484	88	103	96	3	250	251	57				
2-12	1635	1.20	1.03	997.756	88	100	96	3	251	250	54				
2-12	1645			1004.010											

Isokinetic Sampling Cover Sheet

Client:	PCC Structural	Pitot Tube Cp:	0.840
Facility:	LFC - m.1 building 08	Probe Length (Feet):	3
Test Location:	8901 output	Probe Liner Material:	Glass
Project #:	M253113	Sample Plane:	(Hrzt) or Vert.
Test Method(s):	0001	Port Length ("):	3.25
Test Engineer:	KE	Port Diameter ("):	3.0
Test Technician:	JLV	Port Type:	Nippl
Upstream Diameters:	3.0	Duct Shape:	Circ. or Rect.
Downstream Diameters:	3.0	Diameter (Feet):	1.0
# of Ports Sampled:	2	Length (Feet):	—
# of Points per Port:	12	Width (Feet):	—
Source Condition:	Bldg Power	Duct Area (Sq. Feet):	
Diluent Model/SN:	—	Minutes per Point:	20/10/reading
Mid Gas ID/concentration:	— 1%CO2 — %O2	Total Traverse Points:	24
High Gas ID/concentration:	— 1%CO2 — %O2	Test Length (Min.):	450
Moisture Balance ID:	510-2	Train Type:	Anderson

R# 1

R# 2

R#

	R# 1	R# 2	R#
Meter ID:	CM23	CM23	
Pitot ID:			
Filter ID:	—		
Filter Pre-Weight (g):	—		
Nozzle Diameter ("):	0.205	0.205	
Meter Cal Factor (Y):	1.003	1.003	
Meter Orifice Setting (DH):	1.863	1.863	
Nozzle Kit ID:	Gibson AS	Gibson AS	
Individual Nozzle ID:			
Pre Pitot Leak Check:	0.0 @ 3.0 "H2O	0.0 @ 3.7 "H2O	@ "H2O
Post Pitot Leak Check:	0.0 @ 4.1 "H2O	0.0 @ 3.3 "H2O	@ "H2O
Pre Nozzle Leak Check:	0.0012 @ 12 "Hg	0.0004 @ 10 "Hg	@ "Hg
Post Nozzle Leak Check:	0.0004 @ 10 "Hg	0.0002 @ 10 "Hg	@ "Hg
Barometric Pressure, "Hg:	29.90		
Static Pressure, "H2O:	2.20		
CO2 %:	—		
O2 %:	—		

Comments: Best part 1 leak check 0.006 @ 10 "Hg (5.1 liter gal swapped after part 1) R2 Post leak check part 1 0.006 @ 12 "Hg
 R1 Pre part 2 leak check 0.000 @ 12 "Hg
 DS-004 Isokinetic Sampling Cover Sheet Rev. 3.2
 1/1/2021
 Change 5.1 liter gal add hole
 Pre leak check
 0.002 @ 10 "Hg
 0.004 @ 12 "Hg
 Project No. M253113 109 of 194
 Baghouse 8901 ©Mostardi Platt

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/29/25 Test Number: 1
 Client: PCP Structures Test Location: 8901 Stack Operator: SE Test Tech: SE
 Plant: LPC-milwaukee, sp Test Method: 0661 Page Number: 1 of 2

Port-Point #	Time	Time (ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	K-Calcs (Optional)		
												Square Root, ΔP	Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point
1-1	6:20	2.1	3.1	550.643	68	70	68	2	—	—	62	1.414	11.175	—
1	6:30	2.0	3.9	561.560	73	78	68	3	—	—	61	1.414	10.910	562.053
2	6:40	1.8	3.5	571.820	75	81	70	3	—	—	63	1.340	10.340	572.331
2	6:50	1.8	3.5	582.470	73	83	70	3	—	—	63	1.342	10.344	583.221
3	7:00	2.0	3.5	591.220	73	84	73	3	—	—	63	1.414	10.704	592.613
3	7:10	2.0	3.9	605.180	75	84	73	3	—	—	62	1.414	10.704	604.522
4	7:20	1.8	3.5	614.810	75	85	74	3	—	—	62	1.312	10.210	615.426
4	7:30	1.9	3.7	624.220	75	86	74	3	—	—	58	1.378	10.628	627.730
5	7:40	2.0	3.9	635.710	74	87	76	3	—	—	58	1.414	10.504	636.398
5	7:50	2.1	4.1	646.220	74	86	76	3	—	—	56	1.458	11.173	647.222
6	8:00	2.0	3.7	657.820	74	87	77	3	—	—	58	1.414	10.704	658.475
6	8:10	2.0	3.7	667.030	74	87	77	3	—	—	58	1.414	10.704	669.379
7	8:20	1.9	3.7	680.340	75	88	80	3	—	—	61	1.378	10.628	680.283
7	8:30	1.9	3.7	690.720	75	89	81	3	—	—	61	1.377	10.628	690.811
8	8:40	2.0	3.9	701.610	76	91	83	3	—	—	60	1.414	10.704	701.537
8	8:50	2.0	3.9	712.280	76	92	83	3	—	—	59	1.414	10.704	712.410
7	9:00	1.8	3.5	722.720	76	93	84	3	—	—	61	1.342	10.344	723.021
7	9:10	1.8	3.5	733.250	77	93	85	3	—	—	62	1.342	10.344	732.857
10	9:20	1.6	3.1	743.500	77	94	86	3	—	—	63	1.268	9.757	743.645
10	9:30	1.6	3.1	753.220	78	94	87	3	—	—	64	1.265	9.757	753.457
11	9:40	1.7	3.3	763.520	78	94	87	3	—	—	61	1.174	9.055	763.203
11	9:50	1.7	3.3	772.020	78	94	87	3	—	—	65	1.174	9.055	772.253
12	10:00	1.6	3.1	781.500	78	94	88	3	—	—	66	1.265	9.757	781.323
17	10:10	1.6	3.1	791.250	77	94	88	3	—	—	66	1.265	9.757	791.055
18	10:20			800.500										800.807

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/25/15 Test Number: 1
 Client: Pace Steels Test Location: 8101 W. Hill St Operator: EC Test Tech: 2
 Plant: APC - m. b. h. g. DR Test Method: 0261 Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	Square Root, ΔP	K-Calcs (Optional)		Theoretical Meter Volume, (V _m) ft ³ , total
													Meter Rate, Cubic Feet/Min.	Meter Volume, (V _m) ft ³ , per point	
1	12:00	1.7	3.4	811.213	86	93	93	5	—	—	60	4.304	1.029	10.227	821.489
2	12:10	1.7	3.4	826.120	86	93	93	5	—	—	57	1.504	1.029	10.227	837.756
3	12:20	1.8	3.6	832.510	87	102	95	5	—	—	57	1.341	1.029	10.227	852.659
4	12:30	1.7	3.4	841.520	87	103	96	5	—	—	57	1.341	0.998	9.980	862.639
5	12:40	1.6	3.2	852.350	87	105	98	5	—	—	59	1.341	1.029	10.227	873.155
6	12:50	1.8	3.6	862.230	87	106	99	5	—	—	55	1.341	1.029	10.227	883.757
7	13:00	1.8	3.6	872.900	87	107	100	5	—	—	60	1.341	1.029	10.227	894.307
8	13:10	1.8	3.6	882.620	87	107	101	5	—	—	61	1.341	1.029	10.227	904.863
9	13:20	1.8	3.6	893.560	87	108	102	5	—	—	62	1.341	1.029	10.227	915.419
10	13:30	1.8	3.6	904.510	87	108	102	5	—	—	64	1.341	1.029	10.227	925.975
11	13:40	1.9	3.8	915.111	87	109	102	5	—	—	64	1.341	1.029	10.227	936.531
12	13:50	1.9	3.8	925.080	87	109	103	5	—	—	62	1.341	1.029	10.227	947.407
13	14:00	1.9	3.8	936.260	87	110	103	5	—	—	61	1.241	1.029	10.227	957.694
14	14:10	1.8	3.6	947.120	87	111	104	5	—	—	61	1.241	1.029	10.227	967.980
15	14:20	1.9	3.8	956.876	87	111	104	5	—	—	61	1.378	1.029	10.227	978.266
16	14:30	1.9	3.8	967.376	86	106	104	5	—	—	61	1.378	1.029	10.227	988.552
17	14:40	1.9	3.8	977.876	86	106	104	5	—	—	60	1.378	1.029	10.227	998.838
18	14:50	1.9	3.8	987.376	86	109	104	5	—	—	62	1.241	1.029	10.227	1009.124
19	15:00	1.9	3.8	997.876	86	111	104	5	—	—	62	1.378	1.029	10.227	1019.410
20	15:10	1.9	3.8	1007.376	86	112	104	5	—	—	62	1.378	1.029	10.227	1029.696
21	15:20	1.9	3.8	1017.876	86	114	106	5	—	—	62	1.378	1.029	10.227	1040.182
22	15:30	1.9	3.8	1027.376	86	115	106	5	—	—	62	1.378	1.029	10.227	1050.668
23	15:40	1.9	3.8	1037.876	86	115	106	5	—	—	62	1.378	1.029	10.227	1061.154
24	15:50	1.9	3.8	1047.376	86	117	106	5	—	—	62	1.378	1.029	10.227	1071.640
25	16:00	1.9	3.8	1057.876	86	116	107	5	—	—	64	1.378	1.029	10.227	1082.126
26	16:10	1.8	3.6	1067.376	86	116	107	5	—	—	64	1.378	1.029	10.227	1092.612
27	16:20	1.6	3.2	1077.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1103.098
28	16:30	1.6	3.2	1087.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1113.584
29	16:40	1.6	3.2	1097.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1124.070
30	16:50	1.6	3.2	1107.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1134.556
31	17:00	1.6	3.2	1117.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1145.042
32	17:10	1.6	3.2	1127.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1155.528
33	17:20	1.6	3.2	1137.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1166.014
34	17:30	1.6	3.2	1147.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1176.500
35	17:40	1.6	3.2	1157.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1186.986
36	17:50	1.6	3.2	1167.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1197.472
37	18:00	1.6	3.2	1177.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1207.958
38	18:10	1.6	3.2	1187.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1218.444
39	18:20	1.6	3.2	1197.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1228.930
40	18:30	1.6	3.2	1207.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1239.416
41	18:40	1.6	3.2	1217.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1249.902
42	18:50	1.6	3.2	1227.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1260.388
43	19:00	1.6	3.2	1237.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1270.874
44	19:10	1.6	3.2	1247.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1281.360
45	19:20	1.6	3.2	1257.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1291.846
46	19:30	1.6	3.2	1267.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1302.332
47	19:40	1.6	3.2	1277.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1312.818
48	19:50	1.6	3.2	1287.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1323.304
49	20:00	1.6	3.2	1297.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1333.790
50	20:10	1.6	3.2	1307.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1344.276
51	20:20	1.6	3.2	1317.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1354.762
52	20:30	1.6	3.2	1327.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1365.248
53	20:40	1.6	3.2	1337.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1375.734
54	20:50	1.6	3.2	1347.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1386.220
55	21:00	1.6	3.2	1357.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1396.706
56	21:10	1.6	3.2	1367.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1407.192
57	21:20	1.6	3.2	1377.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1417.678
58	21:30	1.6	3.2	1387.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1428.164
59	21:40	1.6	3.2	1397.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1438.650
60	21:50	1.6	3.2	1407.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1449.136
61	22:00	1.6	3.2	1417.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1459.622
62	22:10	1.6	3.2	1427.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1470.108
63	22:20	1.6	3.2	1437.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1480.594
64	22:30	1.6	3.2	1447.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1491.080
65	22:40	1.6	3.2	1457.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1501.566
66	22:50	1.6	3.2	1467.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1512.052
67	23:00	1.6	3.2	1477.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1522.538
68	23:10	1.6	3.2	1487.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1533.024
69	23:20	1.6	3.2	1497.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1543.510
70	23:30	1.6	3.2	1507.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1553.996
71	23:40	1.6	3.2	1517.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1564.482
72	23:50	1.6	3.2	1527.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1574.968
73	24:00	1.6	3.2	1537.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1585.454
74	24:10	1.6	3.2	1547.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1595.940
75	24:20	1.6	3.2	1557.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1606.426
76	24:30	1.6	3.2	1567.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1616.912
77	24:40	1.6	3.2	1577.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1627.398
78	24:50	1.6	3.2	1587.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1637.884
79	25:00	1.6	3.2	1597.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1648.370
80	25:10	1.6	3.2	1607.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1658.856
81	25:20	1.6	3.2	1617.876	86	117	107	5	—	—	62	1.378	1.029	10.227	1669.342
82	25:30	1.6	3.2	1627.376	86	117	107	5	—	—	62	1.378	1.029	10.227	1679.828
83	25:40	1.6	3.2	1637.876	86	117	107	5	—	—	62	1.378			

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/3/25 Test Number: 2
 Client: PEC Test Location: 8901 United Operator: GC Test Tech: GC
 Plant: Milwaukee, WI Test Method: 2061 Page Number: 1 of 2

Port-Point #	Time	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	Square Root, ΔP	K-Calcs (Optional)		Theoretical Meter Volume, (V _m) ft ³ , total
												Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point	
1-1	6:25	1.9	64.710	76	66	65	7	—	—	55	1.338	10.279	—	
1	6:35	1.8	75.120	76	70	65	7	—	—	58	1.341	10.492	75.189	
2	6:45	2.1	81.920	76	74	67	7	—	—	64	1.445	11.332	85.980	
2	6:55	2.1	96.180	76	77	68	7	—	—	67	1.445	11.332	97.312	
3	7:05	1.7	101.530	77	81	70	6	—	—	58	1.304	10.196	102.644	
3	7:15	1.8	117.760	76	83	71	6	—	—	50	1.341	10.492	118.846	
4	7:25	2.0	127.880	77	83	72	7	—	—	57	1.414	11.059	129.322	
4	7:35	2.0	138.970	77	85	74	7	—	—	50	1.414	11.059	140.381	
5	7:45	1.7	110.700	77	85	74	6	—	—	58	1.304	10.196	151.430	
5	7:55	1.8	160.020	77	85	75	6	—	—	52	1.241	10.492	161.646	
6	8:05	1.8	170.710	77	86	76	6	—	—	52	1.341	10.492	172.159	
6	8:15	1.7	181.840	77	88	78	6	—	—	52	1.304	10.196	182.663	
7	8:25	2.0	191.960	—	—	—	6	—	—	—	—	—	192.826	
7	8:35	2.0	191.960	79	87	82	6.7	—	—	49	1.414	11.059	—	
7	8:45	2.0	203.440	79	89	82	7	—	—	52	1.414	11.059	203.885	
7	8:55	2.0	214.630	79	91	83	7	—	—	53	1.414	11.059	214.744	
8	9:05	2.1	225.520	79	92	83	6	—	—	54	1.414	11.059	226.033	
9	9:15	1.9	236.530	79	92	84	6	—	—	59	1.378	10.779	237.062	
9	9:25	2.0	247.160	79	93	84	6	—	—	54	1.414	11.059	247.841	
10	9:35	1.8	258.330	81	96	86	6	—	—	58	1.341	10.492	258.860	
10	9:45	1.9	269.220	81	96	87	6	—	—	59	1.378	10.779	269.762	
11	9:55	1.9	279.650	81	97	89	6	—	—	57	1.378	10.779	280.131	
11	10:05	1.8	289.550	81	96	88	6	—	—	57	1.341	10.492	290.510	
12	10:15	1.8	300.060	82	95	88	6	—	—	57	1.341	10.492	301.402	
12	10:25	1.8	311.430	82	95	89	6	—	—	57	1.341	10.492	311.894	
			521.820										522.386	

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/30/25 Test Number: 2
 Client: P&G Test Location: 8901 outlet Operator: 605 Test Tech: 2
 Plant: Milwaukee OR Test Method: 2061 Page Number: 2 of 2

Port-Point #	Time	(\Delta P)	Orifice Setting (\Delta H)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	Square Root, \Delta P	K-Calcs (Optional)			Theoretical Meter Volume, (V _m) ft ³ , total
													K=0.173	Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point	
2A	11:45	1.8	3.5	322.090	84	86	86	7	—	—	62	1.341	1.049	10.492	—	
1	11:55	1.7	3.3	332.590	86	87	87	6	—	—	60	1.304	1.020	10.196	330.582	
2	12:05	1.7	3.3	342.820	88	88	88	6	—	—	63	1.364	1.020	10.196	342.778	
2	12:15	1.7	3.3	353.350	88	89	89	6	—	—	64	1.304	1.049	10.492	352.974	
3	12:25	1.8	3.5	363.330	88	93	93	7	—	—	66	1.341	1.049	10.492	363.170	
3	12:35	1.8	3.5	374.120	86	95	95	7	—	—	67	1.341	1.049	10.492	374.154	
4	12:45	1.7	3.3	384.510	87	96	96	7	—	—	67	1.341	1.049	10.492	384.646	
4	12:55	2.0	3.9	404.520	87	98	98	7	—	—	64	1.241	1.049	10.492	405.138	
5	13:05	1.9	3.7	415.630	87	99	99	7	—	—	62	1.144	1.106	11.069	416.197	
6	13:25	1.5	3.7	435.789	88	99	99	7	—	—	59	1.378	1.078	10.779	426.976	
6	13:45	2.0	3.9	457.210	89	96	96	7	—	—	61	1.414	1.078	10.779	437.357	
7	14:05	1.8	3.5	478.250	89	96	96	7	—	—	57	1.341	1.106	11.069	448.814	
8	14:15	1.7	3.3	499.766	89	99	99	6	—	—	56	1.341	1.049	10.492	459.306	
7	14:25	1.6	3.1	458.755	88	91	91	6	—	—	55	1.241	0.989	9.892	469.502	
8	15:05	1.6	3.3	468.520	88	94	94	6	—	—	56	1.241	1.049	10.492	469.198	
8	15:15	1.8	3.5	478.250	88	99	99	7	—	—	59	1.341	1.049	10.492	479.690	
9	15:25	1.8	3.5	488.200	88	101	101	7	—	—	60	1.341	1.049	10.492	490.182	
9	15:35	1.7	3.3	499.750	89	103	103	7	—	—	61	1.341	1.049	10.492	500.674	
10	15:45	1.6	3.1	510.270	89	105	105	6	—	—	63	1.241	0.989	9.892	511.166	
10	15:55	1.6	3.1	520.590	90	107	107	6	—	—	67	1.241	0.989	9.892	521.558	
11	16:05	1.7	3.3	530.830	90	108	108	6	—	—	64	1.241	1.049	10.492	530.957	
11	16:15	1.7	3.3	541.120	90	108	108	6	—	—	59	1.241	1.049	10.492	541.442	
12	16:25	1.6	3.1	551.280	90	107	107	6	—	—	58	1.241	0.989	9.892	551.934	
12	16:35	1.6	3.1	561.230	90	108	108	6	—	—	58	1.241	0.989	9.892	561.826	
12	16:45	1.6	3.1	571.470	90	108	108	6	—	—	58	1.241	0.989	9.892	571.718	

Isokinetic Sampling Cover Sheet

Client:	PCC Structural S, Inc.	Pitot Tube Cp:	0.840
Facility:	Large parts campus	Probe Length (Feet):	3.0
Test Location:	Baghouse 8901 outlet	Probe Liner Material:	Glass
Project #:	M253113	Sample Plane:	(Hrztl) or Vert.
Test Method(s):	5	Port Length ("):	3.00
Test Engineer:	ASMA	Port Diameter ("):	3.00
Test Technician:	DV	Port Type:	Nipple
Upstream Diameters:	3.0	Duct Shape:	(Circ) or Rect.
Downstream Diameters:	3.0	Diameter (Feet):	1.00
# of Ports Sampled:	2	Length (Feet):	N/A
# of Points per Port:	12	Width (Feet):	N/A
Source Condition:	Batch process	Duct Area (Sq. Feet):	0.785
Diluent Model/SN:	N/A	Minutes per Point:	20
Mid Gas ID/concentration:	N/A %CO ₂ %O ₂	Total Traverse Points:	24
High Gas ID/concentration:	N/A %CO ₂ %O ₂	Test Length (Min.):	480
Moisture Balance ID:	S10-7	Train Type:	Anderson Box

R# 1

R# 2

R#

	<u>R# 1</u>	<u>R# 2</u>	<u>R#</u>
Meter ID:	CM7	CM7	
Pitot ID:	4032	4032	
Filter ID:	22790	22762	
Filter Pre-Weight (g):	0.47948	0.47833	
Nozzle Diameter ("):	0.190	0.190	
Meter Cal Factor (Y):	1.016	1.016	
Meter Orifice Setting (DH):	1.509	1.509	
Nozzle Kit ID:	Glass set #5	Glass set #5	
Individual Nozzle ID:	848	848	
Pre Pitot Leak Check:	0.0 @ 4.5 "H ₂ O	0.0 @ 3.8 "H ₂ O	@ "H ₂ O
Post Pitot Leak Check:	0.0 @ 4.0 "H ₂ O	0.0 @ 4.0 "H ₂ O	@ "H ₂ O
Pre Nozzle Leak Check:	0.000 @ 15 "Hg	0.000 @ 14 "Hg	@ "Hg
Post Nozzle Leak Check:	0.000 @ 15 "Hg	0.000 @ 15 "Hg	@ "Hg
Barometric Pressure, "Hg:	29.89	29.89	
Static Pressure, "H ₂ O:	2	2	
CO ₂ %:	N/A	N/A	
O ₂ %:	N/A	N/A	

Comments:

Isokinetic Sampling Field Data Sheet

Project Number: M253113
 Client: PCC
 Plant: Large Parts Compas

Date: 7/31/2025 Test Number: 1
 Test Location: Baghouse 8901 out Operator: ADML Test Tech: DV
 Test Method: 5 Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	K-Calcs (Optional)		
												Square Root, ΔP	Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point
1-1	6:05:00	1.50	1.72	4.735	74	62	61	9	257	250	45			
1-1	6:15:00	1.50	1.73	12.553	74	65	62	4	257	250	48			
1-2	6:25:00	1.50	1.73	20.400	74	67	62	4	244	249	49			
1-3	6:35:00	1.50	1.74	28.263	72	69	67	4	240	250	45			
1-3	6:45:00	1.50	1.80	56.643	72	71	64	4	252	251	47			
1-4	6:55:00	1.50	2.10	45.971	72	73	65	4	253	250	45			
1-4	7:05:00	2.00	2.34	54.324	72	73	66	4	255	251	48			
1-5	7:15:00	2.00	2.34	63.664	72	74	67	4	265	249	49			
1-5	7:25:00	2.10	2.46	73.022	72	74	68	4	230	251	52			
1-6	7:35:00	2.00	2.47	82.621	72	77	68	4	230	251	55			
1-6	7:45:00	2.00	2.36	92.246	72	74	69	4	270	249	54			
1-7	7:55:00	2.00	2.55	101.022	72	75	69	4	269	250	55			
1-7	8:05:00	1.80	11.007	111.007										
1-7	8:15:00	1.80	2.11	111.007	72	71	69	4	269	251	54			
1-8	8:25:00	1.80	2.11	119.878	72	72	69	4	253	251	55			
1-8	8:35:00	1.60	1.88	128.756	72	75	70	4	262	251	50			
1-9	8:45:00	1.60	1.89	137.157	72	76	71	4	242	249	49			
1-9	8:55:00	1.50	1.77	145.575	73	80	72	4	262	252	49			
1-10	9:05:00	1.50	1.76	153.756	73	78	72	4	260	249	51			
1-10	9:15:00	1.50	1.77	161.321	74	79	73	4	238	249	51			
1-10	9:25:00	1.50	1.77	170.044	74	79	73	4	255	248	51			
1-11	9:35:00	1.20	1.42	178.260	74	78	74	4	235	251	51			
1-11	9:45:00	1.20	1.42	185.570	74	80	74	4	260	250	52			
1-12	9:55:00	1.20	1.72	192.844	74	80	75	4	230	251	52			
1-12	10:05:00	1.20	1.72	200.725	75	81	75	4	246	250	52			
1-12	10:15:00			207.555										
2-1	10:42:00	1.60	1.89	207.555	81	77	77	4	250	250	55			
2-1	10:53:00	1.60	1.89	207.555	81	77	77	4	241	249	56			
2-2	11:02	1.50	1.77	216.021	77	82	77	4	238	251	53			
2-2	11:12	1.50	1.76	224.501	77	83	78	4	246	250	60			
2-2	11:12	1.50	1.76	232.720	81	84	79	4						

DS-005 M5 Isokinetic Field Data Sheet

Rev. 2.3

Isokinetic Sampling Field Data Sheet

Project Number: M253113
 Client: PCC
 Plant: Large parts Campus

Date: 7/31/2025 Test Number: 1
 Test Location: Baghouse 8901out Operator: Asme
 Test Method: 5 Page Number: 2 of 2

Part-Point #	Time	Time (ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	Square Root, ΔP	K-Calcs (Optional)		
													K=	Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point
2-3	11:22:00	1.50	1.76	240.92	81	84	79	4	245	251	60				
2-3	11:32:00	1.50	1.77	249.125	79	84	80	4	244	250	61				
2-4	12:00:00	1.60	1.87	257.352	78	81	79	4	249	250	60				
2-4	12:10:00	1.60	1.87	265.825	77	83	79	4	255	252	62				
2-5	12:20:00	1.80	2.13	274.322	78	84	79	4	246	252	63				
2-5	12:30:00	1.80	2.13	283.323	80	87	80	4	251	250	65				
2-6	12:40:00	2.00	2.37	292.364	79	88	81	4	254	250	62				
2-7	12:50:00	2.00	2.38	301.903	79	84	82	4	252	250	50				
2-7	13:00:00	2.00	2.37	308.612	80	88	82	4	257	249	50				
2-8	13:10:00	2.00	2.38	315.932	80	88	83	4	256	250	48				
2-8	13:20:00	2.10	2.49	324.622	80	88	83	4	251	249	50				
2-9	13:30:00	2.00	2.49	332.225	81	87	83	4	261	250	49				
2-9	13:40:00	2.00	2.37	346.572	80	88	83	4	230	251	49				
2-9	13:50:00	2.00	2.37	352.112	90	87	84	4	260	250	47				
2-10	14:45:00	1.50	1.78	369.241	87	89	84	4	244	250	55				
2-10	14:55:00	1.50	1.78	377.496	82	92	85	4	241	251	55				
2-11	15:05:00	1.50	1.78	385.188	84	94	87	4	254	249	56				
2-12	15:15:00	1.40	1.67	394.105	84	96	88	4	239	257	56				
2-12	15:25:00	1.20	1.43	402.162	85	96	89	4	240	251	60				
2-12	15:35:00	1.20	1.43	409.620	85	97	90	4	239	250	57				
2-12	15:45:00			417.093											

DS-005 M5 Isokinetic Field Data Sheet

Rev. 2.3

11/3/2022

Isokinetic Sampling Field Data Sheet

Project Number: M253113
 Client: PCC
 Plant: Large Parts Comp

Date: 8/1/2025 Test Number: 2
 Test Location: Baghouse 8901 out Operator: Asm2
 Test Method: 5 Page Number: 1 of 2

Port-Point #	Time (ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp, °F	Impinger Outlet Well Temp, °F	K-Calcs (Optional)			Theoretical Meter Volume, (V _m) ft ³ , total
											Square Root, ΔP	Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point	
1-1	6:05:00	1.50	419.285	72	62	60	4	235	242	50				
1-2	6:15:00	1.50	422.945	72	66	61	4	238	251	50				
1-2	6:25:00	1.60	435.742	71	69	62	4	249	251	53				
1-3	6:35:00	1.60	444.042	71	71	63	4	228	256	50				
1-3	6:55:00	1.80	452.364	71	72	64	4	231	251	51				
1-4	7:30:00	1.80	461.209	71	67	65	4	251	248	47				
1-4	7:40:00	2.00	470.021	71	69	65	4	229	249	46				
1-5	7:50:00	2.00	479.326	72	72	66	4	228	250	47				
1-5	8:00:00	2.10	488.658	72	73	67	4	238	250	48				
1-6	8:10:00	2.10	498.238	72	74	68	4	228	251	48				
1-6	8:20:00	2.00	507.836	72	74	68	4	236	250	48				
1-7	8:30:00	2.00	518.203	73	73	69	4	293	251	49				
1-7	8:40:00	1.80	526.562	72	74	69	4	226	253	51				
1-7	8:50:00	1.80	535.955	73	74	69	4	226	253	51				
1-8	9:15:00	1.80	535.423	73	72	72	4	255	257	56				
1-8	9:25:00	1.60	541.357	74	76	72	4	257	249	53				
1-9	9:35:00	1.60	552.259	74	79	74	4	245	249	53				
1-9	9:45:00	1.50	561.209	75	79	75	4	242	249	53				
1-10	10:05:00	1.50	569.390	74	80	76	4	246	253	54				
1-10	10:15:00	1.40	572.594	75	81	76	4	241	249	54				
1-11	10:25:00	1.40	585.579	76	84	81	4	251	252	58				
1-11	10:35:00	1.40	593.496	76	84	80	4	246	250	57				
1-12	10:45:00	1.20	601.465	76	85	81	4	250	250	59				
1-12	10:55:00	1.20	609.498	77	86	82	4	258	261	58				
2-1	11:05:00	1.20	616.847	79	86	83	4	255	250	58				
2-1	11:10:00	1.50	624.250	79	87	85	4	255	250	58				
2-1	11:20:00	1.50	630.525	79	87	85	4	257	255	61				
2-2	11:30:00	1.60	638.809	79	87	84	4	247	258	61				
2-2	11:40:00	1.60	647.062	79	88	85	4	249	249	63				

DS-005 M5 Isokinetic Field Data Sheet

Rev. 2.3

11/3/2022

Isokinetic Sampling Field Data Sheet

Project Number: M253113
 Client: PCC
 Plant: Large Parts Compas

Date: 8/11/2025 Test Number: 2
 Test Location: Baghouse 8901 Out Operator: Asm1 Test Tech: DV
 Test Method: 5 Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V _m) ft ³ , Actual	Stack Temp. °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional)			
												Square Root, ΔP	Meter Rate, Cubic Feet/Min.	Theoretical Meter Volume, (V _m) ft ³ , per point	Theoretical Meter Volume, (V _m) ft ³ , total
2-2	11:40:00														
2-3	12:10:00	1.60	1.84	655.628	83	86	85	4	254	254	68				
2-3	12:20:00	1.80	2.14	664.178	82	84	85	4	257	247	69				
2-4	12:30:00	1.80	2.13	673.218	83	87	85	4	249	250	57				
2-4	12:40:00	2.00	2.37	682.262	83	89	87	4	240	252	55				
2-5	12:50:00	2.00	2.37	691.829	84	90	86	4	240	248	55				
2-5	13:00:00	2.10	2.59	701.384	84	90	87	4	246	255	57				
2-5	13:10:00	2.10	2.59	711.945	85	91	87	4	237	260	63				
2-6	13:20:00			721.449											
2-6	14:40:00	2.00	2.38	720.999	87	84	92	4	257	252	64				
2-6	14:54:00	2.00	2.38	730.620	87	96	93	4	257	257	64				
2-7	14:51:00	2.00		740.260											
2-7	15:01:00	2.00	2.38	740.267	88	97	93	4	252	248	65				
2-8	15:11:00	2.00	2.38	749.914	88	92	93	4	243	245	64				
2-8	15:21:00	1.80	2.14	759.569	84	100	93	4	256	249	64				
2-9	15:31:00	1.80	2.14	768.735	90	101	94	4	240	253	67				
2-9	15:41:00	1.60	1.91	777.913	90	102	95	4	254	254	66				
2-10	15:51:00	1.60	1.91	786.580	90	102	95	4	254	254	66				
2-10	16:01:00	1.50	1.78	795.270	94	102	95	4	257	257	67				
2-11	16:11:00	1.40	1.67	803.607	97	102	96	4	251	256	67				
2-11	16:21:00	1.40	1.67	811.991	91	102	96	4	253	257	67				
2-12	16:31:00	1.20	1.43	820.098	91	103	96	4	251	255	68				
2-12	16:41:00	1.20	1.43	828.212	91	103	96	4	260	247	68				
2-12	16:51:00	1.20	1.42	835.729	72	99	96	4	247	232	67				
2-12	16:57:00			843.202					248	251	68				

DS-005 M5 Isokinetic Field Data Sheet

Rev. 2.3

11/3/2022

Appendix G - Calibration and Response Time Data

MOSTARDI PLATT

Procedures for Method 5 and Flow Calibration

Nozzles

The nozzles are measured according to Method 5, Section 10.1

Dry Gas Meters

The test meters are calibrated according to Method 5, Section 10.3 and 16.1. and “Procedures for Calibrating and Using Dry Gas Volume Meters as Calibration Standards” by P.R. Westlin and R.T. Shigehara, March 10, 1978.

Analytical Balance

The accuracy of the analytical balance is checked with Class S, Stainless Steel Type 303 weights manufactured by F. Hopken and Son, Jersey City, New Jersey.

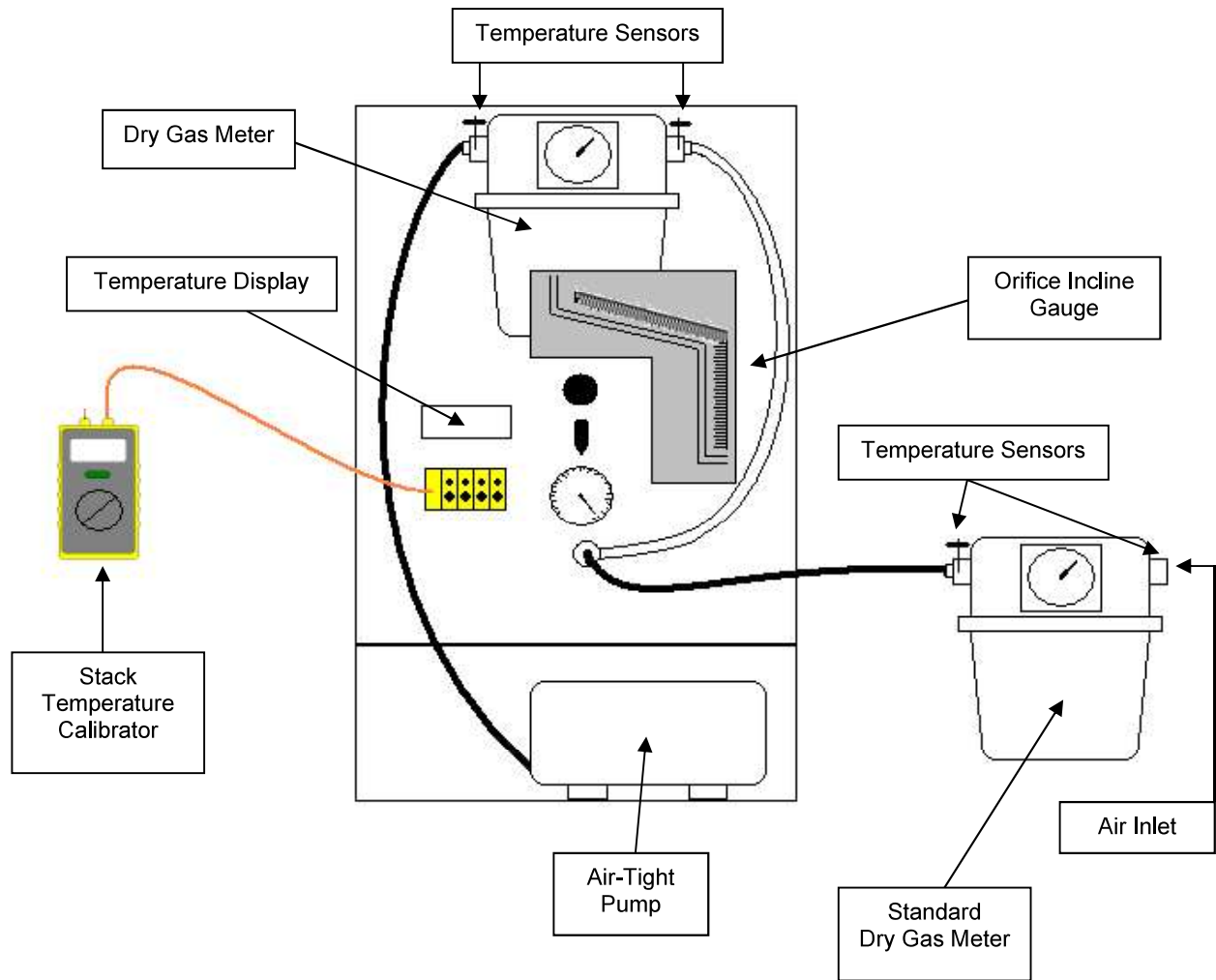
Temperature Sensing Devices

The potentiometer and thermocouples are calibrated utilizing a NIST traceable millivolt source.

Pitot Tubes

The pitot tubes utilized during this test program are manufactured according to the specification described and illustrated in the *Code of Federal Regulations*, Title 40, Part 60, Appendix A, Methods 1 and 2. The pitot tubes comply with the alignment specifications in Method 2, Section 10.1; and the pitot tube assemblies are in compliance with specifications in the same section.

Dry Gas Meter/Control Module Calibration Diagram



Meter Box Calibration

Dry Gas Meter Calibration Data

Dry Gas Meter No. CM7
 Standard Meter No. 15788714
 Standard Meter (Y) 1.00470

Date: July 2, 2025
 Calibrated By: SKF
 Barometric Pressure: 29.30

Run Number	Orifice Setting in H ₂ O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final		19.862	91.505	80	80						
Initial		14.774	86.456	79	79						
Difference 1	0.20	5.088	5.049	80	80		80	19	14	1.012	1.660
Final		31.180	102.706	80	80						
Initial		25.768	97.333	80	80						
Difference 2	0.50	5.412	5.373	80	80		81	12	13	1.012	1.480
Final		44.845	16.194	81	81						
Initial		38.935	10.371	80	81						
Difference 3	0.70	5.910	5.823	81	81		81	11	16	1.019	1.480
Final		38.529	9.968	81	81						
Initial		31.694	3.214	80	80						
Difference 4	0.90	6.835	6.754	81	81		81	11	44	1.015	1.543
Final		25.501	97.062	80	80						
Initial		20.049	91.693	80	80						
Difference 5	1.20	5.452	5.369	80	80		80	8	9	1.017	1.560
Final		14.675	86.358	79	80						
Initial		9.506	81.280	79	79						
Difference 6	2.00	5.169	5.078	79	80		80	5	32	1.019	1.329
Average										1.016	1.509

Stack Temperature Sensor Calibration			
Temperature ID :	100769	Name :	skf
Ambient Temperature, °F :	82.6	Date :	July 2, 2025

Temperature Calibrator			
Model # :	CL23A	Certification Date:	February 5, 2025
Serial # :	T-249465	Expiration Date:	February 5, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	-2	0.4
250	249	0.1
600	599	0.1
1200	1198	0.1

$$\frac{(\text{Ref. Temp., } ^\circ\text{F} + 460) - (\text{Test Therm. Temp., } ^\circ\text{F} + 460)}{\text{Ref. Temp., } ^\circ\text{F} + 460} * 100 \leq 1.5 \%$$

Meter Box Calibration

Dry Gas Meter Calibration Data

Dry Gas Meter No. CM7
 Standard Meter No. 25125408
 Standard Meter (Y) 0.98960

Date: September 2, 2025
 Calibrated By: CJM
 Barometric Pressure: 29.40

Run Number	Orifice Setting in H ₂ O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final		33.836	7.271	72	75	75					
Initial		28.717	2.139	71	76	73					
Difference 1	0.20	5.119	5.132	72	76	74	75	18	43	0.993	1.563
Final		46.464	19.913	73	78	76					
Initial		41.291	14.729	72	78	76					
Difference 2	0.50	5.173	5.184	73	78	76	77	12	2	0.995	1.581
Final		57.808	31.287	73	78	77					
Initial		52.671	26.133	73	78	77					
Difference 3	0.70	5.137	5.154	73	78	77	78	10	0	0.993	1.551
Final		52.134	25.607	73	80	77					
Initial		47.029	20.486	73	78	76					
Difference 4	0.90	5.105	5.121	73	79	77	78	8	52	0.993	1.587
Final		40.692	14.128	72	78	75					
Initial		34.215	7.652	72	75	75					
Difference 5	1.20	6.477	6.476	72	77	75	76	9	42	0.994	1.573
Final		28.135	101.560	71	78	73					
Initial		23.031	96.481	70	76	76					
Difference 6	2.00	5.104	5.079	71	77	75	76	6	4	0.999	1.642
Average										0.994	1.583

Stack Temperature Sensor Calibration			
Temperature ID :	100769	Name :	CJM
Ambient Temperature, °F :	75.2	Date :	September 2, 2025

Temperature Calibrator			
Model # :	CL23A	Certification Date:	February 5, 2025
Serial # :	T-249465	Expiration Date:	February 5, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	0	0.0
250	248	0.3
600	596	0.4
1200	1198	0.1

$$\frac{(\text{Ref. Temp., } ^\circ\text{F} + 460) - (\text{Test Therm. Temp., } ^\circ\text{F} + 460)}{\text{Ref. Temp., } ^\circ\text{F} + 460} * 100 \leq 1.5 \%$$

Meter Box Calibration

Dry Gas Meter Calibration Data

Dry Gas Meter No. CM23
 Standard Meter No. 16541852
 Standard Meter (Y) 0.99920

Date: July 16, 2025
 Calibrated By: JSC
 Barometric Pressure: 28.15

Run Number	Orifice Setting in H ₂ O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final		113.638	120.280	97	101	98					
Initial		108.625	115.249	96	101	97					
Difference 1	0.20	5.013	5.031	97	101	98	99	18	44	1.000	1.753
Final		108.625	115.249	96	101	97					
Initial		103.614	110.206	95	101	97					
Difference 2	0.50	5.011	5.043	96	101	97	99	12	9	0.998	1.839
Final		103.614	110.206	95	101	97					
Initial		98.530	105.125	95	99	96					
Difference 3	0.70	5.084	5.081	95	100	97	98	10	25	1.004	1.838
Final		98.530	105.125	95	99	96					
Initial		93.512	100.116	94	99	95					
Difference 4	0.90	5.018	5.009	95	99	96	97	9	5	1.004	1.844
Final		93.512	100.116	94	99	95					
Initial		88.474	95.103	93	98	94					
Difference 5	1.20	5.038	5.013	94	99	95	97	8	0	1.006	1.888
Final		88.474	95.103	93	98	94					
Initial		83.436	90.092	93	98	93					
Difference 6	2.00	5.038	5.011	93	98	94	96	6	24	1.004	2.013

Average **1.003** **1.863**

Stack Temperature Sensor Calibration			
Temperature ID :	552	Name :	JSC
Ambient Temperature, °F :	94.7	Date :	July 16, 2025

Temperature Calibrator			
Model # :	CL940A	Certification Date:	March 6, 2025
Serial # :	526	Expiration Date:	March 6, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	1	0.2
250	252	0.3
600	602	0.2
1200	1206	0.4

$$\frac{(\text{Ref. Temp., } ^\circ\text{F} + 460) - (\text{Test Therm. Temp., } ^\circ\text{F} + 460)}{\text{Ref. Temp., } ^\circ\text{F} + 460} * 100 \leq 1.5 \%$$

Meter Box Calibration

Dry Gas Meter Calibration Data

Dry Gas Meter No.	CM23	Date:	August 28, 2025
Standard Meter No.	25125408	Calibrated By:	ZGB
Standard Meter (Y)	0.98960	Barometric Pressure:	29.38

Run Number	Orifice Setting in H ₂ O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final		23.303	5.820	74	80	78					
Initial		18.210	0.728	73	79	77					
Difference 1	0.20	5.093	5.092	74	80	78	79	20	34	0.999	1.909
Final		34.088	16.635	74	81	79					
Initial		28.922	11.455	74	81	78					
Difference 2	0.50	5.166	5.180	74	81	79	80	13	27	0.996	1.982
Final		45.052	27.646	73	82	80					
Initial		39.843	22.417	73	81	80					
Difference 3	0.70	5.209	5.229	73	82	80	81	11	17	0.998	1.910
Final		39.711	22.278	73	82	80					
Initial		34.425	16.972	73	81	79					
Difference 4	0.90	5.286	5.306	73	82	80	81	10	15	0.998	1.969
Final		28.608	11.142	74	81	74					
Initial		23.515	6.031	73	74	78					
Difference 5	1.20	5.093	5.111	74	78	76	77	8	33	0.989	1.986
Final		18.009	100.525	73	82	77					
Initial		12.947	95.461	73	81	76					
Difference 6	2.00	5.062	5.064	73	82	77	79	6	31	0.995	1.934
Average										0.996	1.948

Stack Temperature Sensor Calibration			
Temperature ID :	100769	Name :	ZGB
Ambient Temperature, °F :	74.7	Date :	August 28, 2025

Temperature Calibrator			
Model # :	CL23A	Certification Date:	February 5, 2025
Serial # :	T-249465	Expiration Date:	February 5, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	0	0.0
250	251	0.1
600	601	0.1
1200	1205	0.3

$$\frac{(\text{Ref. Temp., } ^\circ\text{F} + 460) - (\text{Test Therm. Temp., } ^\circ\text{F} + 460)}{\text{Ref. Temp., } ^\circ\text{F} + 460} * 100 \leq 1.5 \%$$

Meter Box Calibration

Dry Gas Meter Calibration Data

Dry Gas Meter No. CM43
 Standard Meter No. 25125408
 Standard Meter (Y) 0.98960

Date: July 2, 2025
 Calibrated By: SKF
 Barometric Pressure: 29.28

Run Number	Orifice Setting in H ₂ O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final		99.805	22.853								
Initial		94.512	17.560	81	81						
Difference 1	0.20	5.293	5.293	81	81		81	20	59	0.989	1.889
Final		16.558	39.599	80	80						
Initial		11.330	34.356	80	80						
Difference 2	0.50	5.228	5.243	80	80		80	12	56	0.986	1.836
Final		27.843	50.906	80	80						
Initial		22.445	45.490	80	80						
Difference 3	0.70	5.398	5.416	80	80		80	11	19	0.985	1.846
Final		22.396	45.342								
Initial		16.815	39.856	80	80						
Difference 4	0.90	5.581	5.486	80	80		80	10	4	1.004	1.757
Final		11.179	34.200	81	80						
Initial		6.099	29.145	81	80						
Difference 5	1.20	5.080	5.055	81	80		80	8	2	0.990	1.806
Final		94.355	17.406	81	81						
Initial		89.107	12.208	81	81						
Difference 6	2.00	5.248	5.198	81	81		81	6	28	0.994	1.825

Average **0.991** **1.826**

Stack Temperature Sensor Calibration			
Temperature ID :	100769	Name :	SKF
Ambient Temperature, °F :	85.2	Date :	July 2, 2025

Temperature Calibrator			
Model # :	CL23A	Certification Date:	February 5, 2025
Serial # :	T-249465	Expiration Date:	February 5, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	-3	0.7
250	249	0.1
600	599	0.1
1200	1203	0.2

$$\frac{(\text{Ref. Temp., } ^\circ\text{F} + 460) - (\text{Test Therm. Temp., } ^\circ\text{F} + 460)}{\text{Ref. Temp., } ^\circ\text{F} + 460} * 100 \leq 1.5 \%$$

Meter Box Calibration

Dry Gas Meter Calibration Data

Dry Gas Meter No. CM43
 Standard Meter No. 18654513
 Standard Meter (Y) 1.00570

Date: August 22, 2025
 Calibrated By: CJM
 Barometric Pressure: 29.39

Run Number	Orifice Setting in H ₂ O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final		12.411	75.612	77	77	77					
Initial		7.328	70.488	76	77	77					
Difference 1	0.20	5.083	5.124	77	77	77	77	20	17	0.998	1.829
Final		23.418	86.679	77	77	77					
Initial		18.322	81.554	77	77	77					
Difference 2	0.50	5.096	5.125	77	77	77	77	12	48	0.999	1.815
Final		34.715	98.041	77	78	78					
Initial		29.656	92.939	77	78	78					
Difference 3	0.70	5.059	5.102	77	78	78	78	10	49	0.997	1.838
Final		29.029	92.311	77	78	78					
Initial		23.943	87.196	77	77	77					
Difference 4	0.90	5.086	5.115	77	78	78	78	9	37	0.999	1.850
Final		17.836	81.062	77	77	77					
Initial		12.714	75.929	76	77	77					
Difference 5	1.20	5.122	5.133	77	77	77	77	8	23	1.001	1.846
Final		6.932	70.090	76	77	77					
Initial		1.819	64.979	76	77	77					
Difference 6	2.00	5.113	5.111	76	77	77	77	6	29	1.003	1.844
Average										1.000	1.837

Stack Temperature Sensor Calibration			
Temperature ID :	100769	Name :	CJM
Ambient Temperature, °F :	77.7	Date :	August 22, 2025

Temperature Calibrator			
Model # :	CL23A	Certification Date:	February 5, 2025
Serial # :	T-249465	Expiration Date:	February 5, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	0	0.0
250	250	0.0
600	600	0.0
1200	1204	0.2

$$\frac{(\text{Ref. Temp., } ^\circ\text{F} + 460) - (\text{Test Therm. Temp., } ^\circ\text{F} + 460)}{\text{Ref. Temp., } ^\circ\text{F} + 460} * 100 \leq 1.5 \%$$

Ref. Temp., °F + 460

Meter Box Calibration

Dry Gas Meter Calibration Data

Dry Gas Meter No. 53
 Standard Meter No. 16541852
 Standard Meter (Y) 0.99920

Date: July 10, 2025
 Calibrated By: DSN
 Barometric Pressure: 28.16

Run Number	Orifice Setting in H ₂ O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final		40.093	39.093	92	94	94					
Initial		35.074	34.085	91	92	92					
Difference 1	0.20	5.019	5.008	92	93	93	93	18	55	1.004	1.771
Final		35.074	34.085	91	92	92					
Initial		30.034	29.085	90	91	91					
Difference 2	0.50	5.040	5.000	91	92	92	92	12	15	1.008	1.839
Final		30.034	29.085	90	91	91					
Initial		25.001	24.077	90	90	90					
Difference 3	0.70	5.033	5.008	90	91	91	91	10	20	1.003	1.837
Final		25.001	24.077	90	90	90					
Initial		19.910	19.015	89	90	90					
Difference 4	0.90	5.091	5.062	90	90	90	90	9	15	1.003	1.848
Final		19.910	19.015	89	90	90					
Initial		14.790	13.955	90	89	89					
Difference 5	1.20	5.120	5.060	90	90	90	90	8	5	1.008	1.862
Final		14.790	13.955	90	89	89					
Initial		9.676	8.945	90	89	89					
Difference 6	2.00	5.114	5.010	90	89	89	89	6	10	1.013	1.816

Average **1.006** **1.829**

Stack Temperature Sensor Calibration			
Temperature ID :	100770	Name :	DSN
Ambient Temperature, °F :	92.4	Date :	July 10, 2025

Temperature Calibrator			
Model # :	CL940A	Certification Date:	March 6, 2025
Serial # :	526	Expiration Date:	March 6, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	-1	0.2
250	249	0.1
600	599	0.1
1200	1203	0.2

$$\frac{(\text{Ref. Temp., } ^\circ\text{F} + 460) - (\text{Test Therm. Temp., } ^\circ\text{F} + 460)}{\text{Ref. Temp., } ^\circ\text{F} + 460} * 100 \leq 1.5 \%$$

Meter Box Calibration

Dry Gas Meter Calibration Data

Dry Gas Meter No. 53
 Standard Meter No. 16541852
 Standard Meter (Y) 0.99920

Date: August 4, 2025
 Calibrated By: OB
 Barometric Pressure: 28.11

Run Number	Orifice Setting in H ₂ O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final		125.097	120.046	95	95	95					
Initial		120.037	114.929	94	94	94					
Difference 1	0.20	5.060	5.117	95	95	95	95	18	55	0.988	1.759
Final		120.037	114.929	94	94	94					
Initial		114.956	109.811	94	93	93					
Difference 2	0.50	5.081	5.118	94	94	94	94	12	15	0.990	1.829
Final		114.956	109.811	94	93	93					
Initial		109.944	104.786	93	92	92					
Difference 3	0.70	5.012	5.025	94	93	93	93	10	0	0.993	1.754
Final		109.944	104.786	93	92	92					
Initial		104.728	99.556	93	91	91					
Difference 4	0.90	5.216	5.230	93	92	92	92	9	15	0.991	1.781
Final		98.878	93.719	92	90	90					
Initial		93.754	88.646	91	89	89					
Difference 5	1.20	5.124	5.073	92	90	90	90	8	0	1.002	1.838
Final		93.754	88.646	91	89	89					
Initial		88.668	83.625	91	89	89					
Difference 6	2.00	5.086	5.021	91	89	89	89	6	5	1.003	1.796
Average										0.995	1.793

Stack Temperature Sensor Calibration			
Temperature ID :	100770	Name :	OB
Ambient Temperature, °F :	92.9	Date :	August 4, 2025

Temperature Calibrator			
Model # :	CL940A	Certification Date:	March 6, 2025
Serial # :	526	Expiration Date:	March 6, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	1	0.2
250	251	0.1
600	601	0.1
1200	1205	0.3

$$\frac{(\text{Ref. Temp., } ^\circ\text{F} + 460) - (\text{Test Therm. Temp., } ^\circ\text{F} + 460)}{\text{Ref. Temp., } ^\circ\text{F} + 460} * 100 \leq 1.5 \%$$

Ref. Temp., °F + 460

S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 25

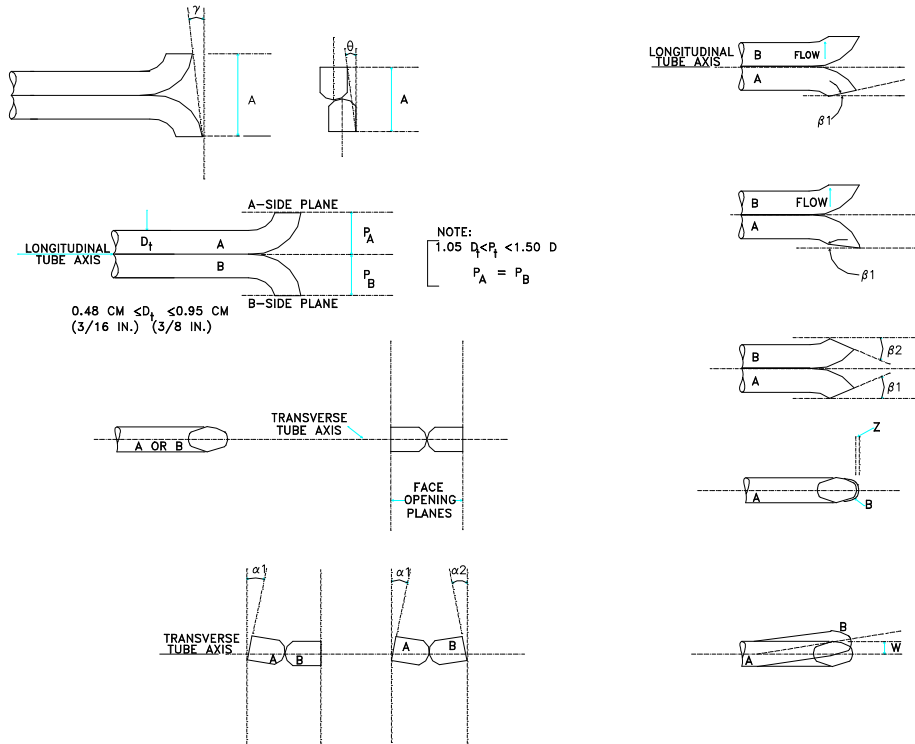
Date: 3/27/2025

Inspectors Name: JAM

Type of Probe: (mark one)

M2	M5	M17
	X	

Probe Length: 3 ft.



Pitot tube assembly level? yes no

Pitot tube openings damaged? yes (explain below) no

$a_1 = \underline{2.5}^\circ (\leq 10^\circ)$

$a_2 = \underline{3.5}^\circ (\leq 10^\circ)$

$z = A \sin \gamma = \underline{0.017}$ (in.); (≤ 0.125 in.)

$b_1 = \underline{0.5}^\circ (\leq 5^\circ)$

$b_2 = \underline{2.5}^\circ (\leq 5^\circ)$

$w = A \sin \theta = \underline{0.01688}$ (in.); (≤ 0.03125 in.)

$\gamma = \underline{1}^\circ \quad \theta = \underline{1}^\circ \quad A = \underline{0.967}$ (in.)

$P_A = \underline{0.484}$ (in.), $P_B = \underline{0.484}$ (in.), $D_t = \underline{0.375}$ (in.)

Calibration required? yes no

S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 25

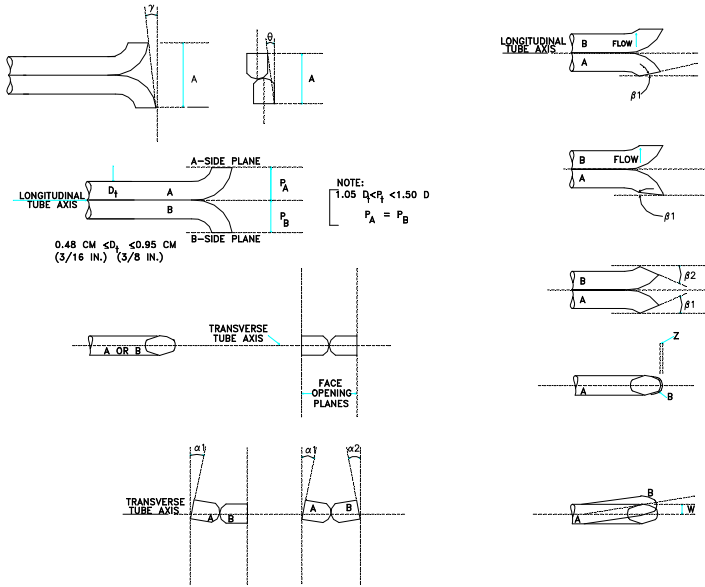
Date: 8/29/2025

Inspectors Name: SFG1

Type of Probe: (circle one)

M2	M5	M17
	X	

Probe Length: 3 ft.



y

Pitot tube assembly level? x yes no

Pitot tube openings damaged? yes (explain below) x no

$a_1 = \underline{0.5}^\circ (\leq 10^\circ)$ $a_2 = \underline{1}^\circ (\leq 10^\circ)$ $z = A \sin \gamma = \underline{0.017}$ (in.); (≤ 0.125 in.)

$b_1 = \underline{2}^\circ (\leq 5^\circ)$ $b_2 = \underline{1.5}^\circ (\leq 5^\circ)$ $w = A \sin \theta = \underline{0.02479}$ (in.); (≤ 0.03125 in.)

$\gamma = \underline{1}^\circ$ $\theta = \underline{1.5}^\circ$ $A = \underline{0.947}$ (in.) $P_A = \underline{0.474}$ (in.), $P_B = \underline{0.474}$ (in.), $D_1 = \underline{0.375}$ (in.)

Calibration required? yes X no

S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 1883

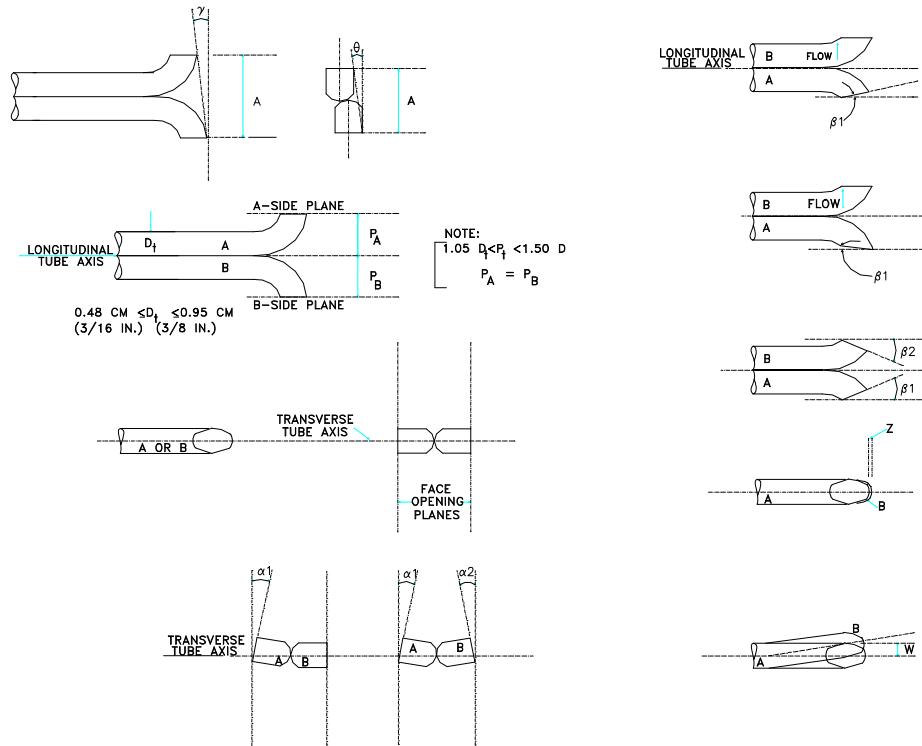
Date: 2/24/2025

Inspectors Name: JAM

Type of Probe: (mark one)

M2	M5	M17
	X	

Probe Length: 3 ft.



Pitot tube assembly level? X yes no

Pitot tube openings damaged? yes (explain below) X no

$a_1 =$ 3.5 ° ($\leq 10^\circ$)

$a_2 =$ 2 ° ($\leq 10^\circ$)

$z = A \sin \gamma =$ 0.015 (in.); (≤ 0.125 in.)

$b_1 =$ 3 ° ($\leq 5^\circ$)

$b_2 =$ 0 ° ($\leq 5^\circ$)

$w = A \sin \theta =$ 0.01511 (in.); (≤ 0.03125 in.)

$\gamma =$ 1 ° $\theta =$ 1 ° $A =$ 0.866 (in.)

$P_A =$ 0.433 (in.), $P_B =$ 0.433 (in.), $D_t =$ 0.375 (in.)

Calibration required? yes X no

S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 1883

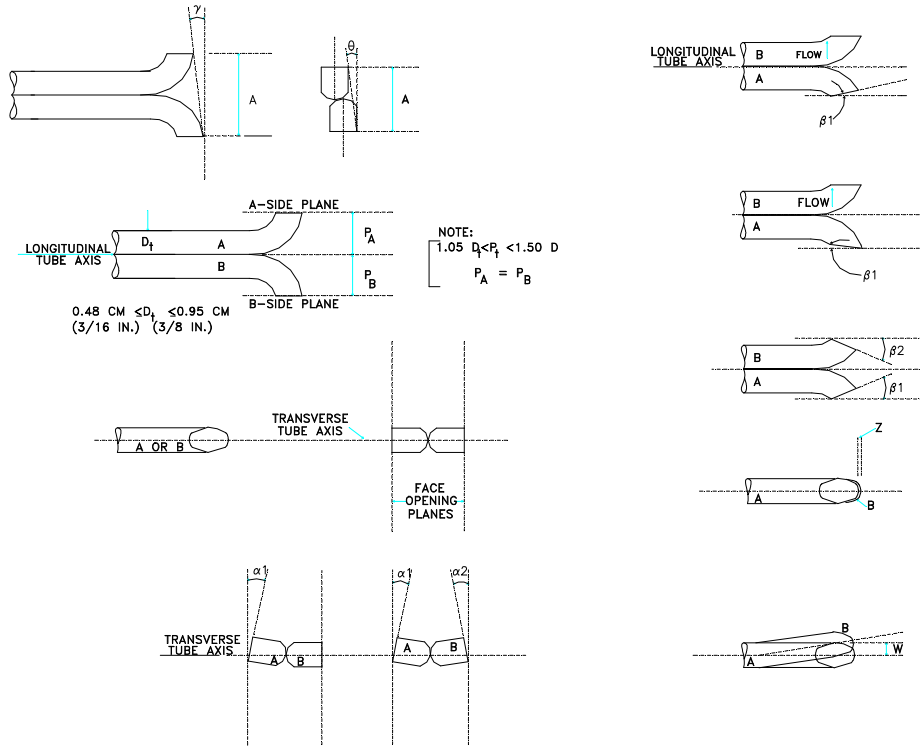
Date: 9/11/2025

Inspectors Name: JAM

Type of Probe: (mark one)

M2	M5	M17
	X	

Probe Length: 3 ft.



Pitot tube assembly level? yes no

Pitot tube openings damaged? yes (explain below) no

$a_1 = \underline{2.5}^\circ (\leq 10^\circ)$ $a_2 = \underline{1.5}^\circ (\leq 10^\circ)$ $z = A \sin \gamma = \underline{0.008}$ (in.); (≤ 0.125 in.)
 $b_1 = \underline{1}^\circ (\leq 5^\circ)$ $b_2 = \underline{1.5}^\circ (\leq 5^\circ)$ $w = A \sin \theta = \underline{0.00000}$ (in.); (≤ 0.03125 in.)
 $\gamma = \underline{0.5}^\circ$ $\theta = \underline{0}^\circ$ $A = \underline{0.862}$ (in.) $P_A = \underline{0.431}$ (in.), $P_B = \underline{0.431}$ (in.), $D_t = \underline{0.375}$ (in.)

Calibration required? yes no

S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 4032

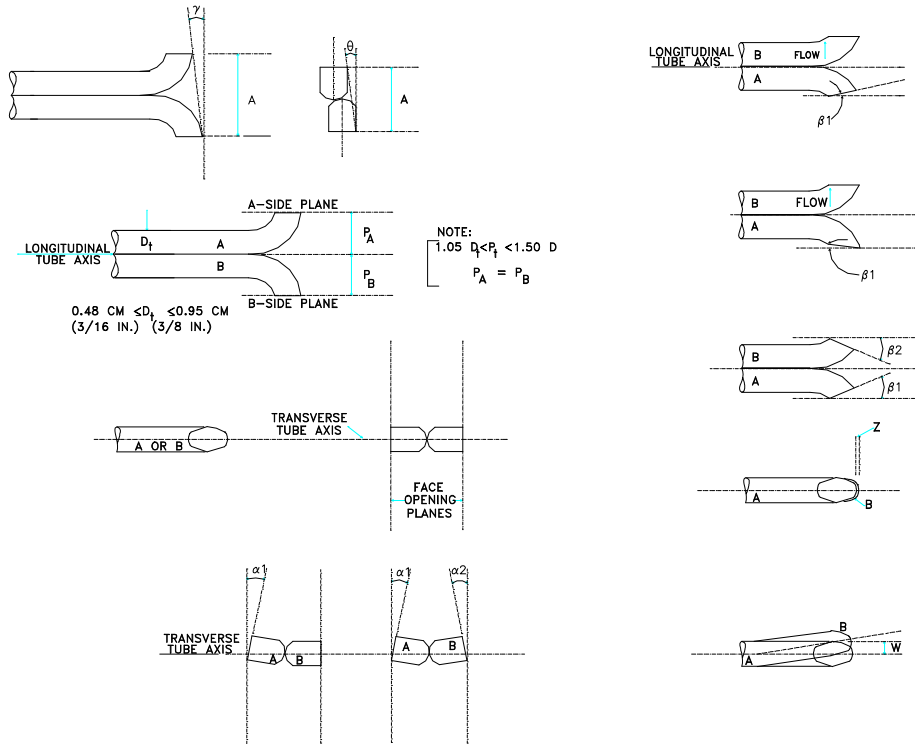
Date: 5/16/2025

Inspectors Name: MO

Type of Probe: (mark one)

M2	M5	M17
	X	

Probe Length: 3 ft.



Pitot tube assembly level? X yes no

Pitot tube openings damaged? yes (explain below) X no

$a_1 = \underline{1}^\circ (\leq 10^\circ)$ $a_2 = \underline{1.5}^\circ (\leq 10^\circ)$ $z = A \sin \gamma = \underline{0.017}$ (in.); (≤ 0.125 in.)
 $b_1 = \underline{1.5}^\circ (\leq 5^\circ)$ $b_2 = \underline{1}^\circ (\leq 5^\circ)$ $w = A \sin \theta = \underline{0.00830}$ (in.); (≤ 0.03125 in.)
 $\gamma = \underline{1}^\circ$ $\theta = \underline{0.5}^\circ$ $A = \underline{0.951}$ (in.) $P_A = \underline{0.476}$ (in.), $P_B = \underline{0.476}$ (in.), $D_t = \underline{0.375}$ (in.)

Calibration required? yes X no

S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 4032

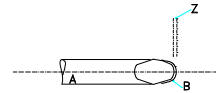
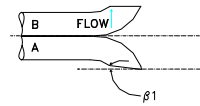
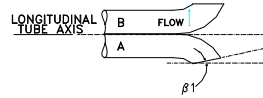
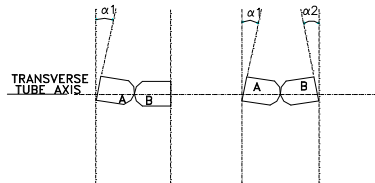
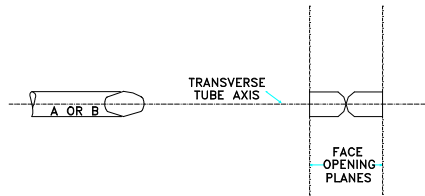
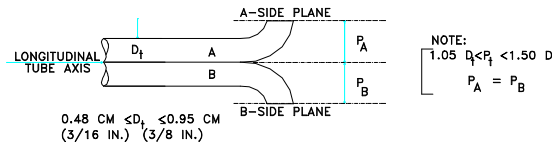
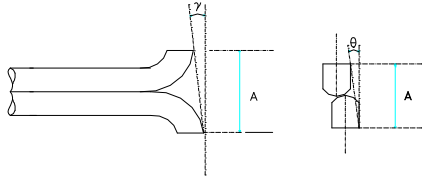
Date: 8/19/2025

Inspectors Name: DMS

Type of Probe: (mark one)

M2	M5	M17
	X	

Probe Length: 3 ft.



Pitot tube assembly level? X yes no

Pitot tube openings damaged? yes (explain below) X no

$a_1 = \underline{4}^\circ (\leq 10^\circ)$

$a_2 = \underline{3}^\circ (\leq 10^\circ)$

$z = A \sin \gamma = \underline{0.000}$ (in.); (≤ 0.125 in.)

$b_1 = \underline{2}^\circ (\leq 5^\circ)$

$b_2 = \underline{4}^\circ (\leq 5^\circ)$

$w = A \sin \theta = \underline{0.00823}$ (in.); (≤ 0.03125 in.)

$\gamma = \underline{0}^\circ$ $\theta = \underline{0.5}^\circ$ $A = \underline{0.944}$ (in.)

$P_A = \underline{0.472}$ (in.), $P_B = \underline{0.472}$ (in.), $D_t = \underline{0.375}$ (in.)

Calibration required? yes X no

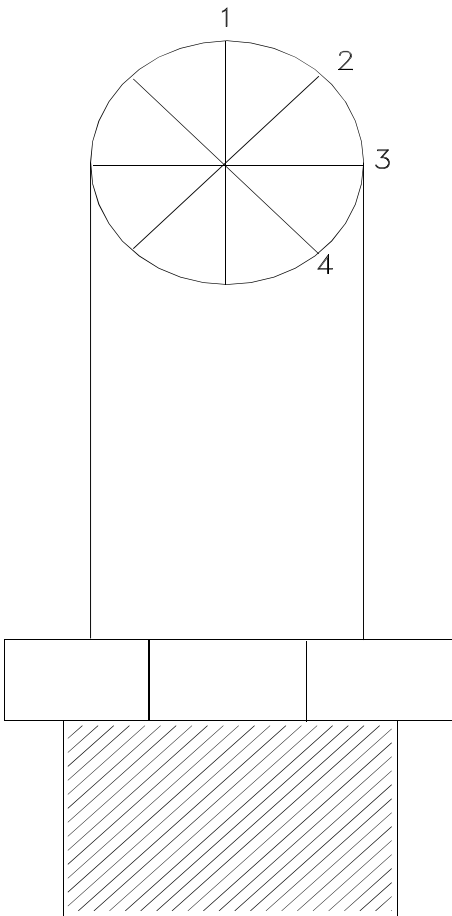
Nozzle Calibration

Date: 5/19/2025

Nozzle ID No.: #23, .175

Analyst: JAM

Material/Type: Glass



0.177 1

0.174 2

0.175 3

0.174 4

Valid Data

Average

0.175

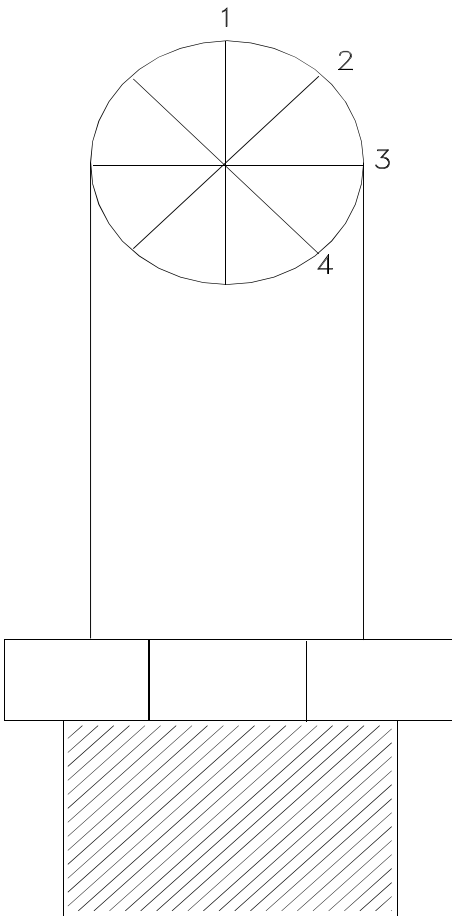
Nozzle Calibration

Date: 6/30/2025

Nozzle ID No.: 799, .177

Analyst: JAM

Material/Type: Glass



0.179 1

0.176 2

0.177 3

0.177 4

Valid Data

Average
<u>0.177</u>

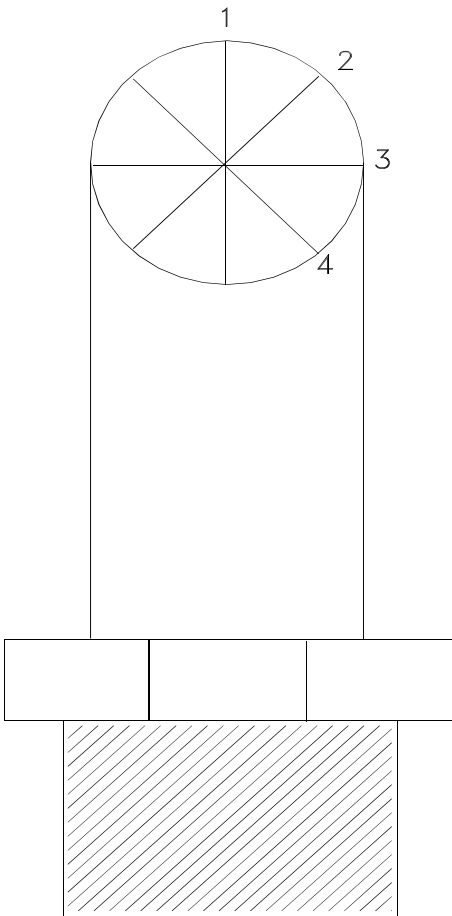
Nozzle Calibration

Date: 4/16/2025

Nozzle ID No.: 848, .190

Analyst: JAM

Material/Type: Glass



0.190 1

0.191 2

0.190 3

0.190 4

Valid Data

Average

0.190

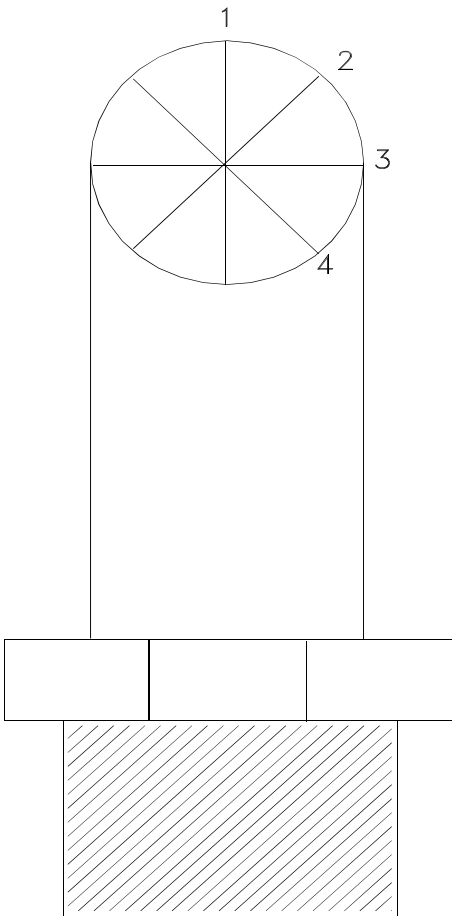
Nozzle Calibration

Date: 4/25/2025

Nozzle ID No.: 879, .205

Analyst: JAM

Material/Type: Glass



0.204 1

0.205 2

0.205 3

0.204 4

Valid Data

Average

0.205

Pre/Post	Date	Time	Analyst	Ambient Temperature degrees F	Relative Humidity %	Barometric Pressure inches Hg	Calibration Standard 50.0000g	% Error	Calibration Standard 0.50000g	% Error
Pre	8/4/2025	12:24PM	LNT	85	17.0	28.12	49.99998		4.99996	
Post	8/4/2025	12:39PM	LNT	85	17.0	28.12	49.99999		4.99998	
PRE	8/5/2024	12:30PM	LNT	86	12.0	28.20	49.99993		4.99995	
Post	8/5/2024	1:45PM	LNT	91	10.0	28.18	49.99993		4.99995	
Pre	8/6/2024	1:10PM	LNT	87	15.0	28.25	49.99990		4.99992	
Post	8/6/2024	3:15PM	LNT	90	16.0	28.21	49.99991		4.99992	
Pre	8/7/2024	10:18AM	LNT	81	29.0	28.24	49.99987		4.99992	
Post	8/7/2024	12:09PM	LNT	84	28.0	28.22	49.99994		4.99995	
Pre	8/8/2024	10:20AM	LNT	83	23.0	28.15	49.99995		4.99995	
Post	8/8/2024	10:33AM	LNT	84	23.0	28.15	49.99995		4.99994	
Pre	8/11/2025	11:29 AM	LNT	83	26.0	28.29	49.99999		4.99999	
Post	8/11/2025	11:58AM	LNT	84	25.0	28.19	49.99997		4.99998	
Pre	8/12/2025	2:16PM	LNT	85	29.0	28.10	50.00002		4.99998	
Post	8/12/2025	2:24PM	LNT	85	29.0	28.10	50.00001		5.00000	
Pre	8/13/2025	10:25AM	LNT	79	36.0	28.14	49.99993		5.00000	
Post	8/13/2025	11:22PM	LNT	82	37.0	28.13	49.99990		4.99997	
Pre	8/14/2025	1:05PM	LNT	85	32.0	28.08	49.99998		4.99999	
Post	8/14/2025	2:40PM	LNT	90	29.0	28.04	49.99983		4.99984	
Pre	8/17/2025	1:05PM	LNT	84	26.0	28.19	49.99989		4.99998	
Post	8/17/2025	1:23PM	LNT	87	25.0	28.18	49.99988		4.99993	
Pre	8/26/2025	12:43PM	JSC	78	36.0	28.30	49.99976		4.99995	
Post	8/26/2025	1:16PM	LNT	79	37.0	28.26	49.99977		4.99993	
Pre	8/27/2025	12:34 PM	LNT	80	35.0	28.31	49.99973		4.99994	
Post	8/27/2025	2:06PM	LNT	83	29.0	28.28	49.99976		4.99993	
Pre	8/28/2025	11:39 AM	JSC	69	36.0	28.33	49.99970		4.99996	
Post	8/28/2025	2:04 AM	JSC	77	26.0	28.15	49.99988		4.99998	

Balance ID Sartorius

Model QUINTIX65-1S

S/N 0034209777



Certificate of Calibration

Certificate No. 255772

Customer Information		Calibration Information	
MOSTARDI-PLATT 888 INDUSTRIAL DR. ELMHURST, IL 60126		As Found	In Tolerance
		As Left	In Tolerance
		Calibration Date:	2/21/2025
		Next Due:	2/21/2026
		Issue Date:	02/21/25
		Temperature:	70.2 °F
		Humidity:	24 %
		Procedure:	PPCA503 PPCA101
		Purchase Order	VBL/JENNA
		Event Type:	FIELD CALIBRATION

Description	Std. Nominal	Tolerance		As Found	As Left	Units
		-	+			
LINEARITY (SPAN)	0.00000	0.00000	0.00000	0.00000	0.00000	G
LINEARITY (SPAN)	15.00000	14.99300	15.00300	15.00009	15.00002	G
LINEARITY (SPAN)	30.00000	29.99300	30.00300	30.00021	30.00003	G
LINEARITY (SPAN)	45.00000	44.99300	45.00300	45.00031	45.00005	G
LINEARITY (SPAN)	60.00000	59.99300	60.00300	60.00021	60.00005	G
LINEARITY (SPAN)	0.00000	-0.00300	0.00300	0.00000	0.00000	G
SHIFT (POSITION 1)	20.00000	19.99300	20.00300	20.00000	20.00000	G
SHIFT (POSITION 2)	20.00000	19.99300	20.00300	20.00004	20.00002	G
SHIFT (POSITION 3)	20.00000	19.99300	20.00300	20.00009	20.00002	G
SHIFT (POSITION 4)	20.00000	19.99300	20.00300	20.00007	20.00002	G

"A" - Adjusted and returned in tolerance

"F" - Indicates out of tolerance result

Standards Used	I.D. Number	Last Cal.	Cal. Due
2 - 1000 GR WT SET	AM0025	8/21/2024	8/31/2026
TEMP/HUM GAUGE	AM0341A	7/17/2024	7/31/2026

Calibration Notes

This measurement equipment was tested using certified standards and was found to be indicating within manufacture specifications.

JOSEPH FABBRINI
 Certified/Authorized By

Signature

2/21/2025

Date

ACME Metrology, certifies that the instrument listed above has been tested, calibrated (if necessary), and meets the criteria established in the associated test procedure unless otherwise noted. The results found in this report relate only to the equipment identified in this report. The standards used are traceable to the "SI" through the National Institute of Standards and Technology (NIST) or other NMI. Statements of compliance use the Simple Acceptance Decision Rule per ILAC G8. The expanded uncertainty of measurement is not included in the determination of conformity or nonconformity, rather, it is provided with the data so as to facilitate its effect in false accept risk or false reject risk, as applicable, on a case by case basis by the customer. The calibration interval has been specified by the customer. Any number of factors may cause the calibration to drift out of tolerance before the recommended interval has expired. This Certificate of Calibration shall not be reproduced, except in full, without the written approval of ACME Metrology.



1100 N. Villa Avenue
 Villa Park IL 60181
 Tel: 630-833-3800/Fax: 630-833-0044
 acmemetrology.com

Certificate of Verification

Certificate No. 255794

Customer Information		Calibration Information	
MOSTARDI-PLATT 888 INDUSTRIAL DR. ELMHURST, IL. 60126		Verification Date:	2/21/2025
		Next Due Date:	2/21/2026
		Temperature:	72.2F
		Humidity:	21%
		Department:	
		Purchase Order:	VBL/JENNA
Equipment Information			
ID Number:	W-01		
Serial Number:	W-01		
Manufacturer:	N/A		
Model:	N/A		
Type:	WEIGHT KIT 50G, 5G, .5G		
Size:	WEIGHT KIT 50G, 5G, .5G		

Calibration Notes

* This test weight was compared on customers scale (#0034209777) against Acme NIST traceable test weight and was found to weigh within acceptable limits of the indicated value.

Description	Std. Nominal	As Found	Units
Weight	0.50000	0.50004	mg
Weight	5.00000	5.00000	g
Weight	50.00000	49.99990	g

JOSEPH FABBRINI

 Certified/Authorized By



 Signature

2/21/2025

 Date

Acme Metrology, certifies the instrument listed above has been verified according to the associated test procedure unless otherwise noted. The standards used are traceable to the National Institute of Standards and Technology (NIST). The verification interval has been specified by the customer. This Certificate of Verification shall not be reproduced, except in full, without the written approval of Acme Metrology.

Appendix H - Laboratory Sample Analysis

MOSTARDI PLATT

PROJECT: M253113
PCC – LARGE PARTS

CLIENT # M050
REPORT # 25-522 REVISION 1

SUBMITTED BY:
Alliance Technical Group

12242 S.W. GARDEN PLACE
TIGARD, OR 97223

(503) 624-2183
©Mostardi Platt



12242 SW Garden Place ❖ Tigard, OR 97223-8246 ❖ (503) 624-2183

Case Narrative

Date: October 9, 2025

General Information

Client: Mostardi Platt
Client Number: M050
Report Number: 25-522 Revision 1
Sample Description: Impinger Trains
Sample Numbers: 25-S3103 – 25-S3133

Analysis

Analytes: Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Hg, Ni, P, Se, Ag, Tl, V, Zn, Hexavalent Chromium

Analytical Protocols: EPA Method 29 (8/2/17 version)
SW-846 Method 0061 (revision 0, December 1996)

Analytical Notes: Method 29 front half samples 25-S3103 and 25-S3108 were analyzed at a twofold dilution for Be because of matrix interference. The detection limits were raised to account for the dilution. Results are not blank corrected.

The client requested Ba, Ag and Tl be added to this report on 10/6/25. Ba and Tl results were pulled from the original analysis, but Ag results are from reanalysis of the samples.

QA/QC Review: All the data have been reviewed by the analysts performing the analyses and the project manager. All the quality control and sample-specific information in this package is complete and meets or exceeds the minimum requirements for acceptability.

Comments: If you have any questions or concerns regarding this analysis, please feel free to contact the project manager.

Disclaimer: This report shall not be reproduced, except in full, without the written approval of the laboratory. The results only represent that of the samples as received into the laboratory. All data are reported to the detection limit. Results <5x DL must be considered to have a higher degree of uncertainty associated with them. Due to the statistical process of detection limit determination, data in this report should not be used for statistical analysis as the data has been censored in such a manner as to bias statistical analyses high.

Lab ID: 25-S3103
Client ID: Inlet Run 1 C1&3
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Aluminum, ICP	1,890	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	11.1	0.125	µg/sample
Beryllium, ICP	0.248	0.100	µg/sample
Cadmium, ICP-MS	0.274	0.075	µg/sample
Chromium, ICP	4,730	0.200	µg/sample
Cobalt, ICP	3,470	0.125	µg/sample
Copper, ICP	22.0	1.25	µg/sample
Lead, ICP-MS	1.74	0.075	µg/sample
Manganese, ICP	23.5	0.075	µg/sample
Mercury, CVAA	0.0344	0.0219	µg/sample
Nickel, ICP	15,000	0.750	µg/sample
Phosphorus, ICP	148.	5.00	µg/sample
Selenium, ICP	9.39	3.75	µg/sample
Silver, ICP	4.48	0.500	µg/sample
Thallium, ICP	45.5	2.50	µg/sample
Vanadium, ICP	3.54	0.250	µg/sample
Zinc, ICP	155.	0.750	µg/sample

Lab ID: 25-S3104
Client ID: Inlet Run 1 C4
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Aluminum, ICP	12.6	4.20	µg/sample
Antimony, ICP	< DL	0.700	µg/sample
Arsenic, ICP	< DL	0.980	µg/sample
Barium, ICP	1.80	0.070	µg/sample
Beryllium, ICP	0.036	0.028	µg/sample
Cadmium, ICP	0.292	0.056	µg/sample
Chromium, ICP	14.9	0.112	µg/sample
Cobalt, ICP	0.384	0.070	µg/sample
Copper, ICP	9.82	0.700	µg/sample
Lead, ICP	3.38	0.700	µg/sample
Manganese, ICP	7.98	0.042	µg/sample
Mercury, CVAA	0.0973	0.0243	µg/sample
Nickel, ICP	4.91	0.420	µg/sample
Phosphorus, ICP	22.9	2.80	µg/sample
Selenium, ICP	< DL	2.10	µg/sample
Silver, ICP	< DL	0.280	µg/sample
Thallium, ICP	< DL	1.40	µg/sample
Vanadium, ICP	< DL	0.140	µg/sample
Zinc, ICP	26.0	0.420	µg/sample

Lab ID: 25-S3105
Client ID: Inlet Run 1 C5A
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.00621	µg/sample

Lab ID: 25-S3106
Client ID: Inlet Run 1 C5B
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	0.113	0.0248	µg/sample

Lab ID: 25-S3107
Client ID: Inlet Run 1 C5C
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0216	µg/sample

Lab ID: 25-S3108
Client ID: Inlet Run 2 C1&3
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	586.	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	5.28	0.125	µg/sample
Beryllium, ICP	0.428	0.100	µg/sample
Cadmium, ICP-MS	0.120	0.075	µg/sample
Chromium, ICP	2,040	0.200	µg/sample
Cobalt, ICP	330.	0.125	µg/sample
Copper, ICP	17.5	1.25	µg/sample
Lead, ICP-MS	0.560	0.075	µg/sample
Manganese, ICP	16.5	0.075	µg/sample
Mercury, CVAA	< DL	0.0219	µg/sample
Nickel, ICP	6,690	0.750	µg/sample
Phosphorus, ICP	32.8	5.00	µg/sample
Selenium, ICP	< DL	3.75	µg/sample
Silver, ICP	3.28	0.500	µg/sample
Thallium, ICP	6.30	2.50	µg/sample
Vanadium, ICP	3.02	0.250	µg/sample
Zinc, ICP	74.2	0.750	µg/sample

Lab ID: 25-S3109
Client ID: Inlet Run 2 C4
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	24.6	3.39	µg/sample
Antimony, ICP	< DL	0.565	µg/sample
Arsenic, ICP	< DL	0.791	µg/sample
Barium, ICP	0.904	0.056	µg/sample
Beryllium, ICP	< DL	0.023	µg/sample
Cadmium, ICP	0.123	0.045	µg/sample
Chromium, ICP	21.1	0.090	µg/sample
Cobalt, ICP	16.1	0.056	µg/sample
Copper, ICP	1.71	0.565	µg/sample
Lead, ICP	0.921	0.565	µg/sample
Manganese, ICP	6.70	0.034	µg/sample
Mercury, CVAA	0.140	0.0305	µg/sample
Nickel, ICP	112.	0.339	µg/sample
Phosphorus, ICP	19.5	2.26	µg/sample
Selenium, ICP	< DL	1.70	µg/sample
Silver, ICP	< DL	0.226	µg/sample
Thallium, ICP	< DL	1.13	µg/sample
Vanadium, ICP	< DL	0.113	µg/sample
Zinc, ICP	11.8	0.339	µg/sample

Lab ID: 25-S3110
Client ID: Inlet Run 2 C5A
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.00980	µg/sample

Lab ID: 25-S3111
Client ID: Inlet Run 2 C5B
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	0.0450	0.0262	µg/sample

Lab ID: 25-S3112
Client ID: Inlet Run 2 C5C
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0193	µg/sample

Lab ID: 25-S3113
Client ID: Outlet Run 1 C1&3
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Aluminum, ICP	115.	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	7.47	0.125	µg/sample
Beryllium, ICP	< DL	0.050	µg/sample
Cadmium, ICP-MS	0.171	0.075	µg/sample
Chromium, ICP	5.46	0.200	µg/sample
Cobalt, ICP	2.03	0.125	µg/sample
Copper, ICP	16.5	1.25	µg/sample
Lead, ICP-MS	0.588	0.075	µg/sample
Manganese, ICP	4.45	0.075	µg/sample
Mercury, CVAA	0.0312	0.0219	µg/sample
Nickel, ICP	75.2	0.750	µg/sample
Phosphorus, ICP	22.0	5.00	µg/sample
Selenium, ICP	< DL	3.75	µg/sample
Silver, ICP	< DL	0.500	µg/sample
Thallium, ICP	< DL	2.50	µg/sample
Vanadium, ICP	0.394	0.250	µg/sample
Zinc, ICP	20.2	0.750	µg/sample

Lab ID: 25-S3114
Client ID: Outlet Run 1 C4
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Aluminum, ICP	87.7	3.60	µg/sample
Antimony, ICP	< DL	0.600	µg/sample
Arsenic, ICP	1.24	0.840	µg/sample
Barium, ICP	2.68	0.060	µg/sample
Beryllium, ICP	0.044	0.024	µg/sample
Cadmium, ICP	0.408	0.048	µg/sample
Chromium, ICP	1.79	0.096	µg/sample
Cobalt, ICP	0.415	0.060	µg/sample
Copper, ICP	2.61	0.600	µg/sample
Lead, ICP	3.88	0.600	µg/sample
Manganese, ICP	11.5	0.036	µg/sample
Mercury, CVAA	0.121	0.0212	µg/sample
Nickel, ICP	1.66	0.360	µg/sample
Phosphorus, ICP	26.3	2.40	µg/sample
Selenium, ICP	< DL	1.80	µg/sample
Silver, ICP	< DL	0.240	µg/sample
Thallium, ICP	< DL	1.20	µg/sample
Vanadium, ICP	0.243	0.120	µg/sample
Zinc, ICP	11.5	0.360	µg/sample

Lab ID: 25-S3115
Client ID: Outlet Run 1 C5A
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0131	µg/sample

Lab ID: 25-S3116
Client ID: Outlet Run 1 C5B
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	0.226	0.0311	µg/sample

Lab ID: 25-S3117
Client ID: Outlet Run 1 C5C
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0196	µg/sample

Lab ID: 25-S3118
Client ID: Outlet Run 2 C1&3
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	121.	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	2.88	0.125	µg/sample
Beryllium, ICP	< DL	0.050	µg/sample
Cadmium, ICP-MS	< DL	0.075	µg/sample
Chromium, ICP	10.1	0.200	µg/sample
Cobalt, ICP	3.24	0.125	µg/sample
Copper, ICP	6.01	1.25	µg/sample
Lead, ICP-MS	0.248	0.075	µg/sample
Manganese, ICP	3.08	0.075	µg/sample
Mercury, CVAA	< DL	0.0219	µg/sample
Nickel, ICP	56.6	0.750	µg/sample
Phosphorus, ICP	19.8	5.00	µg/sample
Selenium, ICP	< DL	3.75	µg/sample
Silver, ICP	< DL	0.500	µg/sample
Thallium, ICP	< DL	2.50	µg/sample
Vanadium, ICP	0.315	0.250	µg/sample
Zinc, ICP	12.2	0.750	µg/sample

Lab ID: 25-S3119
Client ID: Outlet Run 2 C4
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	27.0	3.48	µg/sample
Antimony, ICP	< DL	0.580	µg/sample
Arsenic, ICP	< DL	0.812	µg/sample
Barium, ICP	1.43	0.058	µg/sample
Beryllium, ICP	0.039	0.023	µg/sample
Cadmium, ICP	0.119	0.046	µg/sample
Chromium, ICP	1.71	0.093	µg/sample
Cobalt, ICP	0.300	0.058	µg/sample
Copper, ICP	0.858	0.580	µg/sample
Lead, ICP	0.710	0.580	µg/sample
Manganese, ICP	26.4	0.035	µg/sample
Mercury, CVAA	0.111	0.0258	µg/sample
Nickel, ICP	3.15	0.348	µg/sample
Phosphorus, ICP	19.8	2.32	µg/sample
Selenium, ICP	< DL	1.74	µg/sample
Silver, ICP	1.70	0.232	µg/sample
Thallium, ICP	< DL	1.16	µg/sample
Vanadium, ICP	< DL	0.116	µg/sample
Zinc, ICP	4.42	0.348	µg/sample

Lab ID: 25-S3120
Client ID: Outlet Run 2 C5A
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	0.0286	0.00910	µg/sample

Lab ID: 25-S3121
Client ID: Outlet Run 2 C5B
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	0.0851	0.0259	µg/sample

Lab ID: 25-S3122
Client ID: Outlet Run 2 C5C
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0192	µg/sample

Lab ID: 25-S3123
Client ID: C12 Filter Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	93.2	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	0.740	0.125	µg/sample
Beryllium, ICP	< DL	0.050	µg/sample
Cadmium, ICP-MS	< DL	0.075	µg/sample
Chromium, ICP	2.26	0.200	µg/sample
Cobalt, ICP	0.490	0.125	µg/sample
Copper, ICP	< DL	1.25	µg/sample
Lead, ICP-MS	< DL	0.075	µg/sample
Manganese, ICP	0.512	0.075	µg/sample
Mercury, CVAA	< DL	0.0219	µg/sample
Nickel, ICP	4.64	0.750	µg/sample
Phosphorus, ICP	20.2	5.00	µg/sample
Selenium, ICP	< DL	3.75	µg/sample
Silver, ICP	< DL	0.500	µg/sample
Thallium, ICP	< DL	2.50	µg/sample
Vanadium, ICP	0.278	0.250	µg/sample
Zinc, ICP	1.19	0.750	µg/sample

Lab ID: 25-S3124
Client ID: C8A .1N HNO3 Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	< DL	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	< DL	0.125	µg/sample
Beryllium, ICP	< DL	0.050	µg/sample
Cadmium, ICP-MS	< DL	0.075	µg/sample
Chromium, ICP	0.613	0.200	µg/sample
Cobalt, ICP	0.484	0.125	µg/sample
Copper, ICP	< DL	1.25	µg/sample
Lead, ICP-MS	< DL	0.075	µg/sample
Manganese, ICP	< DL	0.075	µg/sample
Mercury, CVAA	< DL	0.0219	µg/sample
Nickel, ICP	2.08	0.750	µg/sample
Phosphorus, ICP	< DL	5.00	µg/sample
Selenium, ICP	< DL	3.75	µg/sample
Silver, ICP	< DL	0.500	µg/sample
Thallium, ICP	< DL	2.50	µg/sample
Vanadium, ICP	< DL	0.250	µg/sample
Zinc, ICP	< DL	0.750	µg/sample

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Lab ID: 25-S3125
Client ID: C9 5%/10% Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	< DL	3.63	µg/sample
Antimony, ICP	< DL	0.605	µg/sample
Arsenic, ICP	< DL	0.847	µg/sample
Barium, ICP	0.245	0.060	µg/sample
Beryllium, ICP	< DL	0.024	µg/sample
Cadmium, ICP	0.114	0.048	µg/sample
Chromium, ICP	0.412	0.097	µg/sample
Cobalt, ICP	< DL	0.060	µg/sample
Copper, ICP	< DL	0.605	µg/sample
Lead, ICP	< DL	0.605	µg/sample
Manganese, ICP	0.183	0.036	µg/sample
Mercury, CVAA	0.122	0.0204	µg/sample
Nickel, ICP	0.614	0.363	µg/sample
Phosphorus, ICP	20.1	2.42	µg/sample
Selenium, ICP	< DL	1.82	µg/sample
Silver, ICP	< DL	0.242	µg/sample
Thallium, ICP	< DL	1.21	µg/sample
Vanadium, ICP	< DL	0.121	µg/sample
Zinc, ICP	0.688	0.363	µg/sample

Lab ID: 25-S3126
Client ID: C8B DI Water Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0178	µg/sample

Lab ID: 25-S3127
Client ID: C10 KMnO4 Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	0.112	0.0178	µg/sample

Lab ID: 25-S3128
Client ID: C11 8N HCl Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0229	µg/sample

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Client: M050 - Mostardi Platt
Report Number: 25-522

Lab ID: 25-S3129
Client ID: 0061 Inlet Run 1
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25
Sample Volume: 500. mL

Analyte	µg/L		µg/sample	
	Conc.	DL	Conc.	DL
Cr VI	7.97	0.010	3.99	0.0050

Lab ID: 25-S3130
Client ID: 0061 Outlet Run 1
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25
Sample Volume: 385. mL

Analyte	µg/L		µg/sample	
	Conc.	DL	Conc.	DL
Cr VI	6.08	0.010	2.34	0.0038

Lab ID: 25-S3131
Client ID: 0061 Inlet Run 2
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25
Sample Volume: 460. mL

Analyte	µg/L		µg/sample	
	Conc.	DL	Conc.	DL
Cr VI	8.39	0.010	3.86	0.0046

Lab ID: 25-S3132
Client ID: 0061 Outlet Run 2
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25
Sample Volume: 425. mL

Analyte	µg/L		µg/sample	
	Conc.	DL	Conc.	DL
Cr VI	6.13	0.010	2.60	0.0042

Lab ID: 25-S3133
Client ID: KOH Blank
Site: PCC-Large Parts
Sample Date: 7/30/25
Sample Volume: 355. mL

Analyte	µg/L		µg/sample	
	Conc.	DL	Conc.	DL
Cr VI	3.80	0.010	1.35	0.0036

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QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 1&3
 Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Ag	ICB	< DL	2.00
Ag	Meth_Blk	< DL	2.00
Ag	CCB	< DL	2.00
Ag	CCB	< DL	2.00
Al	ICB	< DL	15.0
Al	Meth_Blk	< DL	15.0
Al	CCB	< DL	15.0
Al	CCB	< DL	15.0
As	ICB	< DL	7.00
As	Meth_Blk	< DL	7.00
As	CCB	< DL	7.00
As	CCB	< DL	7.00
Ba	ICB	< DL	0.500
Ba	Meth_Blk	< DL	0.500
Ba	CCB	< DL	0.500
Ba	CCB	< DL	0.500
Be	ICB	< DL	0.400
Be	Meth_Blk	< DL	0.400
Be	CCB	< DL	0.400
Be	CCB	< DL	0.400
Co	ICB	< DL	0.500
Co	Meth_Blk	< DL	0.500
Co	CCB	< DL	0.500
Co	CCB	< DL	0.500
Cr	ICB	< DL	0.800
Cr	Meth_Blk	< DL	0.800
Cr	CCB	< DL	0.800
Cr	CCB	< DL	0.800
Cu	ICB	< DL	5.00
Cu	Meth_Blk	< DL	5.00
Cu	CCB	< DL	5.00
Cu	CCB	< DL	5.00
Mn	ICB	< DL	0.300
Mn	Meth_Blk	< DL	0.300
Mn	CCB	< DL	0.300
Mn	CCB	< DL	0.300
Ni	ICB	< DL	3.00
Ni	Meth_Blk	< DL	3.00
Ni	CCB	< DL	3.00

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 1&3
 Report Number: 25-522

Blank Data (continued)

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Ni	CCB	< DL	3.00
P	ICB	< DL	20.0
P	Meth_Blk	< DL	20.0
P	CCB	< DL	20.0
P	CCB	< DL	20.0
Se	ICB	< DL	15.0
Se	Meth_Blk	< DL	15.0
Se	CCB	< DL	15.0
Se	CCB	< DL	15.0
Tl	ICB	< DL	10.0
Tl	Meth_Blk	< DL	10.0
Tl	CCB	< DL	10.0
Tl	CCB	< DL	10.0
V	ICB	< DL	1.00
V	Meth_Blk	< DL	1.00
V	CCB	< DL	1.00
V	CCB	< DL	1.00
Zn	ICB	< DL	3.00
Zn	Meth_Blk	< DL	3.00
Zn	CCB	< DL	3.00
Zn	CCB	< DL	3.00

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
 *: Sample Media Blank (SM_Blk) concentration in µg/filter
 Method Blank is in control if Method Blank results are <10% of sample results

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Ag	ICV	2500.	2618.	104.7
Ag	LL-CCV	10.00	10.95	109.5
Ag	LL-LCS	9.000	5.096	56.6
Ag	CCV	2500.	2578.	103.1
Ag	CCV	2500.	2551.	102.0
Al	ICV	2500.	2514.	100.6
Al	LL-CCV	150.0	151.5	101.0
Al	LL-LCS	75.00	81.13	108.2

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
 Calibration Verification Limits: 90% - 110% Recovery
 Low Level-CCV Limits: 60% - 140% Recovery
 Low Level-LCS Limits: 50% - 150% Recovery
 LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 1&3
 Report Number: 25-522

Calibration QC (continued)

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Al	CCV	2500.	2547.	101.9
Al	CCV	2500.	2634.	105.4
As	ICV	2500.	2411.	96.4
As	LL-CCV	35.00	36.69	104.8
As	LL-LCS	20.00	18.12	90.6
As	CCV	2500.	2398.	95.9
As	CCV	2500.	2352.	94.1
Ba	ICV	2500.	2528.	101.1
Ba	LL-CCV	2.500	2.690	107.6
Ba	LL-LCS	2.000	1.805	90.2
Ba	CCV	2500.	2570.	102.8
Ba	CCV	2500.	2602.	104.1
Be	ICV	2500.	2488.	99.5
Be	LL-CCV	1.000	1.058	105.8
Be	LL-LCS	0.500	0.512	102.4
Be	CCV	2500.	2433.	97.3
Be	CCV	2500.	2413.	96.5
Co	ICV	2500.	2500.	100.0
Co	LL-CCV	2.500	2.192	87.7
Co	LL-LCS	1.500	1.012	67.5
Co	CCV	2500.	2469.	98.8
Co	CCV	2500.	2442.	97.7
Cr	ICV	2500.	2358.	94.3
Cr	LL-CCV	4.000	4.414	110.4
Cr	LL-LCS	2.000	2.056	102.8
Cr	CCV	2500.	2368.	94.7
Cr	CCV	2500.	2332.	93.3
Cu	ICV	2500.	2393.	95.7
Cu	LL-CCV	25.00	27.05	108.2
Cu	LL-LCS	15.00	15.79	105.3
Cu	CCV	2500.	2389.	95.6
Cu	CCV	2500.	2365.	94.6
Mn	ICV	2500.	2503.	100.1
Mn	LL-CCV	1.500	1.740	116.0
Mn	LL-LCS	1.000	1.161	116.1
Mn	CCV	2500.	2487.	99.5
Mn	CCV	2500.	2462.	98.5

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
 Calibration Verification Limits: 90% - 110% Recovery
 Low Level-CCV Limits: 60% - 140% Recovery
 Low Level-LCS Limits: 50% - 150% Recovery

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 1&3
 Report Number: 25-522

Calibration QC (continued)

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Ni	ICV	2500.	2448.	97.9
Ni	LL-CCV	15.00	17.16	114.4
Ni	LL-LCS	6.000	5.914	98.6
Ni	CCV	2500.	2412.	96.5
Ni	CCV	2500.	2370.	94.8
P	ICV	2500.	2535.	101.4
P	LL-CCV	100.0	99.66	99.7
P	LL-LCS	75.00	73.53	98.0
P	CCV	2500.	2493.	99.7
P	CCV	2500.	2437.	97.5
Se	ICV	2500.	2407.	96.3
Se	LL-CCV	75.00	74.90	99.9
Se	LL-LCS	30.00	28.91	96.4
Se	CCV	2500.	2372.	94.9
Se	CCV	2500.	2341.	93.6
Tl	ICV	2500.	2437.	97.5
Tl	LL-CCV	50.00	52.41	104.8
Tl	LL-LCS	30.00	22.21	74.0
Tl	CCV	2500.	2387.	95.5
Tl	CCV	2500.	2336.	93.4
V	ICV	2500.	2391.	95.6
V	LL-CCV	5.000	5.450	109.0
V	LL-LCS	3.000	3.246	108.2
V	CCV	2500.	2419.	96.8
V	CCV	2500.	2336.	93.4
Zn	ICV	2500.	2455.	98.2
Zn	LL-CCV	15.00	17.32	115.5
Zn	LL-LCS	6.000	6.607	110.1
Zn	CCV	2500.	2437.	97.5
Zn	CCV	2500.	2421.	96.8

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
 Calibration Verification Limits: 90% - 110% Recovery
 Low Level-CCV Limits: 60% - 140% Recovery
 Low Level-LCS Limits: 50% - 150% Recovery
 LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 1&3
 Report Number: 25-522

Replicate Data

Analyte	Sample ID	Sample Conc. µg/L	Replicate Conc. µg/L	RPD
Ag	25-S3103	17.9	14.8	18.8
Al	25-S3103	7550	7680	1.71
As	25-S3103	< 7	< 7	N/C *
Ba	25-S3103	44.4	43.9	1.20
Be	25-S3103	0.994	0.978	1.62 *
Co	25-S3103	13900	13800	0.36
Cr	25-S3103	18900	18900	0.21
Cu	25-S3103	88.0	87.5	0.63
Mn	25-S3103	94.1	93.0	1.18
Ni	25-S3103	60200	60300	0.30
P	25-S3103	591.	594.	0.54
Se	25-S3103	37.6	38.8	3.15 *
Tl	25-S3103	182.	196.	7.40
V	25-S3103	14.2	14.1	0.64
Zn	25-S3103	622.	647.	3.99

RPD = $\frac{\text{sample}-\text{replicate}}{[(\text{sample}+\text{replicate})/2]} \times 100$

N/C: RPD is not calculated when sample or replicate is below detection limit

Replicate Limit: 20% RPD

*: per EPA CLP protocol, control limits do not apply if sample and/or replicate concentration is less than 5x the detection limit

Laboratory Control Sample/Matrix Post Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Ag	LCS	< 2	1122.	1000	112.
Ag	LCS-Duplicate	< 2	1096.	1000	110.
Ag	25-S3108	13.10	1024.	1000	101.
Al	LCS	< 15	1070.	1000	107.
Al	LCS-Duplicate	< 15	1077.	1000	108.
Al	25-S3108	2343.	3371.	1000	103.
As	LCS	< 7	997.2	1000	99.7
As	LCS-Duplicate	< 7	984.2	1000	98.4
As	25-S3108	< 7	953.4	1000	95.3
Ba	LCS	< 0.5	1040.	1000	104.
Ba	LCS-Duplicate	< 0.5	1047.	1000	105.
Ba	25-S3108	21.14	1044.	1000	102.
Be	LCS	< 0.2	1021.	1000	102.

LCS Limit: 80% - 120% Recovery

Spike Limit: 75% - 125% Recovery

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 1&3
 Report Number: 25-522

Laboratory Control Sample/Matrix Post Spike Analysis (continued)

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Be	LCS-Duplicate	< 0.2	1026.	1000	103.
Be	25-S3108	1.711	1843.	2000	92.1
Co	LCS	< 0.5	1030.	1000	103.
Co	LCS-Duplicate	< 0.5	1023.	1000	102.
Co	25-S3108	1318.	2152.	1000	83.4
Cr	LCS	< 0.8	955.0	1000	95.5
Cr	LCS-Duplicate	< 0.8	945.9	1000	94.6
Cr	25-S3108	8169.	17330	10000	91.6
Cu	LCS	< 5	1006.	1000	101.
Cu	LCS-Duplicate	< 5	1009.	1000	101.
Cu	25-S3108	69.94	975.1	1000	90.5
Mn	LCS	< 0.3	1026.	1000	103.
Mn	LCS-Duplicate	< 0.3	1030.	1000	103.
Mn	25-S3108	65.94	938.1	1000	87.2
Ni	LCS	< 3	1014.	1000	101.
Ni	LCS-Duplicate	< 3	1009.	1000	101.
Ni	25-S3108	26750	35280	10000	85.3
P	LCS	< 20	1058.	1000	106.
P	LCS-Duplicate	< 20	1051.	1000	105.
P	25-S3108	131.0	1037.	1000	90.6
Se	LCS	< 15	1010.	1000	101.
Se	LCS-Duplicate	< 15	999.6	1000	100.
Se	25-S3108	< 15	935.2	1000	93.5
Tl	LCS	< 10	1022.	1000	102.
Tl	LCS-Duplicate	< 10	1019.	1000	102.
Tl	25-S3108	25.18	863.5	1000	83.8
V	LCS	< 1	966.2	1000	96.6
V	LCS-Duplicate	< 1	945.3	1000	94.5
V	25-S3108	12.06	946.6	1000	93.5
Zn	LCS	< 3	1031.	1000	103.
Zn	LCS-Duplicate	< 3	1025.	1000	102.
Zn	25-S3108	296.7	1263.	1000	96.6

LCS Limit: 80% - 120% Recovery

Spike Limit: 75% - 125% Recovery

LCS Duplicate Data

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
Ag	LCS-Duplicate	1122.	1096.	2.34
Al	LCS-Duplicate	1070.	1077.	0.65

RPD = $\frac{(\text{sample-duplicate})}{[(\text{sample}+\text{duplicate})/2]} \times 100$

Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 1&3
Report Number: 25-522

LCS Duplicate Data (continued)

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
As	LCS-Duplicate	997.2	984.2	1.31
Ba	LCS-Duplicate	1040.	1047.	0.67
Be	LCS-Duplicate	1021.	1026.	0.49
Co	LCS-Duplicate	1030.	1023.	0.68
Cr	LCS-Duplicate	955.0	945.9	0.96
Cu	LCS-Duplicate	1006.	1009.	0.30
Mn	LCS-Duplicate	1026.	1030.	0.39
Ni	LCS-Duplicate	1014.	1009.	0.49
P	LCS-Duplicate	1058.	1051.	0.66
Se	LCS-Duplicate	1010.	999.6	1.04
Tl	LCS-Duplicate	1022.	1019.	0.29
V	LCS-Duplicate	966.2	945.3	2.19
Zn	LCS-Duplicate	1031.	1025.	0.58

RPD = $\frac{\text{sample-duplicate}}{(\text{sample}+\text{duplicate})/2} \times 100$

Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-MS
 Instrument: Agilent 7850
 Sample Description: EPA Method 29 Cont. 1&3
 Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Cd	ICB	< DL	0.030
Cd	Meth_Blk	< DL	0.300
Cd	CCB	< DL	0.030
Cd	CCB	< DL	0.030
Pb	ICB	< DL	0.030
Pb	Meth_Blk	< DL	0.300
Pb	CCB	< DL	0.030
Pb	CCB	< DL	0.030
Sb	ICB	< DL	0.300
Sb	Meth_Blk	< DL	3.00
Sb	CCB	< DL	0.300
Sb	CCB	< DL	0.300

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
 *: Sample Media Blank (SM_Blk) concentration in µg/filter
 Method Blank is in control if Method Blank results are <10% of sample results

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Cd	ICV	100.0	99.41	99.4
Cd	CCV	100.0	105.3	105.3
Cd	CCV	100.0	104.4	104.4
Pb	ICV	100.0	99.54	99.5
Pb	CCV	100.0	98.99	99.0
Pb	CCV	100.0	99.17	99.2
Sb	ICV	100.0	96.08	96.1
Sb	CCV	100.0	98.80	98.8
Sb	CCV	100.0	97.46	97.5

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
 Calibration Verification Limits: 90% - 110% Recovery
 Low Level-CCV Limits: 60% - 140% Recovery
 Low Level-LCS Limits: 50% - 150% Recovery
 LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-MS
 Instrument: Agilent 7850
 Sample Description: EPA Method 29 Cont. 1&3
 Report Number: 25-522

Replicate Data

Analyte	Sample ID	Sample Conc. µg/L	Replicate Conc. µg/L	RPD
Cd	25-S3103	1.10	1.14	4.02
Pb	25-S3103	6.98	7.03	0.69
Sb	25-S3103	< 3	< 3	N/C *

RPD = $\frac{(\text{sample} - \text{replicate})}{[(\text{sample} + \text{replicate})/2]} \times 100$

N/C: RPD is not calculated when sample or replicate is below detection limit

Replicate Limit: 20% RPD

*: per EPA CLP protocol, control limits do not apply if sample and/or replicate concentration is less than 5x the detection limit

Laboratory Control Sample/Matrix Post Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Cd	LCS	< 0.3	1028.	1000	103.
Cd	LCS-Duplicate	< 0.3	1041.	1000	104.
Cd	25-S3108	0.478	1045.	1000	104.
Pb	LCS	< 0.3	970.2	1000	97.0
Pb	LCS-Duplicate	< 0.3	966.0	1000	96.6
Pb	25-S3108	2.238	994.4	1000	99.2
Sb	LCS	< 3	967.9	1000	96.8
Sb	LCS-Duplicate	< 3	964.3	1000	96.4
Sb	25-S3108	< 3	987.4	1000	98.7

LCS Limit: 80% - 120% Recovery

Spike Limit: 75% - 125% Recovery

LCS Duplicate Data

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
Cd	LCS-Duplicate	1028.	1041.	1.26
Pb	LCS-Duplicate	970.2	966.0	0.43
Sb	LCS-Duplicate	967.9	964.3	0.37

RPD = $\frac{(\text{sample} - \text{duplicate})}{[(\text{sample} + \text{duplicate})/2]} \times 100$

Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 4
 Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Ag	ICB	< DL	2.00
Ag	Meth_Blk	< DL	2.00
Ag	CCB	< DL	2.00
Ag	CCB	< DL	2.00
Al	ICB	< DL	30.0
Al	Meth_Blk	< DL	30.0
Al	CCB	< DL	30.0
Al	CCB	< DL	30.0
As	ICB	< DL	7.00
As	Meth_Blk	< DL	7.00
As	CCB	< DL	7.00
As	CCB	< DL	7.00
Ba	ICB	< DL	0.500
Ba	Meth_Blk	1.02	0.500
Ba	CCB	< DL	0.500
Ba	CCB	< DL	0.500
Be	ICB	< DL	0.200
Be	Meth_Blk	< DL	0.200
Be	CCB	< DL	0.200
Be	CCB	< DL	0.200
Cd	ICB	< DL	0.400
Cd	Meth_Blk	< DL	0.400
Cd	CCB	< DL	0.400
Cd	CCB	< DL	0.400
Co	ICB	< DL	0.500
Co	Meth_Blk	< DL	0.500
Co	CCB	< DL	0.500
Co	CCB	< DL	0.500
Cr	ICB	< DL	0.800
Cr	Meth_Blk	< DL	0.800
Cr	CCB	< DL	0.800
Cr	CCB	< DL	0.800
Cu	ICB	< DL	5.00
Cu	Meth_Blk	< DL	5.00
Cu	CCB	< DL	5.00
Cu	CCB	< DL	5.00
Mn	ICB	< DL	0.300
Mn	Meth_Blk	< DL	0.300
Mn	CCB	< DL	0.300

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 4
 Report Number: 25-522

Blank Data (continued)

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Mn	CCB	< DL	0.300
Ni	ICB	< DL	3.00
Ni	Meth_Blk	< DL	3.00
Ni	CCB	< DL	3.00
Ni	CCB	< DL	3.00
P	ICB	< DL	20.0
P	Meth_Blk	< DL	20.0
P	CCB	< DL	20.0
P	CCB	< DL	20.0
Pb	ICB	< DL	5.00
Pb	Meth_Blk	< DL	5.00
Pb	CCB	< DL	5.00
Pb	CCB	< DL	5.00
Sb	ICB	< DL	5.00
Sb	Meth_Blk	< DL	5.00
Sb	CCB	< DL	5.00
Sb	CCB	< DL	5.00
Se	ICB	< DL	15.0
Se	Meth_Blk	< DL	15.0
Se	CCB	< DL	15.0
Se	CCB	< DL	15.0
Tl	ICB	< DL	10.0
Tl	Meth_Blk	< DL	10.0
Tl	CCB	< DL	10.0
Tl	CCB	< DL	10.0
V	ICB	< DL	1.00
V	Meth_Blk	< DL	1.00
V	CCB	< DL	1.00
V	CCB	< DL	1.00
Zn	ICB	< DL	3.00
Zn	Meth_Blk	< DL	3.00
Zn	CCB	< DL	3.00
Zn	CCB	< DL	3.00

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
 *: Sample Media Blank (SM_Blk) concentration in µg/filter
 Method Blank is in control if Method Blank results are <10% of sample results

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 4
 Report Number: 25-522

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Ag	ICV	2500.	2651.	106.0
Ag	LL-CCV	10.00	6.821	68.2
Ag	LL-LCS	9.000	5.487	61.0
Ag	CCV	2500.	2637.	105.5
Ag	CCV	2500.	2601.	104.0
Al	ICV	2500.	2497.	99.9
Al	LL-CCV	150.0	145.3	96.9
Al	LL-LCS	75.00	84.51	112.7
Al	CCV	2500.	2519.	100.8
Al	CCV	2500.	2489.	99.6
As	ICV	2500.	2429.	97.2
As	LL-CCV	35.00	32.67	93.3
As	LL-LCS	20.00	17.63	88.2
As	CCV	2500.	2429.	97.2
As	CCV	2500.	2422.	96.9
Ba	ICV	2500.	2529.	101.2
Ba	LL-CCV	2.500	2.657	106.3
Ba	LL-LCS	2.000	1.898	94.9
Ba	CCV	2500.	2541.	101.6
Ba	CCV	2500.	2516.	100.6
Be	ICV	2500.	2511.	100.4
Be	LL-CCV	1.000	1.083	108.3
Be	LL-LCS	0.500	0.932	186.4
Be	CCV	2500.	2531.	101.2
Be	CCV	2500.	2509.	100.4
Cd	ICV	2500.	2488.	99.5
Cd	LL-CCV	2.000	2.075	103.8
Cd	LL-LCS	1.500	1.943	129.5
Cd	CCV	2500.	2531.	101.2
Cd	CCV	2500.	2509.	100.4
Co	ICV	2500.	2472.	98.9
Co	LL-CCV	2.500	2.225	89.0
Co	LL-LCS	1.500	1.875	125.0
Co	CCV	2500.	2447.	97.9
Co	CCV	2500.	2447.	97.9
Cr	ICV	2500.	2439.	97.6
Cr	LL-CCV	4.000	4.430	110.8

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
 Calibration Verification Limits: 90% - 110% Recovery
 Low Level-CCV Limits: 60% - 140% Recovery
 Low Level-LCS Limits: 50% - 150% Recovery

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 4
 Report Number: 25-522

Calibration QC (continued)

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Cr	LL-LCS	2.000	2.956	147.8
Cr	CCV	2500.	2470.	98.8
Cr	CCV	2500.	2453.	98.1
Cu	ICV	2500.	2349.	94.0
Cu	LL-CCV	25.00	27.47	109.9
Cu	LL-LCS	15.00	14.63	97.5
Cu	CCV	2500.	2367.	94.7
Cu	CCV	2500.	2352.	94.1
Mn	ICV	2500.	2485.	99.4
Mn	LL-CCV	1.500	1.737	115.8
Mn	LL-LCS	1.500	1.991	132.7
Mn	CCV	2500.	2515.	100.6
Mn	CCV	2500.	2500.	100.0
Ni	ICV	2500.	2389.	95.6
Ni	LL-CCV	15.00	15.72	104.8
Ni	LL-LCS	6.000	8.156	135.9
Ni	CCV	2500.	2413.	96.5
Ni	CCV	2500.	2405.	96.2
P	ICV	2500.	2447.	97.9
P	LL-CCV	100.0	98.93	98.9
P	LL-LCS	75.00	72.12	96.2
P	CCV	2500.	2432.	97.3
P	CCV	2500.	2432.	97.3
Pb	ICV	2500.	2365.	94.6
Pb	LL-CCV	25.00	27.27	109.1
Pb	LL-LCS	15.00	13.06	87.1
Pb	CCV	2500.	2261.	90.4
Pb	CCV	2500.	2281.	91.2
Sb	ICV	2500.	2438.	97.5
Sb	LL-CCV	25.00	21.68	86.7
Sb	LL-LCS	15.00	11.79	78.6
Sb	CCV	2500.	2555.	102.2
Sb	CCV	2500.	2539.	101.6
Se	ICV	2500.	2423.	96.9
Se	LL-CCV	75.00	77.71	103.6
Se	LL-LCS	30.00	38.24	127.5
Se	CCV	2500.	2355.	94.2

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
 Calibration Verification Limits: 90% - 110% Recovery
 Low Level-CCV Limits: 60% - 140% Recovery
 Low Level-LCS Limits: 50% - 150% Recovery

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 4
 Report Number: 25-522

Calibration QC (continued)

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Se	CCV	2500.	2358.	94.3
Tl	ICV	2500.	2379.	95.2
Tl	LL-CCV	50.00	51.54	103.1
Tl	LL-LCS	30.00	25.52	85.1
Tl	CCV	2500.	2339.	93.6
Tl	CCV	2500.	2327.	93.1
V	ICV	2500.	2429.	97.2
V	LL-CCV	5.000	4.981	99.6
V	LL-LCS	3.000	3.218	107.3
V	CCV	2500.	2416.	96.6
V	CCV	2500.	2413.	96.5
Zn	ICV	2500.	2528.	101.1
Zn	LL-CCV	15.00	16.49	109.9
Zn	LL-LCS	6.000	8.121	135.4
Zn	CCV	2500.	2554.	102.2
Zn	CCV	2500.	2532.	101.3

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
 Calibration Verification Limits: 90% - 110% Recovery
 Low Level-CCV Limits: 60% - 140% Recovery
 Low Level-LCS Limits: 50% - 150% Recovery
 LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

Replicate Data

Analyte	Sample ID	Sample Conc. µg/L	Replicate Conc. µg/L	RPD
Ag	25-S3104	< 2	< 2	N/C *
Al	25-S3104	89.6	88.7	1.02
As	25-S3104	< 7	< 7	N/C *
Ba	25-S3104	12.9	12.7	1.41
Be	25-S3104	0.254	0.259	1.95 *
Cd	25-S3104	2.09	1.84	12.6 *
Co	25-S3104	2.74	2.83	3.26
Cr	25-S3104	106.	108.	1.40
Cu	25-S3104	70.2	70.1	0.01
Mn	25-S3104	57.0	57.5	0.89
Ni	25-S3104	35.1	35.4	1.02
P	25-S3104	163.	176.	7.66
Pb	25-S3104	24.1	27.6	13.4 *

RPD = $\frac{(\text{sample} - \text{replicate})}{[(\text{sample} + \text{replicate})/2]} \times 100$

N/C: RPD is not calculated when sample or replicate is below detection limit

Replicate Limit: 20% RPD

*: per EPA CLP protocol, control limits do not apply if sample and/or replicate concentration is less than 5x the detection limit

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 4
 Report Number: 25-522

Replicate Data (continued)

Analyte	Sample ID	Sample Conc. µg/L	Replicate Conc. µg/L	RPD
Sb	25-S3104	< 5	< 5	N/C *
Se	25-S3104	< 15	< 15	N/C *
Tl	25-S3104	< 10	< 10	N/C *
V	25-S3104	< 1	< 1	N/C *
Zn	25-S3104	186.	187.	0.86

RPD = $\frac{(\text{sample} - \text{replicate})}{[(\text{sample} + \text{replicate})/2]} \times 100$

N/C: RPD is not calculated when sample or replicate is below detection limit

Replicate Limit: 20% RPD

*: per EPA CLP protocol, control limits do not apply if sample and/or replicate concentration is less than 5x the detection limit

Laboratory Control Sample/Matrix Post Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Ag	LCS	< 2	994.8	1000	99.5
Ag	LCS-Duplicate	< 2	999.5	1000	100.
Ag	25-S3109	< 2	989.4	1000	98.9
Al	LCS	< 30	941.2	1000	94.1
Al	LCS-Duplicate	< 30	896.2	1000	89.6
Al	25-S3109	218.0	1131.	1000	91.3
As	LCS	< 7	937.8	1000	93.8
As	LCS-Duplicate	< 7	937.6	1000	93.8
As	25-S3109	< 7	928.4	1000	92.8
Ba	LCS	1.022	931.4	1000	93.0
Ba	LCS-Duplicate	1.022	966.0	1000	96.5
Ba	25-S3109	7.996	993.5	1000	98.6
Be	LCS	< 0.2	955.6	1000	95.6
Be	LCS-Duplicate	< 0.2	953.0	1000	95.3
Be	25-S3109	< 0.2	947.0	1000	94.7
Cd	LCS	< 0.4	955.4	1000	95.5
Cd	LCS-Duplicate	< 0.4	953.4	1000	95.3
Cd	25-S3109	1.092	951.8	1000	95.1
Co	LCS	< 0.5	967.2	1000	96.7
Co	LCS-Duplicate	< 0.5	962.6	1000	96.3
Co	25-S3109	142.3	1107.	1000	96.5
Cr	LCS	< 0.8	948.1	1000	94.8
Cr	LCS-Duplicate	< 0.8	942.5	1000	94.2

LCS Limit: 80% - 120% Recovery

Spike Limit: 75% - 125% Recovery

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: ICP-OES
 Instrument: Perkin Elmer Optima 8300
 Sample Description: EPA Method 29 Cont. 4
 Report Number: 25-522

Laboratory Control Sample/Matrix Post Spike Analysis (continued)

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Cr	25-S3109	186.6	1109.	1000	92.2
Cu	LCS	< 5	926.5	1000	92.6
Cu	LCS-Duplicate	< 5	923.5	1000	92.4
Cu	25-S3109	15.16	938.8	1000	92.4
Mn	LCS	< 0.3	979.8	1000	98.0
Mn	LCS-Duplicate	< 0.3	974.2	1000	97.4
Mn	25-S3109	59.31	1011.	1000	95.2
Ni	LCS	< 3	931.1	1000	93.1
Ni	LCS-Duplicate	< 3	924.0	1000	92.4
Ni	25-S3109	992.2	1959.	1000	96.7
P	LCS	< 20	947.1	1000	94.7
P	LCS-Duplicate	< 20	923.8	1000	92.4
P	25-S3109	172.2	1099.	1000	92.7
Pb	LCS	< 5	920.5	1000	92.0
Pb	LCS-Duplicate	< 5	906.0	1000	90.6
Pb	25-S3109	8.150	914.5	1000	90.6
Sb	LCS	< 5	959.1	1000	95.9
Sb	LCS-Duplicate	< 5	950.7	1000	95.1
Sb	25-S3109	< 5	947.0	1000	94.7
Se	LCS	< 15	913.8	1000	91.4
Se	LCS-Duplicate	< 15	924.5	1000	92.4
Se	25-S3109	< 15	902.3	1000	90.2
Tl	LCS	< 10	918.0	1000	91.8
Tl	LCS-Duplicate	< 10	925.6	1000	92.6
Tl	25-S3109	< 10	922.7	1000	92.3
V	LCS	< 1	950.9	1000	95.1
V	LCS-Duplicate	< 1	933.7	1000	93.4
V	25-S3109	< 1	939.1	1000	93.9
Zn	LCS	< 3	960.0	1000	96.0
Zn	LCS-Duplicate	< 3	963.7	1000	96.4
Zn	25-S3109	104.6	1061.	1000	95.6

LCS Limit: 80% - 120% Recovery

Spike Limit: 75% - 125% Recovery

LCS Duplicate Data

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
Ag	LCS-Duplicate	994.8	999.5	0.47
Al	LCS-Duplicate	941.2	896.2	4.90
As	LCS-Duplicate	937.8	937.6	0.02

RPD = $\frac{(\text{sample-duplicate})}{((\text{sample}+\text{duplicate})/2)} \times 100$

Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 4
Report Number: 25-522

LCS Duplicate Data (continued)

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
Ba	LCS-Duplicate	931.4	966.0	3.65
Be	LCS-Duplicate	955.6	953.0	0.27
Cd	LCS-Duplicate	955.4	953.4	0.21
Co	LCS-Duplicate	967.2	962.6	0.48
Cr	LCS-Duplicate	948.1	942.5	0.59
Cu	LCS-Duplicate	926.5	923.5	0.32
Mn	LCS-Duplicate	979.8	974.2	0.57
Ni	LCS-Duplicate	931.1	924.0	0.77
P	LCS-Duplicate	947.1	923.8	2.49
Pb	LCS-Duplicate	920.5	906.0	1.59
Sb	LCS-Duplicate	959.1	950.7	0.88
Se	LCS-Duplicate	913.8	924.5	1.16
Tl	LCS-Duplicate	918.0	925.6	0.82
V	LCS-Duplicate	950.9	933.7	1.83
Zn	LCS-Duplicate	960.0	963.7	0.38

RPD = $\frac{(\text{sample} - \text{duplicate})}{[(\text{sample} + \text{duplicate})/2]} \times 100$

Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: Cold Vapor Atomic Absorption
 Instrument: Nippon 3320A CVAA
 Sample Description: EPA Method 29 Cont. 1&3, 5C
 Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Hg	ICB	< DL	0.007
Hg	MB_FH	0.015	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
 *: Sample Media Blank (SM_BlK) concentration in µg/filter
 Method Blank is in control if Method Blank results are <10% of sample results

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Hg	ICV	5.00	5.25	105.1
Hg	LL-LCS	0.020	0.023	115.0
Hg	CCV	5.00	5.03	100.6
Hg	CCV	5.00	4.98	99.6
Hg	CCV	5.00	4.99	99.8
Hg	CCV	5.00	4.94	98.8

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
 Calibration Verification Limits: 90% - 110% Recovery
 Low Level-LCS Limits: 50% - 150% Recovery
 LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

Duplicate Data

All samples analyzed in duplicate. The reported concentrations are the average of the two measurements.

Laboratory Control Sample/Matrix Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Hg	LCS	0.015	4.94	5.00	98.6
Hg	LCS-Duplicate	0.015	5.19	5.00	104.
Hg	25-S3103	0.011	5.18	5.00	103.
Hg	25-S3107	< 0.007	5.09	5.00	102.

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery

LCS Duplicate Data

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
Hg	LCS-Duplicate	4.94	5.19	4.83

RPD = $\frac{(\text{sample} - \text{duplicate})}{[(\text{sample} + \text{duplicate})/2]} \times 100$

Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: Cold Vapor Atomic Absorption
 Instrument: Nippon 3320A CVAA
 Sample Description: EPA Method 29 Cont. 4
 Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Hg	ICB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
 *: Sample Media Blank (SM_BlK) concentration in µg/filter
 Method Blank is in control if Method Blank results are <10% of sample results

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Hg	ICV	5.00	5.08	101.7
Hg	LL-LCS	0.020	0.019	95.0
Hg	CCV	5.00	4.97	99.4
Hg	CCV	5.00	4.99	99.9
Hg	CCV	5.00	4.99	99.7

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
 Calibration Verification Limits: 90% - 110% Recovery
 Low Level-LCS Limits: 50% - 150% Recovery
 LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

Duplicate Data

All samples analyzed in duplicate. The reported concentrations are the average of the two measurements.

Laboratory Control Sample/Matrix Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Hg	25-S3038	0.028	4.66	5.00	92.5
Hg	25-S3104	0.028	4.82	5.00	95.8

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: Cold Vapor Atomic Absorption
 Instrument: Nippon 3320A CVAA
 Sample Description: EPA Method 29 Cont. 5A, 5B
 Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Hg	ICB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
 *: Sample Media Blank (SM_Blk) concentration in µg/filter
 Method Blank is in control if Method Blank results are <10% of sample results

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Hg	ICV	5.00	5.01	100.3
Hg	LL-LCS	0.020	0.021	105.0
Hg	CCV	5.00	5.05	101.0
Hg	CCV	5.00	4.96	99.1
Hg	CCV	5.00	5.05	101.0
Hg	CCV	5.00	5.04	100.7

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
 Calibration Verification Limits: 90% - 110% Recovery
 Low Level-LCS Limits: 50% - 150% Recovery
 LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

Duplicate Data

All samples analyzed in duplicate. The reported concentrations are the average of the two measurements.

Laboratory Control Sample/Matrix Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Hg	25-S3110	< 0.007	5.10	5.00	102.
Hg	25-S3106	0.032	5.09	5.00	101.
Hg	25-S3307	0.021	5.07	5.00	101.

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery

QA/QC Report

Client Name: Mostardi Platt
 Project Number: M050
 Analytical Technique: Ion Chromatography-PCR
 Instrument: Aquion Cr VI IC (1)
 Sample Description: 0061
 Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Cr VI	ICB	< DL	0.010
Cr VI	CCB	< DL	0.010
Cr VI	CCB	< DL	0.010

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Cr VI	ICV	0.500	0.488	97.6
Cr VI	LL-LCS	0.030	0.021	70.0
Cr VI	CCV	0.500	0.503	100.6
Cr VI	CCV	0.500	0.485	97.0

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
 Calibration Verification Limits: 90% - 110% Recovery
 Low Level-LCS Limits: 50% - 150% Recovery
 LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

Duplicate Data

Analyte	Sample ID	Sample Conc. µg/L	Duplicate Conc. µg/L	RPD
Cr VI	25-S3129	7.97	7.93	0.50

$RPD = \frac{(sample - duplicate)}{((sample + duplicate) / 2)} \times 100$ Duplicate Limit: 20% RPD
 N/C: RPD is not calculated when sample or duplicate is below detection limit
 *: per EPA CLP protocol, control limits do not apply if sample and/or duplicate concentration is less than 5x the detection limit

Laboratory Control Sample/Matrix Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Cr VI	25-S3130	6.08	11.0	5.00	99.0

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery
 *: per EPA CLP protocol, control limits do not apply if spike concentration is less than 25% of the sample concentration

Alliance Technical Group SOURCE SAMPLE RECEIPT CHECKLIST

Client Mostardi Platt Date 7/31/2025
 # Runs 4 + Blanks Report # 25-522

Package intact?	<input type="checkbox"/>
Chain-of-Custody form inspected	<input checked="" type="checkbox"/>
CoC present with samples?	<input checked="" type="checkbox"/>
CoC indicates analytical methodology to be used? (eg M29, etc.)	M29, 0061 !!
Has CoC been signed by client?	<input checked="" type="checkbox"/>
Custody release date and time noted on CoC?	<input checked="" type="checkbox"/>
All sample containers inspected	<input checked="" type="checkbox"/>
Does number of samples match number on CoC form?	<input checked="" type="checkbox"/> !!
Do all sample ID numbers match those on the CoC form?	<input checked="" type="checkbox"/> !!
Did client mark sample volumes prior to shipment?	None
Sample temperature recorded?	Ambient
Are the sample containers intact?	<input checked="" type="checkbox"/> !!
If present, Audit Sample intact?	n/a !!
Are signs of leakage present?	None *
Chain-of-Custody form signed and dated by lab	<input checked="" type="checkbox"/>
Corrective actions	
Client contacted due to mismatching sample ID numbers	
Client contacted due to broken sample container(s)	
Client contacted due to leaking sample container(s)	
Client contacted for verification of methodology?	
Corrective actions documented?	
Corrective actions accomplished?	<input checked="" type="checkbox"/>

Items marked !! shall be addressed **prior to any analytical work being started**.
 Items marked * shall be **noted in case narrative** upon reporting of results to client.

Signed 

Notes R2 outlet C4 and D1 water blank not found with initial drop-off.
0061's arrived at room temperature. Missing samples delivered 8/1/25.

Chain-of-Custody Form						
Project Number: M253113				Date Results Required:		
Client: PCC – Large Parts				TAT Required: Standard		
Plant/Test Location: 8901 Inlet and Outlet				Project Supervisor: C. Eldridge		
Sample Number	Sample Date	Sample Point Identification	# of Conts	Sub Lab	Analysis Required	Volume, mls
001	7/29/25	INLET R1-0.1N HNO3 Rinse and Filter	2	Chester	M29 – see notes	25-53103
002	7/29/25	INLET R1-HNO3/H2O2 Imps and Rinse	1	Chester	M29	25-53104
003	7/29/25	INLET R1- HNO3 Rinse 5A, KMnO4 Imps & HCl Rinse	3	Chester	M29	25-53105 25-53106 25-53107
004	7/30/25	INLET R2-0.1N HNO3 Rinse and Filter	2	Chester	M29	25-53108
005	7/30/25	INLET R2-HNO3/H2O2 Imps and Rinse	1	Chester	M29	25-53109
006	7/30/25	INLET R2- HNO3 Rinse 5A, KMnO4 Imps & HCl Rinse	3	Chester	M29	25-53110 25-53111 25-53112
007	7/29/25	OUTLET R1-0.1N HNO3 Rinse and Filter	2	Chester	M29	25-53113
008	7/29/25	OUTLET R1-HNO3/H2O2 Imps and Rinse	1	Chester	M29	25-53114
009	7/29/25	OUTLET R1- HNO3 Rinse 5A, KMnO4 Imps & HCl Rinse	3	Chester	M29	25-53115 25-53116 25-53117
010	7/30/25	OUTLET R2-0.1N HNO3 Rinse and Filter	2	Chester	M29	25-53118
011	7/30/25	OUTLET R2-HNO3/H2O2 Imps and Rinse	1	Chester	M29	25-53119
012	7/30/25	OUTLET R2- HNO3 Rinse 5A, KMnO4 Imps & HCl Rinse	3	Chester	M29	25-53120 25-53121 25-53122
013	7/30/25	Filter Blanks	3	Chester	M29	25-53123
014	7/30/25	0.1N HNO3 Reagent Blank	1	Chester	M29	25-53124
015	7/30/25	HNO3/H2O2 Reagent Blank	1	Chester	M29	25-53125
016	7/30/25	DI Reagent Blank	1	Chester	M29/0061	25-53126 25-53134
017	7/30/25	KMnO4 & HCl Reagent Blank	2	Chester	M29	25-53127 25-53128
018	7/29/25	INLET R1 – KOH and Rinses	1	Chester	0061	25-53129
019	7/29/25	OUTLET R1 – KOH and Rinses	1	Chester	0061	25-53130
020	7/30/25	INLET R2 – KOH and Rinses	1	Chester	0061	25-53131
021	7/30/25	OUTLET R2 – KOH and Rinses	1	Chester	0061	25-53132
022	7/30/25	KOH Blank	1	Chester	0061	25-53133
Delivered to Lab by: R. Sollars Date/Time: 7/31 8:45 am 			Received by:  Date/Time: 7/31/25 8:50		Processed by: _____ Date/Time: _____	

Mostardi Platt

Laboratory Notes: Method 29 metals list: Aluminum (Al), Antimony (Sb), Arsenic (As), Beryllium (Be), Cadmium (Cd), Chromium (Cr), Cobalt (Co), Copper (Cu), Lead (Pb), Manganese (Mn), Mercury (Hg), Nickel (Ni), Phosphorus (P), Selenium (Se), Vanadium (V), and Zinc (Zn).

SW-846 Test Method 0061: Cr⁺⁶ Only

RAW DATA

Available upon request

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Inlet
 Test Method: 29

Source Condition:		Batch Process Run 1	Batch Process Run 2
Identify Analyte:	Aluminum (Al)		
Molecular Weight:	26.98	ADL	ADL
ug (net) collected:		1809.4	581.3
Identify Analyte:	Antimony (Sb)		
Molecular Weight:	121.76	BDL	BDL
ug (net) collected:		1.45	1.315
Identify Analyte:	Arsenic (As)		
Molecular Weight:	74.92	BDL	BDL
ug (net) collected:		2.73	2.541
Identify Analyte:	Barium (Ba)		
Molecular Weight:	137.33	ADL	ADL
ug (net) collected:		11.915	5.199
Identify Analyte:	Beryllium (Be)		
Molecular Weight:	9.01	ADL	DLL
ug (net) collected:		0.284	0.451
Identify Analyte:	Cadmium (Cd)		
Molecular Weight:	112.41	ADL	ADL
ug (net) collected:		0.452	0.129
Identify Analyte:	Chromium (Cr)		
Molecular Weight:	52	ADL	ADL
ug (net) collected:		4741.002	2057.202
Identify Analyte:	Cobalt (Co)		
Molecular Weight:	58.93	DLL	ADL
ug (net) collected:		3469.086	344.642
Identify Analyte:	Copper (Cu)		
Molecular Weight:	63.55	ADL	ADL
ug (net) collected:		31.82	19.21
Identify Analyte:	Lead (Pb)		
Molecular Weight:	207.2	ADL	ADL
ug (net) collected:		5.12	1.481
Identify Analyte:	Manganese (Mn)		
Molecular Weight:	54.94	ADL	ADL
ug (net) collected:		30.785	22.505
Identify Analyte:	Mercury (Hg)		
Molecular Weight:	200.59	DLL	DLL
ug (net) collected:		0.27251	0.2172
Identify Analyte:	Nickel (Ni)		
Molecular Weight:	58.69	ADL	ADL
ug (net) collected:		14995.496	6792.586
Identify Analyte:	Phosphorus (P)		
Molecular Weight:	30.97	ADL	ADL
ug (net) collected:		169.755	51.3
Identify Analyte:	Selenium (Se)		
Molecular Weight:	78.96	DLL	BDL
ug (net) collected:		11.49	5.45
Identify Analyte:	Silver (Ag)		
Molecular Weight:	107.87	DLL	DLL
ug (net) collected:		4.76	3.506
Identify Analyte:	Thallium (Tl)		
Molecular Weight:	204.38	DLL	DLL
ug (net) collected:		46.9	7.43
Identify Analyte:	Vanadium (V)		
Molecular Weight:	50.94	DLL	DLL
ug (net) collected:		3.402	2.855
Identify Analyte:	Zinc (Zn)		
Molecular Weight:	50.94	ADL	ADL
ug (net) collected:		179.122	84.122

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Test Method: 0061

Source Condition:		Batch Process Run 1	Batch Process Run 2
Identify Analyte:	Hexavalent Chromium (Cr+6)		
Molecular Weight:	51.996	ADL	ADL
ug (net) collected:		2.085	2.1114

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Project Number: M253113
Test Location: Baghouse 8901 Inlet
Test Method: 5
Filterable Analysis Date: 8/15/2025
Condensable Analysis Date: 8/19/2025

Filter Drying Temp °F: 220
Analyst: JMG
Analyst: JMG

Description	Sample Date	ID#	vol. (ml)	Initial Weight (grams)	Final Weight (grams)	Net Weight Gain (grams)
Filterable Particulate						
Run 1	7/31/2025					
Source Condition:	Batch Process					
M5 Filter		22792		0.48057	0.49754	0.03801
Acetone Wash (M5 Pans)		24633	95 mL	4.98170	5.00274	
Acetone Blank						0.00027
Total Filterable Weight						0.03774
Condensable Particulate						
Acetone Wash		24390	125 mL	21.50753	21.51639	0.00886
Acetone Blank						0.00044
Hexane Rinse		24411	150	21.47667	21.47680	0.00013
Hexane Blank						0.00032
DI Wash		24369	471 mL	21.57325	21.57967	0.00642
DI Blank						0.00122
Total Condensable Weight						0.01343
Total Particulate Weight						0.05117
Filterable Particulate						
Run 2	8/1/2025					
Source Condition:	Batch Process					
M5 Filter		22761		0.47634	0.58754	0.12260
Acetone Wash (M5 Pans)		24634	55 mL	4.91764	4.92904	
Acetone Blank						0.00008
Total Filterable Weight						0.12252
Condensable Particulate						
Acetone Wash		24391	120 mL	21.51389	21.51624	0.00235
Acetone Blank						0.00043
Hexane Rinse		24412	150	21.31483	21.31506	0.00023
Hexane Blank						0.00032
DI Wash		24370	334 mL	21.63854	21.64672	0.00818
DI Blank						0.00087
Total Condensable Weight						0.00915
Total Particulate Weight						0.13167
Reagent Blank Summary						
DI Wash		24371	231 mL	21.49225	21.49285	0.00060
Hexane Wash		24377	216 mL	21.80887	21.80917	0.00030
Acetone Wash (M5 Pans)		24392	125 mL	21.43788	21.43823	0.00035
RDL/MDL Summary						
Media		MDL, grams		RDL, grams		
M5 Filter		0.00005		0.00015		
Acetone Wash (M5 Pans)		0.00008		0.00025		
Sample Vials (M202)		0.00008		0.00025		

Client: PCC Structurals, Inc.
 Facility: Large Parts Campus Facility - Milwaukie, OR
 Test Location: Baghouse 8901 Outlet
 Test Method: 29

Source Condition:		Batch Process Run 1	Batch Process Run 2
Identify Analyte:	Aluminum (Al)		
Molecular Weight:	26.98	ADL	ADL
ug (net) collected:		191.066	136.366
Identify Analyte:	Antimony (Sb)		
Molecular Weight:	121.76	BDL	BDL
ug (net) collected:		1.35	1.33
Identify Analyte:	Arsenic (As)		
Molecular Weight:	74.92	DLL	BDL
ug (net) collected:		2.99	2.562
Identify Analyte:	Barium (Ba)		
Molecular Weight:	137.33	ADL	ADL
ug (net) collected:		9.165	3.325
Identify Analyte:	Beryllium (Be)		
Molecular Weight:	9.01	DLL	DLL
ug (net) collected:		0.094	0.089
Identify Analyte:	Cadmium (Cd)		
Molecular Weight:	112.41	ADL	DLL
ug (net) collected:		0.465	0.08
Identify Analyte:	Chromium (Cr)		
Molecular Weight:	52	ADL	ADL
ug (net) collected:		3.377	7.937
Identify Analyte:	Cobalt (Co)		
Molecular Weight:	58.93	DLL	DLL
ug (net) collected:		1.116	2.326
Identify Analyte:	Copper (Cu)		
Molecular Weight:	63.55	ADL	ADL
ug (net) collected:		19.11	6.868
Identify Analyte:	Lead (Pb)		
Molecular Weight:	207.2	ADL	ADL
ug (net) collected:		4.468	0.958
Identify Analyte:	Manganese (Mn)		
Molecular Weight:	54.94	ADL	ADL
ug (net) collected:		15.255	28.785
Identify Analyte:	Mercury (Hg)		
Molecular Weight:	200.59	DLL	DLL
ug (net) collected:		0.4109	0.2658
Identify Analyte:	Nickel (Ni)		
Molecular Weight:	58.69	ADL	ADL
ug (net) collected:		69.14	52.03
Identify Analyte:	Phosphorus (P)		
Molecular Weight:	30.97	ADL	ADL
ug (net) collected:		46.985	38.6
Identify Analyte:	Selenium (Se)		
Molecular Weight:	78.96	BDL	BDL
ug (net) collected:		5.55	5.49
Identify Analyte:	Silver (Ag)		
Molecular Weight:	107.87	BDL	DLL
ug (net) collected:		0.74	2.2
Identify Analyte:	Thallium (Tl)		
Molecular Weight:	204.38	BDL	BDL
ug (net) collected:		3.7	3.66
Identify Analyte:	Vanadium (V)		
Molecular Weight:	50.94	ADL	DLL
ug (net) collected:		0.359	0.153
Identify Analyte:	Zinc (Zn)		
Molecular Weight:	50.94	ADL	ADL
ug (net) collected:		29.822	14.742

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Outlet
Test Method: 0061

Source Condition:		Batch Process Run 1	Batch Process Run 2
Identify Analyte:	Hexavalent Chromium (Cr+6)		
Molecular Weight:	51.996	ADL	ADL
ug (net) collected:		0.8778	0.99025

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Project Number: M253113
Test Location: Baghouse 8901 Outlet
Test Method: 5
Filterable Analysis Date: 8/15/2025
Condensable Analysis Date: 8/19/2025

Filter Drying Temp °F: 220
Analyst: JMG
Analyst: JMG

Description	Sample Date	ID#	vol. (ml)	Initial Weight (grams)	Final Weight (grams)	Net Weight Gain (grams)
Filterable Particulate						
Run 1	7/31/2025					
Source Condition:	Batch Process					
M5 Filter		22790		0.47948	0.47863	0.00449
Acetone Wash (M5 Pans)		24635	70 mL	4.96494	4.97028	
Acetone Blank						0.00025
Total Filterable Weight						0.00424
Condensable Particulate						
Acetone Wash		24409	80 mL	21.56374	21.56400	0.00026
Acetone Blank						0.00028
Hexane Rinse		24378	150	21.76412	21.76446	0.00034
Hexane Blank						0.00032
DI Wash		24372	255 mL	21.51391	21.51877	0.00486
DI Blank						0.00066
Total Condensable Weight						0.00420
Total Particulate Weight						0.00844
Filterable Particulate						
Run 2	8/1/2025					
Source Condition:	Batch Process					
M5 Filter		22762		0.47833	0.47750	0.00120
Acetone Wash (M5 Pans)		24636	60 mL	4.91828	4.92031	
Acetone Blank						0.00021
Total Filterable Weight						0.00099
Condensable Particulate						
Acetone Wash		24410	85 mL	21.58999	21.58988	≤ 0.00008
Acetone Blank						0.00030
Hexane Rinse		24379	150	21.54200	21.54725	0.00525
Hexane Blank						0.00032
DI Wash		24401	292 mL	21.58984	21.59712	0.00728
DI Blank						0.00076
Total Condensable Weight						≤ 0.01123
Total Particulate Weight						≤ 0.01222
Reagent Blank Summary						
DI Wash		24371	231 mL	21.49225	21.49285	0.00060
Hexane Wash		24377	216 mL	21.80887	21.80917	0.00030
Acetone Wash (M5 Pans)		24392	125 mL	21.43788	21.43823	0.00035
RDL/MDL Summary						
Media	MDL, grams			RDL, grams		
M5 Filter	0.00005			0.00015		
Acetone Wash (M5 Pans)	0.00008			0.00025		
Sample Vials (M202)	0.00008			0.00025		

END OF THE REPORT