



Dioxin and Furan Compliance Emissions Test Report

**Votorantim Cimentos
St Marys Cement
Charlevoix Plant
Main Kiln Stack
Charlevoix, Michigan
November 28 and 29, 2023**

**Report Submittal Date
January 3, 2024**

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Mostardi Platt

Project No. M233904A



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1.0 EXECUTIVE SUMMARY

Mostardi Platt conducted a compliance dioxin and furan emissions test program for St Marys Cement at the Charlevoix Plant in Charlevoix, Michigan on the Main Kiln Stack. Main Kiln testing was performed during both “mill on” and “mill off” conditions. This report summarizes the results of the test program and test methods. St Marys Cement operates under Michigan Renewable Operating Permit MI-ROP-B1559-2014 and Permit to Install 140-15C.

The test location, test dates, and test parameter are summarized below.

TEST INFORMATION		
Test Location	Test Dates	Test Parameter
Main Kiln Stack (Mill On)	November 28, 2023	Dioxin/Furan (D/F)
Main Kiln Stack (Mill Off)	November 29, 2023	

The purpose of the test program was to demonstrate compliance with Title 40, *Code of Federal Regulations*, Part 60 (40CFR60) and Part 63 (40CFR63) Subpart LLL “*National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants.*” Specifically, to demonstrate that each of the below listed sources meet their D/F emission limit.

Test Location	Parameter	Test Method	Emission Limit	Emission Rate
Main Kiln Stack (Mill On)	D/F	USEPA Method 23, 40CFR60, Appendix A	≤ 0.40 ng/dscm @ 7% O ₂ (TEQ)	≤ 0.0021
Main Kiln Stack (Mill Off)	D/F			≤ 0.1879

The identifications of the individuals associated with the test program are summarized below.

TEST PERSONNEL INFORMATION		
Location	Address	Contact
Test Facility	St Marys Cement Charlevoix Cement Plant 16000 Bells Bay Road Charlevoix, Michigan 49720	Ms. Laurie Leaman Environmental Manager (231) 237-1387 laurie.leaman@vcimentos.com
Testing Company Supervisor	Mostardi Platt 888 Industrial Drive Elmhurst, Illinois 60126	Mr. Nicholas Colangelo Project Supervisor 630-993-2100 (phone) ncolangelo@mp-mail.com

The test crew consisted of C. Chambers, J. Kolodziejczyk, and N. Colangelo Mostardi Platt.

2.0 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 nomenclature are included in Appendix C. Laboratory analysis for each test run are included in Appendix D. The computerized reference method test data is included in Appendix E. CPMS data and process data as provided by St Marys Cement are also included in Appendix F.

The following methodologies were used during the test program:

Method 1 Sample and Velocity Traverse Determination

Test measurement points were selected in accordance with USEPA Method 1, 40CFR60, Appendix A. The characteristics of the measurement location are summarized below.

TEST POINT INFORMATION							
Test Location	Diameter (Feet)	No. of Ports	Port Length (Inches)	Upstream Diameters	Downstream Diameters	Test Parameter	Number of Sampling Points
Main Kiln	10.58	2	6	7.86	15.72	D/F	12

Method 2 Volumetric Flow Rate Determination

Gas velocity was measured following USEPA Method 2, 40CFR60, Appendix A, for purposes of calculating stack gas volumetric flow rate and emission rates on a lb/hr basis. S-type pitot tubes, 0-10" differential pressure gauge, and K-type 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. Copies of field data sheets are included in Appendix G. Calibration data are presented in Appendix H. This testing met the performance specifications as outlined in the Method.

Method 3A Oxygen (O₂)/Carbon Dioxide (CO₂) Determination

Flue gas O₂ and CO₂ concentrations for the Main Kiln Stack were determined in accordance with USEPA Method 3A. An Ecom analyzer was used to determine the O₂ and CO₂ concentrations by connecting the analyzer to the exit of the dry gas meter. The O₂ instrument operates in the nominal range of 0% to 25% with the specific range determined by the high-level calibration gas. The CO₂ instrument operates in the nominal range of 0% to 20% with the specific range determined by the high-level calibration gas. High and mid-range calibrations were performed using USEPA Protocol gas. Zero nitrogen (a low ppm pollutant in balance nitrogen calibration gases) was introduced during other instrument calibrations to check instrument zero. Zero and mid-range calibrations were performed using USEPA Protocol gas after each test run. Calibration data are presented in Appendix H. Copies of the gas cylinder certifications are found in Appendix I.

Method 4 Moisture (H₂O) Determination

Stack gas moisture content was determined using a Method 4 sampling train as a component of the Method 23 sampling system. In this technique, stack gas was drawn through a series of impingers as detailed in EPA Method 23. The entire impinger train was measured or weighed before and after each test run to determine the mass of moisture condensed.

During testing, the sample train was operated in the manner specified in USEPA Method 4. All of the data specified in Method 4 (gas volume, delta H, impinger outlet well temperature, etc.) was recorded on field data sheets.

All of the equipment used was calibrated in accordance with the specifications of the Method. Calibration data is included in Appendix H.

Method 23 Dioxin and Furan Determination

Stack gas dioxin and furan concentrations and emission rates were determined in accordance with Method 23, 4CFR60, Appendix A. An Environmental Supply Company sampling train was used to sample for concentrations of dioxins and furans, in the manner specified in the Method.

A total of twelve (12) test points will be sampled per run. Six (6) test points were sampled using the two (2) ports that are 90 degrees apart at the stack test location.

The alternative recovery procedure was used that removes the methylene chloride recovery solvent rinse for toluene, as specified in ALT-036 - Approval Method 23 Modification for Cement Kilns.

After recovery, samples were analyzed by an accredited laboratory following the procedures specified in the Method. Laboratory analysis data are found in Appendix D. All of the equipment used was calibrated in accordance with the specifications of the Method. Calibration data is presented in the Appendix H.

3.0 TEST RESULT SUMMARIES

Client: St Marys Cement
 Facility: Charlevoix, Michigan
 Test Location: Main Kiln Stack
 Test Method: 23

Source Condition	Mill On	Mill On	Mill On	
Date	11/28/23	11/28/23	11/28/23	
Start Time	8:43	12:20	16:02	
End Time	11:53	15:30	19:12	
	Run 1	Run 2	Run 3	Average
Stack Conditions				
Average Gas Temperature, °F	254.8	256.6	258.3	256.6
Flue Gas Moisture, percent by volume	12.1%	12.0%	12.2%	12.1%
Average Flue Pressure, in. Hg	29.89	29.89	29.89	29.89
Gas Sample Volume, dscf	166.079	160.050	161.639	162.589
Average Gas Velocity, ft/sec	91.444	89.220	90.301	90.322
Gas Volumetric Flow Rate, acfm	482,358	470,625	476,328	476,437
Gas Volumetric Flow Rate, dscfm	312,941	304,943	307,197	308,360
Gas Volumetric Flow Rate, scfm	355,994	346,466	349,851	350,770
Average %CO ₂ by volume, dry basis	20.1	18.3	18.7	19.0
Average %O ₂ by volume, dry basis	10.2	10.0	9.7	10.0
Isokinetic Variance	101.0	99.9	100.1	100.3
Baghouse Inlet Temperature, °F	251.9	253.1	254.3	253.1
PCDD/PCDF Emissions				
ng/dscm ≤	0.10	≤ 0.06	≤ 0.06	≤ 0.07
ng/dscm TEQ ≤	0.0020	≤ 0.0015	≤ 0.0015	≤ 0.0017
ng/dscm TEQ @ 7% O ₂ Dry ≤	0.0026	≤ 0.0019	≤ 0.0019	≤ 0.0021

Client: St Marys Cement
 Facility: Charlevoix, Michigan
 Test Location: Main Kiln Stack
 Test Method: 23

Source Condition	Mill Off	Mill Off	Mill Off	
Date	11/29/23	11/29/23	11/29/23	
Start Time	7:44	11:15	14:45	
End Time	10:54	14:25	17:54	
	Run 1	Run 2	Run 3	Average
Stack Conditions				
Average Gas Temperature, °F	395.5	400.7	399.4	398.5
Flue Gas Moisture, percent by volume	12.3%	12.6%	12.7%	12.5%
Average Flue Pressure, in. Hg	29.10	29.10	29.10	29.10
Gas Sample Volume, dscf	148.341	148.714	148.938	148.664
Average Gas Velocity, ft/sec	99.708	100.784	101.176	100.556
Gas Volumetric Flow Rate, acfm	525,945	531,622	533,690	530,419
Gas Volumetric Flow Rate, dscfm	276,913	277,308	278,502	277,574
Gas Volumetric Flow Rate, scfm	315,749	317,225	318,953	317,309
Average %CO ₂ by volume, dry basis	22.4	22.0	20.2	21.5
Average %O ₂ by volume, dry basis	9.0	9.2	8.8	9.0
Isokinetic Variance	101.9	102.0	101.8	101.9
Baghouse Inlet Temperature, °F	398.2	399.2	399.6	399.0
PCDD/PCDF Emissions				
ng/dscm	≤ 20.39	≤ 21.62	≤ 21.98	≤ 21.33
ng/dscm TEQ	≤ 0.1403	≤ 0.1716	≤ 0.1706	≤ 0.1608
ng/dscm TEQ @ 7% O ₂ Dry	≤ 0.1639	≤ 0.2039	≤ 0.1960	≤ 0.1879

4.0 CERTIFICATION

Mostardi Platt is pleased to have been of service to St Marys Cement. 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



Nicholas C. Colangelo

Project Manager



Jeffrey M. Crivlare

Quality Assurance

APPENDICES

RECEIVED
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AIR QUALITY DIVISION

Appendix A - Plant Operating Data

Date/Time	KILN: BH_TEMP_RM_ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/28/2023 08:43	248.7	225.41	1.0
11/28/2023 08:44	248.6	225.70	1.0
11/28/2023 08:45	248.6	225.52	1.0
11/28/2023 08:46	248.7	225.40	1.0
11/28/2023 08:47	249.6	225.70	1.0
11/28/2023 08:48	249.6	225.31	1.0
11/28/2023 08:49	249.6	225.70	1.0
11/28/2023 08:50	249.6	225.68	1.0
11/28/2023 08:51	249.6	225.32	1.0
11/28/2023 08:52	249.6	226.13	1.0
11/28/2023 08:53	249.6	225.47	1.0
11/28/2023 08:54	249.6	226.10	1.0
11/28/2023 08:55	249.9	225.32	1.0
11/28/2023 08:56	250.6	225.60	1.0
11/28/2023 08:57	250.6	225.77	1.0
11/28/2023 08:58	250.6	225.26	1.0
11/28/2023 08:59	250.6	225.72	1.0
11/28/2023 09:00	251.4	225.67	1.0
11/28/2023 09:01	251.6	225.44	1.0
11/28/2023 09:02	251.6	225.88	1.0
11/28/2023 09:03	251.3	225.41	1.0
11/28/2023 09:04	250.6	225.55	1.0
11/28/2023 09:05	250.6	225.74	1.0
11/28/2023 09:06	250.6	225.16	1.0
11/28/2023 09:07	250.6	225.84	1.0
11/28/2023 09:08	250.6	225.23	1.0
11/28/2023 09:09	250.6	225.25	1.0
11/28/2023 09:10	250.6	225.95	1.0
11/28/2023 09:11	250.6	225.25	1.0
11/28/2023 09:12	250.6	225.57	1.0
11/28/2023 09:13	250.6	225.62	1.0
11/28/2023 09:14	250.3	225.18	1.0
11/28/2023 09:15	249.8	225.96	1.0
11/28/2023 09:16	249.8	225.66	1.0
11/28/2023 09:17	249.6	225.42	1.0
11/28/2023 09:18	249.6	225.84	1.0
11/28/2023 09:19	249.6	225.50	1.0
11/28/2023 09:20	249.6	225.55	1.0
11/28/2023 09:21	249.6	225.90	1.0
11/28/2023 09:22	249.6	225.25	1.0
11/28/2023 09:23	249.6	225.78	1.0
11/28/2023 09:24	249.6	225.43	1.0
11/28/2023 09:25	249.6	225.56	1.0
11/28/2023 09:26	249.6	225.66	1.0
11/28/2023 09:27	249.6	225.28	1.0
11/28/2023 09:28	249.6	225.89	1.0
11/28/2023 09:29	249.6	225.49	1.0
11/28/2023 09:30	249.6	225.39	1.0
11/28/2023 09:31	249.6	225.84	1.0

Date/Time	KILN: BH_TEMP_RM_ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/28/2023 09:32	249.6	225.76	1.0
11/28/2023 09:33	249.6	225.25	1.0
11/28/2023 09:34	249.6	225.92	1.0
11/28/2023 09:35	249.6	225.22	1.0
11/28/2023 09:36	249.6	225.56	1.0
11/28/2023 09:37	249.6	225.48	1.0
11/28/2023 09:38	249.6	225.37	1.0
11/28/2023 09:39	249.8	225.87	1.0
11/28/2023 09:40	250.6	225.57	1.0
11/28/2023 09:41	250.6	225.47	1.0
11/28/2023 09:42	250.3	226.01	1.0
11/28/2023 09:43	249.6	225.26	1.0
11/28/2023 09:44	249.9	225.64	1.0
11/28/2023 09:45	250.6	225.67	1.0
11/28/2023 09:46	250.6	225.62	1.0
11/28/2023 09:47	250.6	225.39	1.0
11/28/2023 09:48	250.6	225.71	1.0
11/28/2023 09:49	250.6	225.62	1.0
11/28/2023 09:50	250.6	225.66	1.0
11/28/2023 09:51	250.6	225.73	1.0
11/28/2023 09:52	250.6	225.67	1.0
11/28/2023 09:53	250.6	225.65	1.0
11/28/2023 09:54	250.1	225.50	1.0
11/28/2023 09:55	249.6	225.66	1.0
11/28/2023 09:56	248.7	225.50	1.0
11/28/2023 09:57	247.8	225.72	1.0
11/28/2023 09:58	247.5	225.44	1.0
11/28/2023 09:59	246.6	225.51	1.0
11/28/2023 10:00	246.7	225.62	1.0
11/28/2023 10:01	246.7	225.46	1.0
11/28/2023 10:02	246.5	225.40	1.0
11/28/2023 10:03	247.4	225.76	1.0
11/28/2023 10:04	247.7	225.70	1.0
11/28/2023 10:05	247.6	225.64	1.0
11/28/2023 10:06	247.7	225.54	1.0
11/28/2023 10:07	247.6	225.55	1.0
11/28/2023 10:08	247.6	225.60	1.0
11/28/2023 10:09	247.6	225.70	1.0
11/28/2023 10:10	247.7	225.92	1.0
11/28/2023 10:11	247.6	225.58	1.0
11/28/2023 10:12	247.6	225.62	1.0
11/28/2023 10:13	247.6	225.45	1.0
11/28/2023 10:14	247.3	225.44	1.0
11/28/2023 10:15	246.7	225.67	1.0
11/28/2023 10:16	246.7	225.51	1.0
11/28/2023 10:17	247.6	225.58	1.0
11/28/2023 10:18	247.7	225.74	1.0
11/28/2023 10:19	247.6	225.43	1.0
11/28/2023 10:20	247.7	225.69	1.0

Date/Time	KILN: BH_TEMP_RM_ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/28/2023 10:21	247.6	225.84	1.0
11/28/2023 10:22	247.6	225.51	1.0
11/28/2023 10:23	247.6	225.76	1.0
11/28/2023 10:24	248.6	225.50	1.0
11/28/2023 10:25	248.8	225.66	1.0
11/28/2023 10:26	249.6	225.54	1.0
11/28/2023 10:27	249.6	225.48	1.0
11/28/2023 10:28	249.6	225.43	1.0
11/28/2023 10:29	249.6	225.50	1.0
11/28/2023 10:30	249.6	225.55	1.0
11/28/2023 10:31	250.6	225.56	1.0
11/28/2023 10:32	250.6	225.70	1.0
11/28/2023 10:33	251.1	225.36	1.0
11/28/2023 10:34	251.6	225.52	1.0
11/28/2023 10:35	252.1	225.67	1.0
11/28/2023 10:36	252.5	225.54	1.0
11/28/2023 10:37	252.9	225.65	1.0
11/28/2023 10:38	253.6	225.67	1.0
11/28/2023 10:39	253.6	225.57	1.0
11/28/2023 10:40	253.6	225.61	1.0
11/28/2023 10:41	253.2	225.50	1.0
11/28/2023 10:42	252.5	225.68	1.0
11/28/2023 10:43	252.6	225.76	1.0
11/28/2023 10:44	252.5	225.66	1.0
11/28/2023 10:45	253.3	225.46	1.0
11/28/2023 10:46	253.7	225.70	1.0
11/28/2023 10:47	253.6	225.55	1.0
11/28/2023 10:48	253.9	225.40	1.0
11/28/2023 10:49	254.7	225.53	1.0
11/28/2023 10:50	254.7	225.72	1.0
11/28/2023 10:51	254.7	225.53	1.0
11/28/2023 10:52	254.7	225.39	1.0
11/28/2023 10:53	254.5	225.54	1.0
11/28/2023 10:54	254.5	225.58	1.0
11/28/2023 10:55	254.5	225.54	1.0
11/28/2023 10:56	255.0	225.45	1.0
11/28/2023 10:57	255.6	225.44	1.0
11/28/2023 10:58	255.6	225.62	1.0
11/28/2023 10:59	255.7	225.65	1.0
11/28/2023 11:00	255.6	225.59	1.0
11/28/2023 11:01	255.6	225.35	1.0
11/28/2023 11:02	255.6	225.77	1.0
11/28/2023 11:03	254.7	225.37	1.0
11/28/2023 11:04	254.5	225.88	1.0
11/28/2023 11:05	254.6	225.24	1.0
11/28/2023 11:06	254.7	225.42	1.0
11/28/2023 11:07	254.6	226.06	1.0
11/28/2023 11:08	254.7	225.11	1.0
11/28/2023 11:09	255.5	225.99	1.0

Date/Time	KILN: BH_TEMP_RM_ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/28/2023 11:10	255.7	225.31	1.0
11/28/2023 11:11	255.7	225.34	1.0
11/28/2023 11:12	255.6	225.77	1.0
11/28/2023 11:13	255.6	225.51	1.0
11/28/2023 11:14	255.7	225.47	1.0
11/28/2023 11:15	255.6	225.62	1.0
11/28/2023 11:16	255.6	225.90	1.0
11/28/2023 11:17	256.2	225.43	1.0
11/28/2023 11:18	256.7	225.57	1.0
11/28/2023 11:19	256.6	226.05	1.0
11/28/2023 11:20	256.7	225.14	1.0
11/28/2023 11:21	256.7	225.49	1.0
11/28/2023 11:22	257.4	225.86	1.0
11/28/2023 11:23	257.7	225.01	1.0
11/28/2023 11:24	257.7	225.97	1.0
11/28/2023 11:25	257.7	225.59	1.0
11/28/2023 11:26	257.7	225.23	1.0
11/28/2023 11:27	258.3	226.20	1.0
11/28/2023 11:28	258.6	225.65	1.0
11/28/2023 11:29	258.6	225.46	1.0
11/28/2023 11:30	258.6	225.98	1.0
11/28/2023 11:31	258.6	225.42	1.0
11/28/2023 11:32	257.7	225.54	1.0
11/28/2023 11:33	257.7	225.95	1.0
11/28/2023 11:34	257.7	225.10	1.0
11/28/2023 11:35	257.7	225.97	1.0
11/28/2023 11:36	258.2	225.46	1.0
11/28/2023 11:37	258.6	225.58	1.0
11/28/2023 11:38	258.6	225.77	1.0
11/28/2023 11:39	257.8	225.21	1.0
11/28/2023 11:40	257.5	225.67	1.0
11/28/2023 11:41	256.7	225.53	1.0
11/28/2023 11:42	256.7	225.43	1.0
11/28/2023 11:43	255.9	225.64	1.0
11/28/2023 11:44	255.7	225.88	1.0
11/28/2023 11:45	255.2	225.31	1.0
11/28/2023 11:46	254.7	225.64	1.0
11/28/2023 11:47	254.6	225.81	1.0
11/28/2023 11:48	254.7	225.39	1.0
11/28/2023 11:49	254.7	225.58	1.0
11/28/2023 11:50	254.7	225.97	1.0
11/28/2023 11:51	254.5	225.52	1.0
11/28/2023 11:52	254.7	225.52	1.0
11/28/2023 11:53	255.6	225.66	1.0
Average	251.9	225.58	1.0

Date/Time	KILN: BH_TEMP_RM_ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/28/2023 12:20	255.9	225.82	1.0
11/28/2023 12:21	255.6	225.51	1.0
11/28/2023 12:22	255.4	225.35	1.0
11/28/2023 12:23	254.6	225.92	1.0
11/28/2023 12:24	254.7	224.98	1.0
11/28/2023 12:25	254.1	225.83	1.0
11/28/2023 12:26	253.6	225.22	1.0
11/28/2023 12:27	254.2	225.43	1.0
11/28/2023 12:28	254.7	225.80	1.0
11/28/2023 12:29	254.7	225.56	1.0
11/28/2023 12:30	254.8	225.55	1.0
11/28/2023 12:31	254.9	225.94	1.0
11/28/2023 12:32	255.6	225.27	1.0
11/28/2023 12:33	255.6	225.72	1.0
11/28/2023 12:34	255.6	225.35	1.0
11/28/2023 12:35	255.0	225.30	1.0
11/28/2023 12:36	254.7	225.48	1.0
11/28/2023 12:37	255.2	225.72	1.0
11/28/2023 12:38	255.6	225.56	1.0
11/28/2023 12:39	255.7	225.67	1.0
11/28/2023 12:40	255.7	225.34	1.0
11/28/2023 12:41	255.6	226.04	1.0
11/28/2023 12:42	255.7	225.41	1.0
11/28/2023 12:43	255.6	225.63	1.0
11/28/2023 12:44	255.2	225.60	1.0
11/28/2023 12:45	254.8	225.08	1.0
11/28/2023 12:46	254.5	225.95	1.0
11/28/2023 12:47	253.6	225.52	1.0
11/28/2023 12:48	253.6	225.43	1.0
11/28/2023 12:49	253.6	225.91	1.0
11/28/2023 12:50	254.0	225.59	1.0
11/28/2023 12:51	254.7	225.58	1.0
11/28/2023 12:52	254.7	225.87	1.0
11/28/2023 12:53	254.7	225.29	1.0
11/28/2023 12:54	254.1	225.66	1.0
11/28/2023 12:55	253.6	225.57	1.0
11/28/2023 12:56	253.6	225.44	1.0
11/28/2023 12:57	253.6	225.92	1.0
11/28/2023 12:58	253.6	225.42	1.0
11/28/2023 12:59	253.6	225.29	1.0
11/28/2023 13:00	254.4	226.14	1.0
11/28/2023 13:01	254.7	225.59	1.0
11/28/2023 13:02	254.7	225.41	1.0
11/28/2023 13:03	254.9	225.83	1.0
11/28/2023 13:04	255.6	225.54	1.0
11/28/2023 13:05	255.7	225.13	1.0
11/28/2023 13:06	255.6	226.11	1.0
11/28/2023 13:07	256.7	225.27	1.0
11/28/2023 13:08	256.6	225.39	1.0

Date/Time	KILN: BH_TEMP_RM_ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/28/2023 13:09	256.7	225.93	1.0
11/28/2023 13:10	256.6	225.41	1.0
11/28/2023 13:11	256.7	225.48	1.0
11/28/2023 13:12	256.6	225.87	1.0
11/28/2023 13:13	256.6	225.37	1.0
11/28/2023 13:14	256.5	225.91	1.0
11/28/2023 13:15	255.6	225.37	1.0
11/28/2023 13:16	255.0	225.62	1.0
11/28/2023 13:17	254.2	225.95	1.0
11/28/2023 13:18	253.6	225.40	1.0
11/28/2023 13:19	252.8	225.70	1.0
11/28/2023 13:20	252.5	225.43	1.0
11/28/2023 13:21	252.6	225.27	1.0
11/28/2023 13:22	252.6	225.82	1.0
11/28/2023 13:23	252.6	225.34	1.0
11/28/2023 13:24	253.5	225.34	1.0
11/28/2023 13:25	253.6	225.68	1.0
11/28/2023 13:26	253.6	225.51	1.0
11/28/2023 13:27	253.6	225.48	1.0
11/28/2023 13:28	253.7	225.84	1.0
11/28/2023 13:29	254.2	225.33	1.0
11/28/2023 13:30	254.8	225.89	1.0
11/28/2023 13:31	254.7	225.62	1.0
11/28/2023 13:32	254.7	225.38	1.0
11/28/2023 13:33	254.1	226.01	1.0
11/28/2023 13:34	253.6	225.60	1.0
11/28/2023 13:35	253.6	225.03	1.0
11/28/2023 13:36	253.6	225.84	1.0
11/28/2023 13:37	253.7	225.66	1.0
11/28/2023 13:38	253.6	225.40	1.0
11/28/2023 13:39	253.6	225.98	1.0
11/28/2023 13:40	253.6	225.27	1.0
11/28/2023 13:41	252.7	225.62	1.0
11/28/2023 13:42	252.5	225.85	1.0
11/28/2023 13:43	252.6	225.38	1.0
11/28/2023 13:44	252.6	226.02	1.0
11/28/2023 13:45	251.6	225.05	1.0
11/28/2023 13:46	251.6	225.63	1.0
11/28/2023 13:47	251.7	225.97	1.0
11/28/2023 13:48	251.6	225.38	1.0
11/28/2023 13:49	250.6	225.58	1.0
11/28/2023 13:50	250.6	225.68	1.0
11/28/2023 13:51	250.6	225.24	1.0
11/28/2023 13:52	250.6	225.70	1.0
11/28/2023 13:53	250.6	225.96	1.0
11/28/2023 13:54	250.6	225.39	1.0
11/28/2023 13:55	251.3	225.92	1.0
11/28/2023 13:56	251.7	225.33	1.0
11/28/2023 13:57	251.6	225.73	1.0

Date/Time	KILN: BH_TEMP_RM_ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/28/2023 13:58	252.6	225.91	1.0
11/28/2023 13:59	252.6	225.35	1.0
11/28/2023 14:00	253.4	225.91	1.0
11/28/2023 14:01	253.5	225.62	1.0
11/28/2023 14:02	253.6	225.27	1.0
11/28/2023 14:03	253.8	226.14	1.0
11/28/2023 14:04	254.7	225.28	1.0
11/28/2023 14:05	254.7	225.38	1.0
11/28/2023 14:06	254.7	226.13	1.0
11/28/2023 14:07	254.6	225.37	1.0
11/28/2023 14:08	254.7	225.56	1.0
11/28/2023 14:09	253.6	225.86	1.0
11/28/2023 14:10	253.6	224.99	1.0
11/28/2023 14:11	253.6	225.81	1.0
11/28/2023 14:12	253.2	225.83	1.0
11/28/2023 14:13	252.6	225.15	1.0
11/28/2023 14:14	252.6	226.22	1.0
11/28/2023 14:15	252.6	225.77	1.0
11/28/2023 14:16	252.6	225.47	1.0
11/28/2023 14:17	252.2	225.85	1.0
11/28/2023 14:18	251.6	225.64	1.0
11/28/2023 14:19	251.6	225.47	1.0
11/28/2023 14:20	251.6	225.76	1.0
11/28/2023 14:21	251.6	225.37	1.0
11/28/2023 14:22	251.6	225.37	1.0
11/28/2023 14:23	251.6	226.48	1.0
11/28/2023 14:24	251.6	225.41	1.0
11/28/2023 14:25	251.6	225.77	1.0
11/28/2023 14:26	251.6	225.65	1.0
11/28/2023 14:27	251.6	225.59	1.0
11/28/2023 14:28	251.6	225.92	1.0
11/28/2023 14:29	251.6	225.54	1.0
11/28/2023 14:30	251.3	225.54	1.0
11/28/2023 14:31	250.6	225.67	1.0
11/28/2023 14:32	250.6	225.61	1.0
11/28/2023 14:33	251.2	225.38	1.0
11/28/2023 14:34	251.6	225.88	1.0
11/28/2023 14:35	251.6	225.36	1.0
11/28/2023 14:36	251.6	225.12	1.0
11/28/2023 14:37	251.7	225.86	1.0
11/28/2023 14:38	251.6	225.48	1.0
11/28/2023 14:39	251.6	225.40	1.0
11/28/2023 14:40	251.6	225.76	1.0
11/28/2023 14:41	251.6	225.23	1.0
11/28/2023 14:42	251.6	225.35	1.0
11/28/2023 14:43	251.6	225.96	1.0
11/28/2023 14:44	251.6	225.56	1.0
11/28/2023 14:45	250.8	225.84	1.0
11/28/2023 14:46	250.6	225.45	1.0

Date/Time	KILN: BH_TEMP_RM_ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/28/2023 14:47	250.6	225.37	1.0
11/28/2023 14:48	250.6	225.87	1.0
11/28/2023 14:49	250.6	225.16	1.0
11/28/2023 14:50	250.6	225.73	1.0
11/28/2023 14:51	250.6	225.76	1.0
11/28/2023 14:52	250.6	225.45	1.0
11/28/2023 14:53	249.9	225.74	1.0
11/28/2023 14:54	249.6	225.67	1.0
11/28/2023 14:55	249.6	225.46	1.0
11/28/2023 14:56	249.6	225.71	1.0
11/28/2023 14:57	248.7	225.88	1.0
11/28/2023 14:58	248.7	225.04	1.0
11/28/2023 14:59	248.6	225.51	1.0
11/28/2023 15:00	248.7	225.86	1.0
11/28/2023 15:01	249.3	225.25	1.0
11/28/2023 15:02	249.6	225.71	1.0
11/28/2023 15:03	249.6	225.43	1.0
11/28/2023 15:04	249.6	225.43	1.0
11/28/2023 15:05	249.6	225.76	1.0
11/28/2023 15:06	249.6	225.64	1.0
11/28/2023 15:07	250.3	225.58	1.0
11/28/2023 15:08	250.6	225.80	1.0
11/28/2023 15:09	250.9	225.46	1.0
11/28/2023 15:10	251.6	225.43	1.0
11/28/2023 15:11	251.6	225.54	1.0
11/28/2023 15:12	252.2	225.65	1.0
11/28/2023 15:13	252.6	225.44	1.0
11/28/2023 15:14	253.6	225.59	1.0
11/28/2023 15:15	253.6	225.71	1.0
11/28/2023 15:16	253.8	225.37	1.0
11/28/2023 15:17	254.6	225.76	1.0
11/28/2023 15:18	254.7	225.76	1.0
11/28/2023 15:19	254.7	225.15	1.0
11/28/2023 15:20	254.7	225.72	1.0
11/28/2023 15:21	254.6	225.62	1.0
11/28/2023 15:22	254.7	225.31	1.0
11/28/2023 15:23	254.7	225.92	1.0
11/28/2023 15:24	254.6	225.60	1.0
11/28/2023 15:25	254.6	225.38	1.0
11/28/2023 15:26	254.5	225.84	1.0
11/28/2023 15:27	254.7	225.46	1.0
11/28/2023 15:28	254.6	225.24	1.0
11/28/2023 15:29	254.7	225.85	1.0
11/28/2023 15:30	254.7	225.69	1.0
Average	253.1	225.59	1.0

Date/Time	KILN: BH_TEMP_RM _ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/28/2023 16:02	256.7	225.24	1.0
11/28/2023 16:03	256.0	225.77	1.0
11/28/2023 16:04	255.6	225.64	1.0
11/28/2023 16:05	255.7	225.36	1.0
11/28/2023 16:06	255.7	225.79	1.0
11/28/2023 16:07	256.5	225.66	1.0
11/28/2023 16:08	256.6	225.47	1.0
11/28/2023 16:09	256.7	225.75	1.0
11/28/2023 16:10	256.7	225.57	1.0
11/28/2023 16:11	256.2	225.37	1.0
11/28/2023 16:12	255.6	225.56	1.0
11/28/2023 16:13	255.7	225.84	1.0
11/28/2023 16:14	255.6	225.41	1.0
11/28/2023 16:15	256.4	225.56	1.0
11/28/2023 16:16	256.7	225.70	1.0
11/28/2023 16:17	256.6	225.36	1.0
11/28/2023 16:18	257.7	225.94	1.0
11/28/2023 16:19	257.7	225.51	1.0
11/28/2023 16:20	257.7	225.36	1.0
11/28/2023 16:21	258.4	225.88	1.0
11/28/2023 16:22	257.7	225.44	1.0
11/28/2023 16:23	256.0	225.35	1.0
11/28/2023 16:24	254.3	225.99	1.0
11/28/2023 16:25	252.9	225.58	1.0
11/28/2023 16:26	251.9	225.36	1.0
11/28/2023 16:27	251.1	225.85	1.0
11/28/2023 16:28	250.6	225.44	1.0
11/28/2023 16:29	249.6	225.50	1.0
11/28/2023 16:30	249.5	225.94	1.0
11/28/2023 16:31	249.6	225.44	1.0
11/28/2023 16:32	249.6	225.57	1.0
11/28/2023 16:33	249.9	226.02	1.0
11/28/2023 16:34	250.6	225.06	1.0
11/28/2023 16:35	251.4	225.83	1.0
11/28/2023 16:36	252.2	225.41	1.0
11/28/2023 16:37	253.0	225.31	1.0
11/28/2023 16:38	253.8	225.85	1.0
11/28/2023 16:39	254.7	225.44	1.0
11/28/2023 16:40	254.7	225.49	1.0
11/28/2023 16:41	255.5	225.82	1.0
11/28/2023 16:42	255.6	225.57	1.0
11/28/2023 16:43	256.5	225.37	1.0
11/28/2023 16:44	256.7	225.52	1.0
11/28/2023 16:45	256.7	225.68	1.0
11/28/2023 16:46	257.4	225.62	1.0
11/28/2023 16:47	257.7	225.26	1.0
11/28/2023 16:48	257.7	225.62	1.0
11/28/2023 16:49	257.5	225.64	1.0
11/28/2023 16:50	256.6	225.36	1.0

	KILN: BH_TEMP_RM _ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
Date/Time	Raw Value	Raw Value	Raw Value
11/28/2023 16:51	256.5	225.87	1.0
11/28/2023 16:52	255.6	225.45	1.0
11/28/2023 16:53	255.6	225.00	1.0
11/28/2023 16:54	254.8	225.90	1.0
11/28/2023 16:55	254.8	225.40	1.0
11/28/2023 16:56	255.1	225.23	1.0
11/28/2023 16:57	255.7	225.64	1.0
11/28/2023 16:58	255.6	225.29	1.0
11/28/2023 16:59	255.6	225.82	1.0
11/28/2023 17:00	253.4	225.76	1.0
11/28/2023 17:01	252.2	225.18	1.0
11/28/2023 17:02	251.8	226.02	1.0
11/28/2023 17:03	252.6	225.31	1.0
11/28/2023 17:04	252.5	225.40	1.0
11/28/2023 17:05	252.9	225.65	1.0
11/28/2023 17:06	253.6	225.55	1.0
11/28/2023 17:07	254.0	225.68	1.0
11/28/2023 17:08	254.7	225.99	1.0
11/28/2023 17:09	253.5	225.08	1.0
11/28/2023 17:10	251.9	225.70	1.0
11/28/2023 17:11	252.6	225.71	1.0
11/28/2023 17:12	253.6	225.34	1.0
11/28/2023 17:13	254.9	225.86	1.0
11/28/2023 17:14	255.9	225.65	1.0
11/28/2023 17:15	256.7	225.28	1.0
11/28/2023 17:16	257.0	226.06	1.0
11/28/2023 17:17	257.7	225.20	1.0
11/28/2023 17:18	257.7	225.54	1.0
11/28/2023 17:19	257.6	225.83	1.0
11/28/2023 17:20	257.7	225.04	1.0
11/28/2023 17:21	257.7	226.13	1.0
11/28/2023 17:22	257.7	220.55	1.0
11/28/2023 17:23	257.7	225.30	1.0
11/28/2023 17:24	257.7	226.28	1.0
11/28/2023 17:25	257.2	224.81	1.0
11/28/2023 17:26	253.3	226.29	1.0
11/28/2023 17:27	251.6	225.73	1.0
11/28/2023 17:28	250.6	225.24	1.0
11/28/2023 17:29	245.3	226.02	1.0
11/28/2023 17:30	241.0	225.36	1.0
11/28/2023 17:31	241.6	225.80	1.0
11/28/2023 17:32	244.5	225.68	1.0
11/28/2023 17:33	247.0	225.28	1.0
11/28/2023 17:34	249.2	225.91	1.0
11/28/2023 17:35	250.9	225.20	1.0
11/28/2023 17:36	252.4	225.27	1.0
11/28/2023 17:37	253.0	226.15	1.0
11/28/2023 17:38	253.6	225.44	1.0
11/28/2023 17:39	253.6	225.52	1.0

Date/Time	KILN: BH_TEMP_RM _ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/28/2023 17:40	253.6	225.84	1.0
11/28/2023 17:41	253.6	225.49	1.0
11/28/2023 17:42	253.4	225.52	1.0
11/28/2023 17:43	252.6	225.85	1.0
11/28/2023 17:44	252.6	225.15	1.0
11/28/2023 17:45	252.6	225.67	1.0
11/28/2023 17:46	252.6	225.71	1.0
11/28/2023 17:47	252.6	225.12	1.0
11/28/2023 17:48	252.6	226.04	1.0
11/28/2023 17:49	253.6	225.33	1.0
11/28/2023 17:50	253.6	225.38	1.0
11/28/2023 17:51	254.6	225.98	1.0
11/28/2023 17:52	254.6	225.50	1.0
11/28/2023 17:53	255.4	225.89	1.0
11/28/2023 17:54	255.7	225.55	1.0
11/28/2023 17:55	255.7	225.52	1.0
11/28/2023 17:56	256.3	225.89	1.0
11/28/2023 17:57	256.7	225.51	1.0
11/28/2023 17:58	256.7	225.26	1.0
11/28/2023 17:59	257.5	226.06	1.0
11/28/2023 18:00	257.7	225.55	1.0
11/28/2023 18:01	257.7	225.42	1.0
11/28/2023 18:02	256.8	226.11	1.0
11/28/2023 18:03	256.6	225.27	1.0
11/28/2023 18:04	256.7	225.76	1.0
11/28/2023 18:05	256.3	225.57	1.0
11/28/2023 18:06	255.6	225.43	1.0
11/28/2023 18:07	255.0	226.00	1.0
11/28/2023 18:08	254.3	225.65	1.0
11/28/2023 18:09	253.7	225.35	1.0
11/28/2023 18:10	253.6	226.01	1.0
11/28/2023 18:11	252.9	225.65	1.0
11/28/2023 18:12	252.6	225.15	1.0
11/28/2023 18:13	252.6	225.68	1.0
11/28/2023 18:14	252.5	225.21	1.0
11/28/2023 18:15	252.6	225.64	1.0
11/28/2023 18:16	252.5	225.81	1.0
11/28/2023 18:17	252.5	225.48	1.0
11/28/2023 18:18	252.6	225.72	1.0
11/28/2023 18:19	252.9	225.43	1.0
11/28/2023 18:20	253.8	225.85	1.0
11/28/2023 18:21	254.7	225.72	1.0
11/28/2023 18:22	255.5	225.43	1.0
11/28/2023 18:23	255.6	225.91	1.0
11/28/2023 18:24	255.6	225.46	1.0
11/28/2023 18:25	256.7	225.43	1.0
11/28/2023 18:26	256.7	225.91	1.0
11/28/2023 18:27	256.6	225.12	1.0
11/28/2023 18:28	256.4	225.50	1.0

Date/Time	KILN: BH_TEMP_RM _ON (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/28/2023 18:29	255.7	225.94	1.0
11/28/2023 18:30	255.6	225.25	1.0
11/28/2023 18:31	254.8	225.47	1.0
11/28/2023 18:32	254.6	225.76	1.0
11/28/2023 18:33	254.7	225.49	1.0
11/28/2023 18:34	254.7	225.39	1.0
11/28/2023 18:35	254.8	225.83	1.0
11/28/2023 18:36	254.7	225.62	1.0
11/28/2023 18:37	255.4	225.40	1.0
11/28/2023 18:38	255.6	225.91	1.0
11/28/2023 18:39	255.6	225.56	1.0
11/28/2023 18:40	255.6	225.17	1.0
11/28/2023 18:41	255.6	225.75	1.0
11/28/2023 18:42	254.9	225.62	1.0
11/28/2023 18:43	254.7	225.50	1.0
11/28/2023 18:44	254.7	225.75	1.0
11/28/2023 18:45	254.6	225.56	1.0
11/28/2023 18:46	254.0	225.33	1.0
11/28/2023 18:47	253.6	225.82	1.0
11/28/2023 18:48	252.8	225.57	1.0
11/28/2023 18:49	252.6	225.36	1.0
11/28/2023 18:50	252.6	225.92	1.0
11/28/2023 18:51	252.6	225.43	1.0
11/28/2023 18:52	252.7	225.56	1.0
11/28/2023 18:53	252.6	225.66	1.0
11/28/2023 18:54	252.6	226.01	1.0
11/28/2023 18:55	252.6	225.14	1.0
11/28/2023 18:56	252.6	225.86	1.0
11/28/2023 18:57	252.5	225.67	1.0
11/28/2023 18:58	253.1	225.45	1.0
11/28/2023 18:59	253.8	225.90	1.0
11/28/2023 19:00	253.6	225.53	1.0
11/28/2023 19:01	253.9	225.25	1.0
11/28/2023 19:02	254.7	225.77	1.0
11/28/2023 19:03	254.6	225.77	1.0
11/28/2023 19:04	254.7	225.28	1.0
11/28/2023 19:05	254.6	225.70	1.0
11/28/2023 19:06	254.7	225.62	1.0
11/28/2023 19:07	254.7	225.43	1.0
11/28/2023 19:08	254.7	225.74	1.0
11/28/2023 19:09	253.6	225.48	1.0
11/28/2023 19:10	252.7	225.60	1.0
11/28/2023 19:11	251.8	225.75	1.0
11/28/2023 19:12	250.9	225.33	1.0
Average	254.3	225.56	1.0

Date/Time	KILN: BH_TEMP_RM_ OFF (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/29/2023 07:44	393.6	225.37	0.0
11/29/2023 07:45	392.5	225.94	0.0
11/29/2023 07:46	392.6	225.49	0.0
11/29/2023 07:47	392.6	225.40	0.0
11/29/2023 07:48	391.6	225.55	0.0
11/29/2023 07:49	390.1	225.75	0.0
11/29/2023 07:50	388.9	225.38	0.0
11/29/2023 07:51	388.6	225.73	0.0
11/29/2023 07:52	388.6	225.54	0.0
11/29/2023 07:53	388.4	225.38	0.0
11/29/2023 07:54	389.2	225.77	0.0
11/29/2023 07:55	389.2	225.78	0.0
11/29/2023 07:56	389.7	225.43	0.0
11/29/2023 07:57	389.7	225.71	0.0
11/29/2023 07:58	389.4	225.60	0.0
11/29/2023 07:59	388.6	225.69	0.0
11/29/2023 08:00	389.8	225.74	0.0
11/29/2023 08:01	391.1	225.27	0.0
11/29/2023 08:02	392.9	225.74	0.0
11/29/2023 08:03	394.3	225.50	0.0
11/29/2023 08:04	394.7	225.28	0.0
11/29/2023 08:05	394.6	225.77	0.0
11/29/2023 08:06	394.9	225.68	0.0
11/29/2023 08:07	395.6	225.39	0.0
11/29/2023 08:08	395.7	225.75	0.0
11/29/2023 08:09	395.7	225.70	0.0
11/29/2023 08:10	396.6	225.78	0.0
11/29/2023 08:11	396.6	225.81	0.0
11/29/2023 08:12	396.6	225.33	0.0
11/29/2023 08:13	395.7	225.36	0.0
11/29/2023 08:14	395.6	225.92	0.0
11/29/2023 08:15	395.6	225.36	0.0
11/29/2023 08:16	395.6	225.78	0.0
11/29/2023 08:17	395.5	225.33	0.0
11/29/2023 08:18	394.8	225.64	0.0
11/29/2023 08:19	394.6	225.70	0.0
11/29/2023 08:20	394.7	225.36	0.0
11/29/2023 08:21	395.5	225.67	0.0
11/29/2023 08:22	395.6	225.65	0.0
11/29/2023 08:23	396.6	225.36	0.0
11/29/2023 08:24	396.6	225.79	0.0
11/29/2023 08:25	397.4	225.31	0.0
11/29/2023 08:26	397.6	225.52	0.0
11/29/2023 08:27	397.3	225.75	0.0
11/29/2023 08:28	395.6	225.57	0.0
11/29/2023 08:29	393.2	225.63	0.0
11/29/2023 08:30	391.6	225.83	0.0
11/29/2023 08:31	390.6	225.48	0.0
11/29/2023 08:32	389.8	225.82	0.0

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Date/Time	KILN: BH_TEMP_RM_ OFF (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/29/2023 08:33	389.0	225.62	0.0
11/29/2023 08:34	388.7	225.40	0.0
11/29/2023 08:35	388.6	225.81	0.0
11/29/2023 08:36	387.8	225.53	0.0
11/29/2023 08:37	388.1	225.54	0.0
11/29/2023 08:38	388.6	225.52	0.0
11/29/2023 08:39	389.5	226.06	0.0
11/29/2023 08:40	390.3	225.48	0.0
11/29/2023 08:41	392.1	225.49	0.0
11/29/2023 08:42	393.2	225.64	0.0
11/29/2023 08:43	394.1	225.38	0.0
11/29/2023 08:44	394.7	225.31	0.0
11/29/2023 08:45	394.7	225.81	0.0
11/29/2023 08:46	394.0	225.80	0.0
11/29/2023 08:47	392.1	225.43	0.0
11/29/2023 08:48	390.7	225.75	0.0
11/29/2023 08:49	389.8	225.69	0.0
11/29/2023 08:50	389.7	225.53	0.0
11/29/2023 08:51	389.6	225.83	0.0
11/29/2023 08:52	390.4	225.54	0.0
11/29/2023 08:53	390.9	225.65	0.0
11/29/2023 08:54	392.1	225.93	0.0
11/29/2023 08:55	393.3	225.37	0.0
11/29/2023 08:56	395.0	225.56	0.0
11/29/2023 08:57	395.8	225.72	0.0
11/29/2023 08:58	397.2	225.60	0.0
11/29/2023 08:59	397.7	225.78	0.0
11/29/2023 09:00	397.7	225.84	0.0
11/29/2023 09:01	397.8	225.44	0.0
11/29/2023 09:02	398.6	225.76	0.0
11/29/2023 09:03	399.3	225.62	0.0
11/29/2023 09:04	399.6	225.39	0.0
11/29/2023 09:05	399.9	225.71	0.0
11/29/2023 09:06	400.6	225.98	0.0
11/29/2023 09:07	401.4	225.29	0.0
11/29/2023 09:08	400.6	225.74	0.0
11/29/2023 09:09	400.4	225.49	0.0
11/29/2023 09:10	399.6	225.12	0.0
11/29/2023 09:11	398.6	226.34	0.0
11/29/2023 09:12	397.9	225.67	0.0
11/29/2023 09:13	397.6	225.50	0.0
11/29/2023 09:14	397.7	225.75	0.0
11/29/2023 09:15	397.7	225.60	0.0
11/29/2023 09:16	398.1	225.53	0.0
11/29/2023 09:17	398.3	225.70	0.0
11/29/2023 09:18	397.6	225.66	0.0
11/29/2023 09:19	397.7	225.47	0.0
11/29/2023 09:20	397.9	225.71	0.0
11/29/2023 09:21	398.6	225.62	0.0

Date/Time	KILN: BH_TEMP_RM_ OFF (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_ON (BITMASK)
	Raw Value	Raw Value	Raw Value
11/29/2023 09:22	399.6	225.30	0.0
11/29/2023 09:23	399.6	225.50	0.0
11/29/2023 09:24	399.6	225.48	0.0
11/29/2023 09:25	399.6	225.44	0.0
11/29/2023 09:26	399.6	225.89	0.0
11/29/2023 09:27	400.0	225.06	0.0
11/29/2023 09:28	400.8	225.92	0.0
11/29/2023 09:29	401.6	225.49	0.0
11/29/2023 09:30	400.9	225.54	0.0
11/29/2023 09:31	400.7	225.83	0.0
11/29/2023 09:32	400.6	225.47	0.0
11/29/2023 09:33	401.2	225.44	0.0
11/29/2023 09:34	400.6	225.59	0.0
11/29/2023 09:35	400.9	225.55	0.0
11/29/2023 09:36	401.6	225.56	0.0
11/29/2023 09:37	401.5	225.62	0.0
11/29/2023 09:38	402.0	225.51	0.0
11/29/2023 09:39	402.6	225.45	0.0
11/29/2023 09:40	402.6	225.46	0.0
11/29/2023 09:41	401.6	225.95	0.0
11/29/2023 09:42	401.7	225.59	0.0
11/29/2023 09:43	402.6	225.44	0.0
11/29/2023 09:44	403.5	225.96	0.0
11/29/2023 09:45	403.6	225.59	0.0
11/29/2023 09:46	403.4	225.65	0.0
11/29/2023 09:47	402.6	225.72	0.0
11/29/2023 09:48	402.6	225.30	0.0
11/29/2023 09:49	402.6	225.27	0.0
11/29/2023 09:50	402.5	225.94	0.0
11/29/2023 09:51	401.8	225.46	0.0
11/29/2023 09:52	401.5	225.40	0.0
11/29/2023 09:53	401.1	225.71	0.0
11/29/2023 09:54	400.7	225.59	0.0
11/29/2023 09:55	400.6	225.69	0.0
11/29/2023 09:56	400.6	225.62	0.0
11/29/2023 09:57	401.4	226.05	0.0
11/29/2023 09:58	402.0	225.71	0.0
11/29/2023 09:59	402.7	225.50	0.0
11/29/2023 10:00	402.5	225.66	0.0
11/29/2023 10:01	402.6	225.88	0.0
11/29/2023 10:02	402.6	225.38	0.0
11/29/2023 10:03	403.6	225.46	0.0
11/29/2023 10:04	404.3	225.97	0.0
11/29/2023 10:05	404.7	225.46	0.0
11/29/2023 10:06	404.5	225.41	0.0
11/29/2023 10:07	403.8	225.81	0.0
11/29/2023 10:08	403.5	225.41	0.0
11/29/2023 10:09	403.7	225.48	0.0
11/29/2023 10:10	403.6	225.46	0.0

Date/Time	KILN: BH_TEMP_RM_ OFF (DEGF) Raw Value	KILN: CLINKER_PROD (TNHR) Raw Value	KILN: ROLLER_MILL_ON (BITMASK) Raw Value
11/29/2023 10:11	403.7	226.00	0.0
11/29/2023 10:12	402.8	225.16	0.0
11/29/2023 10:13	403.4	225.75	0.0
11/29/2023 10:14	403.6	225.88	0.0
11/29/2023 10:15	403.5	225.24	0.0
11/29/2023 10:16	402.9	225.90	0.0
11/29/2023 10:17	402.7	225.48	0.0
11/29/2023 10:18	402.4	225.42	0.0
11/29/2023 10:19	401.6	225.75	0.0
11/29/2023 10:20	402.5	225.53	0.0
11/29/2023 10:21	403.2	225.46	0.0
11/29/2023 10:22	403.6	225.46	0.0
11/29/2023 10:23	403.4	225.91	0.0
11/29/2023 10:24	403.6	225.60	0.0
11/29/2023 10:25	403.5	225.50	0.0
11/29/2023 10:26	403.6	225.89	0.0
11/29/2023 10:27	403.6	225.18	0.0
11/29/2023 10:28	403.5	225.75	0.0
11/29/2023 10:29	403.5	225.54	0.0
11/29/2023 10:30	403.5	225.40	0.0
11/29/2023 10:31	403.4	225.54	0.0
11/29/2023 10:32	403.5	225.82	0.0
11/29/2023 10:33	403.6	225.51	0.0
11/29/2023 10:34	403.4	225.56	0.0
11/29/2023 10:35	403.5	225.77	0.0
11/29/2023 10:36	403.6	225.43	0.0
11/29/2023 10:37	403.6	225.41	0.0
11/29/2023 10:38	403.6	225.86	0.0
11/29/2023 10:39	404.2	225.37	0.0
11/29/2023 10:40	404.7	225.35	0.0
11/29/2023 10:41	404.6	225.83	0.0
11/29/2023 10:42	404.0	225.64	0.0
11/29/2023 10:43	403.6	225.62	0.0
11/29/2023 10:44	403.1	225.62	0.0
11/29/2023 10:45	402.5	225.47	0.0
11/29/2023 10:46	402.4	225.44	0.0
11/29/2023 10:47	402.4	225.73	0.0
11/29/2023 10:48	401.5	225.64	0.0
11/29/2023 10:49	401.1	225.55	0.0
11/29/2023 10:50	400.6	225.56	0.0
11/29/2023 10:51	400.6	225.43	0.0
11/29/2023 10:52	400.6	225.49	0.0
11/29/2023 10:53	400.6	225.75	0.0
11/29/2023 10:54	401.6	225.31	0.0
Average	398.2	225.60	0.0

Date/Time	KILN: BH_TEMP_RM_O	KILN: CLINKER_PROD	KILN: ROLLER_MILL_O
	FF (DEGF) Raw Value	(TNHR) Raw Value	N (BITMASK) Raw Value
11/29/2023 11:15	397.5	225.67	0.0
11/29/2023 11:16	396.6	225.73	0.0
11/29/2023 11:17	396.6	225.57	0.0
11/29/2023 11:18	396.6	225.84	0.0
11/29/2023 11:19	397.7	225.68	0.0
11/29/2023 11:20	398.6	225.45	0.0
11/29/2023 11:21	398.6	225.55	0.0
11/29/2023 11:22	398.6	225.86	0.0
11/29/2023 11:23	398.9	225.41	0.0
11/29/2023 11:24	399.6	225.89	0.0
11/29/2023 11:25	399.8	225.89	0.0
11/29/2023 11:26	400.6	225.60	0.0
11/29/2023 11:27	400.6	225.53	0.0
11/29/2023 11:28	400.6	225.54	0.0
11/29/2023 11:29	400.6	225.83	0.0
11/29/2023 11:30	400.6	225.53	0.0
11/29/2023 11:31	399.8	225.59	0.0
11/29/2023 11:32	399.6	225.75	0.0
11/29/2023 11:33	399.6	225.59	0.0
11/29/2023 11:34	399.6	225.42	0.0
11/29/2023 11:35	399.6	225.68	0.0
11/29/2023 11:36	400.3	225.77	0.0
11/29/2023 11:37	401.1	225.36	0.0
11/29/2023 11:38	401.7	225.61	0.0
11/29/2023 11:39	402.6	225.93	0.0
11/29/2023 11:40	402.8	225.51	0.0
11/29/2023 11:41	403.6	225.48	0.0
11/29/2023 11:42	403.5	225.50	0.0
11/29/2023 11:43	404.7	225.70	0.0
11/29/2023 11:44	404.6	225.65	0.0
11/29/2023 11:45	403.9	225.64	0.0
11/29/2023 11:46	403.6	225.63	0.0
11/29/2023 11:47	403.1	225.68	0.0
11/29/2023 11:48	402.3	225.64	0.0
11/29/2023 11:49	401.6	225.41	0.0
11/29/2023 11:50	401.1	225.62	0.0
11/29/2023 11:51	400.4	225.65	0.0
11/29/2023 11:52	399.6	225.49	0.0
11/29/2023 11:53	399.2	225.73	0.0
11/29/2023 11:54	399.1	225.54	0.0
11/29/2023 11:55	399.6	225.42	0.0
11/29/2023 11:56	400.3	225.62	0.0
11/29/2023 11:57	400.6	225.68	0.0
11/29/2023 11:58	401.1	225.37	0.0
11/29/2023 11:59	401.6	225.36	0.0
11/29/2023 12:00	401.6	225.91	0.0
11/29/2023 12:01	402.1	225.48	0.0
11/29/2023 12:02	402.6	225.51	0.0
11/29/2023 12:03	402.6	225.85	0.0

Date/Time	KILN: BH_TEMP_RM_O FF (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_O N (BITMASK)
	Raw Value	Raw Value	Raw Value
11/29/2023 12:04	402.6	225.49	0.0
11/29/2023 12:05	401.8	225.59	0.0
11/29/2023 12:06	401.4	225.46	0.0
11/29/2023 12:07	400.5	225.76	0.0
11/29/2023 12:08	400.0	225.47	0.0
11/29/2023 12:09	399.6	225.52	0.0
11/29/2023 12:10	399.1	225.70	0.0
11/29/2023 12:11	398.6	225.50	0.0
11/29/2023 12:12	398.3	225.47	0.0
11/29/2023 12:13	397.6	225.58	0.0
11/29/2023 12:14	396.6	225.72	0.0
11/29/2023 12:15	396.5	225.56	0.0
11/29/2023 12:16	396.5	225.60	0.0
11/29/2023 12:17	397.7	225.55	0.0
11/29/2023 12:18	398.6	225.52	0.0
11/29/2023 12:19	399.7	225.53	0.0
11/29/2023 12:20	400.3	225.80	0.0
11/29/2023 12:21	400.6	225.78	0.0
11/29/2023 12:22	401.4	225.40	0.0
11/29/2023 12:23	401.6	225.42	0.0
11/29/2023 12:24	402.2	225.76	0.0
11/29/2023 12:25	401.8	225.44	0.0
11/29/2023 12:26	401.5	225.37	0.0
11/29/2023 12:27	401.6	225.63	0.0
11/29/2023 12:28	401.7	225.75	0.0
11/29/2023 12:29	401.6	225.44	0.0
11/29/2023 12:30	400.9	225.54	0.0
11/29/2023 12:31	400.4	225.78	0.0
11/29/2023 12:32	399.6	225.78	0.0
11/29/2023 12:33	398.9	225.36	0.0
11/29/2023 12:34	398.6	225.42	0.0
11/29/2023 12:35	398.6	225.74	0.0
11/29/2023 12:36	399.0	225.45	0.0
11/29/2023 12:37	399.6	225.60	0.0
11/29/2023 12:38	400.2	225.84	0.0
11/29/2023 12:39	401.2	225.24	0.0
11/29/2023 12:40	401.6	225.67	0.0
11/29/2023 12:41	401.5	225.64	0.0
11/29/2023 12:42	401.6	225.46	0.0
11/29/2023 12:43	401.5	225.40	0.0
11/29/2023 12:44	401.6	225.68	0.0
11/29/2023 12:45	401.6	225.57	0.0
11/29/2023 12:46	401.6	225.52	0.0
11/29/2023 12:47	401.6	225.68	0.0
11/29/2023 12:48	401.5	225.88	0.0
11/29/2023 12:49	401.6	225.51	0.0
11/29/2023 12:50	401.5	225.40	0.0
11/29/2023 12:51	401.2	225.75	0.0
11/29/2023 12:52	400.6	225.64	0.0

Date/Time	KILN: BH_TEMP_RM_O FF (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_O N (BITMASK)
	Raw Value	Raw Value	Raw Value
11/29/2023 12:53	400.4	225.40	0.0
11/29/2023 12:54	399.6	225.50	0.0
11/29/2023 12:55	399.6	225.50	0.0
11/29/2023 12:56	399.6	225.77	0.0
11/29/2023 12:57	399.6	225.44	0.0
11/29/2023 12:58	399.6	225.75	0.0
11/29/2023 12:59	399.6	225.52	0.0
11/29/2023 13:00	399.3	225.38	0.0
11/29/2023 13:01	398.6	225.81	0.0
11/29/2023 13:02	398.6	225.63	0.0
11/29/2023 13:03	398.6	225.47	0.0
11/29/2023 13:04	398.7	225.44	0.0
11/29/2023 13:05	399.4	225.76	0.0
11/29/2023 13:06	399.6	225.60	0.0
11/29/2023 13:07	400.5	225.58	0.0
11/29/2023 13:08	401.1	225.67	0.0
11/29/2023 13:09	401.5	225.67	0.0
11/29/2023 13:10	400.6	225.48	0.0
11/29/2023 13:11	400.3	225.52	0.0
11/29/2023 13:12	399.3	225.95	0.0
11/29/2023 13:13	398.2	225.54	0.0
11/29/2023 13:14	397.3	225.56	0.0
11/29/2023 13:15	396.3	225.68	0.0
11/29/2023 13:16	395.6	225.46	0.0
11/29/2023 13:17	395.6	225.46	0.0
11/29/2023 13:18	395.6	225.71	0.0
11/29/2023 13:19	395.8	225.48	0.0
11/29/2023 13:20	396.6	225.53	0.0
11/29/2023 13:21	397.6	225.60	0.0
11/29/2023 13:22	398.4	225.78	0.0
11/29/2023 13:23	399.4	225.42	0.0
11/29/2023 13:24	399.6	225.36	0.0
11/29/2023 13:25	399.7	225.83	0.0
11/29/2023 13:26	398.7	225.75	0.0
11/29/2023 13:27	398.6	225.40	0.0
11/29/2023 13:28	398.1	225.65	0.0
11/29/2023 13:29	397.5	225.80	0.0
11/29/2023 13:30	396.6	225.40	0.0
11/29/2023 13:31	396.3	225.52	0.0
11/29/2023 13:32	395.6	225.44	0.0
11/29/2023 13:33	395.5	225.75	0.0
11/29/2023 13:34	395.5	225.51	0.0
11/29/2023 13:35	395.2	225.81	0.0
11/29/2023 13:36	394.6	225.70	0.0
11/29/2023 13:37	395.4	225.76	0.0
11/29/2023 13:38	396.3	225.43	0.0
11/29/2023 13:39	397.5	225.56	0.0
11/29/2023 13:40	397.2	225.95	0.0
11/29/2023 13:41	397.2	225.43	0.0

Date/Time	KILN: BH_TEMP_RM_O FF (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_O N (BITMASK)
	Raw Value	Raw Value	Raw Value
11/29/2023 13:42	397.6	225.52	0.0
11/29/2023 13:43	397.6	225.72	0.0
11/29/2023 13:44	397.6	225.56	0.0
11/29/2023 13:45	397.7	225.48	0.0
11/29/2023 13:46	397.6	225.73	0.0
11/29/2023 13:47	397.3	225.52	0.0
11/29/2023 13:48	396.7	225.48	0.0
11/29/2023 13:49	396.6	225.94	0.0
11/29/2023 13:50	395.9	225.32	0.0
11/29/2023 13:51	395.5	225.55	0.0
11/29/2023 13:52	394.9	225.85	0.0
11/29/2023 13:53	394.0	225.45	0.0
11/29/2023 13:54	393.7	225.52	0.0
11/29/2023 13:55	393.5	225.76	0.0
11/29/2023 13:56	394.2	225.60	0.0
11/29/2023 13:57	394.8	225.51	0.0
11/29/2023 13:58	395.6	225.58	0.0
11/29/2023 13:59	395.6	225.51	0.0
11/29/2023 14:00	395.6	225.58	0.0
11/29/2023 14:01	396.5	225.57	0.0
11/29/2023 14:02	396.7	225.53	0.0
11/29/2023 14:03	396.6	226.10	0.0
11/29/2023 14:04	396.6	225.47	0.0
11/29/2023 14:05	396.7	225.87	0.0
11/29/2023 14:06	396.6	225.62	0.0
11/29/2023 14:07	396.6	225.46	0.0
11/29/2023 14:08	396.8	225.86	0.0
11/29/2023 14:09	397.5	225.36	0.0
11/29/2023 14:10	397.6	225.53	0.0
11/29/2023 14:11	397.6	225.63	0.0
11/29/2023 14:12	397.8	225.66	0.0
11/29/2023 14:13	398.6	225.60	0.0
11/29/2023 14:14	398.6	225.79	0.0
11/29/2023 14:15	399.4	225.54	0.0
11/29/2023 14:16	399.6	225.60	0.0
11/29/2023 14:17	400.1	225.56	0.0
11/29/2023 14:18	400.6	225.91	0.0
11/29/2023 14:19	400.7	225.48	0.0
11/29/2023 14:20	400.6	225.44	0.0
11/29/2023 14:21	400.6	225.76	0.0
11/29/2023 14:22	400.6	225.56	0.0
11/29/2023 14:23	400.6	225.55	0.0
11/29/2023 14:24	400.7	225.68	0.0
11/29/2023 14:25	400.0	225.79	0.0
Average	399.2	225.60	0.0

Date/Time	KILN: BH_TEMP_RM_O FF (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_O N (BITMASK)
	Raw Value	Raw Value	Raw Value
11/29/2023 14:45	402.4	225.65	0.0
11/29/2023 14:46	401.5	225.72	0.0
11/29/2023 14:47	401.2	225.70	0.0
11/29/2023 14:48	400.6	225.61	0.0
11/29/2023 14:49	400.2	225.48	0.0
11/29/2023 14:50	399.6	225.51	0.0
11/29/2023 14:51	398.6	225.28	0.0
11/29/2023 14:52	398.5	225.70	0.0
11/29/2023 14:53	398.6	225.48	0.0
11/29/2023 14:54	399.1	225.47	0.0
11/29/2023 14:55	399.6	225.80	0.0
11/29/2023 14:56	399.6	225.90	0.0
11/29/2023 14:57	399.6	225.33	0.0
11/29/2023 14:58	399.6	225.77	0.0
11/29/2023 14:59	400.6	225.82	0.0
11/29/2023 15:00	400.6	225.57	0.0
11/29/2023 15:01	401.1	225.58	0.0
11/29/2023 15:02	401.5	225.70	0.0
11/29/2023 15:03	401.6	225.51	0.0
11/29/2023 15:04	401.6	225.64	0.0
11/29/2023 15:05	401.6	225.43	0.0
11/29/2023 15:06	401.6	225.60	0.0
11/29/2023 15:07	401.1	225.75	0.0
11/29/2023 15:08	400.6	225.63	0.0
11/29/2023 15:09	400.1	225.51	0.0
11/29/2023 15:10	399.4	225.50	0.0
11/29/2023 15:11	398.6	225.70	0.0
11/29/2023 15:12	398.6	225.61	0.0
11/29/2023 15:13	398.5	225.42	0.0
11/29/2023 15:14	398.6	225.36	0.0
11/29/2023 15:15	398.5	225.87	0.0
11/29/2023 15:16	398.3	225.63	0.0
11/29/2023 15:17	398.6	225.58	0.0
11/29/2023 15:18	398.6	225.85	0.0
11/29/2023 15:19	398.6	225.38	0.0
11/29/2023 15:20	398.6	225.56	0.0
11/29/2023 15:21	398.2	225.60	0.0
11/29/2023 15:22	397.6	225.65	0.0
11/29/2023 15:23	397.6	225.46	0.0
11/29/2023 15:24	397.6	225.32	0.0
11/29/2023 15:25	397.6	225.77	0.0
11/29/2023 15:26	397.7	225.58	0.0
11/29/2023 15:27	397.5	225.55	0.0
11/29/2023 15:28	396.6	225.62	0.0
11/29/2023 15:29	395.6	225.60	0.0
11/29/2023 15:30	394.6	225.27	0.0
11/29/2023 15:31	393.5	225.75	0.0
11/29/2023 15:32	393.6	225.91	0.0
11/29/2023 15:33	392.9	225.41	0.0

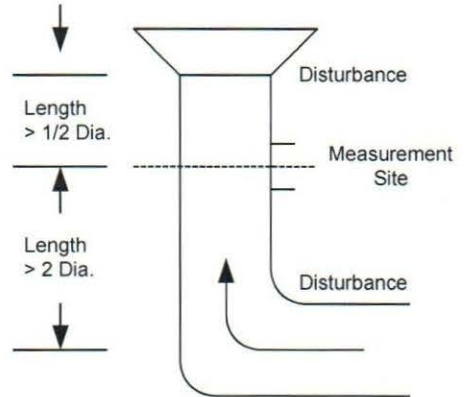
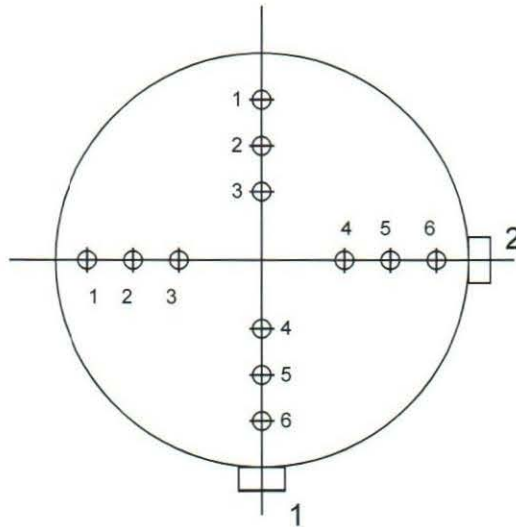
Date/Time	KILN: BH_TEMP_RM_O FF (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_O N (BITMASK)
	Raw Value	Raw Value	Raw Value
11/29/2023 15:34	392.5	225.62	0.0
11/29/2023 15:35	392.5	225.66	0.0
11/29/2023 15:36	393.9	225.78	0.0
11/29/2023 15:37	394.9	225.72	0.0
11/29/2023 15:38	395.4	225.36	0.0
11/29/2023 15:39	395.5	225.79	0.0
11/29/2023 15:40	395.5	225.50	0.0
11/29/2023 15:41	395.5	225.36	0.0
11/29/2023 15:42	395.6	225.53	0.0
11/29/2023 15:43	395.7	225.76	0.0
11/29/2023 15:44	395.5	225.51	0.0
11/29/2023 15:45	395.5	225.58	0.0
11/29/2023 15:46	396.4	225.78	0.0
11/29/2023 15:47	396.6	225.45	0.0
11/29/2023 15:48	396.5	225.53	0.0
11/29/2023 15:49	395.5	225.81	0.0
11/29/2023 15:50	395.6	225.71	0.0
11/29/2023 15:51	395.4	225.34	0.0
11/29/2023 15:52	395.8	225.40	0.0
11/29/2023 15:53	396.6	225.90	0.0
11/29/2023 15:54	397.3	225.42	0.0
11/29/2023 15:55	397.8	225.51	0.0
11/29/2023 15:56	398.6	225.87	0.0
11/29/2023 15:57	399.5	225.58	0.0
11/29/2023 15:58	400.1	225.45	0.0
11/29/2023 15:59	400.7	225.67	0.0
11/29/2023 16:00	400.6	225.74	0.0
11/29/2023 16:01	400.6	225.43	0.0
11/29/2023 16:02	400.8	225.52	0.0
11/29/2023 16:03	401.6	225.45	0.0
11/29/2023 16:04	401.8	225.76	0.0
11/29/2023 16:05	402.6	225.59	0.0
11/29/2023 16:06	402.6	225.39	0.0
11/29/2023 16:07	401.5	225.62	0.0
11/29/2023 16:08	401.1	225.58	0.0
11/29/2023 16:09	400.6	225.48	0.0
11/29/2023 16:10	399.8	225.95	0.0
11/29/2023 16:11	399.3	225.61	0.0
11/29/2023 16:12	398.4	225.71	0.0
11/29/2023 16:13	397.6	225.39	0.0
11/29/2023 16:14	396.7	225.65	0.0
11/29/2023 16:15	396.7	225.74	0.0
11/29/2023 16:16	397.4	225.48	0.0
11/29/2023 16:17	398.1	225.60	0.0
11/29/2023 16:18	398.9	225.88	0.0
11/29/2023 16:19	399.6	225.64	0.0
11/29/2023 16:20	399.6	225.42	0.0
11/29/2023 16:21	399.6	225.83	0.0
11/29/2023 16:22	400.7	225.75	0.0

Date/Time	KILN: BH_TEMP_RM_O FF (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_O N (BITMASK)
	Raw Value	Raw Value	Raw Value
11/29/2023 16:23	400.6	225.52	0.0
11/29/2023 16:24	400.7	225.28	0.0
11/29/2023 16:25	400.6	225.95	0.0
11/29/2023 16:26	399.6	225.38	0.0
11/29/2023 16:27	398.6	225.57	0.0
11/29/2023 16:28	398.6	225.62	0.0
11/29/2023 16:29	398.4	225.51	0.0
11/29/2023 16:30	397.7	225.58	0.0
11/29/2023 16:31	397.6	225.52	0.0
11/29/2023 16:32	398.3	225.92	0.0
11/29/2023 16:33	398.6	225.64	0.0
11/29/2023 16:34	398.6	225.49	0.0
11/29/2023 16:35	398.6	225.48	0.0
11/29/2023 16:36	398.6	225.83	0.0
11/29/2023 16:37	398.6	225.27	0.0
11/29/2023 16:38	399.6	225.62	0.0
11/29/2023 16:39	400.1	225.73	0.0
11/29/2023 16:40	400.6	225.34	0.0
11/29/2023 16:41	400.6	225.43	0.0
11/29/2023 16:42	401.2	225.81	0.0
11/29/2023 16:43	401.6	225.52	0.0
11/29/2023 16:44	401.1	225.64	0.0
11/29/2023 16:45	400.6	225.65	0.0
11/29/2023 16:46	400.6	225.74	0.0
11/29/2023 16:47	401.1	225.44	0.0
11/29/2023 16:48	401.5	225.46	0.0
11/29/2023 16:49	401.6	225.54	0.0
11/29/2023 16:50	400.8	225.68	0.0
11/29/2023 16:51	400.7	225.71	0.0
11/29/2023 16:52	400.7	225.49	0.0
11/29/2023 16:53	400.7	225.42	0.0
11/29/2023 16:54	400.8	225.75	0.0
11/29/2023 16:55	400.7	225.62	0.0
11/29/2023 16:56	400.6	225.38	0.0
11/29/2023 16:57	400.6	225.74	0.0
11/29/2023 16:58	400.8	225.77	0.0
11/29/2023 16:59	400.7	225.38	0.0
11/29/2023 17:00	400.6	225.46	0.0
11/29/2023 17:01	401.2	225.89	0.0
11/29/2023 17:02	401.6	225.61	0.0
11/29/2023 17:03	402.4	225.51	0.0
11/29/2023 17:04	403.0	225.63	0.0
11/29/2023 17:05	403.5	225.68	0.0
11/29/2023 17:06	404.4	225.55	0.0
11/29/2023 17:07	403.6	225.65	0.0
11/29/2023 17:08	403.8	225.49	0.0
11/29/2023 17:09	404.6	225.58	0.0
11/29/2023 17:10	404.7	225.49	0.0
11/29/2023 17:11	404.7	225.40	0.0

Date/Time	KILN: BH_TEMP_RM_O FF (DEGF)	KILN: CLINKER_PROD (TNHR)	KILN: ROLLER_MILL_O N (BITMASK)
	Raw Value	Raw Value	Raw Value
11/29/2023 17:12	404.5	225.55	0.0
11/29/2023 17:13	404.4	225.87	0.0
11/29/2023 17:14	403.6	225.60	0.0
11/29/2023 17:15	403.5	225.57	0.0
11/29/2023 17:16	402.6	225.68	0.0
11/29/2023 17:17	402.5	225.60	0.0
11/29/2023 17:18	401.7	225.42	0.0
11/29/2023 17:19	402.0	225.55	0.0
11/29/2023 17:20	401.9	225.55	0.0
11/29/2023 17:21	402.6	225.57	0.0
11/29/2023 17:22	402.7	225.58	0.0
11/29/2023 17:23	403.1	225.54	0.0
11/29/2023 17:24	403.6	225.62	0.0
11/29/2023 17:25	403.6	225.85	0.0
11/29/2023 17:26	403.6	225.47	0.0
11/29/2023 17:27	402.8	225.48	0.0
11/29/2023 17:28	401.8	225.56	0.0
11/29/2023 17:29	401.6	225.78	0.0
11/29/2023 17:30	401.6	225.39	0.0
11/29/2023 17:31	401.0	225.52	0.0
11/29/2023 17:32	400.7	225.72	0.0
11/29/2023 17:33	399.9	225.46	0.0
11/29/2023 17:34	399.6	225.45	0.0
11/29/2023 17:35	399.6	225.65	0.0
11/29/2023 17:36	399.6	225.82	0.0
11/29/2023 17:37	399.6	225.61	0.0
11/29/2023 17:38	399.8	225.82	0.0
11/29/2023 17:39	400.4	225.63	0.0
11/29/2023 17:40	400.8	225.73	0.0
11/29/2023 17:41	401.5	225.47	0.0
11/29/2023 17:42	401.6	225.81	0.0
11/29/2023 17:43	400.8	225.60	0.0
11/29/2023 17:44	400.6	225.67	0.0
11/29/2023 17:45	400.6	225.49	0.0
11/29/2023 17:46	400.6	225.79	0.0
11/29/2023 17:47	399.8	225.88	0.0
11/29/2023 17:48	399.6	225.35	0.0
11/29/2023 17:49	398.8	225.72	0.0
11/29/2023 17:50	398.6	225.76	0.0
11/29/2023 17:51	398.4	225.45	0.0
11/29/2023 17:52	397.7	225.46	0.0
11/29/2023 17:53	397.6	225.63	0.0
11/29/2023 17:54	397.6	225.85	0.0
Average	399.6	225.60	0.0

Appendix B - Test Section Diagram

EQUAL AREA TRAVERSE FOR ROUND DUCTS



Job: St. Marys Cement
Charlevoix Plant
Charlevoix, Michigan

Date: Novemeber 28 and 29, 2023

Test Location: Main Kiln Stack

Duct Diameter: 10.58 Feet

Duct Area: 87.915 Square Feet

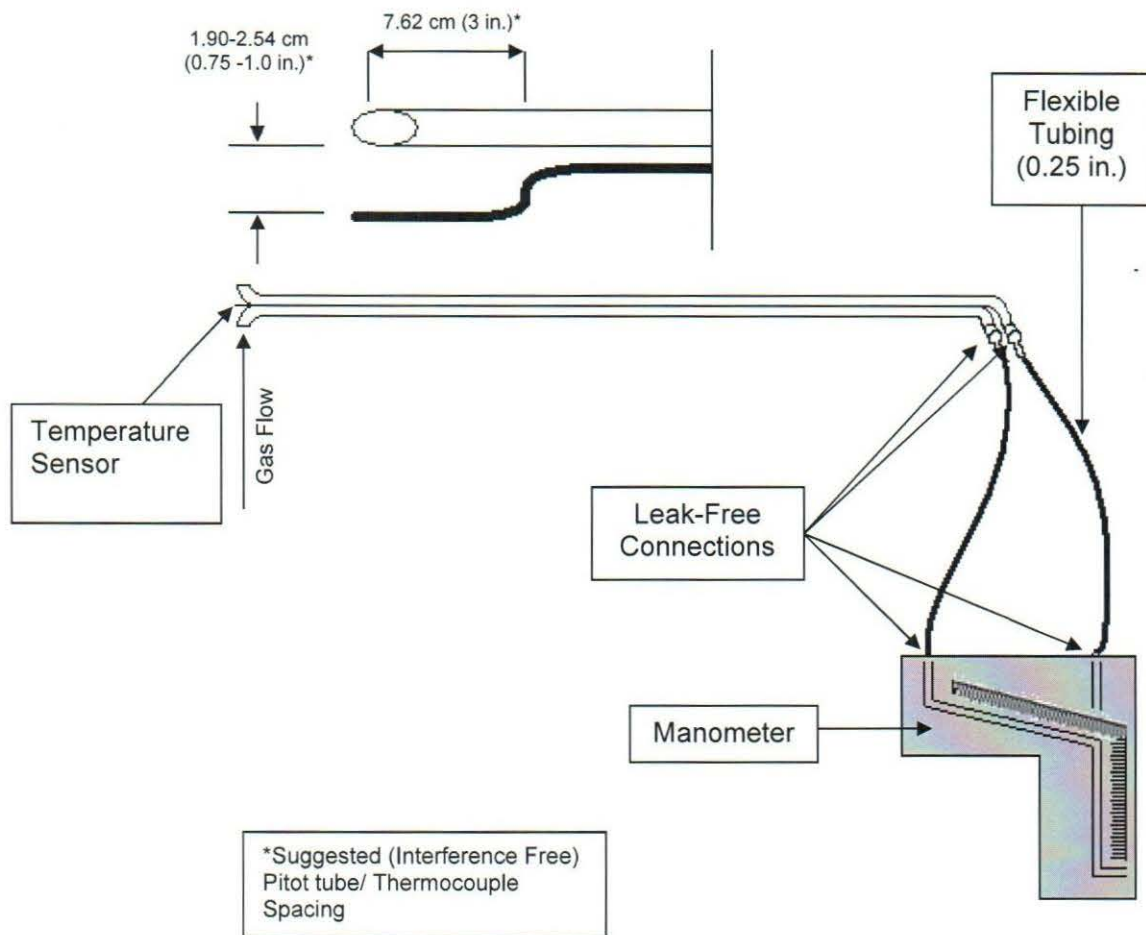
No. Points Across Diameter: 6

No. of Ports: 2

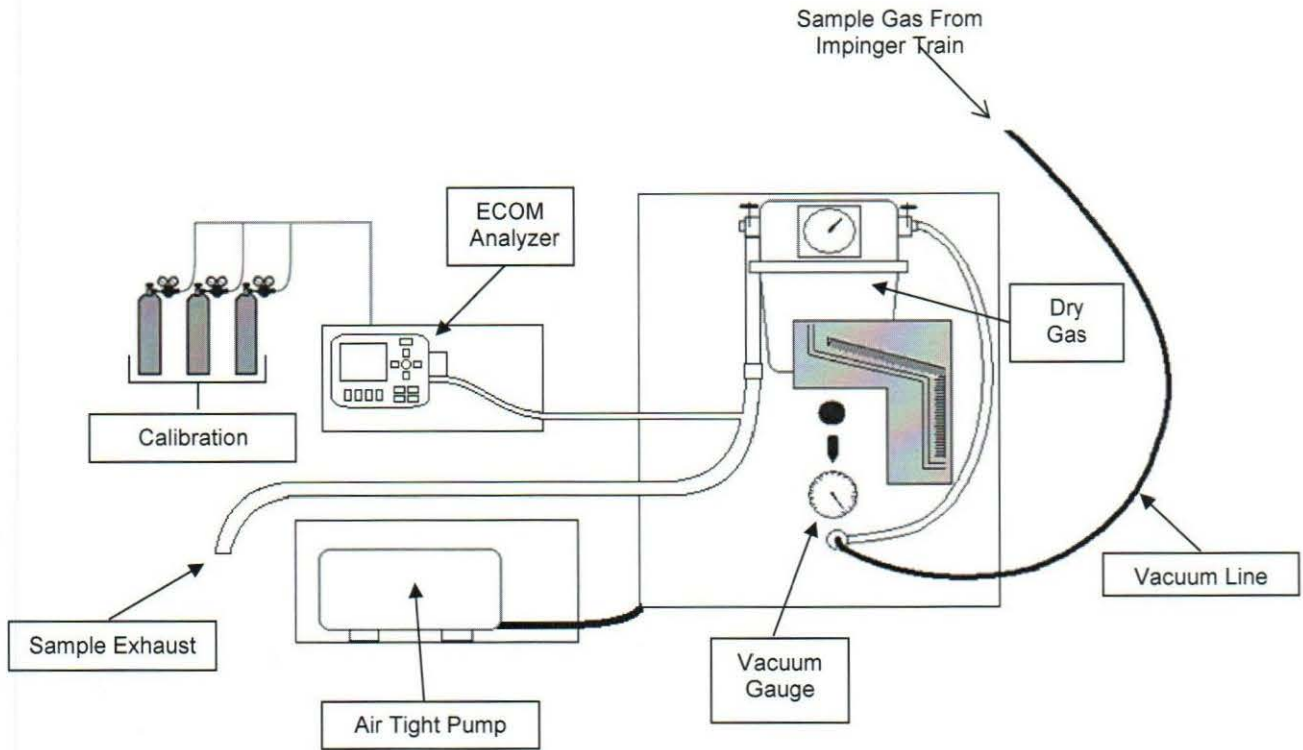
Port Length: 6 Inch

Appendix C - Sample Train Diagrams

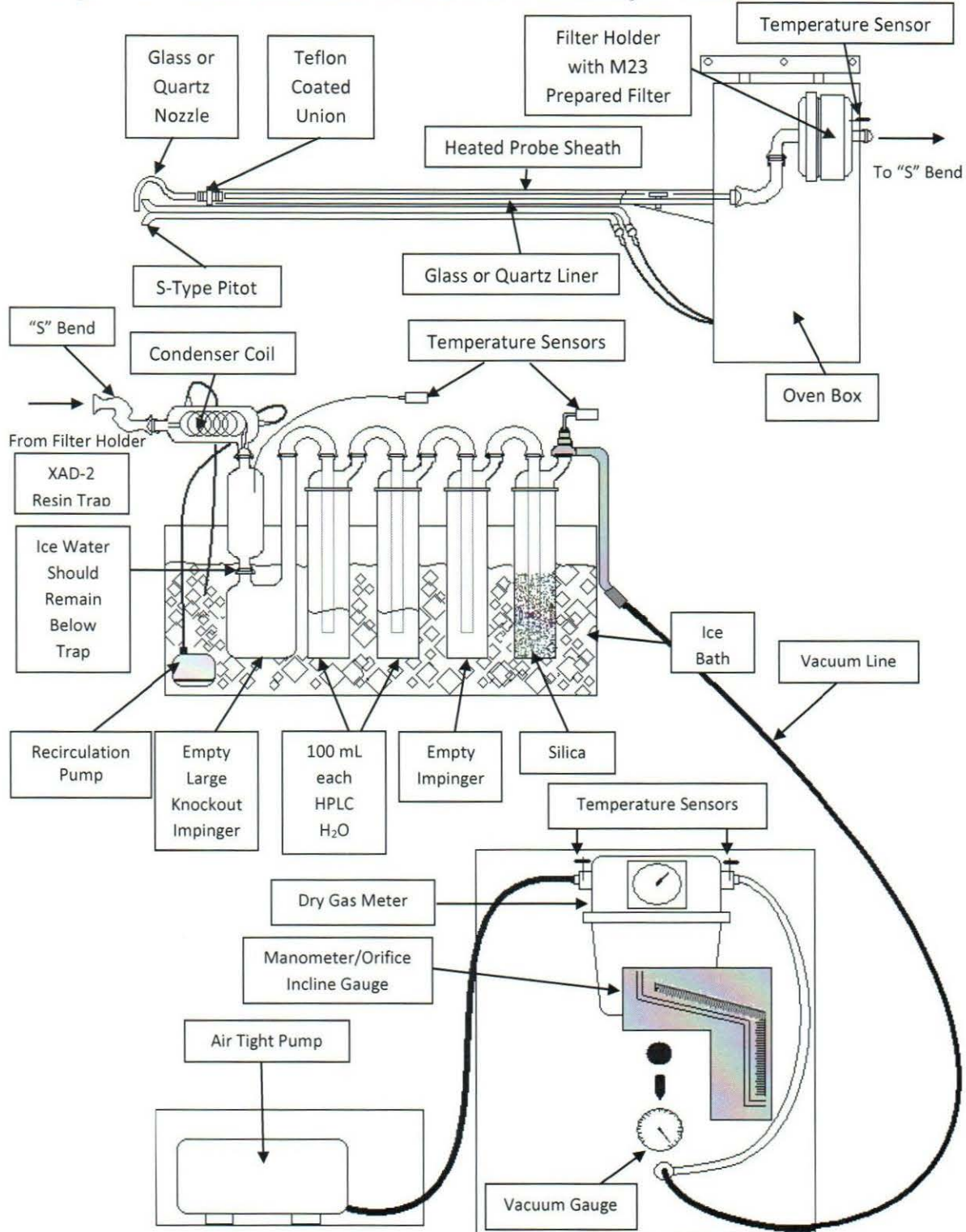
USEPA Method 2 – Type S Pitot Tube Manometer Assembly



USEPA Method 3A - Integrated Oxygen/Carbon Dioxide Sample Train Diagram Utilizing ECOM To Measure from Sample Exhaust



Method 23 - Determination of Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans from Municipal Waste Combustors



ATD-061 USEPA Method 23

Rev. 1.2

1/1/2021