1.0 EXECUTIVE SUMMARY

Mostardi Platt conducted a compliance emissions test program for Ajax Materials Corporation - Plant 4 located in Genesse Township, Michigan on August 31 through September 1 and September 5, 2023 This report summarized the results of the test program and test method used in accordance with Mostardi Platt Protocol No. P232813 dated August 9, 2023; approved by Michigan EGLE Air Quality Department by letter dated August 21, 2023.

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

TEST INFORMATION			
Test Locations	**Test Date**	**Test Parameters**	**Test Method**
EUHMAPLANT	August 31-September 1, 2023	Particulate Matter (PM)	USEPA Method 5, 40CFR60, Appendix A
		Condensable Particulate Matter ($PM_{2.5}$)	USEPA Method 202, 40CFR51, Appendix M
		Total Particulate Matter (PM_{10})	USEPA Method 202, 40CFR51, Appendix M
		Carbon (CO)	USEPA Method 10 40CFR60, Appendix A
		Sulfur Dioxide ($SO_{2)}$	USEPA Method 6C 40CFR60, Appendix A
		Nitrous Oxide (NO_X)	USEPA Method 7E 40CFR60, Appendix A
		Volatile Organic Compounds (VOC)	USEPA Method 25A 40CFR60, Appendix A
		Benzene, Toluene, Ethylbenzene, and Xylenes-meta, ortho, para (BTEX)	USEPA Method 18 40CFR60, Appendix A
	September 5, 2023	Arsenic (As), Nickel (Ni), Manganese (Mn)	USEPA Method 29 40CFR60, Appendix A
		Lead (Pb)	USEPA Method 29 40CFR60, Appendix A
	August 31-September 1, 2023	Formaldehyde	USEPA Method 320 40CFR63, Appendix A

The purpose of this test program was to demonstrate the compliance in accordance with Title 40, *Code of Federal Regulations,* Part 60 (40CFR60), and Title V Operation Permit 90-21.

Test Location	Date	Parameter	Emission Limit	Actual Result
EUHMAPLANT	8/31-9/1/23	PM	0.04 gr/dscf	0.0046 gr/dscf
			0.036 lb/ton	0.003 lb/ton
		$PM_{2.5}$	0.05 lb/ton	0.005 lb/ton
		PM_{10}	0.05 lb/ton	0.005 lb/ton
		Opacity	20% (6 minute average)	0.0%
		CO	0.2 lb/ ton	0.029 lb/ton
		SO_2	0.089 lb/ton	0.008 lb/ton
		NO_X	0.07 lb/ton	0.031 lb/ton
		VOC	0.06 lb/ton	0.007 lb/ton
		Benzene	0.00075 lb/ton	9.53E-05 lb/ton
		Toluene	0.003 lb/ton	5.42E-05 lb/ton
	8/31-9/1/23	Ethlybenzene	0.001 lb/ton	5.65E-06 lb/ton
		Xylene (m,p,o)	0.001 lb/ton	1.76E-05 lb/ton
		Formaldehyde	0.0054 lb/ton	0.0006 lb/ton
	9/5/2023	Pb	0.0000100 lb/ton	3.77E-07 lb/ton
		As	0.0000020 lb/ton	2.26E-07 lb/ton
		Ni	0.000076lb/ ton	1.81E-06 lb/ton
		Mn	0.000035 lb/ton	3.92E-06 lb/ton

The Method 29 (metals) run performed on 8/31 did not pass the post nozzle leak check and therefore was not analyzed. The flow rate from the metals test on 8/31 was used for the lb/hr calculation of the first run of the M18 testing. No other deviations, additions, or exclusions from the site-specific test plan, test methods, the Mostardi Platt Quality Manual, or the ASTM D&036-12 occurred. The specific test conditions encountered did not interfere with the collection of the data.

The identification of individuals associated with this test program is summarized below.

Title	Address	Contact Information
Test Coordinators	Ajax Materials Corporation 5088 Energy Drive Flint, Michigan 48505	Mrs. Kathleen Anderson Environmental Consultant 810-845-3925 axisenvironmental@charter.net
	Fishbeck 39500 MacKenzie Dr. #100 Novi, MI 48377	Ms. Stephanie Jarrett Vice President 248-417-9425 sajarrett@fishbeck.com
Test Company Representative	Mostardi Platt 888 North Industrial Dr. Elmhurst, Illinois 60126	Mr. Stuart Sands AET Lead - Elmhurst (630) 993-2100 ssands@mp-mail.com
State Observer	Address	Contact Information
EGLE AQD Thermal Process Unit	Air Quality Division, First Floor Southwest P.O. Box 30242 Lansing, MI 48909	Mr. Jeremy Howe, Supervisor 231-878-6687 Howej1@michigan.gov
EGLE AQD Lansing District Office	Air Quality Division, First Floor Southwest P.O. Box 30242 Lansing, MI 48909	Daniel McGeen Cell phone: 517-648-7547 mcgeend@michigan.gov

The test crew consisted of A. Diaz, E. Ehlers, J. Meyerhoff, P. Pradhan and S Sands of Mostardi Platt.

2.0 TEST METHODOLOGY

Emission testing was conducted following the United States Environmental Protection Agency (USEPA) methods specified in 40CFR60 and 40CFR63, Appendix A in addition to the Mostardi Platt Quality Manual and the site-specific test plan approved by Michigan EGLE AQD. Schematics of the test section diagrams and sampling trains are included in Appendix B and C, respectively.

The following methodologies were used during the test program:

2.1 Method 1 Sample and Velocity Traverse Determination

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

Sample Point Selection

Test Location	Stack Diameter	Upstream Diameters	Downstream Diameters	Test Parameter	Number of Sampling Points
Baghouse Exhaust	68"	12	4	SO_2, NO_X, CO, VOC, HCHO	12 (Stratification) 3 (Test Runs)
				TPM, As, Mn, Ni, Pb	24
				BTEX	1

2.2 Method 2 Volumetric Flow Rate Determination

For 5A/202 and 29 testing, gas velocity was measured following Method 2, 40CFR60, Appendix A, for purposes of calculating stack gas volumetric flow rate and emission rates on a lb/ton basis. An S-type pitot tube, as a component of the isokinetic sampling trains, differential pressure gauge, thermocouple, and temperature readout are 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 are presented in Appendix H.

2.3 Method 3A Oxygen (O_2) Determination

Flue gas O_2 concentrations were determined in accordance with USEPA Method 3A. A BrandGaus 4710 analyzer was used to determine the O_2 wet concentrations by connecting the analyzer to the outlet of the Fourier transform infrared analyzer. The O_2 instrument operates in the nominal range of 0% to 21% 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.

2.4 Method 4 H_2O Determination

Stack gas moisture content was determined using a Method 4 sampling train as a component of the Method 5/202 and 29 sampling system. In this technique, stack gas is drawn through a series of impingers as detailed in EPA Method 5/202 and 29. The entire impinger train is measured or weighed before and after each test run to determine the mass of moisture condensed.

During testing, the sample train was be 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.) will be recorded on field data sheets.

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

2.5 Method 5 Filterable Particulate Matter Determination

Stack gas filterable particulate matter concentrations and emission rates were determined in accordance with Method 5. The probe and filter housing were maintained at a temperature of 248°F +/- 25°. An Environmental Supply Company, Inc. sampling train was used to sample stack gas at an isokinetic rate. The total sample time for each run was 60 minutes, with twelve sample points being utilized (12 points per port, 2 total ports). A minimum of 0.9 dry standard cubic meter was sampled for each run.

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 was considered complete, if not, another pass of the brush through the probe was made and inspected until the solution was clear. The nozzle was then removed from the probe and cleaned in a similar manner, utilizing an appropriately sized nozzle brush. The filter and filter housing were 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. Sample analyses was performed off site by Mostardi Platt personnel in accordance with Method 5.

2.6 Method 202 Condensable Particulate Matter Determination

Stack gas condensable particulate concentrations and emission rates were determined in accordance with the Method 202, in conjunction with Method 5 filterable particulate sampling. Condensable particulate matter was collected in the impinger portion of the Method 5 sampling trains.

The condensable particulate matter (CPM) was collected in impingers, after filterable particulate material was collected, using Method 5. The organic and aqueous fractions were then taken to dryness and weighed. The total of all fractions represents the CPM. A schematic of the sampling train is found in Appendix C.

CPM was collected in the water dropout, modified Greenburg Smith impinger and ambient filter portion of the sampling train as described in this Method. The impinger contents were purged with nitrogen (N_2) immediately after sample collection to remove dissolved sulfur dioxide (SO_2) gases from the impingers. The impinger solution was then extracted with DI water, acetone, and hexane. The organic and aqueous fractions were dried and the residues weighed. The total of the aqueous, organic, and ambient filter fractions represents the CPM. Laboratory analysis data are found in Appendix E. All of the equipment used was calibrated in accordance with the specifications of the Method. Calibration data are presented in Appendix H.

2.7 Method 18 BTEX Determination

Stack gas BTEX concentrations and emission rates were determined in accordance with Method 18. Paired traps were sampled through 1/4" stainless steel probes, an empty knockout mini-impinger, and collected on carbon sorbent traps.

The "A" traps were the unspiked two section traps, while the "B" traps were the two section traps spiked with BTEX at a nominal 50ng. Upon completion of the test run, post-test leak checks were be performed and traps were capped and kept on ice for storage. All laboratory analysis data are found in Appendix E.

2.8 Method 29 Trace Metals Determination

Stack gas metals concentrations and emission rates were determined in accordance with Method 29. An Environmental Supply Company sampling train was used to sample stack gas, in the manner specified in the Method. Analyses of the samples collected will be analyzed by a certified laboratory. Samples will be analyzed for arsenic, manganese, nickel, and lead.

2.9 Method 25A THC Determination

The Method 25A sampling and measurement system meets the requirements for stack sampling of THC set forth by the USEPA. In particular, it meets the requirements of USEPA Reference Method 25A, "Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer," 40CFR60, Appendix A. This method applies to the measurement of total gaseous organic concentration of hydrocarbons. With this method, the gas sample is extracted from the sample location through a heated Teflon sample line to the analyzer.

The flame ionization detector (FID) to be used during this program is a highly sensitive FID that provides a direct reading of organic vapor concentrations with linear ranges of 0-10, 100, 1000, and 10,000 ppm by volume. The instrument is calibrated using ultra-zero air and propane in air EPA Protocol standards for the total hydrocarbon (THC) determination. The calibrations are performed before and after sampling with calibration checks performed between each test run. Sample times and locations are logged simultaneously on data loggers.

The calibration data and copies of the calibration gas cylinder certifications are found in Appendix H and I, respectively.

2.10 Method 320 SO_2, NO_X, CO, and HCHO Determination

The sampling procedures for SO_2, NO_X, CO, and HCHO were performed in accordance with USEPA Methods 320 (FTIR) in lieu of 40CFR60, Appendix A. Data was continuously recorded with a data logging system.

All sampling system components are heated to 375ºF +/- 25ºF, including: stainless steel sample probe, stainless steel calibration tee, in line glass fiber particulate filter, Teflon® sample line, FTIR detector cell, and hydrocarbon analyzer. The sample pump distributes the gas sample to each instrument at a steady sample flow rate (+/- 10%). All components of the sampling system are constructed of stainless steel, glass, or Teflon®.

Analyzer calibration error tests are performed on each instrument prior to the first run and again after any failed system bias or drift test. Low-level (0-20% of calibration span, mid-level (40-60% of calibration span, and high-level (span) gases are used. Pre-test and post-test system calibrations are performed to demonstrate bias and drift requirements are met for each run or series of runs as well as to correct final gas readings for calibration bias. System bias/drift calibrations are performed through the entire gas system, with calibration gas introduced upstream of all sample conditioning components.

FTIR technology works on the principle that most gases absorb infrared light. This is true for all compounds with the exception of homonuclear diatomic molecules and noble gases such as: N_2, O_2, H_2, He, Ne, and Ar. Vibrations, stretches, bends, and rotations within the bonds of a molecule determine the infrared absorption distinctiveness. The absorption creates a “fingerprint" which is unique to each given compound. The quantity of infrared light absorbed is proportional to the gas concentration. Most compounds have absorbencies at different infrared frequencies, thus allowing the simultaneous analysis of multiple compounds at one time. The FTIR software compares each sample spectrum to a user-selected list of calibration references and concentration data is generated.

FTIR data will be collected using an MKS MultiGas 2030 FTIR spectrometer. Data will be generated at 0.5 cm^{-1}. Each Spectra will be derived from the coaddition of 64 scans with a new data point generated approximately every minute. Analyte spiking will assure the ability of the system to recover the spike in the stack matrix.

To validate the data, reference spectra will be manually fit to that of the sample spectra to determine a concentration. Sample pressure and temperature corrections will then be applied to compute the final sample concentration. The manually calculated results will then be compared to the software generated result to ensure accuracy of the generated data. If there is a difference of ±20% the spectra are reviewed for possible spectra interferences or any other possible causes leading to mis-quantified data.

FTIR QA/QC Procedures						
QA/QC Specification	**Purpose**	**Calibration Gas Analyte**	**Delivery**	**Frequency**	**Acceptance Criteria**	**Result**
M320: Zero	Verify that the FTIR is free of contaminants & zero the FTIR	Nitrogen (zero)	Direct to FTIR	pre/post test	< MDL or Noise	**Pass**
M320: Calibration Transfer Standard (CTS) Direct	Verify FTIR stability, confirm optical path length	Ethylene	Direct to FTIR	Pretest/post test	+/- 5% cert. value	**Pass**
M320: CTS Response	Verify system stability, recovery, response time	Ethylene	Sampling System	pretest	+/- 5% of Direct Measurement	**Pass**
M320: Zero Response	Verify system is free of contaminants, system bias	Zero Nitrogen	Sampling System	pretest	Bias correct data	**Pass**
M320: Analyte Spike	Verify system ability to deliver and quantify analyte of interest in the presence of other effluent gases	Formaldehyde	Dynamic Addition to Sampling System, ~1:10 effluent	pretest and minimum 3 times throughout testing	+/- 30% theoretical recovery	**Pass**

Analyte Spiking

Spiking was performed prior to testing to verify the ability of the sampling system to quantitatively deliver a sample containing acetaldehyde and methanol from the base of the probe to the FTIR. Analyte spiking assures the ability of the FTIR sampling system to recover acid gases in the presence of effluent gas.

As part of the spiking procedure, samples were measured to determine native acetaldehyde and methanol concentrations to be used in the spike recovery calculations. The analyte spiking gases contained a low concentration of sulfur hexafluoride (SF_6). The determined SF_6 concentration in the spiked sample was used to calculate the dilution factor of the spike and thus used to calculate the concentration of the spiked Acetaldehyde. The spike target dilution ratio was 1:10 or less. Spike recovery as calculated per Section 9.2.3 (3) of Method 320.

QA/QC data are found in Appendix K. Copies of gas cylinder certifications are found in Appendix I. All concentration data were recorded on a wet, volume basis. The sample and data collection followed the procedures outlined in Method 320

2.11 Method 9 Visible Emission Determination

Visible emissions were determined in accordance with Method 9. The observer stood at a distance providing a clear view of the emissions with the sun oriented in the 140° sector to his back. As much as possible, the line of vision was approximately perpendicular to the plume direction.

Opacity observations were made at the point of greatest opacity in the portion of the plume. Observations were made at 15-second intervals for the duration of the test run.

Visible emissions observations were conducted and recorded by Mr. John Buresh, who is a certified visual emissions observer. Visible emissions data and the reader certification are found in Appendix J.

3.0 TEST RESULT SUMMARIES

Client: Ajax Materials Corporation
Facility: Genesee Township Facility
Test Location: EUHMAPLANT
Test Method: 5/202

Source Condition	Normal	Normal	Normal	
Date	8/31/23	9/1/23	9/1/23	
Start Time	12:05	7:25	10:35	
End Time	13:40	8:45	12:03	
	Run 1	Run 2	Run 3	Average
Stack Conditions				
Average Gas Temperature, °F	243.8	240.8	243.5	242.7
Flue Gas Moisture, percent by volume	46.3%	42.3%	41.4%	43.3%
Average Flue Pressure, in. Hg	29.30	29.43	29.43	29.39
Gas Sample Volume, dscf	43.846	38.668	45.614	42.709
Average Gas Velocity, ft/sec	48.934	39.601	45.102	44.546
Gas Volumetric Flow Rate, acfm	74,055	59,931	68,257	67,414
Gas Volumetric Flow Rate, dscfm	29,210	25,614	29,535	28,120
Gas Volumetric Flow Rate, scfm	54,403	44,417	50,390	49,737
Average %CO_2 by volume, dry basis	8.2	7.8	7.9	8.0
Average %O_2 by volume, dry basis	9.9	8.9	8.3	9.0
Isokinetic Variance	100.1	100.7	103.0	101.3
Asphalt Production Rate, ton/hr	443.0	409.0	415.0	422.3
Filterable Particulate Matter (Method 5)				
grams collected	0.00964	0.01489	0.01327	0.01260
grains/dscf	0.0034	0.0059	0.0045	0.0046
lb/hr	0.849	1.304	1.136	1.096
lb/ton of asphalt	0.002	0.003	0.003	0.003
Condensable Particulate Matter (Method 202)				
grams collected	0.02288	0.00347	0.00298	0.00978
grains/dscf	0.0081	0.0014	0.0010	0.0035
lb/hr	2.016	0.304	0.255	0.858
lb/ton of asphalt	0.005	0.001	0.001	0.002
Total Particulate Matter (5/202)				
grams collected	0.03252	0.01836	0.01625	0.02238
grains/dscf	0.0115	0.0073	0.0055	0.0081
lb/hr	2.865	1.608	1.391	1.955
lb/ton of asphalt	0.006	0.004	0.003	0.005

Ajax Materials Corporation
Genesee Township Facility
EUHMAPLANT
Reference Method Test Data

Test No.	Date	Start Time	End Time	NOx ppmvw	SO2 ppmvw	CO ppmvw	NOx lb/ton	SO2 lb/ton	CO lb/ton	CO2 % (wet)	O2 % (wet)	VOC ppmvw as propane	VOC lb/hr as propane	VOC lb/ton as propane	Formaldehyde ppmw	Formaldehyde lb/hr	Formaldehyde lb/ton	Moisture %	ton/hr of Asphalt	Flow, SCFH
1	8/31/2023	7:05	9:06	33.1	6.3	42.2	0.028	0.007	0.022	4.4	3.4	6.2	2.1	0.005	0.83	0.19	0.0005	40.83%	426	3,001,380
2	8/31/2023	12:05	13:28	37.0	10.8	50.2	0.033	0.013	0.027	4.4	3.0	8.3	3.1	0.007	0.97	0.25	0.0006	45.22%	443	3,264,180
3	9/1/2023	7:25	8:40	37.6	4.6	55.3	0.029	0.005	0.03	4.6	3.1	11.0	3.4	0.008	1.28	0.27	0.0007	40.74%	409	2,665,020
4	9/1/2023	10:35	12:00	38.0	5.3	78.7	0.033	0.006	0.04	4.5	2.6	9.7	3.3	0.008	1.42	0.33	0.0008	43.48%	415	3,023,340
Average				**36.4**	**6.7**	**56.6**	**0.031**	**0.008**	**0.029**	**4.5**	**3.0**	**8.8**	**3.0**	**0.007**	**0.37**	**0.26**	**0.0006**	**42.57%**	**423.3**	**2,988,480**

Organic HAP Results Summary
Ajax Genesee Township Testing
Ajax Genesee County
EUHMAPLANT
Normal

Run No.	1	2	3	Average
Date	8/31/2023	8/31/2023	9/1/2023	
Start Time	7:15	12:05	7:25	
End Time	9:15	13:30	8:45	
Gas Volumetric Flow Rate, dscfm	29,599	29,210	25,614	28,141
Asphalt Production Rate, ton/hr	426.0	443.0	409.0	426.0
Benzene ppmvd	0.08	0.16	0.12	0.12
Benzene lb/hr	0.03	0.06	0.04	0.04
Benzene lb/ton of asphalt	7.17E-05	1.25E-04	8.96E-05	9.53E-05
Ethylbenzene ppmvd	≤ 0.005	≤ 0.01	≤ 0.01	≤ 0.01
Ethylbenzene lb/hr	≤ 2.42E-03	≤ 2.68E-03	≤ 2.13E-03	≤ 2.41E-03
Ethylbenzene lb/ton of asphalt	≤ 5.69E-06	≤ 6.04E-06	≤ 5.22E-06	≤ 5.65E-06
m-Xylene ppmvd	≤ 0.005	≤ 0.01	≤ 0.005	≤ 0.01
o-Xylene ppmvd	≤ 0.01	≤ 0.01	≤ 0.01	≤ 0.01
p-Xylene ppmvd	≤ 0.01	≤ 0.01	≤ 0.01	≤ 0.01
Total Xylene lb/hr	≤ 7.54E-03	≤ 8.32E-03	≤ 6.64E-03	≤ 7.50E-03
Total Xylene lb/ton of asphalt	≤ 1.77E-05	≤ 1.88E-05	≤ 1.62E-05	≤ 1.76E-05
Toluene ppmvd	≤ 0.04	0.07	0.07	≤ 0.06
Toluene lb/hr	≤ 0.02	0.03	0.03	≤ 0.02
Toluene lb/ton of asphalt	≤ 3.68E-05	6.23E-05	6.33E-05	≤ 5.42E-05

Client: Ajax Materials Corporation
Facility: Genesee Township Facility
Test Location: EUHMAPLANT
Test Method: 29

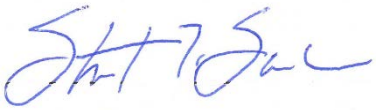
Source Condition	**Normal**		**Normal**		**Normal**		
Date	**9/5/23**		**9/5/23**		**9/5/23**		
Start Time	**7:15**		**9:45**		**12:30**		
End Time	**9:10**		**11:58**		**14:20**		
	Run 1		**Run 2**		**Run 3**		**Average**
Stack Conditions							
Average Gas Temperature, °F	252.8		240.7		258.4		250.6
Flue Gas Moisture, percent by volume	42.8%		41.6%		42.5%		42.3%
Average Flue Pressure, in. Hg	29.19		29.19		29.19		29.19
Gas Sample Volume, dscf	71.445		68.552		72.068		70.688
Average Gas Velocity, ft/sec	46.412		46.555		47.396		46.788
Gas Volumetric Flow Rate, acfm	70,238		70,455		71,728		70,807
Gas Volumetric Flow Rate, dscfm	29,029		30,235		29,563		29,609
Gas Volumetric Flow Rate, scfm	50,759		51,797		51,433		51,330
Average %CO_2 by volume, dry basis	8.6		9.0		8.2		8.6
Average %O_2 by volume, dry basis	7.4		6.7		8.1		7.4
Isokinetic Variance	102.6		94.5		101.6		99.6
Asphalt Production Rate, ton/hr	438.0		448.0		439.0		441.7
Arsenic (As) Emissions							
ug of sample collected	≤ 1.20	≤	1.20	≤	1.20	≤	1.20
ppm	≤ 1.90E-04	≤	1.98E-04	≤	1.89E-04	≤	1.92E-04
mg/dscm	≤ 5.93E-04	≤	6.18E-04	≤	5.88E-04	≤	6.00E-04
lb/hr	≤ 1.00E-04	≤	1.00E-04	≤	1.00E-04	≤	1.00E-04
lb/ton of asphalt	≤ 2.28E-07	≤	2.23E-07	≤	2.28E-07	≤	2.26E-07
Lead (Pb) Emissions							
ug of sample collected	2.83		2.82		1.46		2.37
ppm	1.62E-04		1.69E-04		8.30E-05		1.38E-04
mg/dscm	1.40E-03		1.45E-03		7.15E-04		1.19E-03
lb/hr	2.00E-04		2.00E-04		1.00E-04		1.67E-04
lb/ton of asphalt	4.57E-07		4.46E-07		2.28E-07		3.77E-07
Manganese (Mn) Emissions							
ug of sample collected	35.24		31.21		27.88		31.44
ppm	8.00E-03		7.00E-03		6.00E-03		7.00E-03
mg/dscm	2.00E-02		2.00E-02		1.00E-02		1.67E-02
lb/hr	1.90E-03		1.80E-03		1.50E-03		1.73E-03
lb/ton of asphalt	4.34E-06		4.02E-06		3.42E-06		3.92E-06
Nickel (Ni) Emissions							
ug of sample collected	17.01		18.01		8.03		14.35
ppm	3.00E-03		4.00E-03		2.00E-03		3.00E-03
mg/dscm	1.00E-02		1.00E-02		3.93E-03		7.98E-03
lb/hr	9.00E-04		1.10E-03		4.00E-04		8.00E-04
lb/ton of asphalt	2.05E-06		2.46E-06		9.11E-07		1.81E-06

4.0 CERTIFICATION

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

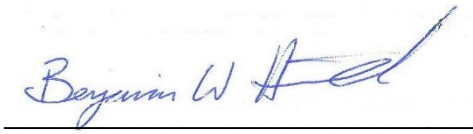
As the program manager, I hereby certify that this test report represents a true and accurate summary of emissions test results and the methodologies employed to obtain those results. The test program was performed in accordance with the site-specific test plan, test methods, the Mostardi Platt Quality Manual, and the ASTM D7036-12, as applicable.

MOSTARDI PLATT



Program Manager

Stuart T. Sands



Quality Assurance

Benjamin W. Hendricks

APPENDIX

Appendix A - Plant Operating Data

Facility Name: **Ajax Materials Corporation**
Location: Plant 4
5088 Energy Dr.
Flint, MI 48505

SRN: P1171
PTI: 90-21
Test Dates: 8/31/2023, 9/1/2023, 9/5/2023
Type of Fuel Used: Natural Gas for all tests
(No other permitted fuels were utilized)
Control Device: Baghouse Filter
Plant Operator: Scott Maxwell
Data Collection: Kathleen Anderson, Axis Environmental Consulting Corp.

The Future is Riding on Ajax.™

						Total HMA Produced (TPH)	HMA Mix Type	RAP Usage Rate (TPH)	Virgin Aggregate Usage Rate (TPH)	RAP Content (%)	Liquid AC Usage Rate (TPH)	Performance Grade of Liquid AC	HMA Discharge Temp (deg F)	Baghouse Inlet Temp (deg F)	Fan Variable Frequency Drive (%)	Burner Position (% Open)	Baghouse Pressure Drop (in H_2O)	Natural Gas Usage Rate (cubic ft/hr)	Propane Usage	Fuel Oil Usage	COMMENTS
Thursday, August 31, 2023																					
Test No. 1		8/31/2023																			BTEX/Gases Stratification
			Start Time:	6:55 AM	0 min	435	5EL	145	270	37	20.9	PG 52-34	272	264	66	49	4.1				Metals (failed leak test)
RAP Moisture %:		5.1		7:10 AM	15 min	440	5EL	145	270	37	21	PG 52-34	266	268	66	49	4.3				
Virgin Agg Moisture %:		5.3		7:25 AM	30 min	439	5EL	145	270	37	21	PG 52-34	257	268	66	49	4.2				
Baghouse Pulse Frequency:		Every 30 seconds		7:40 AM	45 min	434	5EL	145	274	37	20.9	PG 52-34	262	266	66	49	4.1				
				7:55 AM	60 min	434	5EL	144	269	37	20.9	PG 52-34	266	267	66	49	4.0				Port change 7:34-8:38 (Strat/Metals)
				8:10 AM	75 min	440	5EL	145	266	37	21	PG 52-34	261	268	66	49	4.0				Port change 7:45-8:45 (BTEX)
				8:25 AM	90 min	440	5EL	144	275	37	21.2	PG 52-34	262	264	66	49	4.1				
				8:40 AM	105 min	415	5EL	133	264	37	19.5	PG 52-34	273	270	69	55	4.4				
				8:55 AM	120 min	418	5EL	132	264	37	19.5	PG 52-34	272	264	69	58	4.7				
				9:10 AM	135 min	413	5EL	131	262	37	19.4	PG 52-34	287	270	69	58	4.7				
			Stop Time:	9:26 AM	150 min	413	5EL	132	263	37	19.4	PG 52-34	273	266	69	58	4.6				
			Averages:			**426**		**139**	**267**	**37**	**20**		**270**	**267**	**68**	**53**	**4.4**				
																	Total	136,800	0	0	
Test No. 2		8/31/2023																			PM/Gases/Formaldehyde/BTEX/VE's
			Start Time:	12:05 PM	0 min	442	5EML	145	277	36	20.3	PG 58-34	259	278	57	40	3.4				
RAP Moisture %:		5.1		12:20 PM	15 min	448	5EML	146	278	36	20.6	PG 58-34	266	259	63	49	4.1				
Virgin Agg Moisture %:		5.3		12:35 PM	30 min	441	5EML	144	274	36	20.3	PG 58-34	272	263	65	49	4.6				Port change 12:34-12:59 (Gases)
Baghouse Pulse Frequency:		Every 30 seconds		12:50 PM	45 min	441	5EML	145	274	36	20.3	PG 58-34	267	268	71	49	5.5				Port change 12:35-13:00 (BTEX)
				1:05 PM	60 min	444	5EML	144	278	36	20.6	PG 58-34	267	269	71	49	4.8				Port change 12:35-13:07 (PM)
				1:20 PM	75 min	442	5EML	144	278	36	20.5	PG 58-34	270	269	71	49	4.9				
				1:35 PM	90 min	443	5EML	144	278	36	20.6	PG 58-34	275	270	71	49	5.1				
			Stop Time:	1:40 PM	95 min	442	5EML	145	277	36	20.3	PG 58-34	271	271	71	49	4.9				
			Averages:			**443**		**145**	**277**	**36**	**20**		**269**	**268**	**67**	**48**	**4.5**				
																	Total	163,924	0	0	
Friday, September 1, 2023																					
Test No. 3		9/1/2023																			PM/Gases/Formaldehyde/BTEX/VE's
			Start Time:	7:25 AM	0 min	407	13A	166	225	45	15.1	PG 52-28	283	259	54	38	2.9				
RAP Moisture %:		5.1		7:40 AM	15 min	408	13A	167	225	45	15.3	PG 52-28	294	270	54	38	3				
Virgin Agg Moisture %:		5.3		7:55 AM	30 min	408	13A	167	227	45	15.6	PG 52-28	298	274	57	38	3.4				Port change 7:55-8:15 (PM/BTEX)
Baghouse Pulse Frequency:		Every 50 seconds		8:10 AM	45 min	407	13A	168	223	45	15.3	PG 52-28	296	273	57	38	3.4				Port change 7:56-8:13 (Gases)
				8:25 AM	60 min	410	13A	167	226	45	15.3	PG 52-28	298	272	57	38	3.4				
				8:40 AM	75 min	411	13A	168	224	45	15.3	PG 52-28	290	275	57	38	3.5				
			Stop Time:	8:45 AM	80 min	411	13A	167	224	45	15.3	PG 52-28	290	275	57	38	3.4				
			Averages:			**409**		**167**	**225**	**45**	**15**		**292**	**271**	**56**	**38**	**3.3**				
																	Total	124,060	0	0	
Test No. 4		9/1/2023																			PM/Gases/Formaldehyde/BTEX/VE's
			Start Time:	10:30 AM	0 min	415	5EL	140	258	37	19.7	PG 52-34	288	269	68	44	4.9				
RAP Moisture %:		5.1		10:45 AM	15 min	416	5EL	139	258	37	20	PG 52-34	290	269	68	44	5.4				
Virgin Agg Moisture %:		5.3		11:00 AM	30 min	416	5EL	140	255	37	20	PG 52-34	292	268	68	43	5.2				Port change 11:04-11:31 (Gases)
Baghouse Pulse Frequency:		Every 50 seconds		11:15 AM	45 min	413	5EL	138	261	37	20	PG 52-34	291	268	68	43	5.3				Port change 11:05-11:33 (PM)
				11:30 AM	60 min	417	5EL	139	255	37	20	PG 52-34	280	262	68	43	5.1				
				11:45 AM	75 min	414	5EL	139	256	37	20	PG 52-34	285	265	68	43	5.5				
				12:00 PM	100 min	414	5EL	140	259	37	19.7	PG 52-34	288	265	68	43	5.1				
			Stop Time:	12:03 PM	103 min	419	5EL	140	255	37	20	PG 52-34	280	261	68	43	5.2				
			Averages:			**415**		**140**	**257**	**37**	**20**		**287**	**266**	**68**	**43**	**5.2**				
																	Total	139,277	0	0	

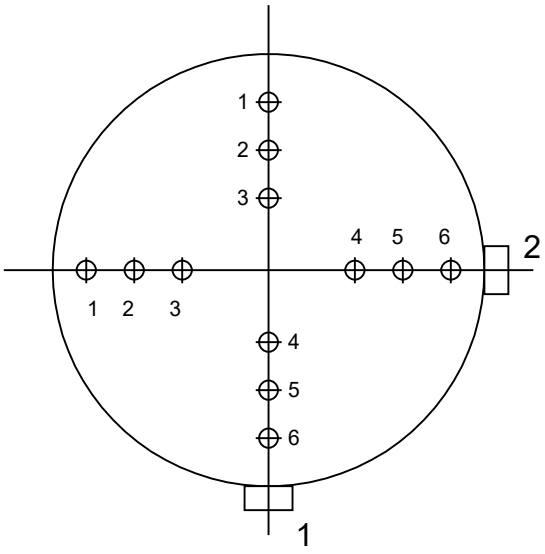
Tuesday, September 5, 2023																					
Test No. 5		9/5/2023																			Metals Only
			Start Time:	7:15 AM	0 min	415	5E1 Commercial	170	246	44	16.4	PG 52-34	316	277	61	42	4.2				
RAP Moisture %:		4.5		7:30 AM	15 min	440	5E1 Commercial	178	250	44	17.3	PG 52-34	293	275	61	42	4				
Virgin Agg Moisture %:		5.1		7:45 AM	30 min	442	5E1 Commercial	177	251	44	17.3	PG 52-34	286	282	66	42	4.9				
Baghouse Pulse Frequency:		Every 40 seconds		8:00 AM	45 min	449	5E1 Commercial	179	249	44	17.6	PG 52-34	281	270	66	42	4.7				
				8:15 AM	60 min	442	5E1 Commercial	176	249	44	17.3	PG 52-34	272	268	70	44	5.5				Port change 8:03-8:22
				8:30 AM	75 min	443	5E1 Commercial	181	254	44	17.3	PG 52-34	263	275	70	44	5.5				
				8:45 AM	90 min	438	5E1 Commercial	176	241	44	16.9	PG 52-34	275	277	70	44	5.7				
				9:00 AM	105 min	442	5E1 Commercial	176	240	44	17.2	PG 52-34	301	291	70	44	5.6				
			Stop Time:	9:10 AM	115 min	436	5E1 Commercial	177	247	44	17.2	PG 52-34	293	291	70	42	5.8				
			Averages:			**438**		**177**	**247**	**44**	**17**		**289**	**280**	**67**	**43**	**5.1**				
																	Total	145,616	0	0	
Test No. 6		9/5/2023																			Metals Only
			Start Time:	9:45 AM	0 min	451	5EML Commercial	146	280	36	20.9	PG 52-34	285	261	70	40	5.4				
RAP Moisture %:		4.5		10:00 AM	15 min	450	5EML Commercial	152	283	36	20.7	PG 52-34	268	255	70	40	5				
Virgin Agg Moisture %:		5.1		10:15 AM	30 min	450	5EML Commercial	149	280	36	20.9	PG 52-34	273	251	67	40	5.1				
Baghouse Pulse Frequency:		Every 40 seconds		10:30 AM	45 min	445	5EML Commercial	146	278	36	20.7	PG 52-34	262	254	67	40	4.7				
				10:45 AM	60 min	446	5EML Commercial	148	279	36	20.7	PG 52-34	266	251	67	40	5				Port change 10:33-10:50
				11:00 AM	75 min	449	5EML Commercial	149	280	36	20.7	PG 52-34	271	253	67	42	4.6				
				11:15 AM	90 min	448	5EML Commercial	146	281	36	20.7	PG 52-34	278	256	67	42	5				
				11:30 AM	105 min	445	5EML Commercial	148	279	36	20.5	PG 52-34	274	257	61	42	4.7				
				11:45 AM	120 min	448	5EML Commercial	146	283	36	20.9	PG 52-34	273	253	67	42	5				
			Stop Time:	11:58 AM	128 min	450	5EML Commercial	147	280	36	20.7	PG 52-34	272	254	67	42	4.6				
			Averages:			**448**		**148**	**280**	**36**	**21**		**273**	**255**	**67**	**41**	**4.9**				
																	Total	140,376	0	0	
Test No. 7		9/5/2023																			Metals Only
			Start Time:	12:30 PM	0 min	415	5E1 Commercial	172	245	44	16.1	PG 52-28	297	270	67	45	4.8				
RAP Moisture %:		4.5		12:45 PM	15 min	440	5E1 Commercial	177	249	44	17.1	PG 52-28	289	267	67	45	5.1				
Virgin Agg Moisture %:		5.1		1:00 PM	30 min	455	5E1 Commercial	180	243	44	17.7	PG 52-28	273	282	72	44	5.6				
Baghouse Pulse Frequency:		Every 40 seconds		1:15 PM	45 min	442	5E1 Commercial	183	244	44	16.9	PG 52-28	280	292	72	44	6.1				
				1:30 PM	60 min	440	5E1 Commercial	179	241	44	17.1	PG 52-28	288	285	72	44	5.5				Port change 1:18-1:32
				1:45 PM	75 min	437	5E1 Commercial	180	244	44	16.7	PG 52-28	277	291	72	44	5.1				
				2:00 PM	90 min	447	5E1 Commercial	180	245	44	17.2	PG 52-28	273	285	72	44	5.4				
				2:15 PM	105 min	437	5E1 Commercial	178	241	44	17	PG 52-28	264	281	72	44	5.3				
			Stop Time:	2:20 PM	110 min	439	5E1 Commercial	178	243	44	16.9	PG 52-28	266	274	72	44	5.3				
			Averages:			**439**		**179**	**244**	**44**	**17**		**277**	**280**	**71**	**44**	**5.3**				
																	Total	193,442	0	0	

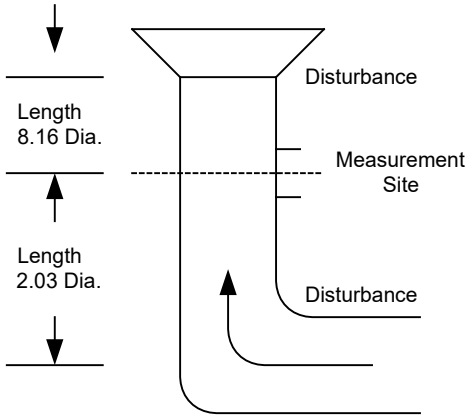
TPH= Tons Per Hour

Note: Averages do not include data taken during port changes when the test was not running.

Appendix B - Test Section Diagram

GASEOUS AREA TRAVERSE FOR ROUND DUCTS
(Stratification)





Job: Ajax Materials Corporation
Genesee Township Hot Mix Plant

Date: August 31 and September 1, 2023

Test Location: EUHMAPLANT

Duct Diameter: 5.67 Feet

Duct Area: 25.22 Square Feet

No. Points Across Diameter: 6

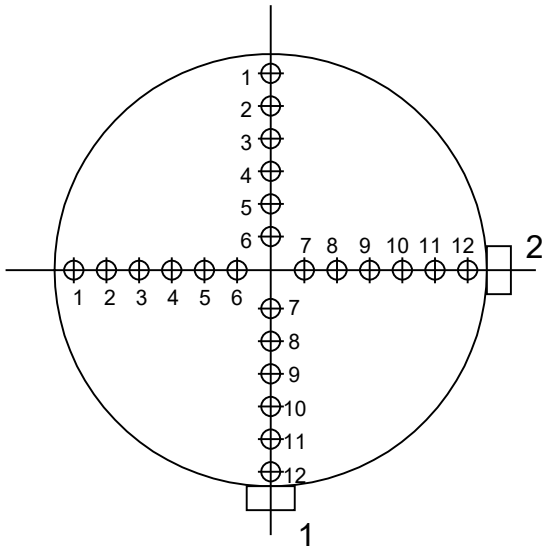
No. of Ports: 2

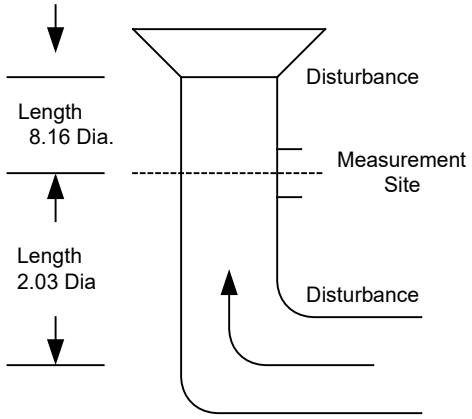
Port Length: 3.5 Inches

Distance from Inside Wall To Traverse Point (Inches)

1	6.492
2	13.428
3	23.628
4	51.372
5	61.572
6	68.508

EQUAL AREA TRAVERSE FOR ROUND DUCTS
(M5/202 and M29 Sampling)





Job: Ajax Materials Corporation
Genesee Township Hot Mix Plant

Date: August 31 and September 5, 2023

Test Location: EUHMAPLANT

Duct Diameter: 5.67 Feet

Duct Area: 25.22 Square Feet

No. Points Across Diameter: 24

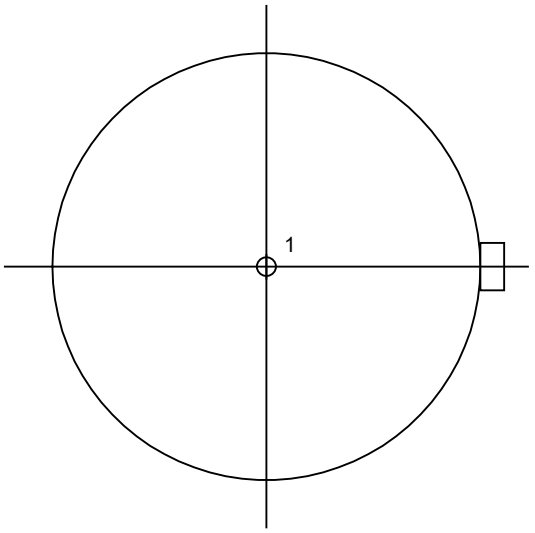
No. of Ports: 2

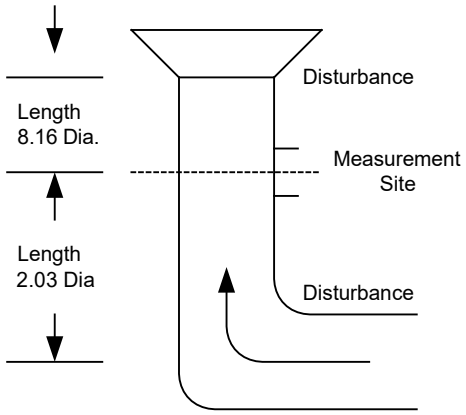
Port Length: 3.5 Inches

Distance from Inside Wall To Traverse Point (Inches)

1	3.93
2	7.06
3	10.52
4	14.54
5	19.50
6	26.71
7	46.29
8	53.50
9	58.47
10	62.48
11	65.95
12	69.08

BTEX TRAVERSE FOR ROUND DUCTS
(M18 Sampling and Gaseous)





Job:	Ajax Materials Corporation Genesee Township Hot Mix Plant
Date:	August 31 and September 1, 2023
Test Location:	EUHMAPLANT
Duct Diameter:	5.67 Feet
Duct Area:	25.22 Square Feet
No. of Points :	1
No. of Ports:	1