DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B312054220

FACILITY: AJAX MATERIALS CORPORATION		**SRN / ID:** B3120
LOCATION: 8744 INKSTER ROAD, ROMULUS		**DISTRICT:** Detroit
CITY: ROMULUS		**COUNTY:** WAYNE
CONTACT: Mark Boden , Vice President		**ACTIVITY DATE:** 07/21/2020
STAFF: Jonathan Lamb	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Scheduled inspection, FY 2020		
RESOLVED COMPLAINTS:		

INSPECTED BY: Jonathan Lamb, EGLE-AQD
PERSONNEL PRESENT: Kathleen Anderson, consultant; Jason Reaume, Plant Manager; Dave Grabowski, Plant Operator
FACILITY PHONE NUMBER: (734) 946-8080, ext. 3
FACILITY WEBSITE: ww.ajaxpaving.com

FACILITY BACKGROUND:

Ajax Paving Industries, founded in 1951, is based in Troy, Michigan, and has asphalt facilities in Michigan and Florida. Plant 5, located in Romulus, Michigan, produces paving-grade hot mix asphalt; per the company's website, it is the company's highest-producing asphalt facility. Plant 5 is located on an 18-acre property close to I-94 and Detroit Metro Airport. The area is mostly light industrial, though there are some nearby homes on the east side of Inkster Road. The facility is seasonal; depending on the weather, the paving season usually starts in late April/early May and runs through late November/early December. Current operating hours are 4:00 a.m. to 4:00 p.m., Monday through Sunday, and there are six employees on-site (including lab and scale personnel).
Note: Most production records are sent daily to the corporate office and are not kept on site. The contact at the corporate office is Mark Boden, (248-398-2300) or Dave Grabowski (248-388-1670). Records were provided by their consultant, Kathleen Anderson (kanderson@ajaxpaving.com; 248-244-3300).

COMPLAINT/COMPLIANCE HISTORY:

AQD does not have any complaints listed for this facility in the past 10 years, and there are no outstanding consent orders.

AQD issued a Violation Notice to the facility on September 13, 2016, for failing to control emissions from the asphalt load-out area and top of the asphalt silos, based on observations made during the last compliance inspection performed on June 29, 2016. A response to the Violation Notice was received on October 5, 2016, in which the facility provided a list of corrective actions taken to improve capture of the emissions from the load-out area and top of the silos and to prevent recurrence of the violations. Based on the response and follow up surveillance performed by AQD staff, the violations were determined to be resolved.

AQD also formally requested the facility to submit a Malfunction Abatement Plan (MAP) in a letter dated October 14, 2016. The facility submitted a MAP for AQD approval on November 11, 2016, with a revised MAP submitted on December 5, 2016, which incorporated changes of the original draft as requested by AQD.

On November 11, 2015, USEPA Region 5 staff performed Method 82 opacity readings of the baghouse stack at Ajax after observing emissions coming from the stack. The readings showed a 6-minute average opacity of 45%. On February 11, 2016, USEPA issued a Section 114 Request to Ajax Materials Corporation, requiring the company to submit records and perform testing for particulate matter (PM) emissions and perform Method 9 Visible Emission readings. Testing was performed on June 29, 2016, and was observed by AQD staff. USEPA issued an NOV/FOV to Ajax on September 26, 2016, which resulted in the issuance of Consent Agreement and Final Order (CAFO) No. EPA-5-18-113(a)-MI-02 on February 28, 2018. The CAFO required the facility to modify its existing air permit to include a revised Preventative Maintenance/Malfunction Abatement Plan (PM/MAP). Permit to Install (PTI) 310-06C was issued on April 30, 2018; the CAFO was terminated on April 30, 2019, one year after issuance of PTI No. 310-06C.

PROCESS DESCRIPTION AND EQUIPMENT:

Ajax produces a variety of formulations of hot mix asphalt (HMA), using various types/proportions of aggregate, recycled asphalt product (RAP), and liquid asphalt based on customer specifications. Recycled shingles, activated tire

rubber, and/or slag may also be used in some formulations. In addition, the facility has the capability to produce warm mix asphalt (WMA), but has not produced WMA during this compliance period. Formulations vary depending on the intended use of the asphalt: a base mix uses a courser aggregate while a surface mix will contain more fines to produce a smoother driving surface. Currently, the main customers are Detroit Metro Airport, MDOT, Wayne County, independent contractors, and Ajax's own paving operations.

Asphalt production is performed on a batch basis, with each batch made for a specific customer that day. To start the process, various types of virgin aggregate are moved from stockpiles to cold-feed bins via a front-end loader. A belt conveyor sends the aggregate through a scalping screen and across a weighbridge, to make sure the aggregate has the correct size and tonnage for the mix. The aggregate is then fed from the conveyor into the front end of the drum dryer, which sends the mix and exhaust gases towards the silos and baghouse. Ajax uses a counter-flow Gencor dryer with a 700 ton/hour capacity, which was installed in March 2008. The drum dryer and baghouse are identified in the permit as EUHMAPLANT.

RAP is also loaded into cold-feed bins and fed via a conveyor into the mixer at mid-drum, downstream of the burner. Liquid asphalt, which is stored in heated tanks, is then metered into the lower half of the drum, following the addition of RAP. There are six 30,000-gallon vertical liquid asphalt tanks (EUACTANKS), with each tank having a liquid condensation unit on top of each tank.

The finished hot mix asphalt is discharged from the mixer onto a slat conveyor. This conveyor elevates the hot mix asphalt to the top of one of eight 300-ton storage silos (EUSILOS), where the mix is stored for truck loading and transport to the job site. HMA mix is generally not stored in the silos for more than 24 hours; if the mix stays in the silo too long, it will start to solidify.

The facility is permitted to use both natural gas and recycled used oil (RUO) for fuel but has only used natural gas the past several years.

There are various tanks and equipment which are exempt from permitting requirements:

- Two 1,000-gallon horizontal diesel tanks: Tanks are painted green and are used for off-road and on-road fueling. Tanks are exempt per Rule 284(2)(d).
- One 500-gallon horizontal waste oil tank: Tank is painted green. Waste oil is held for disposal, not used for fuel. Tank is exempt per Rule 284(2)(i).
- One 30,000-gallon vertical RUO tank: Tank is empty since RUO is currently not used. Tank is exempt per Rule 284(2)(d).
- One 10,000-gallon vertical tack asphalt tank: Tack is an asphalt by-product used during road resurfacing to improve bonding. Tank is exempt per Rule 284(2)(i).
- One horizontal calibration tank: A small tank (less than 1000 gallons) used to mix and test the liquid asphalt cement before use. Liquid asphalt is not listed as a carcinogen and has a low vapor pressure (<0.01 mm Hg), so the tanks are exempt per Rule 284(2)(i).
- One AC Heater tank: This unit is filled with oil which is heated and recirculated through the linings of the liquid asphalt tanks to provide indirect heating for those tanks. This unit is exempt per Rule 284(2)(c).

The warm mix asphalt system, manufactured by AquaFoam, uses a water-based foaming agent which has been determined by AQD to be exempt per R.285(2)(b). Note: For the purposes of emission calculations, the company assumes all asphalt production to be hot mix asphalt, which has higher emissions due to higher production temperature and fuel usage, so this conservative approach is acceptable when accounting for emissions from warm mix asphalt production. Mr. Reaume said the facility had not done any WMA production during this compliance period.

PROCESS CONTROLS:

All drum emissions are sent through a 1,520-bag, reverse-air baghouse to control particulate emissions before being discharged to the ambient air through a stack. Baghouse fines are conveyed via screw auger back to the drum as aggregate, so there is no disposal needed for the baghouse fines.

Controls were installed for the silo load out area and top of the silos prior to the start of the 2009 paving season. The silo load-out control consists of collection hoods at both ends of the loading area under the silos, which are routed to a baghouse and short stack. The current silo load-out control is expected to be replaced prior to the start of the 2021 paving season. Emissions from the top of the silos are controlled by a condensation canister system which collects the emissions and routes them back into the silos.

The liquid asphalt cement tanks are controlled with a vapor condensation and recovery system.
Fugitive dust emissions are controlled by sweeping and by spraying stockpiles and roadways with water or calcium chloride, as necessary.

INSPECTION NOTES:

I met with Jason Reaume - Plant Manager, Dave Grabowki - Operations Manager, and Kathleen Anderson – Consultant in the control room. We discussed current operations at the facility and reviewed records before walking the property. While in the control room, I recorded the following readings of the asphalt mix currently being produced:

Production Rate: 468 tph
Liquid Asphalt: 13.1 tph
RAP: 27%
Drum temp.: 293 F
Baghouse Inlet temp: 275 F
Baghouse Outlet temp.: 215 F
Burner position: 65%
Baghouse Pressure Drop: 6.5" wg

The facility started 2020 production on March 31, 2020, but had to shut down from April 5 through 26, 2020, due to COVID-19. As of June 30, 2020, the plant had operated for approximately 294 hours during the 2020 paving season.

CO monitoring is performed around the start of each paving season and again after every 500 hours of operation during the paving season. If CO readings are above 500 ppm, the facility will have the burners tuned up. CO readings below 500 ppm indicate proper operation of the burners.

CO monitoring was performed on the following dates from April 2018 through June 2020:
April 26, 2018: start-up, 64-87 ppm CO
July 27, 2018: 500 hours, 80-107 ppm CO
November 12, 2018: 1000 hours, 133-148 ppm CO
April 30, 2019: start-up, 48-53 ppm CO
July 10, 2019: 500 hours, 116-132 ppm CO
September 25, 2019: 1000 hours, 309-389 ppm CO
May 12, 2020: start-up, 230-291 ppm CO

Burner tuning is performed by Combustion Services annually near the start of the paving season. Additional tune-ups may also be performed during the paving season if CO monitoring shows tune-ups are needed; however, CO monitoring during the compliance period has not demonstrated a need for additional tune-ups.

RAP is produced by crushing asphalt-containing debris, mainly old roads, which is performed on site at Plant 5 by a portable crusher. RAP crushing was performed on site by Rock Recyclers periodically during the compliance period.

APPLICABLE RULES/ PERMIT CONDITIONS:

Ajax Plant 5 is a synthetic minor source operating under PTI No. 310-06C, issued on April 30, 2018. This permit was a modification of PTI No. 310-06B, which included a more substantial Preventative Maintenance/Malfunction Abatement Plan and daily visible emission readings to satisfy the requirements of USEPA CAFO No. EPA-5-18-113(a)-MI-02.

In determining compliance at the time of this inspection, production and emission records from April 2018 through June 2020 were reviewed. Some records were reviewed on site, including baghouse maintenance, CO monitoring, and fugitive dust control records. Emission and production records were submitted by Ms. Anderson on August 9, 2016. Copies of all records obtained during the inspection can be found in the orange facility file.

PTI No. 310-06C, Special Conditions:

EUHMAPLANT

	Pollutant	Limit [1]	Reported Emissions	Compliance Status	Testing Date(s)
1.1a	PM	0.04 gr/dscf	0.002 gr/dscf	In Compliance	June 29, 2016
1.1b	PM	0.04 lb per ton[1]	0.002 lb per ton[1]	In Compliance	Aug. 12, 2008
1.1c	CO			In Compliance	Oct. 28, 2008

	Pollutant	Limit [1]	Reported Emissions	Compliance Status	Testing Date(s)
		0.201 lb per ton[1]	0.123 lb per ton[1]		
1.1d	CO	89.9 tpy	62.7 tons (12-month rolling time period ending Sept. 2019); 56.4 tons (12-month rolling time period ending June 2020)	In Compliance	NA
1.1e	SO_2	0.169 lb per ton[1]	0.002 lb per ton[1]	In Compliance	Oct. 28, 2008
1.1f	SO_2	75.6 tpy	52.7 tons (12-month rolling time period ending Sept. 2019); 47.5 tons (12-month rolling time period ending June 2020)	In Compliance	NA
1.1g	NO_x	0.12 lb per ton[1]	Not Evaluated	See note below[2]	NA
1.1h	Lead	1.5×10^{-5} lb per ton[1]	7.75×10^{-7} lb per ton[1]	In Compliance	Aug. 12, 2008
1.1i	Benzene	0.0009 lb per ton[1]	0.00056 lb per ton[1]	In Compliance	Oct. 28-29, 2008
1.1j	Toluene	0.006 lb per ton[1]	0.00025 lb per ton[1]	In Compliance	Oct. 28-29, 2008
1.1k	Ethylbenzene	0.005 lb per ton[1]	0.00007 lb per ton[1]	In Compliance	Oct. 28-29, 2008
1.1l	Xylene	0.001 lb per ton[1]	0.00011 lb per ton[1]	In Compliance	Oct. 28-29, 2008
1.1m	Naphthalene	0.001 lb per ton[1]	0.00006 lb per ton[1]	In Compliance	Oct. 28, 2008
1.1n	Formaldehyde	0.007 lb per ton[1]	0.00144 lb per ton[1]	In Compliance	Oct. 28-29, 2008
1.1o	Acrolein	0.0008 lb per ton[1]	0.000255 lb per ton[1]	In Compliance	Oct. 28-29, 2008
1.1p	Arsenic	1.5×10^{-6} lb per ton[1]	7.16×10^{-8} lb per ton[1]	In Compliance	Aug. 12, 2008
1.1q	Nickel	1.5×10^{-4} lb per ton[1]	4.56×10^{-7} lb per ton[1]	In Compliance	Aug. 12, 2008
1.1r	H_2SO_4	0.015 lb per ton[1]	0.00040 lb per ton[1]	In Compliance	Aug. 13, 2008
1.1s	Manganese	5.0×10^{-5} lb per ton[1]	2.03×10^{-6} lb per ton[1]	In Compliance	Aug. 12, 2008
1.1t	HCl	0.024 lb per ton[1]	0.000098 lb per ton[1]	In Compliance	Aug. 12-13, 2008

[1] Pound pollutant per ton of HMA paving material produced.

[2] NO_x testing not required at this time. NO_x emission testing was not specifically required in the permit conditions and based on a review of NO_x emissions tests at other asphalt plants, AQD has determined that NO_x emissions should be below permit limits. AQD retains the right to require the facility to perform NO_x testing at a later date.

1.2: In compliance. Facility is only burning natural gas in EUHMAPLANT at this time.
1.3 and 1.4: Not evaluated. Facility is not currently using fuel oil or RUO in EUHMAPLANT.
1.5: In compliance. Facility does not use any asbestos-containing material in its HMA production.
1.6: In compliance. Facility did not exceed 50% RAP material in the asphalt mix, based on a monthly average. The highest monthly average RAP % was 42% in December 2019. The average RAP% for June 2020 was 30%.
1.7: In compliance. HMA production is well below the permit limit of 895,000 tons per 12-month rolling time period. The highest 12-month rolling total was 623,913 tons of HMA in the 12-month rolling time period ending September 2019. Total HMA production in the 12-month rolling time period ending June 2020 was 561,632 tons.
1.8: In compliance. Facility did not exceed the permitted limit of 700 tph, based on a daily average. The highest daily average was 545.1 tph on September 23, 2019.
1.9: In compliance. A Fugitive Dust Control Plan, as specified in Appendix A, is implemented and maintained. Further evaluation of the Fugitive Dust Plan is discussed later in this report.
1.10: In compliance. A Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) is implemented and maintained, as required. Further evaluation of the PM/MAP is discussed later in this report.
1.11: In compliance. Emission Abatement Plan for Start-Up, Shutdown, and Malfunction (SSM), as specified in Appendix B, is implemented and maintained. Further evaluation of the SSM Plan is discussed later in this report.
1.12: In compliance. A Compliance Monitoring Plan for RUO, as specified in Appendix C, is implemented and maintained, though RUO is not currently being used.
1.13: In compliance. The burners are fine-tuned around the start of each paving season by Combustion Services. A review of CO monitoring demonstrated that additional tuning has not been required during the 2018, 2019, or 2020 paving seasons.

1.14: In compliance. The baghouse is installed, operated, and maintained in a satisfactory manner. Facility maintained the proper maintenance and inspection records, in accordance with the Preventative Maintenance/Malfunction Abatement Plan.
1.15: In compliance. Odor testing was performed. Air samples were collected during the August 12, 2008, emissions testing and then sent to Odor Science & Engineering for evaluation via an odor panel (per ASTM Method E-679-91) and reported on February 5, 2009.
1.16: In compliance. Testing of TAC emission rates was performed on August 12-13 and October 28-29, 2008. Results were reported on February 5, 2009.
1.17: In compliance. Testing of CO and SO2 emission rates was performed on August 12-13 and October 28-29, 2008. Results were reported on February 5, 2009.
1.18: In compliance. Testing of particulate emission rates was performed on August 12-13 and October 28-29, 2008. Results were reported on February 5, 2009.
1.19: In compliance. Virgin aggregate and RAP feed rates are monitored on a continuous basis.
1.20: In compliance. CO monitoring was performed at a reasonable timeframe after the start of the paving season and after every 500 hours of operation in 2018, 2019, and 2020 to be considered to be in substantial compliance with this condition.
1.21: In compliance. Records are maintained in a format acceptable to AQD and were provided upon request.
1.22: In compliance. Proper notification regarding construction and modification is made to AQD, when applicable.
1.23: In compliance. Records are maintained per 40 CFR Part 60 Subparts A and I, as required.
1.24: In compliance. Maintenance of the mixer/burner and baghouse is performed on a routine basis and as needed. Records of all maintenance activities are maintained and were reviewed as part of this inspection.
1.25: In compliance. Facility keeps track of total HMA produced, including average RAP per ton of HMA produced, on a monthly basis. Facility does not use fuel oils but maintains records of natural gas usage.
1.26: In compliance. Facility keeps intermittent daily records of virgin aggregate feed rate, RAP feed rate, temperature, and mix identification data, as required.
1.27: In compliance. All required daily, monthly, and 12-month rolling emission calculation records for criteria pollutants and TACs are maintained in a format acceptable to AQD.
1.28: In compliance. Records of CO monitoring are maintained, as required.
1.29: In compliance. Records of daily, monthly, and 12-month rolling HMA production are maintained, as required.
1.30: In compliance. Baghouse stack appears to meet permit specifications.

EUYARD
2.1: In compliance. A Fugitive Dust Plan, as specified in Appendix B, is implemented and maintained. During the site inspection, there were no fugitive dust issues observed. Fugitive dust control records were reviewed as part of the inspection.
2.2: Not applicable. Monthly fugitive dust emission calculations are not required.
2.3: In compliance. Emissions of particulate matter from fugitive dust are calculated and reported to MAERS on an annual basis.

EUACTANKS
3.1: In compliance. The vapor condensation and recovery system for the asphalt cement tanks is installed, maintained, and operated as required.

EUSILOS
4.1: In compliance. Emission capture system for the silos was installed on March 13, 2009. No visible emissions from the top of the silos were observed during the inspection.
4.2: In compliance. Load out controls were installed on March 13, 2009. No visible emissions from the load-out area were observed during the inspection.
4.3: In compliance. A PM/MAP for EUSILOS is implemented and maintained, as required. Further evaluation of the PM/MAP is discussed later in this report.

FGFACILITY
5.1a: In compliance. No individual HAP exceeded the permit limit of 8.9 tons per 12-month rolling time period. Individual HAP emissions are calculated on a 12-month basis using emission factors determined during testing performed on October 28 and 29, 2008. Of the individual HAP emissions of concern, formaldehyde has the highest emission rate per ton of HMA. During this compliance period, the highest 12-month total of formaldehyde emissions was 0.44 tons for the 12-month rolling time period ending September 2019. Total formaldehyde emissions were 0.40 tons for the 12-month rolling time period ending June 2020.
5.1b: In compliance. Total HAP emissions did not exceed the permit limit of 22.4 tons per 12-month rolling time period. Total HAP emissions are calculated on a 12-month basis using emission factors reported in the February 5, 2009, stack test report. During this compliance period, the highest total aggregate HAP emissions was 0.93 tons in the 12-month

rolling time period ending September 2019. Total aggregate HAP emissions were 0.84 tons for the 12-month rolling time period ending June 2020.
5.2 and 5.3: In compliance. Records of individual and total HAP emission calculations for each 12-month rolling time period are maintained on a monthly basis, as required.

Appendix A - Fugitive Dust Control Plan: Facility follows the fugitive dust control plan. Sweeping and spraying of the lots and roadways are performed regularly to keep fugitive dust levels down. Water and calcium chloride are used as dust suppressant; for the 2020 paving season, calcium chloride was sprayed on May 26 and June 25, 2020. Records of all sweeping and spraying activities are maintained and were reviewed as part of the inspection. Truck loads are kept covered when they leave the facility property. There were no fugitive dust problems observed from the yard or storage piles during the inspection.

Appendix B – Emission Abatement Program for Startup, Shutdown, and Malfunctions: Facility follows the startup, shutdown, and malfunction procedures as detailed in Appendix B. The facility reported no abnormal operating conditions during the compliance period.

Appendix C - Compliance Monitoring Plan for Recycled Used Oil: Facility maintains a Compliance Monitoring Plan for RUO; however, the facility has not used RUO in several years.

Preventative Maintenance and Malfunction Abatement Plan for Fabric Filter and Silo Load Out Controls: Facility implements and maintains the PM/MAP, as detailed in most recent version dated February 12, 2018.

- Non-certified visible emission (VE) readings are performed at least once per operating day on the baghouse exhaust stack, top of silos, and silo load-out area. Records of these readings are maintained, and a spot check of the records was performed as part of the inspection. Kathleen Anderson, Dave Grabowski, and Chris Edwards are currently the certified Method 9 personnel for this site.
- Pressure drop is recorded daily. A review of daily records demonstrated the pressure drop to be between 2" wg and 10" wg, as recommended in the PM/MAP.
- The facility performs a full black light inspection of the baghouse prior to the start of each paving season. Facility performs daily, weekly, and monthly inspections and maintenance, as detailed in the PM/MAP. All inspections and maintenance activities are recorded and maintained; these records were reviewed as part of the inspection. According to maintenance records, all 1,520 bags were replaced between March 1 and April 19, 2018. Three bags were replaced on April 2, 2019, and 22 bags were replaced between March 1 and March 10, 2020.
- The facility did not have any malfunctions or abnormal operating conditions which required reporting to AQD per Rule 912 during the compliance period.

FINAL COMPLIANCE DETERMINATION:

At the time of inspection, Ajax Plant 5 was determined to be in substantial compliance with the conditions of PTI No. 310-06C and applicable State and federal regulations.

NAME  DATE 8-9-21 SUPERVISOR JK