

B3120  
MHWK

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

B312027081

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: 09/23/2014
STAFF: Jonathan Lamb	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Targeted inspection, FY '14		
RESOLVED COMPLAINTS:		

INSPECTED BY: Jonathan Lamb, MDEQ-AQD  
 PERSONNEL PRESENT: Jason Reaume, Plant Manager/Operator  
 FACILITY PHONE NUMBER: (734) 946-8080, ext. 3  
 FACILITY WEBSITE: www.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 in a mostly light industrial area close to I-94, with some nearby residences to the east. 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. Normal operating hours are 3:00 a.m. to 5:00 p.m., Monday through Sunday, and there are six employees on-site.

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:**

Facility was found to be in non-compliance with several permit conditions during the last inspection in 2011 and was issued a Violation Notice in January 2012. The violations were corrected and no further enforcement action was taken.

There have been no complaints made against the facility in the past several years.

**OUTSTANDING CONSENT ORDERS:**

There are no outstanding consent orders.

**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 and/or slag may also be used in some formulations. In addition, the facility recently started producing some warm mix asphalt (WMA), though most production remains HMA. 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 MDOT, Detroit Metro Airport, 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. The facility generally does about 4-7 different "mixes" per day. To start the process, various types of virgin aggregate are moved from stockpiles to cold-feed bins via a front-end loader; the facility currently uses 13 types of virgin aggregate plus RAP, which is made from crushing old asphalt pavement. 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 into the front end of the drum dryer, which sends the mix and exhaust gases towards the silos and barehouse; Ajax uses a counter-flow Gencor dryer with a 700 ton/hour capacity, which was installed in March 2008.

RAP is then fed 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.

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 six 300-ton storage silos, where the mix is stored for no more than 24-hours before truck loading and transport to the job site.

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 which are exempt from permit requirements per R.284:

Five 30,000-gallon liquid asphalt tanks

Two 1,000-gallon diesel tanks

One 1,000-gallon waste oil tank (waste oil is held for disposal, not used for fuel)

One 30,000-gallon RUO tank (currently empty)

One 10,000-gallon tack asphalt tank (Tack is an asphalt by-product used during road resurfacing to improve bonding)

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(b). 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.

### **PROCESS CONTROLS:**

All drum emissions are sent through a 1,520-bag baghouse to control particulate emissions before being discharged to the ambient air. Fugitive dust emissions are controlled by spraying stock piles and roadways with water or calcium chloride.

Load out controls were installed prior to the start of the paving season in 2009.

### **INSPECTION NOTES:**

I started the inspection by meeting with Jason Reaume, the Plant Manager/Operator, in the control room. The facility was producing a batch of asphalt at the time of inspection, and I took the following readings of the current mix:

Mix at time of inspection: 4E-10 MDOT

Liquid Asphalt: 5%

RAP: 46%

Drum inlet temp.: 277 F

Drum outlet temp: 229 F

Burner position: 48%

Production Rate: 432 tph

Baghouse Pressure Drop: 3.17" wg

Mr. Reaume provided some of the required records, which were maintained on site, including maintenance and fugitive dust control records. He said I should contact their consultant, Kathleen Anderson, for emission and production records. He said that a new burner was installed on the drum over the winter by Vector, and CO monitoring had been performed prior to start-up and after 500 hours. At the time of inspection, the plant had operated for approximately 900 hours this paving season.

Mr. Reaume stated that a portable RAP crusher had been on site a couple weeks earlier. RAP crushing is performed by Great Lakes Aggregates - Rock Recyclers. Based on records, RAP crushing was performed during the following time periods:

#### **2012**

March 7 – April 7

July 25 – August 22

September 25 – October 1

October 26 – November 28

#### **2013**

January 29 – February 26

August 1 – August 15

September 7 – September 30

October 11 – October 29

**2014**

January 14 – February 13

July 18 – July 26

August 15 – September 9

September 26 – September 30

AQD did not receive notification from Rock Recyclers prior to these dates. AQD will contact the company to find out if notifications were sent, and, if not, whether the company believes it is operating under an exemption and maintaining the records to demonstrate this.

**APPLICABLE RULES/ PERMIT CONDITIONS:**

Ajax Plant 5 is an Opt-Out source operating under PTI No. 310-06B, issued on June 12, 2008.

In determining compliance status at the time of this inspection, production and emission records from January 2012 through September 2014 were reviewed. These records can be found in the orange facility file.

PTI No. 310.06B, Special Conditions:

	Pollutant	Limit <sup>1</sup>	Actual	Compliance Status	Testing Date
1.1a	PM	0.04 gr/dscf	0.0023 gr/dscf	In Compliance	Aug. 12, 2008
1.1b	PM	0.04 lb per ton <sup>1</sup>	0.002 lb per ton <sup>1</sup>	In Compliance	Aug. 12, 2008
1.1c	CO	0.201 lb per ton <sup>1</sup>	0.123 lb per ton <sup>1</sup>	In Compliance	Oct. 28, 2008
1.1d	CO	89.9 tpy	30.5 tons	In Compliance	Oct. 2013 - Sept. 2014
1.1e	SO <sub>2</sub>	0.169 lb per ton <sup>1</sup>	0.002 lb per ton <sup>1</sup>	In Compliance	Oct. 28, 2008
1.1f	SO <sub>2</sub>	75.6 tpy	0.5 tons	In Compliance	Oct. 2013 - Sept. 2014
1.1g	NO <sub>x</sub>	0.12 lb per ton <sup>1</sup>	Not Evaluated	See note below <sup>2</sup>	NA
1.1h	Lead	1.5×10 <sup>-5</sup> lb per ton <sup>1</sup>	7.75×10 <sup>-7</sup> lb per ton <sup>1</sup>	In Compliance	Aug. 12, 2008
1.1i	Benzene	0.0009 lb per ton <sup>1</sup>	0.00056 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1j	Toluene	0.006 lb per ton <sup>1</sup>	0.00025 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1k	Ethylbenzene	0.005 lb per ton <sup>1</sup>	0.00007 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1l	Xylene	0.001 lb per ton <sup>1</sup>	0.00011 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1m	Naphthalene	0.001 lb per ton <sup>1</sup>	0.00006 lb per ton <sup>1</sup>	In Compliance	Oct. 28, 2008
1.1n	Formaldehyde	0.007 lb per ton <sup>1</sup>	0.00144 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1o	Acrolein	0.0008 lb per ton <sup>1</sup>	0.000255 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1p	Arsenic	1.5×10 <sup>-6</sup> lb per ton <sup>1</sup>	7.16×10 <sup>-8</sup> lb per ton <sup>1</sup>	In Compliance	Aug. 12, 2008
1.1q	Nickel	1.5×10 <sup>-4</sup> lb per ton <sup>1</sup>	4.56×10 <sup>-7</sup> lb per ton <sup>1</sup>	In Compliance	Aug. 12, 2008
1.1r	H <sub>2</sub> SO <sub>4</sub>	0.015 lb per ton <sup>1</sup>	0.00040 lb per ton <sup>1</sup>	In Compliance	Aug. 13, 2008
1.1s	Manganese	5.0×10 <sup>-5</sup> lb per ton <sup>1</sup>	2.03×10 <sup>-6</sup> lb per ton <sup>1</sup>	In Compliance	Aug. 12, 2008
1.1t	HCl	0.024 lb per ton <sup>1</sup>	0.000098 lb per ton <sup>1</sup>	In Compliance	Aug. 12-13, 2008

<sup>1</sup> Pound pollutant per ton of HMA paving material produced.

<sup>2</sup> NO<sub>x</sub> testing not required at this time. NO<sub>x</sub> emission testing was not specifically required in the permit conditions and based on a review of NO<sub>x</sub> emissions tests at other asphalt plants, AQD believes that NO<sub>x</sub> emissions should be below permit limits. AQD withholds the right to require the facility to perform NO<sub>x</sub> 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 RUO.

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 41% in November 2013 and September 2014.

- 1.7: In compliance. HMA production is well below the permit limit of 895,000 tons per 12-month rolling average. The highest 12-month rolling average was 495,747 tons of HMA from Oct. 1, 2013 through Sept. 30, 2014.
- 1.8: In compliance. Facility did not exceed the permitted limit of 700 tph, based on a daily average. The highest daily average was 548 tph on May 20, 2013. Based on the daily records, production typically ranges from 350-450 tph.
- 1.9: In compliance. Fugitive Dust Control Plan is implemented and maintained, as required.
- 1.10: In compliance. Preventative Maintenance Program is implemented and maintained, as required.
- 1.11: In compliance. Emission Abatement Plan for Start-Up, Shutdown, and Malfunction is implemented and maintained, as required.
- 1.12: In compliance. Facility has a Compliance Monitoring Plan for RUO, though RUO is not currently being used.
- 1.13: In compliance. Drum burners were fine-tuned at the start of the 2012, 2013, and 2014 paving seasons by Combustion Services, Inc. Additional burner fine-tuning was performed in August 2013 after the 500-hour CO monitoring demonstrated high CO readings. This condition was not in compliance at the time of the last inspection, but has since been corrected.
- 1.14: In compliance. The baghouse is installed, operated, and maintained in a satisfactory manner.
- 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 SO<sub>2</sub> 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 upon at the start of the paving season and after every 500 hours of operation in 2012, 2013, and 2014, as required. This condition was not in compliance at the time of the last inspection but has since been corrected.
- 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 has been made to AQD.
- 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 on site.
- 1.25: In compliance. Facility keeps track of natural gas usage and average RAP per ton of HMA on a monthly basis.
- 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. This condition was noted as being in non-compliance at the time of the last inspection and has since been corrected.
- 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. However, it is recommended that Ajax adjust their recordkeeping to a format which clearly shows the monthly and 12-month rolling HMA production totals.
- 1.30: In compliance. Stack appears to meet the maximum diameter and minimum height requirements.
- 2.1: In compliance. A fugitive dust plan is implemented and maintained. During the site inspection, there were no fugitive dust issues observed.
- 2.2: Not evaluated. Monthly fugitive dust emission calculations are not required.
- 2.3: In compliance. Fugitive dust emissions are calculated on an annual basis and submitted in the MAERS report.
- 3.1: In compliance. The vapor condensation and recovery system for the asphalt cement tanks is installed, maintained, and operated as required.
- 4.1 and 4.2: In compliance. Installation of load-out controls and blue smoke recovery system was completed on March 13, 2009.
- 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 reported in the February 5, 2009, stack test report. Formaldehyde has the highest emission rate per ton of HMA. During this compliance period, the highest 12-month rolling total of formaldehyde was 0.36 tons from October 2013 through September 2014.

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 0.80 tons between October 2013 and September 2014.

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. This recordkeeping condition was corrected since the previous inspection noted

Preventative Maintenance Program for the Baghouse: Facility is following its preventative maintenance program. Pressure drop is recorded daily and is no less than 2". A record of all maintenance is maintained. According to records, 700 bags were replaced at the start of the paving season. Facility performs 3 or 4 baghouse inspections per paving season.

Fugitive Dust Control Plan: Facility follows the fugitive dust control plan. Regular sweeping and spraying is done to keep fugitive dust levels down, and dates of spraying are recorded and maintained. Truck loads are kept covered. There were no fugitive dust problems during the inspection.

Compliance Monitoring Plan for Recycled Used Oil: Facility has a Compliance Monitoring Plan for RUO; however, the facility has not used RUO for the past few years.

**FINAL COMPLIANCE DETERMINATION:**

At the time of inspection, Ajax Plant 5 was in compliance with the conditions of PTI No. 310-06B and other applicable State and federal air regulations.

NAME

Sham

DATE

3-2-15

SUPERVISOR

JK

