

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N540364683

FACILITY: ACE-SAGINAW PAVING COMPANY		SRN / ID: N5403
LOCATION: 16255 TINDALL RD, DAVISBURG		DISTRICT: Warren
CITY: DAVISBURG		COUNTY: OAKLAND
CONTACT: Rick Will , AC Manager		ACTIVITY DATE: 08/18/2022
STAFF: Robert Joseph	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Inspection of HMA plant		
RESOLVED COMPLAINTS:		

On August 18, 2022, I, Michigan Department Environment, Great Lakes, and Energy-Air Quality Division staff Robert Joseph, conducted a scheduled inspection of Ace-Saginaw Paving Company (N5403) located at 16255 Tindall Road, Davisburg, MI. The purpose of the inspection was to determine the facility's compliance with the requirements of the Federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451; The Michigan Department Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) Administrative Rules, and conditions of the facility's Permit to Install, 194-85I.

General Facility Information

I arrived at the facility at approximately 1:30 p.m. and met with the facility manager, Rick Will. I introduced myself and presented my identification and credentials and stated the purpose of my visit. I asked Rick to provide me some general information regarding the facility. He indicated the facility operates typically six days a week during the paving season (April to November) from 6 a.m. to 6 p.m. The facility maintains five employees and produces Hot Mix Asphalt (HMA) for local, county and state road projects as well as for commercial establishments. Independent contractors haul the HMA to the required destination.

Facility Tour

The HMA is produced in a double counter-flow direct fired rotary drum that is fired by natural gas (the facility typically does not use recycled used oil (RUO) in the HMA production but has done so recently due to the increased cost of natural gas). There are two RAP bins (recycled asphalt pavement) and 12 virgin aggregate bins. The HMA product can be altered by changing the virgin aggregate and RAP mixture at the beginning of the process to produce many mix designs. Common mixes are 5E-3 (mainline roadway) and 4E-3 (road shoulders).

The process begins by loading the desired aggregate mix into the feed hoppers. Once the appropriate aggregate is chosen for a specific mix design, the aggregate falls from its bin onto the main conveyor belt and the HMA production process begins. There is a single main belt for each of the virgin and RAP materials. The aggregate is conveyed to a weigh bridge which then flows into one drum which heats the virgin material removing its moisture, followed by the second drum which is a counter flow direct-fired rotary drum used for the RAP and the mixing of liquid asphalt cement.

The counter flow is a direct-fired rotary drum, where the exhaust gases through the dryer flame, and the fumes are combusted before exiting the drum at the opposite end from the paving material. This drum is designed for aggregate to flow counter to the heat source

allowing for high aggregate temperatures and low stack temperatures. The burner flame is not in contact with asphalt.

The facility's mix process includes eight emulsified liquid asphalt storage tanks (EUACTANKS), seven vertical and one horizontal. The tanks are exempt from Rule 201 (Permit to Install) per rule 289(2)(b) provided the tanks are controlled by an appropriately designed and operated vapor condensation and recovery system or an equivalent control system. Each of the liquid asphalt tanks is equipped with a canister style condensation and recovery system. Special condition 3.1 of EU-ACTANKS references that emission unit EUHMAPLANT shall not operate unless the vapor condensation and recovery system for each liquid asphalt cement storage tank is installed and operating properly.

There are no tanks which store Tack, a sticky glue-like substance that is sprayed onto a surface before the placement of hot-mix asphalt (HMA) to aid in adhesion. Also, there are five storage tanks (EUSILOS, four have a capacity of 200-tons each and one with a capacity of 250-tons) where the HMA is stored after production. The HMA mix is maintained at approximately 350 degrees F for ease of placement and compaction in-place.

The drum inlet temperature was 300 F and drum outlet temperature is 310 F at the time of inspection. Exhaust gas from the dryer/mixer is directed to a primary collector consisting of a series of pulse-jet filter bags. There are approximately 1,168 bags which are inspected regularly by the facility where dust and particulate matter from the aggregate mix are mixed back into the final product. The filter bags and their contents are disposed of in a landfill and a stack with an exhaust dimension of approximately 48 inches emits the emissions into the atmosphere. There were no visible emissions during the inspection.

PTI 194-85I

EU-HMAPLANT

EMISSION LIMITS

The following pollutants were tested between July 11-26, 2006. The permit was modified on April 13, 2006, due to an increase in the sulfur limit and to simplify the lab analysis for the usage of recycled used oil. Each pollutant was below its permitted limit.

<u>Pollutant</u>	<u>Limit</u>	<u>Emission result</u>
1.1a) PM	0.04 gr/dscf	0.013 gr/dscf
1.1b) PM	0.04 lb/ton	Test result per test plan was determined in gr/dscf.
1.1c) CO	0.201 lb/ton	0.118 lb/ton
1.1d) CO	99 tons/yr	Computed each year per recordkeeping requirement
1.1e) SO ₂	0.08 lb/ton	0.023 lb/ton
1.1f) NO _x	0.12 lb/ton	Not tested per permit condition 1.15

1.1g) NO _x	60 tons/yr	Computed each year per recordkeeping requirement 1.25.
1.1h) Lead	1.5E-05 lb/ton	1.11E-06
1.1i) Benzene	0.0039 lb/ton	0.00022 lb/ton
1.1j) Toluene	0.006 lb/ton	Non-detect
1.1k) Ethylbenzene	0.0015 lb/ton	Non-detect
1.1l) Xylene	0.0015 lb/ton	Non-detect
1.1m) Naphthalene	0.001 lb/ton	0.000044 lb/ton
1.1n) Formaldehyde	0.018 lb/ton	0.00263 lb/ton
1.1o) Acrolein	0.0009 lb/ton	0.00032 lb/ton
1.1p) Arsenic	4.0E-06 lb/ton	6.0E-07 lb/ton
1.1q) Nickel	1.0E-04 lb/ton	1.86E-06
1.1r) H ₂ SO ₄	0.0061 lb/ton	0.00169 lb/ton
1.1s) Manganese	1.2E-04 lb/ton	2.08E-05
1.1t) HCl	0.006 lb/ton	Non-detect

Material Usage Limits

The facility utilizes natural gas and recycled used oil (RUO) as fuel and the sulfur content does not exceed 1.5%. The facility does not burn any hazardous waste nor does the RUO exceed the threshold for each containment listed below.

Contaminant	Limit	Units
Arsenic	5.0	ppmw
Cadmium	2.0	ppmw
Chromium	10.0	ppmw
Lead	100.0	ppmw
PCBs	1.0	ppmw
Total Halogens	4000.0	ppmw
Sulfur	1.5	Weight %
Minimum Flash Point	100.0	°F

Contaminant	Limit	Units
Maximum Ash Content	1.0	Weight %
Acidity	Minimum pH = 4 Maximum pH = 10	N/A

The facility does not use waste materials containing asbestos per 40 CFR Part 61. The facility's average recycled asphalt pavement materials each month appears to vary between 20-35%. The 12-month rolling HMA paving material production averages approximately 300,000 tons (985,000-ton limit) with a 24-hour rolling total approximately between 300-400 tons/hr (650 tons/hr limit).

Process/Operational Limits

Based on the inspection records review, the Compliance Monitoring Plan (CMP) for RUO is being implemented. The fugitive dust control plan consisting of the conditions detailing the site maintenance, management of on-site roadways, on-site management of haul vehicles, and the management of front-end loader operations is being implemented and maintained. The facility maintains the drum mix burners are tuned every paving season and verified every 500-hours of operation when CO readings are conducted. The burner position is adjusted manually by staff and Rick indicated that it was set at a burner position of approximately 35%.

The facility submitted an Emission Abatement Plan for Startup, Shutdown, and Malfunctions. It also details hot stops – hot starts should the silos become full, identification of supervisory and maintenance personnel, description of inspected items, replacement parts, baghouse variables and monitoring, corrective procedures and responsible persons, and drum mix and batch during normal startup procedures.

Fabric filter dust collectors are installed and maintained in a satisfactory manner and the pressure reading was approximately 3 inches of water column during the inspection.

Testing

The AQD has not requested that a verification and quantification of odor emissions from EUHMAPLANT be performed to continue operation. The facility previously conducted performance tests to verify and quantify the HAP emission rates as detailed in Section I, as well quantifying and verifying the emission rates of PM, CO, and SO₂.

The facility used the MAERS emission factors when calculating and submitting their 2021 criteria pollutant emissions (tons/yr).

Monitoring

The facility continuously monitors the virgin aggregate and RAP feed rate within each design mix. This information is monitored within the controls to limit the RAP to 50% and details the amount of virgin aggregate added to each mix.

The facility also monitors the carbon monoxide (CO) concentration with a handheld CO monitor upon start-up of each paving season, during a malfunction of the drum dryer/mixer or its associated burner, and after every 500 hours of operation. The facility monitors the

CO pollutant consisting of eight separate readings ranging between 103 ppm to 222 ppm during the most reading in August 2022.

The facility appears to be monitoring the emissions and operating as outlined in 40 CFR 60 Subparts A and I for Hot Mix Asphalt facilities relating to PM standards and test methods and procedures.

Recordkeeping/Reporting/Notification

The records reviewed appeared to satisfy the New Stationary Sources as specified in 40 CFR 60 Subparts A and I for Hot Mix Asphalt facilities. In addition, the facility maintains a fabric filter collector (baghouse) for their operations of EUHMAPLANTS. Maintenance records are maintained regarding the replacement and inspection of the baghouses, and this is consistent with the Preventative Maintenance Program for the Fabric Filter Dust Collector as indicated in Appendix B.

Records indicate the identification, type, and the amounts (in gallons) of all fuel oils combusted. Records indicate the Vesco Oil Company as the supplier which includes the gallons received and combusted – approximately 11,000 gallons were received and between 200 to 6,000 gallons combusted during the last two years when used. The sulfur content is listed as 1.5%, contains a specific gravity of 0.8827, has a flash point greater than 175 F, and a higher heating value over 118,000 Btu/lb.

The tons of hot mix asphalt containing RAP produced typically is greater than 300 tons per operational day, with the average percent of RAP per ton of hot mix asphalt produced between 20-35%.

The facility also maintains daily records of the virgin aggregate feed rate which typically varies between 200-300 tons per day with a RAP feed rate of 80 tons/hr. The production rate at the time of inspection was approximately 1800 tons with RAP content of 25%. The asphalt paving material product temperature averages at least 350 F upon completion. Daily mix designs are recorded upon start-up and during each mix design change.

The facility also records and calculates the monthly and 12-month rolling time period emission calculation records of all criteria pollutants and HAPs listed in the Emission Limit Table for EUHMAPLANT. The highest and lowest criteria pollutants emitted in July 2022 were NO_x at 7,572 lbs and Lead at 0.07 lbs, respectively. The highest and lowest HAP pollutants emitted in July 2022 were both Toluene and HCl at 379 lbs, and Arsenic at 0.0389 lbs, respectively.

The highest and lowest 12-month rolling totals for criteria pollutants over the last 12-months have been NO_x at 8,050 tons in June 2022 and Lead at 0.004113 lbs in April 2022. The highest and lowest aggregate totals occurred in June 2022 with 20,525 lbs and 1,133 tons in April 2022, respectively.

The highest and lowest 12-month rolling totals for HAP pollutants over the last 12-months have been Toluene/HCl at 402 tons in June 2022 and Arsenic at 0.0023 lbs in April 2022, respectively. The highest and lowest aggregate totals occurred in June 2022 with 1,336 lbs and 73 lbs in April 2022, respectively.

In addition, all CO emissions and related production data including the dates and times emissions were monitored are recorded by the facility. Readings were conducted in both

July and August 2022. The facility often monitors the CO emission readings on multiple occasions each month. Readings were conducted twice in June 2022 on the 14th and 30th. The most readings ranged between 100-200 ppm which were conducted on August 17, 2022. Records review indicates an average 0.069 tons emitted each day.

The facility also maintains the daily, monthly and 12-month rolling time period records of the amount of HMA paving materials produced from EUHMAPLANT. The daily HMA production in July 2022 varied between 300-400 tons/hr. The highest and lowest monthly totals over the last 12-months occurred in June 2022 with 67,000 tons and April 2022 with 3,800 tons, respectively. The current 12-month rolling production total is 310,000 occurring from August 2021 to July 2022.

Stack/Vent Restrictions

There did not appear to be any visible emissions emanating from the facility's stack.

EU-YARD

Process/Operational Limits

The facility maintains and implements the Fugitive Dust Control Plan all roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix A. All activities performed to control fugitive dust are documented by the facility. The facility reports their annual emissions of particulate matter for EUYARD through MAERS. The facility used a MAERS Emission Factor of 0.12 for PM for their aggregate storage and vehicle equipment totaling 6,933 lbs, and a MAERS emission factor of 6.2 lb/mile for PM for their roadways totaling 4,129 lbs.

EUACTANKS

PROCESS/OPERATIONAL LIMITS

The vapor condensation and recovery system is implemented and maintained by the facility. No cranks or leaks were observed at the time of inspection. The facility inspects the filter media and inspects the tanks at least once or twice a season.

EUSILOS

PROCESS/OPERATIONAL LIMITS

All silo load activities occur in an area which is permanently enclosed except for truck entrance and exit points. The Silo Load-Out control system is maintained and operated in a satisfactory manner for all emissions vented into the burning zone.

FGFACILITY

Emission Limits

The total emission rate of HAPs listed in Section I shall not exceed 8.9 tons per rolling 12-month period for each individual HAP, nor 22.49 tons per rolling 12-month period for all HAPs combined.

The current highest and lowest single HAP 12-month rolling total is Toluene and Hydrogen Chloride at 1,859 lbs (0.92 tons), and Arsenic at 0.19 lbs (9.5×10^{-5} tons), respectively. The current 12-month rolling total is 6,137 lbs (3.06 tons).

Appendix A – Fugitive Dust Control Plan

SITE MAINTENANCE

Dust on all areas where vehicular traffic occurs is controlled by the application of water, sweeping, or vacuuming. This occurs at a minimum of one to two times per day or more frequently according to facility records. Watering of the yard, chloride applications, and wet sweeping are the methods employed by the facility. Signs are posted to advise to drivers of the speed limit. There were no visible emissions emanating off of the storage piles.

MANAGEMENT OF ON -SITE ROADWAYS

There were no visible fugitive dust issues with the roadways, aggregate piles, or paved surfaces.

ON-SITE MANAGEMENT OF HAUL VEHICLES

All trucks that were observed entering and exiting the facility appeared to have their loads covered.

MANAGEMENT OF FRONT-END LOADER OPERATIONS

There were no observed issues with the any of the front-end loaders transporting materials.

RECORDKEEPING

The facility maintains a daily log of all dust suppressant applications and activities performed regarding dust prevention. This includes sweeping, calcium chloride applications, and water suppression.

FUGITIVE EMISSIONS FROM PROCESS EQUIPMENT AND FABRIC FILTER COLLECTOR

There were no fugitive emissions due to leak(s) or malfunction(s) from any transfer system, storage bin, mixer, hopper, or filter fabric observed during the inspection.

Appendix B - Preventative Maintenance Program for the Fabric Filter Collector

The facility oversees the stack opacity, excess emissions, burner tuning, baghouse inspection, bags replaced, and baghouse pressure drop.

FABRIC FILTER COLLECTOR OPERATING PRESSURE DROP

The pressure drop across the baghouse is measured continuously. The minimum pressure drop shall not be less than 2 inches, water gauge, except when a large number of filter bags have been replaced and the maximum pressure drop shall not be greater than 8 inches, water gauge. The daily pressure drop varies between 3 to 4 inches H₂O. The pressure drop is recorded daily and was 3.0 inches H₂O at the time of inspection.

FABRIC FILTER COLLECTOR /PLANT ALARM SYSTEM

The baghouse is equipped with a high temperature sensor and alarm system. The alarm system is set to alarm when the high temperature set-point has been violated. The temperature for the facility sounds off at 400 F (the filter bags will catch fire at 450 F). A sequential shut-down of the plant will occur if the situation is not resolved within a very short period of time after the alarm sounds.

HANDLING AND STORAGE OF FABRIC FILTER DUST

The accumulated baghouse dust is disposed of in a landfill.

PIPING AND SEALS MAINTENANCE

There were no visible leaks on site.

VISIBLE EMISSIONS AND ACTIONS TO BE TAKEN IN THE EVENT OF

There were no visible emissions from the stack at the time of inspection.

BLACK LIGHT INSPECTIONS

A black light inspection occurs every year at the onset of the paving season and as necessary during the fine-tuning of the burners.

INVENTORY OF FILTER BAGS

The facility maintains a minimum of 60 filter bags at all times.

FABRIC FILTER DUST COLLECTOR INSPECTION RECORD

Visual inspections of the interior components of the baghouse are performed by the facility when the blacklight inspection is performed and during any malfunction event. Sealings are inspected and filter fabric replacement is performed as needed. There have not been any visible emissions observed according to facility records.

Appendix C - COMPLIANCE MONITORING PLAN (CMP) FOR FACILITIES BURNING RECYCLED USED OIL (RUO)

The facility RUO documentation was reviewed for purchases made in June 2022. Each shipment from the used oil supplier was accompanied by the supplier's documentation demonstrating that the used oil meets the specification levels below, and the documentation includes supplier certification and analytical data. Each shipment was screened for halogens and contained the supplied laboratory analysis from Summit Environmental Technologies located in Cuyahoga Falls, OH.

ALLOWABLE LEVELS

Allowable levels for RUO properties and constituents are listed in Table 1.

PROPERTY/CONSTITUENT	Table 1 ALLOWABLE LEVEL	Facility Levels
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PROPERTY/CONSTITUENT	ALLOWABLE LEVEL	Facility Levels
Higher Heating Value	17,000 Btu per pound, minimum	18,018 Btu/lb
Arsenic	5.0 ppm, maximum	< 1.00ppm
Cadmium	2.0 ppm, maximum	0.158 ppm
Chromium	10.0 ppm, maximum	< 4.00 ppm
Lead	100.0 ppm, maximum	1.02 ppm
Sulfur	1.5 percent, maximum	0.2037%
Polychlorinated Biphenyls (PCBs)	1.0 ppm, maximum	< 1.00 ppm
Total Halogens	4,000 ppm, maximum	200 ppm

The facility utilizes Method 2 - On-Site Qualification which requires a quarterly split sample analysis for all shipments which are not from a pre-qualified batch. One quarterly sample with the required laboratory analysis was viewed.

Conclusion

Based on the AQD inspection and records review, Ace-Saginaw Paving Company is in compliance with the requirements of the Federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451; the Michigan Department Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) Administrative Rules, and conditions of the facility's Permit to Install, 194-851.

NAME Robert Joseph

DATE 09-20-22

SUPERVISOR Joyce