

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

P019836159

FACILITY: SUPERIOR ASPHALT INC - Lansing		SRN / ID: P0198
LOCATION: 3888 S CANAL RD, LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: EATON
CONTACT: Nate Voruganti, Plant Manager		ACTIVITY DATE: 08/15/2016
STAFF: Michelle Luplow	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled, unannounced inspection to determine compliance with Superior Asphalt's PTI No. 12-11A for a hot mix asphalt facility		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow

Personnel Present: Dave Moore (davem@superiorasphalt.com), Plant Operator
Nate Voruganti (nate@superiorasphalt.com), Plant Manager

Other Personnel: Jeff Kresnak (jeffk@choiceonemail.com), Owner

Purpose: Conduct an unannounced, scheduled, partial compliance evaluation (PCE) inspection by determining compliance with Superior Asphalt's Opt-Out Permit No. 12-11A. This inspection was done as part of a full compliance evaluation (FCE).

Facility Background/Regulatory Overview: Superior Asphalt is a hot mix asphalt facility that uses both recycled asphalt (RAP) and virgin aggregate in their mixes.

Dave Moore said that Superior Asphalt generally starts production the 3rd or 4th week of April and runs through the end of November, around Thanksgiving.

Superior Asphalt is an opt-out facility for HAPs.

Inspection: At approximately 2:20 p.m. on August 15, 2016, I arrived at Superior Asphalt and met with Dave Moore, Plant Operator, and later Nate Voruganti, Plant Manager, also. I provided D. Moore with a DEQ "Environmental Inspections: Rights and Responsibilities" brochure. The plant was not operating when I arrived for the inspection, although 1 truck was being loaded out with hot asphalt mix.

<u>EU</u>	<u>EU Description</u>	<u>Compliance</u>
EUHMAPLANT	Hot mix asphalt facility, aggregate conveyors, 400 tph counterflow drum mixer with fabric filter dust collector Burns natural gas	Yes
EUACTANKS	Two 30,000-gallon liquid asphalt tanks	Yes
EUSILOS	Two 200-ton storage silos for finished product	Yes
EUYARD	Fugitive dust sources: -all plant roadways -plant yard -material storage piles -material handling operations (except cold feed bins)	Yes

EUHMAPLANT

Material Limits

Superior Asphalt is only allowed to burn natural gas, propane, fuel oils 1-6, or recycled used oil (RUO), and the % sulfur, specific gravity, flash point, higher heating value of all fuel oils combusted must be recorded monthly; however, D. Moore said that they only burn natural gas. Superior Asphalt is therefore in compliance with the requirement not to burn any RUO that exceeds the specified concentrations of contaminants in the permit and the RUO conditions are not applicable at this time.

Superior is not allowed to use any asbestos tailings or waste materials containing asbestos in their HMA. D. Moore said that they only crush RAP and once or twice a year will crush concrete to make 21AA (gravel used for base). During the inspection Custom Crushings, a portable crusher out of Grand Rapids (SRN N6664), was present onsite crushing concrete. I did not observe any materials on the plant yard that would contain asbestos. A relocation notice was submitted for N6664 within the required timeframe.

N. Voruganti provided me with an electronic copy of the percent recycled asphalt material (RAP) used through July 2016. Superior Asphalt is allowed a maximum of 50% recycled asphalt (RAP), recycled asphalt shingles (RAS) and crumb rubber in the processed asphalt mixture on a monthly average basis. Superior only uses RAP in their asphalt mixes and said that they have no plans to do any crumb rubber work in the future. Per the electronic record, also attached, the maximum monthly average amount of RAP Superior has used in their asphalt between August 2015 and July 2016 is 31% in June 2016. Superior keeps track of the total Hot Mix Asphalt (HMA) produced that contains RAP and the Total RAP aggregate used both on a monthly basis to calculate the average percent RAP used monthly.

The total tons of HMA produced is limited to 895,000 per 12-month rolling time period. From August 2015 – June 2016 the 12-month rolling total of HMA produced was 59,384 tons.

There is a 400 ton/hr HMA limit, based on a daily average. For the purposes of this permit, compliance of this condition is checked by averaging the daily production of HMA over the operating hours for the day to determine if Superior is in compliance with the hourly limit. Per the electronic copies of the data, also attached, the maximum hourly HMA produced between April 2016 and July 2016 was 272 tons on July 16, 2016.

Superior Asphalt is in compliance with all material limits at this time.

Process/Operational Restrictions

The Fugitive Dust Control Plan for EUYARD in Appendix A for of the permit is required to be implemented and maintained if Superior Asphalt wishes to operate the plant.

The following is an evaluation of whether the Fugitive Dust Control Plan for EUYARD was adhered to:

SITE MAINTENANCE

Dust on all areas where there is vehicular traffic is required to be controlled by water, sweeping, vacuuming or other acceptable control methods, and should be done a minimum of 2 times per month or more frequently depending on weather conditions, spills, and vehicular activity.

N. Voruganti keeps track of the dust control applications and the type of dust control used on a daily basis in the electronic spreadsheet (copy is attached). Superior uses rain and sweeping to control dust. During this operating season Superior has done at least 2 times of a combination of sweeping and allowing rain to control dust. I verified via weather underground that the rain events Superior logged corresponded to actual weather data. The majority of them did, taking into consideration that the weather data was representative of rain at the Lansing airport, not of the 48917 zip code where Superior is located. The plant yard, which D. Moore explained is entirely paved (no unpaved portions of the plant yard), appeared to be kept reasonably controlled for dust. I did not see opacity from any of the yard during the inspection. Attached are the dust control records.

Superior is required to have speed limit signs of 10 mph or less. There are 10 mph signs posted at the entrance of the facility.

Piles are required to be maintained to prevent fugitive dust. D. Moore explained that storage piles don't generate much, if any fugitive dust. I did not observe any opacity from the stock piles during the inspection.

MANAGEMENT OF ON-SITE ROADWAYS

The conditions for this section of the fugitive dust control plan are addressed under the "Site Maintenance" discussion.

ON-SITE MANAGEMENT OF HAUL VEHICLES

All trucks entering the site to deliver loads and all trucks leaving the site with HMA paving materials are required to cover the loads. A sign for the trucks leaving the site is also required to remind them to tarp the loads prior to leaving the site. There is a sign at the exit of the plant that reminds all trucks leaving the site to cover their loads.

MANAGEMENT OF FRONT-END LOADER OPERATIONS

While there are requirements in place to avoid the overfilling of the bucket of the loader and the feed hoppers to prevent spillage and to also minimize the drop height of the material when loading the feedhoppers or transferring material to stockpiles, none of these operations were occurring during the inspection to verify compliance.

Superior Asphalt is currently in compliance with their Fugitive Dust Control Plan at this time.

The Preventative Maintenance Program for the fabric filter dust collector (Appendix B in permit) is required to be implemented and maintained if Superior Asphalt wishes to operate the plant.

The following is an evaluation of whether the Preventative Maintenance Program for the fabric filter control system was adhered to:

FABRIC FILTER DUST COLLECTOR OPERATING PRESSURE DROP

The fabric filter dust collector pressure drop is required to be recorded once per day, but continuously measured. The acceptable pressure drop range should be no less than 2 in H₂O and no greater than 10 in H₂O. During the inspection, the system was not operating so I was not able to verify compliance with the pressure drop for this day, however, N. Voruganti provided me with pressure drop records for the 2016 operation season, recorded on a daily basis. There have been no pressure drop readings from April 27 through August 14, 2016 that dropped below the 2.0 in H₂O: the lowest pressure drop reading was 2.1 in. H₂O, the highest was ~5 in. H₂O. The pressure drop is monitored continuously via computer program.

FABRIC FILTER DUST COLLECTOR/PLANT ALARM SYSTEM

A high temperature sensor and alarm system should be equipped on the fabric filter dust collector that is designed to set off an alarm when the high temperature set-point has been violated, which should begin immediate sequential shut-down if the situation is not resolved in a short time period. D. Moore told me that the set-point is 400°F, at which point the system shuts down, but that alarms go off at 375°F, 385°F, and 395°F prior to the set-point alarm.

HANDLING AND STORAGE OF FABRIC FILTER DUST

Fabric filter dust is required to be disposed of in a manner that minimizes introduction of the particulate to the outer air. D. Moore explained that Superior uses a closed system: all dust collected is sent back through the process to be used. They do not dispose of any particulate.

VISIBLE EMISSIONS AND ACTIONS TO BE TAKEN

N. Voruganti verified that they saw no visible emissions from the discharge point of their stack during the past 12 months and therefore there were no records of visible emissions recorded.

BLACK LIGHT INSPECTIONS

A black light test is required to be conducted at least once per year before operations for the paving season begin. A black light test is a test where black light-reactive dust is injected into the system, and using a black light, operators are able to determine if the black light-reactive dust is escaping the baghouse, thus detecting any baghouse leaks. N. Voruganti keeps electronic records of all black light inspections conducted within Superior's "HMA Plant and Baghouse Maintenance Activities and Log of Significant Repairs" spreadsheet. The records go back to the start of the paving season in 2013 and end through July 2016. For this paving season, a black light inspection was conducted on 7/19/16; therefore, black light inspections were not conducted prior to the start of the paving season. Additionally, for 2013, 2014, and 2015, the black light inspections were not conducted prior to those respective paving seasons as well. I will inform N. Voruganti, D. Moore, and J. Kresnak of this deficiency and remind them that failure to conduct black light inspections at the beginning of the paving season is a violation of the permit.

INVENTORY OF FILTER BAGS

Fabric filter bags are required to be maintained in inventory onsite or be available to the site within a day. D. Moore confirmed that they keep 200 bags in inventory onsite.

FABRIC FILTER DUST COLLECTOR INSPECTION RECORD

Superior has an electronic spreadsheet of all maintenance activities that occur on the site which includes visual inspections of the baghouse and the inspection findings, black light inspections, number of bags replaced when necessary, the reason for the bag replacement, and other baghouse maintenance activities conducted.

The Compliance Monitoring Plan for RUO (Appendix D of PTI 12-11A) does not apply because Superior Asphalt does not burn RUO at this time.

Superior is required to fine-tune the drum mix burners for proper burn operation in order to control CO emissions, and shall do this at the start of each paving season or upon a malfunction of the plant as determined by the CO emission data. CO emission readings are required to be taken 8 times throughout a period of 30 minutes or more, and must remain under 500 ppmv. N. Voruganti provided me with electronic records for CO emissions from the drum mix burner ("CO Handheld Emissions Monitoring"), which Superior has maintained since 2013. CO emissions were monitored at the beginning of the 2016 paving season (4/27/16) with an average reading of 282 ppm over 8 CO readings. None of the 8 CO readings

exceeded 500 ppm. The mix design during this test was 13A at a rate of 135 tons/hour. Additionally, CO emission readings are required to be taken after every 500 hours of operation. The total hours of operation from 4/27/16 – 8/14/16 was 243.5 hours, and therefore additional CO emissions readings were not required to be conducted. Superior is in compliance with CO monitoring/recordkeeping/emission limits at this time.

Testing/Sampling

Stack testing was conducted in January 2014 to verify emission rates of CO, PM, SO₂, NO_x and lead. Emissions for each pollutant were verified in compliance with their respective emission limits.

Monitoring/Recordkeeping

Superior is required to continuously monitor the virgin aggregate feed rate and RAP feed rate to EUHMAPLANT and keep intermittent, daily records for these rates. D. Moore keeps the electronic spreadsheets of daily RAP and virgin aggregate feed rates on a ton/day basis. They also monitor instantaneous readings directly from their computer program, which will continuously monitor the rates. I was not able to verify instantaneous feed rates during the inspection, as the processes were not running.

In addition to the feed rates, Superior must also keep a daily intermittent record of the asphalt paving material product temperature and keep information sufficient to identify all components of the asphalt mix. This includes recording the initial mix design and time upon initial start-up, and the time and new mix design whenever the mix design changes. Superior keeps "Superior Asphalt Data for Stack Testing" hard copies that are used to record the date, mix name, time of mix start, temperature of the mix, and baghouse pressure drop at the time of the mix start. Attached are 8/8/16 – 8/15/16 records. Although these mix design records for the aforementioned week in August does not show other mix designs, N. Voruganti confirmed that if the mix design changes throughout the day, they document these changes. I will remind N. Voruganti, D. Moore, and J. Kresnak that anytime a mix design changes, the same data recorded for the initial mix design must also be recorded for changes in mix design.

Superior is required to calculate emissions for all TACs and criteria air pollutants listed in the Emission Limit Summary Table of their PTI on a monthly and 12-month rolling basis. Superior keeps track of the monthly and 12-month rolling emissions for all criteria pollutants and TACS. I conducted snapshot checks of the 12-month rolling calculations to verify accuracy. Based on my review of the calculations it appears that Superior is underestimating their emissions for each of these pollutants. The permit requires that either stack test data or the emission limits set forth in the permit be used to calculate the 12-month rolling emissions and my calculations using these emission factors produced much higher results than what Superior reported in their spreadsheet. (Stack test data is available for CO, SO₂, NO_x, PM and Lead only). The following tables contain 12-month rolling emissions from August 2015 – July 2016 showing my results versus Superior's 12-month rolling calculations. Emissions should be based on total HMA produced. Underestimations of emissions occur for all pollutants except for CO and PM. I will inform N. Voruganti, D. Moore and J. Kresnak of this deficiency so that for future compliance inspections calculations can be conducted using the correct emission factors.

Although the calculations appear to be underestimating emissions, the corrected emissions based on total HMA produced is still in compliance with the 12-month rolling emission limits both for criteria air pollutants and for aggregate HAPs under FGFACILITY. FGFACILITY takes into account all emissions sources and restricts HAP emissions to 9.0 tpy for each individual HAP and 22.5 tpy for aggregate HAPs. The HAPS regulated under this permit are all pollutants listed in the emission unit summary table, except for the criteria air pollutants.

Table 1. 12-month Rolling Criteria Air Pollutant Emission Comparison

Pollutant	Superior's Calcs 12-month rolling Emissions (tpy)	AQD's Calcs 12-month rolling Emissions (tpy)	Criteria Pollutant Emission Limit (tpy)	Compliant?
CO	5.9	2.7	89.5	Yes
SO ₂	0.1	0.3	80.6	Yes
NO _x	0.78	0.9	89.5	Yes
PM	1.48	0.05	22.4	Yes

Table 2. 12-month Rolling TACs/HAPs Emission Comparison

Pollutant	Superior's 12-month rolling Emissions (tpy)	AQD's 12-month rolling Emissions (tpy)	Compliant?
Pb	1.8E-5	2.2E-4	
Mn	2.3E-4	9.2E-4	
Ni	1.9E-3	7.4E-3	
Benzene	1.2E-2	2.5E-2	
Ethyl benzene	7.1E-3	1.6E-2	

Toluene	4.4E-3	1.9E-1	
Xylene	5.9E-3	1.3E-2	
Acrolein	0	2.4E-2	
Formaldehyde	9.2E-2	2.0E-1	
Naphthalene	2.7E-3	4.2E-2	
H2SO4	0	4.7E-1	
HCl	0	7.1E-1	
As	1.7E-5	4.5E-5	
Total Aggregate HAPs	1.3E-1	1.7	Yes

Stacks

The stack height is required to be a minimum of 60' from ground level. D. Moore verified during the inspection that the stack height was 60'.

EUYARD

Fugitive dust emissions from the plant roadways, plant yard, material storage piles, and material handling operations (excluding the cold feed aggregate bins) are required to be calculated annually for MAERS. Based on the 2015 MAERS emission year, Superior is in compliance with this condition. (Emissions reported under "EUYARD").

Superior is also required to follow the Fugitive Dust Program in Appendix A. Per the analysis earlier in the report, Superior is in compliance with this condition as well.

EUACTANKS

The two AC tank vapor condensation and recovery systems are required to be maintained and operated in a satisfactory manner. D. Moore explained that they know they need to change the steel wool condensing material when smoke is visible coming from the exhaust point of the tank during loading of the AC into the tanks. There was no loading of AC into the tanks during the inspection to verify these were being maintained in a satisfactory manner, but the awareness of plant personnel that the system has to be maintained is sufficient for determining compliance at this time.

EUSILOS

During the inspection I watched the loading of 1 truck. I saw steam coming off of the loaded pile in the truck, but did not see any signs of opacity or detect any odors. The loadout area is partially enclosed on the sides running parallel with loadout trucks.

D. Moore explained that the entire system (loadout silos, conveyors, etc) is enclosed. He said there is a fan that is used to draw odorous fumes off the asphalt while it is being conveyed up to the loadout silo. The system is essentially under vacuum in order to control emissions. The vapors, he said, are pulled back into the drum. The silos also vent to atmosphere and D. Moore explained that when they can see blue smoke, they replace the filters that capture these fumes.

Superior Asphalt is in compliance with all EUSILOS conditions at this time.

Compliance Statement: As a result of this inspection and review of records Superior Asphalt is found to be in compliance with all state and federal regulations at this time; however, the emission factor deficiencies for emissions calculations and the black light testing mid-season versus prior to the start of the season are noted and may result in violations during future inspections if not corrected.

NAME

Michael M. Lopez

DATE

9/7/16

SUPERVISOR

D. Moore

