

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

P019840957

FACILITY: SUPERIOR ASPHALT INC - Lansing	SRN / ID: P0198
LOCATION: 3888 S CANAL RD, LANSING	DISTRICT: Lansing
CITY: LANSING	COUNTY: EATON
CONTACT: Dave Moore , Plant Operator	ACTIVITY DATE: 08/03/2017
STAFF: Michelle Luplow	COMPLIANCE STATUS: Compliance
SUBJECT: Scheduled, announced inspection to determine compliance with PTI 12-11A.	SOURCE CLASS: SM OPT OUT
RESOLVED COMPLAINTS:	

Inspected by: Michelle Luplow

Personnel Present: Dave Moore (davem@superiorasphalt.com), Plant Operator
Darren Zimmerman, Superintendent

Off-site Personnel: Jeff Kresnak (jeffk@choiceonemail.com), Owner
Nate Voruganti (nate@superiorasphalt.com), Plant Manager

Purpose: Conduct an announced, scheduled, partial compliance evaluation (PCE) inspection by determining compliance with Superior Asphalt's Opt-Out Permit No. 12-11A. An unannounced inspection was attempted on 7/28/17; however, production was completed for the day. I requested that Dave Moore, Plant Operator, inform me of a day when they would be operating so I could inspect the plant in its operational state at that time. The last inspection (8/2016) was conducted when the plant was not operating.

This inspection was conducted as part of a full compliance evaluation (FCE). Particular attention was paid to whether or not the black light testing was conducted prior to the start of the operating season, as well as ensuring that TAC emissions were calculated correctly, as these were deficiencies noted during the previous inspection.

Facility Background/Regulatory Overview: Superior Asphalt (Superior) is a hot mix asphalt facility that uses both recycled asphalt (RAP) and virgin aggregate in their mixes. D. Moore verified that there have been no modifications or new installations to the plant since its initial installation.

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; however, the operating season is contingent upon the number of jobs that come in and the weather. He explained that they don't like to pave in temperatures below 32°F. Operating hours also vary depending on the jobs that need to be done. There have been projects during this operating season that result in Superior operating until midnight. The last time they operated until midnight was July 27, 2017.

On June 15, 2017, the AQD received a fugitive dust complaint from a Cintas employee, a business directly adjacent to Superior's north property line (3524 S. Canal). Although I was not able to verify fallout (crushing operations had ceased and a day had passed since the fallout had occurred), it was determined that Custom Crushing was operating an unpermitted crusher at the Superior site. A violation notice was sent to Custom Crushing to address the unpermitted operations. I encouraged the complainant to contact me in the event that fugitive dust fallout reoccurs from these types of operations at Superior. D. Moore said that Custom Crushing was crushing RAP when the complaint was received. He also said that Superior had received fugitive dust complaints in the past from Cintas, but that they had worked together to ensure that all fallout from the crushing operations were cleaned off Cintas' employee's personal vehicles. D. Moore said that Superior did not pay to have the cleaning done on the cars this year.

Custom Crushing has been to this facility at least once prior (during the 2016 inspection) under SRN N6664. During the 2016 inspection, I did not observe any fugitive dust associated with the N6664 Custom Crushing operations. Superior Asphalt is an opt-out facility for HAPs.

Inspection: At approximately 7:30 a.m. on August 3, 2017, I arrived at Superior Asphalt and met with Dave Moore, Plant Operator, and later Darren Zimmerman, Plant Superintendent. I provided D. Moore with a January 2017 PTI Exemptions Handbook during my first visit on 7/28/17. The plant was operating at this time, with 10+ trucks being loaded out while I was onsite. D. Moore estimated that approximately 1,000 tons of asphalt would be produced during this operating day, and he plans to operate for 8 hours total, which he said does not include "hot stops" where the plant is stopped midstream. He explained that during hot stops, the drum containing the asphalt mix can sit for 1 – 1.5 hours without any mix, process, or operational troubles before starting it back up.

Plant operations started at 5:30 a.m. the morning of the inspection, according to D. Moore.

<u>EU</u>	<u>EU Description</u>	<u>Compliance</u>
EUHMAPLANT	Hot mix asphalt facility, aggregate conveyors, 400 tph capacity counterflow drum mixer with fabric filter dust collector Burns natural gas only (plant is configured to burn only natural gas)	Yes
EUACTANKS	Two side-by-side 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

This EU consists of a hot mix asphalt facility, associated aggregate conveyors and a 400 tph-capacity counterflow drum mixer with fabric filter dust collector. EUHMAPLANT was operating while I was onsite.

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, and higher heating value of all fuel oils combusted must be recorded monthly; however, D. Moore said that Superior only burns natural gas in EUHMAPLANT, that the system is only configured to burn natural gas, and that to burn any other fuel type would require reconfiguration of the entire plant to accommodate burning fuel other than natural gas. All RUO permit conditions are therefore not applicable at this time.

Superior shall not use any asbestos tailings or waste materials containing asbestos in their HMA. D. Moore said that they only use RAP in their mixtures, in addition to various other non-concrete aggregates. Once or twice a year D. Moore said Superior will hire a contractor to crush RAP. He also said that since Superior has been operating at this location, they have only had a contractor come out once to crush concrete for making 21AA (gravel used for base at various job sites).

Material Limits & Recordkeeping

Superior's asphalt mixture is limited to a maximum of 50% RAP, based on a monthly average, in addition to 895,000 tons of hot mix asphalt (HMA) paving materials per 12-month rolling period, and no more than 400 tons of HMA paving materials per hour, based on a daily average (daily HMA production divided by daily operating hours).

N. Voruganti provided me with an electronic copy of the percent recycled asphalt material (RAP) used throughout the 2016 and 2017 operating seasons. Superior only uses RAP in their asphalt mixes and said that they have no plans to do any crumb rubber or recycled asphalt shingle (RAS) work in the future. Per the electronic records, attached, the highest monthly average amount of RAP Superior has used in their asphalt in 2016 was 31% (June 2016) and in 2017 was 24% (May 2017). Superior keeps track of the total HMA produced that contains RAP and the Total RAP aggregate used on a monthly basis to calculate the monthly average percent RAP in the mixture.

The total tons of HMA produced is limited to 895,000 per 12-month rolling time period. From August 2016 – July 2017 the 12-month rolling total of HMA produced was 63,700 tons.

There is a 400 ton/hr HMA limit, based on a daily average. D. Moore said Superior usually operates at approximately 200 tph, and could operate faster if they had to, but they only have 2 silos for storage and therefore would not have the capacity to store HMA at the 400 tph production permit limit. 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, the highest hourly HMA produced in 2016 was 272 tph (7/16/16) and the highest hourly HMA produced in 2017 was 231 tph (7/20/17).

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 wishes to operate the plant.

The following is an evaluation of compliance with the Fugitive Dust Control Plan for EUYARD:

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.

D. Moore said that Superior owns a water truck and that it is always onsite, but that typically it is not used; a loader bucket is the main mode of dust suppressant application for the plant yard. I noted that the water truck was parked near the storage piles during the inspection. He said they apply water every day throughout the day as needed using the loader bucket, the public access portions of the plant are swept daily and the operational plant yard is swept twice per week on average.

D. Moore keeps track of the dust control applications to the plant yard and the type of dust control used on a daily basis in the electronic spreadsheet (copy is attached). They track when it rained, and if not, if dust suppressant was applied that day, the time of day it was applied, the reason why it was applied, and the type of control. Control will typically consist of watering, sweeping (manually using bucket brooms) or both. During this operating season Superior has done at least 2 times of a combination of sweeping, watering and/or allowing rain to control dust. The plant yard, which D. Moore explained is entirely paved (no unpaved portions of the plant yard), was well maintained. I did not see opacity from any of the yard or generated from any truck traffic during the inspection.

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 to present the need to water them. He also explained that they don't want the piles too wet as it would take more energy to dry the materials in the drum prior to creating the HMA. I did not observe any opacity from the stock piles during the inspection.

All roadways are clean of spillage or any other dust that would have the potential to be re-entrained into the air as a result of truck traffic.

MANAGEMENT OF ON-SITE ROADWAYS

Compliance with 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 "PLEASE TARP LOAD" that reminds all trucks leaving the site to cover their loads. I did not see any trucks bringing in loads of aggregate to verify compliance with incoming trucks. There were 10+ trucks being loaded out during the inspection. I watched as each of them covered their HMA load at the sign, prior to exiting the facility.

MANAGEMENT OF FRONT-END LOADER OPERATIONS

Superior is required to avoid the overfilling of the loader bucket 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. When I was at the facility on 7/28/17 I watched a front-end loader transfer RAP from a storage pile into a feed hopper. I saw no material spillage and no dust from the material when dropped into the feed hoppers. I did not observe these operations occurring during this inspection.

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 compliance with the Preventative Maintenance Program for the fabric filter control system:

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 pressure drop reading on D. Moore's operations monitor screen read 3.3 in H₂O which is within the limits of the

permit. N. Voruganti provided me with pressure drop records for the 2016 and 2017 operating seasons, recorded on a daily basis. There have been no pressure drop readings during these two operating seasons that dropped below the 2.0 in H₂O or reached above 10 in H₂O; the lowest pressure drop reading was 2.1 in. H₂O, the highest was 5.2 in. H₂O. The pressure drop is monitored continuously via computer program. D. Moore said that they calibrate the pressure drop monitoring device once per year, in the spring before starting operations for the season.

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 reached, which should begin immediate sequential shut-down if the situation is not resolved within 5 minutes after the alarm sounds. D. Moore told me that the high temperature set-point is 400°F and that a baghouse temperature greater than 400°F would catch the baghouse on fire. He said they have an alarm that goes off at 380°F, at which point the plant will go into "low fire mode" to bring the temperature down. If the temperature continues to climb, even in low fire mode, and reaches 400°F the plant shuts off. D. Moore said that prior to the start of the operating season he tested the system by allowing the temperature to reach 400°F and ensuring the system shut itself down.

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

D. Moore said that he monitors the exhaust from the stack on a daily basis. He said if they see VE's emitting from the stack, they shut down the plant and black light inspect the baghouse. D. Moore verified that he has seen no visible emissions from the discharge point of their stack 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. Operations, according to the Daily Production Log, started 4/11/2017. 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. D. Moore said that they do 1 run to get the baghouse hot, and then conduct the black light inspection. 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 June 2017. For this paving season, a black light inspection was conducted on 4/11/17, the first day of operation. During this test, D. Moore noted that 3 of the bags were questionable and were replaced at that time, prior to production for the day. The review of these records during the August 2016 inspection had revealed that the black light inspection had not been conducted prior to operations for the year, in addition to the 2013, 2014, and 2015 operating seasons. Superior is now in compliance with this requirement.

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 150 bags in inventory onsite at all times.

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.

Process/Operational Restrictions and Monitoring/Recordkeeping

Superior is required to fine-tune the drum mix burners for proper burn operation for control of CO emissions, and shall do this at the start of each paving season, upon a malfunction of the plant as determined by the CO emission data, and every 500 operating hours. 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. They conducted the CO test for the 2017 operating season on the day of startup (4/11/17) as well. The mix design during the 2017 test was 13A at a rate of 170 tons/hour. None of the 8 CO readings exceeded 500 ppm. The total hours of operation from 4/11/16 – 7/31/17 was 260.3 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.

Design/Equipment Parameters

Superior is required to install, maintain and operate the fabric filter dust collector in a satisfactory manner, which includes operating it within a pressure drop range of 2-10 in. H₂O. This was addressed previously in the PMP discussion. Superior is in compliance with this requirement.

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. Table 1 contains the stack test emission rates for these criteria pollutants.

Table 1. 2014 Stack Test Results

Pollutant	Avg Tested Emission Rate (lb/ton)	Permit Limit (lb/ton)
PM	0.0017	0.05
SO ₂	0.01	0.18
NO _x	0.03	0.20
CO	0.09	0.20
Pb	7.41E-06	1.5E-05

There is also a testing requirement that allows the AQD to require verification and quantification of odor emissions from EUHMAPLANT. During the inspection, I did not detect any odors, even during loadout of multiple trucks. The AQD has also not received any odor complaints associated with this facility. There is therefore no need to conduct odor testing at this time.

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. During the inspection, Superior was producing mix design 13A (changing over to 36A near the end of the inspection), with an instantaneous virgin aggregate feed rate of 135.7 tph and instantaneous RAP feed rate of 34.6 tph.

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 of 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. I requested these records for 7/31/17 – 8/4/17 (attached). These mix design records document the times when every batch is created, not only the mix design changes.

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. If stack test data is not available for emissions calculations, Superior must calculate emissions based on the applicable emission factors presented in the Emission Limit Table of PTI 12-11A. There is no stack test data available for TAC emissions. 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. Stack test results are used for the criteria pollutants, but, as verified per N. Voruganti and consultant, Jacob Abair, Superior was calculating TAC emissions based on AP-42 emission factors (found in both the August 2016 inspection records, and again during this inspection's records review). Upon my request to recalculate TAC emissions based on the limits established in the Emission Limit Table, Jacob Abair provided updated, corrected records. Tables 2 and 3 contain 12-month rolling emissions from August 2016 – July 2017.

TAC Emissions and 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. As documented in Table 3, from August 2016 – July 2017 total aggregate HAPs was 1.3 tons and therefore Superior is in compliance with FGFACILITY emission limits at this time.

Table 2. 12-month Rolling Criteria Air Pollutant Emissions

Pollutant	12-month rolling Emissions (tpy)	Criteria Pollutant Emission Limit (tpy)	Compliant?
CO	4.86	89.5	Yes
SO ₂	0.2	80.6	Yes
NO _x	0.8	89.5	Yes
PM	0.9	22.4	Yes

Table 3. 12-month Rolling TACs/HAPs Emissions

Pollutant	Superior's 12-month rolling Emissions (tpy)	Compliant?
Pb	4.8E-4	
Mn	9.9E-4	
Ni	8.0E-3	
Benzene	2.7E-2	
Ethyl benzene	1.7E-2	
Toluene	2.0E-1	
Xylene	1.4E-2	
Acrolein	2.6E-2	
Formaldehyde	2.2E-1	
Naphthalene	4.5E-2	
H ₂ SO ₄	5.1E-1	
HCl	7.6E-1	
As	4.8E-5	
Total Aggregate HAPs	1.3	Yes

Stacks

The stack height is required to be a minimum of 60' from ground level. D. Moore verified during the previous 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 2016 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

EUSILOS refers to the HMA paving material storage silos. D. Moore said that these are not heated, but they are insulated. He said the mix entering the silos is approximately 330-340°F and can remain in the silos overnight at a temperature warm enough that allows it to be maintained in a malleable and saleable state.

During the inspection, I watched the loading of 10+ trucks. 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 the 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.

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

Compliance Statement: Superior Asphalt is found to be in compliance with PTI 12-11A at this time.

NAME M. Moore DATE 8/25/17 SUPERVISOR [Signature]