

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Self Initiated Inspection

U83150675130167

FACILITY: Gallagher Asphalt Corporation		SRN / ID: U831506751
LOCATION: 18100 South Indian Avenue, Thornton		DISTRICT: Cadillac
CITY: Thornton		COUNTY: WEXFORD
CONTACT: Pat Faster, National Sales Director		ACTIVITY DATE: 07/13/2015
STAFF: Kurt Childs	COMPLIANCE STATUS: Compliance	
SUBJECT: Compliance inspection.		SOURCE CLASS:
RESOLVED COMPLAINTS:		

On my way into work at the Cadillac District Office on 7/13/2015 I observed a large plume of smoke several blocks away from the office. I drove by and observed an MDOT road construction project involving Gallagher Asphalt Corporation utilizing a hot-in-place asphalt recycling (HIPAR) process to resurface Sunnyside/Granite Street. Strong asphalt odors were present as was significant opacity from the process.

I returned to the office to get safety equipment and a state car. Ms. Caryn Owens(AQD) accompanied me back to the work site and we observed the process for several minutes. The process is as described in Mr. Dan McGeen's(AQD) 9/17/2009 activity report U3309039707613 (attached) regarding this same process in use in Haslett Mi. There are two trucks pulling the process equipment along the road. The first truck pulls only an "oven" deck which pre-heats the road surface the second truck pulls another oven deck as well as equipment that scarifies and mixes the heat softened road surface with an asphalt emulsion "rejuvenating" formula then smoothes out the reclaimed asphalt. A roller follows the two trucks to compact the new road surface.

Visible emissions from the first oven deck are primarily blue haze. The second oven deck releases water vapor, blue haze and occasionally a dark plume of smoke that is brown in color. Ms. Owens and I observed instantaneous opacities from the second oven deck of up to 85%. We spoke with Gallagher employee Carlos who seemed to be directing operation of equipment. He stated emissions are primarily water. I inquired about emissions and he referred me to the project manager Pat Faster who was on his way but was not on-site yet.

Visible emissions from the process varied from low opacities with blue haze only to very high opacities when the brown smoke was present. On these occasions excess flames could be observed extending beyond the edges of the ovens. Dan McGeen's previous report indicated that processing of roads containing rubber seam filler created more visible emissions as the filler material was burned up.

The Sunnyside/Granite project includes two different types of road surfaces; milled and un-milled. The surface Ms. Owens and I first observed was milled and did not appear to contain much rubberized crack sealant (crack filler) but I closely observed the surface later and did notice some small sections of crack filler as well as some joints that appeared to be covered in asphalt. I returned later in the day and observed resurfacing the un-milled roadway as well.

At that time it had begun to rain lightly but the process continued. I conducted a 6 minute visible emissions observation of the second oven deck. Emissions were less than I had originally observed and consisted only of the blue haze, I did not observe any of the heavy brown smoke during the observation. The six minute average opacity was 29%. Under Michigan's Air Pollution Control Rules Rule 301 Opacity must be limited to 20%, except for one 6-minute average per hour of not more than 27% opacity.

There was a lot of variability in the density of the emissions and the presence of the water vapor had to be accounted for. It is important to note these emissions are more like fugitive emissions as there is no stack or vent from which they are emitted. Most of the emissions appear to come from behind the oven decks particularly from the second oven. The sides of the deck are skirted and stay near the road surface. It also appears the operators have a great deal of control over the process including forward speed, height of oven above the road surface, and amount of heat.

The resurfacing continued throughout the day and I stopped to observe the process again at the end of the day (5:00 PM). Emissions at that time were much as I had observed earlier when I conducted the VE reading.

The following morning on 7/14/2015 I noted that the west bound lane of Sunnyside had been resurfaced all the way to M-115 the previous day. It was raining and no resurfacing activities were taking place.

The rain stopped and at 4:00 PM AQD Cadillac District Supervisor Ms. Janis Ransom and I travelled to the work site on Sunnyside and observed the HIPAR resurfacing process as it proceeded in the eastbound lane from M-115. During our drive to the site we noted that the un-milled eastbound lane contained varying amounts of crack filler. When we arrived at the worksite we observed significant opacity from the process including several instances of emissions of the brown smoke.

We spoke with an MDOT employee who directed us to MDOT inspector Mr. Al Hooker. Mr. Hooker contacted the project assistant engineer Mr. Craig Taylor who later arrived at the site with Mr. Del Kirkby also of MDOT. We observed the process and noted that most of the visible emissions were being generated by the crack filler material as the first oven passed over releasing some blue haze and then as the second oven passed over often igniting the material and releasing either brown smoke or denser blue haze.

The truck operators were able to adjust the height of the oven over the road surface and were able to minimize the crack filler from igniting and causing brown smoke. The blue haze could still be seen originating from the filler but the density of emissions was not as great as when the brown smoke was present. We also observed some emissions when road striping was present and was heated, occasionally catching fire.

The rejuvenating fluid is an asphalt emulsion that contains water and is applied after the two ovens have passed over the road. It appeared that this was the source of water vapor emissions we observed.

When Mr. Kirkby and Mr. Taylor arrived we discussed these issues with them and our concerns regarding the excess emissions. We recommended that future HIPAR projects have the crack filler removed first.

A Rule 290 exemption analysis (attached) was previously provided by Gallagher Asphalt to the AQD and accepted by the AQD. As a result Permits to Install have not been required for this process but the company was notified of other Air Pollution Control requirements such as Rule 301 regarding density of emissions and Rule 901 regarding nuisance conditions. The Rule 290 analysis states that the HIPAR process was not intended for use on tar & chip road surfaces or roads with significant amounts of crack filler.

As a result of AQD observations over the two day period, and prior AQD experience with this process in Haslett, it is evident that the primary source of visible emissions is due to the presence of rubberized crack sealant. In the past the AQD has informed municipalities that this process cannot be used on roads with crack filler due to opacity compliance problems.

I am recommending correspondence with Gallagher Asphalt re-iterating that, in order to avoid Rule 301 and/or Rule 901 concerns, the process should not be used on tar & chip surfaces or on roads containing rubberized crack sealant unless the filler is removed prior to resurfacing. Outreach to MDOT and local road commissions will also be recommended to specify that road projects using HIPAR be free of tar & chip and rubberized crack sealant. This information will also be shared with all AQD District Offices.

NAME  DATE 7-16-15 SUPERVISOR 