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

N656953750

FACILITY: PAYNE & DOLAN INC C34		**SRN / ID:** N6569
LOCATION: C34 ASPHALT PLANT #40-99D, KINROSS		**DISTRICT:** Upper Peninsula
CITY: KINROSS		**COUNTY:** CHIPPEWA
CONTACT: JAMES MERTES , ENVIRONMENTAL MANAGER		**ACTIVITY DATE:** 05/27/2020
STAFF: Michael Conklin	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Targeted inspection for FY 20.		
RESOLVED COMPLAINTS:		

Facility: Payne & Dolan Inc. C34 (SRN: N6569)
Location: C34 Asphalt Plant, Kinross, MI 49752
Contact(s): James Mertes, Environmental Manager, 262-524-1849

Regulatory Authority

Under the Authority of Section 5526 of Part 55 of NREPA, the Department of Environment, Great Lakes, and Energy may upon the presentation of their card, and stating the authority and purpose of the investigation, enter and inspect any property at reasonable times for the purpose of investigating either an actual or suspected source of air pollution or ascertaining compliance or noncompliance with NREPA, Rules promulgated thereunder, and the federal Clean Air Act.

Facility Description

Payne & Dolan, Inc. (P&D) is an asphalt material producer and pavement contractor based out of Waukesha, WI. P&D is one of several companies that make up the Walbec Group, which is a collection of companies that provides construction and engineering services. The company owns and operates several portable and stationary asphalt plants in Wisconsin and Michigan, primarily producing hot mix asphalt (HMA).

Plant C34 is a stationary HMA plant located in Kinross, Chippewa County, MI. The plant operates under Permit to Install (PTI) No. 40-99D and became a permanent plant under the issuance of this permit. The facility is considered a continuous, parallel flow drum dryer/mixer plant with an HMA production capacity of 350 tons per hour. The drum dryer is natural gas-fired with a 116 MMBtu/hr burner. The HMA plant consists of aggregate and reclaimed asphalt pavement (RAP) storage piles, cold feed bins, conveyors, screens, drum dryer, fabric filter, asphalt cement storage tanks, silos, loaders, and haul trucks.

Process Description

HMA is produced by the drying and mixing of aggregate, RAP, and liquid asphalt cement. HMA plants can be categorized as either batch or continuous mix. Continuous mix plants are further subdivided based on the type of dryer, which can be either a parallel-flow drum or counter-flow drum.

The HMA process begins with the transfer of aggregate, consisting of sand and crushed rock, from storage piles into cold aggregate feed bins. From the bins, material is dispensed onto conveyors that transport the material into screens and then into the drum dryer. The quantities of the type and size of aggregate are determined from the control room. The virgin aggregate is heated by a natural gas-fired burner to remove moisture. Once the virgin aggregate reaches a certain length of the dryer, RAP is dispensed from a separate bin and added to the dryer. The RAP and aggregate continue to be heated and are then mixed with asphalt cement prior to exiting the dryer. After exiting the dryer, HMA is conveyed to storage silos where it is loaded into trucks to be hauled off-site.

Emissions

The primary source of emissions from all three types of plants is the dryer. Air contaminants emitted include PM from aggregate drying and gaseous pollutants from the combustion process of the dryer. The gaseous pollutants consist of sulfur dioxide (SO_2), nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC). The quantities of gaseous pollutants emitted varies based on the type of fuel being burned and operating parameters. A fabric filter collector is primarily used as PM control for the dryer. Other sources of emissions at HMA plants include fugitive emissions of PM and VOCs from storage silos, truck load-out operations, liquid asphalt cement storage tanks, aggregate storage and handling, and vehicle traffic. Dust suppressants, such as water or calcium chloride, can be used to control fugitive PM emissions.

Emissions Reporting

P&D C34 is a synthetic minor source and is subject to the New Source Performance Standards (NSPS), Subpart I – Standards of Performance for Hot Mix Asphalt Facilities. This facility is required to report its annual emissions to the Michigan Air Emissions Reporting System (MAERS). For 2019, the plant reported producing 73,112 tons of asphalt. The table below shows the facility's 2019 MAERS submittal.

Pollutant	Pounds per Year (PPY)	Tons per Year (TPY)
CO	9599.61	4.80
NOx	1900.91	<1
PM10	2233.62	1.1
PM2.5	1096.68	<1
SO2	248.58	<1
VOC	2624.72	1.31

Compliance History

The facility has not received any violation notices in the past five years. The facility was last inspected in 2015 and was found to be in compliance with all applicable air quality rules and federal regulations at that time.

Regulatory Analysis

P&D C34 is subject to PTI No. 40-99D for a stationary HMA plant and fugitive emissions. The issuance of PTI No. 40-99D converted the C34 plant from a portable source to a stationary source. Stationary HMA plants have more stringent requirements such as load out controls and requiring haul roads to be paved.

The facility is considered a true minor source for criteria pollutants and a synthetic minor source for hazardous air pollutants (HAPs). The source took emission limits to restrict its potential-to-emit (PTE) to below major source thresholds of 10 tpy for individual HAPS and 25 tpy for combined HAPs. The source is subject to 40 CFR Part 60 Subpart I, NSPS for Hot Mix Asphalt Facilities, because the source is defined as a hot mix asphalt facility that commenced construction after June 11, 1973.

Inspection

P&D C34 is a targeted inspection source for fiscal year 2020. Since there have been no recent complaints or reported issues at the facility, the on-site inspection is not considered essential and will be scheduled following the COVID-19 period. In the interim, a partial compliance evaluation (PCE) was conducted by reviewing requested records required in PTI No. 40-99D for the years 2018 and 2019. The records request was sent to Mr. Mertes (Environmental Manager) on April 8th, and records were received via email on April 15th. A full compliance evaluation (FCE) with an on-site inspection will be scheduled at a later date.

EUHMAPLANT

Environmental tracking forms for the weeks of 6/16/2018 and 8/17/2019 were provided. These forms record daily operations data, daily fuel data, daily fugitive emissions checks and control, along with a weekly maintenance checklist. Under the daily operations data, the tons of HMA produced per day is recorded, along with the tons of virgin aggregate in the mix, tons of RAP in the mix, percent RAP in the mix, the hours of operation each day, and the mix temperature (SC VI.2 and 7). The startup time for a day of production is recorded and additional time in the day is recorded every 8 hours (SC VI.7). Upon startup and every 8-hours, the differential pressure across the baghouse is recorded. The baghouse is equipped with a Magnehlic gauge that records the pressure drop across the fabric filters (SC IV.1). The pressure drop gauge is monitored from the control room and is automatically recorded on the environmental tracking forms.

For the week of 6/10/2018, the records indicate that the highest amount of RAP in the mix for a given day of the week was 30% (SC II.4). This was based on 650.14 tons of HMA produced and 195.04 tons of RAP used. The tons of HMA produced per hour is also recorded on the environmental tracking form based on taking the total production for the day and averaging it over the total hours of operation for the day. P&D C34 is required to not produce more than 350 tons of HMA per hour based on a 24-hour rolling time period as determined at the end of each hour. On 06/15/2018, records indicate that 253.34 tons per hour was

produced (SC II.6). The virgin aggregate feed rate and RAP feed rate into the plant are monitored on a continuous basis (SC IV.2).

For this week of data, the mix temperature stayed consistent around 310 degrees Fahrenheit and the differential pressure across the baghouse stayed at 3.01 inches water column (SC IV.1). The baghouse is required to maintain a differential pressure range of 1 and 6 inches of water column and not fall below 2 inches water column except when a large number of filter bags have been replaced.

Total hours of drum operation, amount of virgin aggregate in the mix, and HMA produced are summed weekly. During this week, the plant operated a total of 12 hours, used 1,943.98 tons of virgin aggregate, and produced 2,585.07 tons of HMA.

Fuel data for the plant is also recorded daily. With the C34 plant becoming stationary, natural gas lines were connected making the dryer natural gas-fired. There is no fuel oil or recycled used oil fired in the drum dryer (SC II.2). No hazardous waste or asbestos containing material was used in the drum dryer (SC II.1 and 3). The type of fuel and amount is recorded on the daily environmental tracking form (SC VI.6). During the week of 6/16/2018, the plant consumed 39.76 therms of natural gas.

For the week of 8/11/2019, the records indicate that the highest amount of RAP in the mix for a given day of production was 27% (SC II.4). This was based on 1704.7 tons of HMA produced and 460.27 tons of RAP used in the mix. On 08/15/2018, records indicate that 284.74 tons per hour was produced (SC II.6). The mix temperature stayed consistent around 305 degrees Fahrenheit and the differential pressure across the baghouse stayed at 2.51 inches water column (SC IV.1). During this week, the plant operated a total of 13 hours, used 2,657.16 tons of virgin aggregate, and produced 3,515.90 tons of HMA. There is no fuel oil or recycled used oil fired in the drum dryer (SC II.2). No hazardous waste or asbestos containing material was used in the drum dryer (SC II.1 and 3). During this week, the plant consumed 45.84 therms of natural gas.

Fugitive dust emissions on plant roadways are checked daily. If visible emissions are over 5% opacity, the roads are swept and/or dust suppressants are applied. Records provided during the weeks of 6/10/2018 and 8/11/2019 show fugitive dust emissions are checked daily during plant operation and if dust control was implemented (SC III.1).

A weekly checklist of monitoring and maintenance on the dryer and baghouse is provided on the environmental tracking forms. The weekly checklist includes fuel pump and regulator, door and drum seals, gauge and line leak check, baghouse covers and check for leaks, ductwork integrity, and damper operation (SC VI.5). There were no records provided of significant maintenance or significant repairs performed for the plant.

The Preventative Maintenance Program specified in Appendix B of PTI NO. 40-99D, requires maintenance records for the fabric filter collector. Two initial season inspection and maintenance records were provided dated 5/10/2018 and 6/3/2019. A black light inspection was performed on each date, but no findings were reported. For the 5/10/2018 record, 250 filter bags were changed, and for the 6/3/2019 record, 150 filter bags were changed. Location of bag changes were not provided. No visible emission records were provided for 2018 and 2019. Mr. Mertes stated that plant has not had any visible emissions that have appeared to exceed 20% opacity so there are no records to be provided. From the records provided, the pressure drop across the fabric filter collector during operation was above 2 inches water column and less than 10 inches water column.

To maintain efficiency and control emissions, the permittee is required to tune the dryer burner at the start of the paving season, every 500 hours of operation, or upon a malfunction. Using a handheld emissions analyzer, CO emissions are to be recorded during a burner check and should be less than 500 ppmv to ensure proper operation. Burner reports were provided for the dates 8/10/2017, 7/10/2018, and 7/2/2019 (SC VI.3 and 9). All three reports state the burner mechanicals, flights and drum seals are in good condition, and that no repairs were made. Of the three reports, the 2019 report had a stack CO concentration greater than 500 ppmv. The preliminary test had a CO reading of 1073 ppmv and the final test had a CO reading of 1073 ppmv. The burner was firing at 19%, the production rate was 280 tons per hour, aggregate moisture content was 4.4% and stack temperature was 299 degrees Fahrenheit. The excess air range was 90%, stack O2 percent was 9.3%, and stack CO2 percent was 6.5%. The amount of excess air and aggregate moisture contributes to CO emissions. The report states that no adjustments were made to the burner even though the CO concentration was above 500 ppm.

For 2018, the plant operated May through November and produced 58,780 tons of HMA, used 12,814 tons of RAP, and burned 920 therms of natural gas (SC VI.10). This equates to roughly 22% of RAP material in the mix (SC II.4). Emissions of NOx, SO2, CO, and PM were calculated and resulted in 7,053 lbs, 10,580 lbs, 11,814 lbs, and 2,351 lbs respectively (SC VI.8). A baghouse control efficiency of 99.8% is used in calculating PM emissions rates. All TAC pollutants listed in the mission limit table are also calculated using the emission limits as emission factors (SC VI.8). The emissions rates are within the limits contained in PTI No. 40-99D.

For 2019, the plant operated May through November and produced 73,405 tons of HMA, used 15,563 tons of RAP, and burned 1,104 therms of natural gas (SC VI.10). This equates to roughly 21% of RAP material in the mix (SC II.4). Emissions of NOx, SO2, CO, and PM were calculated and resulted in 8,808 lbs, 13,213 lbs, 14,754 lbs, and 2,936 lbs respectively (SC VI.8). A baghouse control efficiency of 99.8% is used in calculating PM emissions rates. All TAC pollutants listed in the mission limit table are also calculated using the emission limits as emission factors (SC VI.8). The emissions rates are within the limits contained in PTI No. 40-99D.

The SO2 emissions are high for natural gas usage. SC VI.8 states if stack test results do not exist for a specific pollutant, the applicable emission factor listed in the emission limit table shall be used to estimate emissions of a pollutant from EUHMAPLANT. This emission factor is a very conservative estimate for SO2 emissions from natural gas combustion and is more applicable to RUO usage. With the plant becoming a stationary source, RUO is no longer fired in the plant and only natural gas. A more applicable emission factor for natural gas usage could be used to estimate emissions.

Emissions for the plant were provided monthly and a yearly total. The emissions were also calculated as a 12-month average. It was explained to Mr. Mertes that this needs to be corrected to a 12-month rolling sum. Since the YTD for the emissions are well below the emission limits, this is not a pressing issue but should be corrected for future recordkeeping.

EUYARD
P&D C34 is required to calculate annual fugitive dust emissions for EUYARD. This includes fugitive process emissions from silo filling, storage piles, haul roads, and load-out. It was noted during the 2018 MAERS report review for the source that the plant was not reporting fugitive emissions as required in SC VII.1. The fugitive emissions were also being incorrectly reported for the 2019 report. Assistance was provided in helping the facility report its annual emissions. The source is currently not keeping records of annual fugitive emissions. During an on-site visit, the source will be inspected for fugitive dust control.

EUACTANKS
The liquid asphalt cement storage tanks are required to have a vapor condensation and recovery system installed, maintained, and operated in a satisfactory manner (SC III.1). This will be verified during the on-site inspection.

EUSILOS
The plant is required to control load-out fugitive emissions from the silos and have an emission capture system for silo filling (SC III.1 and 2). A spray mist is required to be operated during load-out activities. This requirement will be verified during the on-site inspection.

FGFACILITY
The plant is considered a synthetic minor source for hazardous air pollutants (HAPs) and has taken emission limits to restrict the potential to emit over major source thresholds. These emission limits are enforced under FGFACILITY in PTI No. 40-99D. In addition to emission calculations required under EUHMAPLANT, there are HAP emission calculations required under FGFACILITY. The source has not been calculating and recording HAP emissions for the facility.

<u>Compliance</u>
Based on the review of records provided, Payne & Dolan C34 is not in compliance with PTI No. 40-99D and a Violation Notice (VN) will be issued requesting the company to come back into compliance.

The source is in non-compliance with the following:

1. The burner check report dated 7/2/2019 indicates CO emissions are over 500 ppm. After the

preliminary test, no tuning was performed on the burner to improve combustion efficiency and reduce CO emissions;
2. Annual fugitive emissions from EUYARD are not being calculated and recorded; and
3. Individual and aggregate HAP emissions are not being calculated and recorded for FGFACILITY.

The source could improve recordkeeping in the following:

1. More detailed records on the findings of visual inspections on the interior components of the baghouse;
2. Location of filter bags replaced;
3. More detailed records on fugitive dust emissions observed and actions performed; and
4. Emission calculations, HMA produced, RAP used, and amount of fuel combusted should be in a 12-month rolling and not a 12-month average.

Provided records that were reviewed for determining compliance with PTI No. 40-99D can be found here: S:\Air Quality Division\CONKLIN\Inspections\N6569.

Update: 05/13/2020

A spreadsheet for facility-wide HAP emission calculations was submitted via email on May 13th. AP-42 Chapter 11.1 emission factors were used to calculate individual and aggregate HAPs from HMA production at the plant, silo filling, and truck load out. All emission calculations were provided for each month and a 12-month rolling time period basis. For plant HAP emissions, table 10 and 12 emission factors were used, for silo filling tables 14, 15, and 16 were used, and for load out tables 14, 15, and 16 were used. All emission factors are expressed as pound per ton of HMA produced. For 2018, the total HAPs emissions were 332 pounds, and for 2019 total HAPs emissions were 414.61 pounds. The single highest HAP was formaldehyde at 187 pounds for 2018 and 233 pounds for 2019. These emission calculations show compliance with the 5,600 pounds limit for a single HAP and 13,000 pounds for all HAPs combined.

Update: 05/27/2020

An on-site inspection was performed at the plant on 05/27/2020. Mr. Mertes was my point of contact for the inspection. I arrived at 13:45 and the plant was currently operating.

The plant shares South Caldwell road with neighboring residents and is paved from the intersection with M-80 to the pit. Upon entering, it was observed the plant roadways were paved and brine was being applied. There were no visible emissions from haul trucks as they were entering and exiting the plant. Haul trucks that were entering and exiting were covered.

While the plant was producing HMA, visible emission checks were performed. The fabric filter collector was connected to the drum mixer/dryer and exhausting out the stack. No visible emissions were observed, only steam from aggregate drying. Fugitive dust from loader operations were below 5 percent opacity and drop distances were kept to a minimum into the feed bins. The plant yard was also paved, and brine was being applied in the areas the loader was operating between the aggregate piles and the feed bins. There were no visible fugitive emissions from process equipment as all doors and seals appeared to be maintained and operating properly.

The conveyor from the dryer/mixer to the silos was enclosed and contained a fan that creates negative pressure to draw any emissions to the fabric filter. The emission capture system at the top of the silos was observed and appeared to be operating properly. During truck load-out, the spray mist system was operating. There were negligible odors during load-out operations and Mr. Mertes stated that the plant has not received any complaints. Natural gas lines were observed to the drum burner and to the liquid asphalt cement heater. Mr. Mertes confirmed that the vapor condensation and recovery system for the liquid asphalt cement storage tanks were installed and operating.

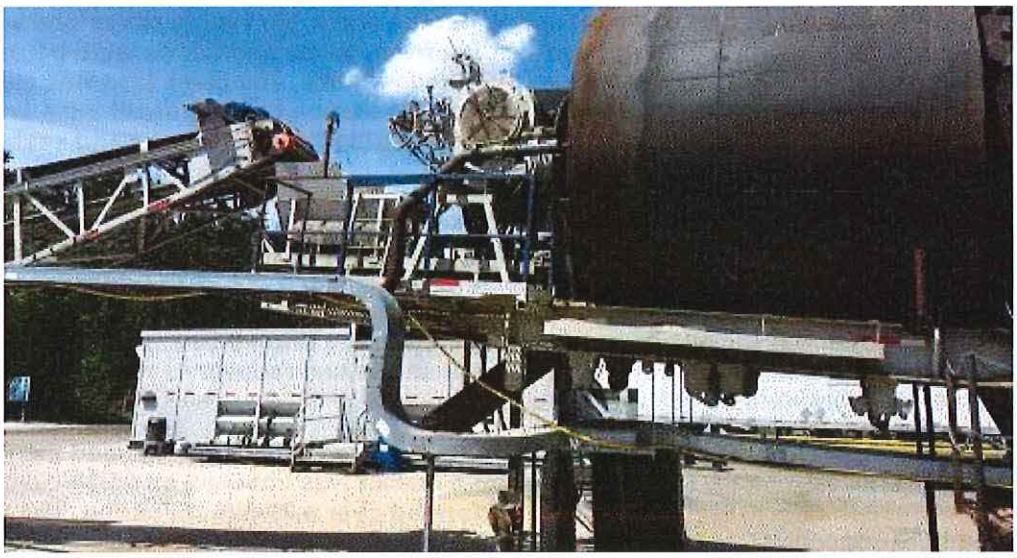
After inspecting the plant, Mr. Mertes provided a 2020 burner check report that provided the CO concentration and CO emission factor (SC VI.3). The drum burner was checked on 05/20/2020 as part of the beginning of the season check. Eight tests were performed over a 30-minute period. The results showed an average CO concentration of 133 ppm during an HMA production rate of 290 ton/hr. This

equated to an average CO emission factor of 0.08 lb/ton of HMA produced (SC I.3). These results show compliance following the CO emissions monitoring violation that occurred in 2019.

A discussion followed on improving recordkeeping during visual inspections and maintenance performed on the dryer and baghouse. The plant operator agreed to keep a log of maintenance and inspections performed. Also, more detailed notes of fugitive dust observed and corrective actions following will be recorded on the environmental tracking sheets.

Based on the site inspection of the source, Payne & Dolan C34 is in compliance with PTI No. 40-99D.

Image 1(HMA Plant) : Payne & Dolan Plant C34



NAME Mitchell Wallin DATE 5/27/2020 SUPERVISOR EL