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**west virginia department of environmental protection**

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**GENERAL PERMIT REGISTRATION APPLICATION  
ENGINEERING EVALUATION / FACT SHEET**

**BACKGROUND INFORMATION**

Registration No.: G20-B038  
Plant ID No.: 055-00139  
Applicant: Terry Parks dba AAA Paving and Sealing  
Facility Name: Princeton Facility  
Location: Princeton, Mercer County  
SIC Code: 2951  
NAICS Code: 324121  
Application Type: Construction  
Received Date: November 16, 2015  
Engineer Assigned: Thornton E. Martin Jr.  
Fee Amount: \$1500.00  
Assigned Date: November 17, 2015  
Complete Date: December 21, 2015  
Applicant Ad Date: November 27, 2015  
Newspaper: *Princeton Times*  
UTM's: Easting: 496.45943 km      Northing: 4135.85902 km      Zone: 17  
Description: Applicant proposes to construct a stationary Hot Mix Asphalt Plant.

**PROCESS DESCRIPTION** (taken from the Application)

The proposed operation will employ a hot mix asphalt plant (Batch) to manufacture hot mix asphalt for road/parking lot pavements. The process consists of blending prescribed portions of cold feed materials (sand, gravel, limestone, screenings, chips, reclaimed asphalt pavement (RAP), shingles, etc., uniformly and adding sufficient hot asphalt cement to bind the mixture together. After the hot mix asphalt is manufactured at the plant, it is transported to the location where it is to be applied.

Open storage piles (OS1 - OS4) of raw materials (cold feed materials) will be maintained in close proximity to the Batch plant. A front-end loader (FE) will feed the raw materials into cold feed storage bins (E3).

From the cold feed storage bins, prescribed amounts of each raw material will drop onto a conveyor belt and fed to the rotary dryer (BPRD-1). The rotary dryer is rated at 230 tons per hour and can be fired with propane, #2 fuel oil, used oil or natural gas. However, the rated capacity of the plant will vary with each aggregate mix and moisture content with a 5% surface moisture removal. Liquid fuels would be fed from the stationary storage tanks (T-1 and T-2). The rotary dryer heats the material to approximately 300 degrees Fahrenheit while thoroughly mixing the cold feed.

From the rotary dryer, the warm aggregate is transferred to an elevator which takes it to the top of the Batch plant consisting of hot aggregate screens, hot bins and a mixer. Liquid asphalt cement from the storage tanks (T-3 through T-5), which has been pre-heated by an asphalt cement heater (AH-1) is fed into the mixer of the Batch plant. If RAP is required, it will be added directly to the mixer from the separate cold feed bins/screener/conveying system.

Note: RAP will be a future addition to the plant, however, emissions associated with RAP screening and conveyance have been included with this application.

When the materials are sufficiently mixed the hot mix asphalt is either unloaded into a waiting haul truck which will then transport the product to the paving site, or the hot mix asphalt will be transferred via elevator to the top of a storage silo (up to three silos, BS-1 through BS-3) which will then be transported at a later time.

Point source and fugitive emissions will be associated with the operation of the Batch plant. Specifically, point source emissions are associated with the rotary dryer and the hot screens, bins and mixer as the emissions are vented to a settling chamber and then a baghouse (APCD-1) which exhausts to the atmosphere. The baghouse controls the particulate emissions, however it does not control point source emissions of carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>) and volatile organic compounds (VOC) which are associated with fuel combustion, fuel storage and drying operations.

Fugitive emissions are associated with cold-side (cold and RAP feed bin loading/unloading, cold feed conveying and screening, cold feed loading into drum) and hot side (hot mix loading into elevator, silo filling and unloading) material handling operations. Fugitive emissions are also generated from vehicular traffic on unpaved roadways/working areas and from loading/unloading and wind erosion of storage piles (OS1 - OS4). Fugitive emissions from the storage pile operations are controlled by the inherently high moisture content of the raw materials and using low drop heights. Fugitive emissions from roadways and working areas will be controlled by a watering truck (HR-WS).

See the following tables for description, maximum throughput, control equipment, and maximum storage for all permitted equipment at the Princeton facility:

TABLE 1: Equipment Summary (G20-B038)

Equipment ID No.	Description	Date of Change	A M R <sup>2</sup>	Maximum Capacity		Control Equip-ment <sup>1</sup>
				TPH	TPY	
<b>Equipment</b>						
BPRD-1	1964 H&B; 850-8832 Batch Mix Plant	2015	A	230	460,000	APCD1
S1	Single Deck RAP Screen	TBD	A	115	230,000	PE
AH-1	Asphalt Heater – PNG (16,667 scf/hr, 1000 hr/yr)	2015	A	----	----	N
<b>Conveyors</b>						
BC1	Cold Feed Belt Conveyor	2015	A	216.2	432,400	N
BC2	RAP Belt Conveyor	TBD	A	115	230,000	N
BC3	RAP Belt Conveyor	TBD	A	115	230,000	N
<b>Storage</b>						
OS1	Sand Stockpile	2015	A	----	259,440	N
OS2	Gravel Stockpile	2015	A	----	172,960	N
OS3	Limestone Stockpile	2015	A	----	172,960	N
OS4	RAP Stockpile	2015	A	----	216,200	N
B1	Cold Feed Bin	2015	A	216.2	432,400	PE
B2	Cold Feed Bin	2015	A			PE
B3	Cold Feed Bin	2015	A			PE
B4	Cold Feed Bin	2015	A			PE
B5	Cold Feed Bin	2015	A			PE
BS-1	HMA Silo	2015	A	100 tons	230,000	FE
BS-2	HMA Silo	2015	A	100 tons	230,000	FE
BS-3	HMA Silo	2015	A	100 tons	230,000	FE
<b>Tanks</b>						
T-1	Storage Tank – Used Oil	2015	A	TBD	TBD	N
T-2	Storage Tank – #2 fuel oil	2015	A	TBD	TBD	N
T-3	Storage Tank – Asphalt Cement	2015	A	15,000	9,200	N
T-4	Storage Tank – Asphalt Cement	2015	A	10,000	9,200	N
T-5	Storage Tank – Asphalt Cement	2015	A	15,000	9,200	N

<sup>1</sup> FE - Full Enclosure; PE - Partial Enclosure; APCD-1 - Baghouse; N - None  
<sup>2</sup> A - Addition, M - Modification or No Change, R - Removal

**SITE INSPECTION**

According to the application and area maps, the proposed facility will reside at 560 Turnpike Industrial Park Road in Princeton, Mercer County, West Virginia. This is an industrial business area and the proposed location/property will be adjacent to other industrial businesses, vacant wooded areas and farm land. The proposed site will meet G20-B siting criteria.

## ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emission calculations for operations, transfer points, RAP screening, storage piles and unpaved haulroads are based on AP-42 Fifth Edition, "Compilation of Air Pollution Emission Factors". The estimated emission calculations were performed by the applicant's consultant and were checked for accuracy and completeness by the writer.

The proposed construction will result in an estimated potential to discharge controlled emissions of 15.02 TPY of PM (particulate matter), of which 9.82 TPY are PM<sub>10</sub> (particulate matter less than 10 microns in diameter). Other estimated emission increases include: VOC of 7.40 TPY, SO<sub>2</sub> of 20.25 TPY, NO<sub>x</sub> of 29.27 TPY, CO of 93.98 TPY and Total HAP's of 1.66 TPY. Refer to the following tables for a complete summary of the proposed facility emissions:

**TABLE 2: Criteria Pollutant Emission Summary (Based on 2,000 hours/year of operation)**

Source	Nitrogen Oxides		Carbon Monoxide		Volatile Organic Compounds		Sulfur Dioxide		Particulate Matter		Particulate Matter-10	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Haulroads									NA	1.73	NA	0.51
Material Handling			0.58	0.58	3.77	3.77			NA	6.13	NA	2.15
Dryer	27.60	27.60	92.00	92.00	3.45	3.45	20.24	20.24	7.03	7.03	7.03	7.03
Asphalt Heater	1.67	1.67	1.40	1.40	0.18	0.18	0.01	0.01	0.13	0.13	0.13	0.13
<b>TOTAL</b>	<b>29.27</b>	<b>29.27</b>	<b>93.98</b>	<b>93.98</b>	<b>7.40</b>	<b>7.40</b>	<b>20.25</b>	<b>20.25</b>	<b>7.16</b>	<b>15.02</b>	<b>7.16</b>	<b>9.82</b>

**TABLE 3: Hazardous/Toxic Pollutant Emission Summary (Based on 2,000 hours/year of operation)**

Source	Acetaldehyde		Benzene		Ethylbenzene		Toluene		Xylene		Formaldehyde	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Dryer	0.07	0.07	0.06	0.06	0.51	0.51	0.23	0.23	0.62	0.62	0.17	0.17
Asphalt Heater	NA	NA	3.5E-5	3.5E-5	NA	NA	5.7E-5	5.7E-5	NA	NA	1.25E-3	1.25E-3
<b>Total</b>	<b>0.07</b>	<b>0.07</b>	<b>0.06</b>	<b>0.06</b>	<b>0.51</b>	<b>0.51</b>	<b>0.23</b>	<b>0.23</b>	<b>0.62</b>	<b>0.62</b>	<b>0.17</b>	<b>0.17</b>

## REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the proposed facility. The proposed construction of the hot mix asphalt facility is subject to the following state rules and federal regulations:

*45CSR2 To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers*

The purpose of this rule is to establish limitations for smoke and particulate matter which are discharged from fuel burning units. Per this rule, Section 2.14 defines an indirect heat exchanger as a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. Section 2.10 defines a fuel burning unit as any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. The facility will be subject to the opacity requirements in this rule, which is 10% opacity based on a six minute block average.

*45CSR3 To Prevent and Control Air Pollution from the Operation of Hot Mix Asphalt Plants*

The purpose of this rule is to establish emission limitations for hot mix asphalt plants and the plant property. The facility is subject to this rule because it meets the definition of Hot Mix Asphalt Plant as found in Section 2.14. The facility must meet visible emission limits of 40% opacity during start-up or shutdown and 20% opacity during operations of any fuel burning equipment. The facility shall be operated and maintained in a manner as to prevent emission of particulate matter from any point other than a stack outlet. The facility will utilize a cyclone and baghouse to minimize particulate emissions.

*45CSR7 To Prevent and Control Particulate Matter Air Pollution from Manufacturing Processes and Associate Operations*

The purpose of this rule is to prevent and control particulate matter air pollution from manufacturing processes and associated operations. The facility is subject to the requirements of this rule because it meets the definition of "Manufacturing Process" found in Section 2.20 of this rule.; Subsection 4.1 – PM emissions shall not exceed those under Table 45-7A (see paragraph below); Subsection 5.1 – manufacturing process must be equipped with a system to minimize emissions (baghouse APCD-1 control emissions from the Batch mix plant BPRD-1); Subsection 5.2 – minimize PM emissions from haulroads and plant premises (water truck will be utilized to control these emissions).

According to Table 45-7A, for a type 'a' source with a maximum process weight rate of 460,000 lb/hr, the maximum allowable emission rate is approximately 45 lb/hr of particulate matter. The proposed maximum point source emission rate at the facility is 7.16 lb/hr of particulate matter according to calculated emissions in permit application G20-B038.

*45CSR10 To Prevent and Control Air Pollution from Emissions of Sulfur Oxides*

The purpose of this rule is to prevent and control air pollution from the emission of sulfur oxides. Per this rule, Section 2.9 defines an indirect heat exchanger as a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. Section 2.8 defines a fuel burning unit as any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. According to section 4.1., sulfur dioxide concentrations must fall below 2,000 parts per million by volume.

*45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation*

The purpose of this rule is to set forth the procedures for stationary source reporting, and the criteria for obtaining a permit to construct and operate a new stationary source which is not a major stationary source, to modify a non-major stationary source, to make modifications which are not major modifications to an existing major stationary source and to relocate non-major stationary sources within the state of West Virginia. The applicant is applying for a General Permit to Construct for the Princeton facility. The facility is subject to the following sections of this rule: reporting requirements, requirements for modifications of stationary sources, demonstrating compliance with stationary sources, public review procedures, and permit application fees. The facility will demonstrate compliance by following all the applicable rules and regulations that apply to the facility. They will also follow the terms and conditions set forth in permit G20-B038. The applicant published a Class I legal advertisement in the *Princeton Times* on November 27, 2015 and submitted an application fee of \$1,500.00.

*45CSR16 Standards of Performance for New Stationary Sources*

This rule establishes and adopts standards of performance for new stationary sources promulgated by the United States Environmental Protection Agency pursuant to section 111(b) of the federal Clean Air Act, as amended (CAA). The facility is subject to 40CFR60 Subpart I.

*40CFR60 Subpart I: Standards of Performance for Hot Mix Asphalt Facilities*

The facility is subject to this Subpart because it meets the definition of “hot mix asphalt facility” as defined in 60.91(a) – hot mix asphalt facility means any facility used to manufacture hot mix asphalt by heating and drying aggregate and mixing with asphalt cements and consisting of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing

mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.

The proposed construction of Terry Parks dba AAA Paving and Sealing's hot mix asphalt facility is not subject to the following state and federal rules:

*45CSR14 Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration*

In accordance with 45CSR14 Major Source Determination, the proposed additions and hot mix asphalt facilities are not listed in Table 1. The facilities will have a total potential to emit 7.16 TPY of a regulated air pollutant (PM), not including fugitive emissions, which is less than the 45CSR14 threshold of 250 TPY. Therefore, the proposed construction is not subject to the requirements set forth within 45CSR14.

#### TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Small amounts of non-criteria regulated hazardous or toxic air pollutants such as benzene, ethylbenzene, toluene, xylenes and formaldehyde may be emitted during the production of hot mix asphalt. Due to the small amounts emitted, these non-criteria regulated hazardous/toxic pollutants should not adversely impact an applicable ambient air quality standard or cause or contribute to degradation of public health and welfare. A toxicity analysis would be required when the Director determines the facility may interfere with attainment or maintenance of an applicable ambient air quality standard or cause or contribute to degradation of public health and welfare.

#### AIR QUALITY IMPACT ANALYSIS

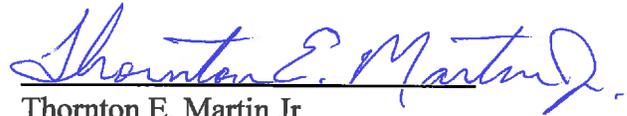
The facility will not be a major source as defined by 45CSR14. Based on the nature of the emissions and the annual emission rate, no air quality impact analysis was performed.

#### MONITORING OF OPERATIONS

Terry Parks dba AAA Paving and Sealing will be required to monitor and maintain records of daily and yearly asphalt production, hours of operation, water truck water usage, type and amount of fuel used in the dryer, and sulfur content of the #2 fuel oil. These records shall be maintained on site for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The information contained in this General Permit Registration Application indicates that compliance with all applicable state rules and federal regulations should be achieved when all of the proposed particulate matter control methods are in operation. Due to the location, nature of the process, and control methods proposed, adverse impacts on the surrounding area should be minimized. Therefore, the granting of a permit to Terry Parks dba AAA Paving and Sealing for the construction of a hot mix asphalt plant to be located in Princeton, Mercer County, WV, is hereby recommended.



Thornton E. Martin Jr.  
Permit Engineer

December 21, 2015

Date