

# **Statement of Basis**

**Permit to Construct No. P-2010.0158  
Project ID 61037**

**Valley Paving & Asphalt, Inc.  
Portable, Idaho**

**Facility ID 777-00105**

**Final**

**June 13, 2012  
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The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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## ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

CFR	Code of Federal Regulations
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	CO <sub>2</sub> equivalent emissions
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
gr/dscf	grains (1 lb = 7,000 grains) per dry standard cubic foot
HAP	hazardous air pollutants
HMA	hot mix asphalt
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
MACT	Maximum Achievable Control Technology
MMBtu/hr	million British thermal units per hour
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
O <sub>2</sub>	oxygen
PERF	Portable Equipment Relocation Form
PM	particulate matter
PM <sub>2.5</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
RAP	recycled asphalt pavement
RFO	reprocessed fuel oil
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO <sub>2</sub>	sulfur dioxide
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
TAP	toxic air pollutants
VOC	volatile organic compounds

## FACILITY INFORMATION

### *Description*

The following modifications requested include reconfiguring the plant from parallel flow to counter flow, replacing the scrubber with a baghouse, and increasing RAP processing from 20% to 50%. Plant configuration and setup can vary somewhat from one location to another to accommodate different sites (e.g. access roads, quarry floor topography, and stockpile locations)

First, crushed virgin aggregate is placed in the aggregate bins by a loader. The bins are equipped with variably controlled feed conveyors that are linked to the operator control center. The operator can control the percentages of fine and course aggregate to mix the material to a design gradation. The aggregate is conveyed to a screen that separates out any oversize material that may have been accidentally placed in aggregate bins by the loader. The crushed aggregate is then conveyed into the counter flow drum dryer near the location of the burner. When RAP (Reclaimed Asphalt Pavement) is used, it is also placed into feeder bins that are variably controlled by the operator. Similar to the crushed aggregate, the RAP passes through a screen to ensure no oversized material will contaminate the final HMA product. The RAP then enters the drum dryer through a RAP collar positioned near the mid-section of the drum.

The drum is considered counter flow because the aggregate flow in the drum is opposite or counterflows to the direction of the exhaust gases. The dryer burns either Reprocessed Fuel Oil (RFO which is also commonly referred to as used oil) or #2 Diesel Fuel to dry and heat the aggregate to approximately 325°F. RAP enters the drum from a different location than the crushed aggregate due to the presence of asphalt oil in the material. The RAP is heated and then mixed with the crushed aggregate. The crushed aggregate including the RAP is mixed with liquid asphalt oil supplied by an electric heated asphalt storage tank. The introduction of the asphalt oil is measured by a variable controlled flow pump that is electronically linked to the control system's computer. The mixture then exits the drum into a drag conveyor that conveys the freshly produced HMA to a storage silo from which trucks are loaded.

The quantity of each process material (crushed aggregate, asphalt oil, and RAP) depends on the product being produced and the characteristics of the new material used to make the HMA product. Generally, a mix design is developed for the materials at each site to optimize the HMA product. The design process tells the operator how much of each material to mix to make a good performing mixture with the correct gradation and appropriate asphalt oil content. RAP, when available, is utilized for its asphalt and aggregate content. When an operator utilizes RAP it allows for less asphalt oil in the mixture which results in a cost savings as the asphalt oil is generally the most expensive portion of the HMA material. Emissions from the dryer enter a MAXAM Equipment Inc. Portable Size 32 baghouse, with 99.9% control efficiency, and then exhausts to the atmosphere. During normal operation, a 603 HP diesel generator is utilized to supply electricity to the plant's electric motors, tank heaters, pumps, conveyors, etc.

### *Permitting History*

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

March 11, 2011	P-2010.0158, PTC modification to allow the use of RFO and RAP, Permit status (A, but will become S upon issuance of this permit)
September 17, 2002	P-777-00105, PTC modification to allow the portable hot mix asphalt (HMA) to operate within the state of Idaho in both attainment and non-attainment areas, Permit status (S)
June 24, 1999	777-00105, PTC revision to reduce the hours of operations for the generator and to reduce the facility throughput when collocated with another HMA plant, concrete batch plant, or rock crushing plant (S)
June 6, 1994	777-00105, Initial PTC for portable HMA with a capacity of 300 T/hr of hot mix production (S)

## Application Scope

This PTC is a revision of an existing PTC. The applicant has proposed to:

- Convert parallel flow to counter flow HMA
- Replace wet scrubber with a baghouse
- Increase RAP processing from 20% to 50%

The burner and dryer will not be replaced. The burner will be relocated in the same dryer.

## Application Chronology

April 30, 2012	DEQ received an application
May 1, 2012	DEQ received an application fee.
May 25, 2012	DEQ determined that the application was complete.
May 30, 2012	DEQ made available the draft permit and statement of basis for peer and regional office review.
June 5, 2012	DEQ made available the draft permit and statement of basis for applicant review.
June 6, 2012	DEQ received a letter from the facility stating that there were no comments on draft permit.
June 12, 2012	DEQ received the permit processing fee.

## TECHNICAL ANALYSIS

### Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Sources	Control Equipment
<u>Hot Mix Asphalt Plant – Counter Flow Drum Dryer</u> Manufacturer: Hauck Manufacturing Model: SJ580 Maximum Production: 450 T/hr, 1,418,383 T/yr (permitted in 2002) Fuel Types: Natural gas, propane, #2 diesel fuel oil, reprocessed fuel oil Maximum Heat Input: 96.8 MMBtu/hr Sulfur Content: 0.5%	Baghouse
<u>Asphalt Tank Heater (1)</u> Fuel Type: Electric	None
<u>Fugitive Emissions</u>	Reasonable Control
<u>450 kW Generator Set</u> Engine Manufacturer: Caterpillar Engine Model: D348 Manufactured Year: May 27, 1994 Fuel Type: #2 diesel fuel oil Rated Power: 603 bhp (engine) Consumption Rate: 31.75 gal/hr	None

### Emissions Inventories

The facility is changing the parallel flow HMA to a counter-flow HMA.

From AP-42, Section 11.1-3, March 2004, "Because the liquid asphalt cement, virgin aggregate, and RAP are mixed in a zone removed from the exhaust gas stream, counterflow drum mix plants will likely have organic emissions (gaseous and liquid aerosol) that are lower than parallel flow drum mix plants. However, the available data are insufficient to discern any differences in emissions that result from differences in the two processes. A counterflow drum mix plant can normally process RAP at ratios up to 50 percent with little or no observed effect upon emissions."

Because there is no increase in emissions at this existing permitted source, no further analysis of the emissions for the HMA or the increase in RAP (from 20% to 50%) is required.

The facility has also proposed to replace the scrubber with a baghouse. The emission factor tables in AP-42 shows that the emissions for a facility using a baghouse are the same as or less than the factors for a facility using a scrubber.

***Ambient Air Quality Impact Analyses***

Because there is no requested increase in emissions or change to any modeling parameters, no ambient air quality impact analyses is required.

**REGULATORY ANALYSIS**

***Attainment Designation (40 CFR 81.313)***

This modeling analysis for this facility demonstrates compliance with applicable standards in attainment areas. However, because a separate modeling analysis was not provided to demonstrate compliance with applicable standards in non-attainment areas, this portable facility is not permitted for operation in non-attainment areas. This requirement is assessed by Permit Conditions 2.26, 2.27, and 2.28.

***Facility Classification***

"Synthetic Minor" classification for criteria pollutants is defined as the uncontrolled Potential to Emit for criteria pollutants are above the applicable major source thresholds and the Potential to Emit for criteria pollutants fall below the applicable major source thresholds. The facility has been determined in previous permitting actions to be an SM facility.

***Permit to Construct (IDAPA 58.01.01.201)***

IDAPA 58.01.01.201 .....Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for modified emissions source. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

***Tier II Operating Permit (IDAPA 58.01.01.401)***

IDAPA 58.01.01.401 .....Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400-410 were not applicable to this permitting action.

**Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)**

IDAPA 58.01.01.301 .....Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO, or VOC nor 10 tons per year for any one HAP or 25 tons per year for all HAPs combined as determined in the PTC No. 777-00105, issued on September 17, 2002. This PTC action did not result in the facility triggering the major source thresholds. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006.113 and the requirements of IDAPA 58.01.01.301 do not apply.

**PSD Classification (40 CFR 52.21)**

40 CFR 52.21 .....Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is/is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

**NSPS Applicability (40 CFR 60)**

§ 60.90 *Applicability and designation of affected facility.*

*(a) The affected facility to which the provisions of this subpart apply is each hot mix asphalt facility. For the purpose of this subpart, a hot mix asphalt facility is comprised only 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.*

*(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.*

Valley Paving & Asphalt, Inc. was constructed by Hauck Manufacturing Company after June 11 1973. Therefore, the facility is subject to subpart I.

§ 60.92 *Standard for particulate matter.*

*In accordance with §60.92, no owner or operator shall discharge or cause the discharge into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.04 gr/dscf or exhibit 20 percent opacity or greater. This NSPS emission limit is included as a permit condition in the PTC.*

§ 60.93 *Test methods and procedures.*

*In accordance with §60.93(a), performance tests shall be used as reference methods and the procedures for the test methods is in Appendix A of 40 CFR 60.*

This test was performed on August 12, 2011.

The permittee is required to conduct the next PM source test within five years of the previous test. This requirement is assessed by Permit Condition 2.19.

**NESHAP Applicability (40 CFR 61)**

The facility is not subject to any NESHAP requirements in 40 CFR 61.

## **MACT Applicability (40 CFR 63)**

The facility is not subject to any MACT standards in 40 CFR Part 63.

Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, applicability is addressed in the March 7, 2011 statement of basis for this facility.

## **Permit Conditions Review**

This section describes the permit conditions only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

Permit conditions have been renumbered where needed.

Existing Permit Condition 3

This Table was revised to show that the HMA has been changed from parallel flow to counterflow and the control equipment is a baghouse instead of a scrubber.

Existing Permit Condition 4

This permit condition was updated to Permit Condition 2.1 for the process description.

Existing Permit Condition 5

This permit condition was changed from describing the scrubber as the control device to showing a baghouse as the control device and was renumbered to Permit Condition 2.2

Existing Permit Condition 9

*RAP may be used at a rate of up to 20% of the total production, as requested by the permittee.*

Revised Permit Condition 9, renumbered as 2.6

*RAP may be used at a daily average rate of up to 50% of the total production.*

The permittee requested that the allowable RAP usage be increased from 20% to 50%. This new limit is to be assessed as an average amount on a daily average.

Existing Permit Conditions 14, 15, 16, 17, and 21

### **14. Monitoring Equipment**

*The permittee shall install, calibrate, maintain, and operate, in accordance with manufacturing specifications, equipment to continuously measure the pressure differential across the air pollution control equipment and the scrubbing media flow rate to the air pollution control equipment. A scrubbing media flow rate monitor is required only if a wet scrubber is used to control some or all of the emissions from the HMA plant.*

### **15. Operations and Maintenance Manual Requirements**

*Within 60 days after startup, the permittee shall have developed an O&M manual for the air pollution control device which describes the procedures that will be followed to comply with the General Compliance permit condition and the air pollution control device requirements contained in this permit. The manual shall be maintained in accordance with the Monitoring and Recordkeeping requirements of the General Provisions.*

### **16. Pressure Drop Across Air Pollution Control Device**

*The pressure drop across the air pollution control device shall be maintained within the manufacturer and O&M manual specifications. Documentation of both the manufacturer and O&M manual operating pressure drop specifications shall be maintained in accordance with the Monitoring and Recordkeeping requirements of the General Provisions.*

### **17. Scrubbing Media Flow Rate**

*When a wet scrubber is utilized, the scrubbing media flow rate to the air pollution control device shall be maintained within manufacturer and O&M manual specifications. Documentation of manufacturer and O&M manual operating scrubbing media specifications shall be maintained in accordance with the Monitoring and Recordkeeping requirements of the General Provisions.*

**21. Wet Scrubber Operating Parameters Monitoring**

*The following parameters shall be monitored and recorded:*

- *Pressure drop across the air pollution control device once on a daily basis.*
- *When the wet scrubber is utilized, the scrubbing media flow rate to the air pollution control device once on a daily basis.*

*All records shall be maintained in accordance with the Monitoring and Recordkeeping requirements of the General Provisions.*

These permit conditions were removed because they pertained to the scrubber. They have been replaced with Permit Conditions 2.11 and 2.12.

New Permit Condition 2.11

**Baghouse**

*The permittee shall install and operate a baghouse to control PM and PM<sub>10</sub> emissions from the HMA drum dryer.*

New Permit Condition 2.12

**Baghouse Procedures**

*Within 60 days of initial start-up, the permittee shall have developed a Baghouse Procedures document for the inspection and operation of the baghouse which controls emissions from the HMA drum dryer. The Baghouse Procedures document shall be a permittee developed document independent of the manufacturer supplied operating manual but may include summaries of procedures included in the manufacturer supplied operating manual.*

*The Baghouse Procedures document shall describe the procedures that will be followed to comply with General Provision 3.2 and shall contain requirements for monthly see-no-see visible emissions inspections of the baghouse. The inspection shall occur during daylight hours and under normal operating conditions.*

*The Baghouse Procedures document shall also include a schedule and procedures for corrective action that will be taken if visible emissions are present from the baghouse at any time. At a minimum the document shall include:*

- *Procedures to determine if bags or cartridges are ruptured; and*
- *Procedures to determine if bags or cartridges are not appropriately secured in place.*

*The Permittee shall maintain records of the results of each baghouse/filter system inspections in accordance with General Provision 3.7. The records shall include, but not be limited to, the following:*

- *Date and time of inspection;*
- *Equipment inspected (e.g. exterior housing of baghouse, fan motor, auger, inlet air ducting);*
- *Description of whether visible emissions were present, and if visible emissions were present a description of the corrective action that was taken.*
- *Date corrective action was taken.*

*The Baghouse Procedures document shall also remain on site at all times and shall be made available to DEQ representatives upon request.*

*The operating, monitoring and recordkeeping requirements specified in the Baghouse/Filter System Procedures document are incorporated by reference to this permit and are enforceable permit conditions.*

#### Removed Permit Condition 25

*The permittee shall conduct a performance test on the asphalt dryer wet scrubber stack in accordance with 40 CFR 60.93 and 40 CFR 60.8.*

*The performance test shall measure the PM emission rate in grains per dry standard cubic feet and the opacity to demonstrate compliance with the emission limits in the particulate matter standard permit condition.*

*The performance test shall be conducted under worst-case normal operating conditions and in accordance with 40 CFR 60.93, 60.8, and 60.11; and the Performance Test General Provision of this permit. The permittee is encouraged to submit a performance testing protocol for approval 30 days prior to conducting the performance tests.*

*Each performance test shall consist of three separate runs using the applicable test method in accordance with 40 CFR 60.8(f).*

The results of the initial test were received at DEQ on May 5, 2011, so this permit condition was removed from the permit.

#### Revised Permit Condition 2.19

The periodic testing permit condition was reworded to require that the test be done on the baghouse stack, and on the last line to show five years from the date of the most recent test, which was conducted on August 12, 2011, as follows:

*The permittee shall conduct a PM performance test on or before August 12, 2016.*

The test should be done within five years of the latest test on the dryer, the emissions of which were controlled by a wet scrubber. A baghouse is expected to be more efficient. Therefore, the next test is not required to be done before five years from the scrubber test.

## **PUBLIC REVIEW**

### ***Public Comment Opportunity***

Because this permitting action does not authorize an increase in emissions, an opportunity for public comment period was not required or provided in accordance with IDAPA 58.01.01.209.04 or IDAPA 58.01.01.404.04.

## APPENDIX A – PROCESSING FEE