



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

AVERY T. DAY
ACTING COMMISSIONER

**Pike Industries, Inc.
Knox County
Washington, Maine
A-239-71-N-A (SM)**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #1**

FINDINGS OF FACT

After review of the air emission license amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes Annotated (M.R.S.A.), §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Pike Industries, Inc. (Pike) of Washington, Maine was issued Air Emission License A-239-71-M-T/R on October 24, 2014, permitting the operation of emission sources associated with their hot mix asphalt plant. The equipment addressed in this license is located at 73 Jefferson Road, Washington, Maine.

Pike has requested an amendment to their license in order to move and license Pike's asphalt batch plant from their Lewiston site to the Washington site and decommission the existing asphalt batch plant.

B. Emission Equipment

The following equipment is addressed in this Air Emission License:

Asphalt Plant

Equipment	Process Rate (tons/hour)	Design Capacity Firing Rate	Control Devices	Stack ID	Date of Manufacture
Asphalt Batch Plant (P818)	240	68.8 MMBtu/hr, 66,345 cf/hr nat gas 491 gal/hr, distillate fuel and/or spec. waste oil	Baghouse	1	1988

Heating Equipment

Equipment	Maximum Capacity	Fuel Type, % sulfur	Maximum Firing Rate
Hot Oil Heater #1 (Heatec hot oil heater)	2.2 MMBtu/hr	distillate fuel, 0.5% S	17.8 gal/hr

C. Definitions

Distillate Fuel means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396, diesel fuel oil numbers 1 or 2, as defined in ASTM D975, kerosene, as defined in ASTM D3699, biodiesel as defined in ASTM D6751, or biodiesel blends as defined in ASTM D7467.

D. Application Classification

A new emission unit at an existing minor source is considered a major modification based on whether or not expected emission increases exceed the "Significant Emission" levels as defined in 06-096 CMR 100. The emission increases for a new emission unit are determined by the maximum future license annual emissions for the new emission unit, as follows:

Pollutant	Max. Future License (TPY)	Significant Emission Levels
PM	8.7	100
PM ₁₀	8.7	100
SO ₂	18.1	100
NO _x	21.9	100
CO	60.4	100
VOC	1.4	50
CO ₂ e	< 100,000	100,000

Therefore, this modification is determined to be a minor modification and has been processed as such.

II. BEST PRACTICAL TREATMENT

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment

(BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Asphalt Batch Plant

Pike plans to dismantle the existing hot mix Asphalt Batch Plant and replace it with a hot mix Asphalt Batch Plant from their Lewiston site (formerly known as P900). The existing baghouse from Asphalt Batch Plant P818 will be used and tied in with the batch plant equipment from Lewiston. After these changes, the plant will retain the original Pike Plant Number (P818). The maximum design firing rates and production rates are similar from both facilities.

The Asphalt Batch Plant was manufactured in 1988 and is therefore subject to EPA New Source Performance Standards (NSPS) Subpart I for Hot Mix Asphalt Facilities manufactured after June 11, 1973. A successful particulate emissions test was conducted May 1989, with a result of 0.006 grains per dry standard cubic foot. The change of the baghouse after the plant's relocation is not considered a modification as defined in NSPS Subpart I. Furthermore the original plant's design and capacity has not changed and since the baghouse is of similar design it is not expected to increase emissions. Therefore the particulate emission test required per Subpart I, which was conducted May 1989, will not need to be retested at this time.

Pike operates an asphalt batch plant (P818) with a maximum hourly throughput of 240 ton/hr of asphalt and a 68.8 MMBtu/hr burner. The Asphalt Batch Plant can fire distillate fuel, specification waste oil, and natural gas. In the past it has been assumed that there is a linear relationship between the fuel required for an asphalt plant burner and the plant output. Meaning, it is assumed that to operate at 100% throughput requires the burner to fire at 100%, to operate at 75% throughput requires the burner to fire at 75%, etc. This assumption allows for an asphalt plant to have its annual emissions limited by placing a fuel limit on the burner.

However, in some cases it has been determined that the asphalt plant is operated significantly more efficiently than originally anticipated. This allows the burner to operate at a lower firing rate than would be expected for the asphalt output. Since emission factors for asphalt plants are based on tons of asphalt produced, without the previously mentioned linear relationship between plant output and burner firing rate, a fuel limit on the asphalt plant is not sufficient to limit the equipment's annual emissions.

Therefore, to ensure annual emissions are limited to less than major source thresholds, asphalt throughput is limited instead of fuel consumption. Accordingly, the annual throughput of the asphalt batch plant shall not exceed 300,000 tons of asphalt per year on a 12-month rolling total basis.

1. BACT/BPT Findings

The BACT emission limits for the Asphalt Batch Plant were based on the following:

- PM/PM₁₀ – 0.03 gr/dscf and 7.1 lb/hr and the use of a baghouse
- SO₂ – 0.088 lb/ton based on AP-42, Table 11.1-5, dated 3/04
- NO_x – 0.12 lb/ton based on AP-42, Table 11.1-5, dated 3/04
- CO – 0.40 lb/ton based on AP-42, Table 11.1-5, dated 3/04
- VOC – 0.0082 lb/ton based on AP-42, Table 11.1-6, dated 3/04
- Opacity – 06-096 CMR 101

Emissions from the asphalt plant baghouse shall not exceed the following:

Pollutant	grs/dscf	lb/hr
PM	0.03	11.9
PM ₁₀	-	11.9
SO ₂	-	21.2
NO _x	-	28.8
CO	-	96.0
VOC	-	2.0

Opacity - 06-096 CMR 101, *Visible Emission Regulation*: visible emissions from the asphalt plant baghouse shall not exceed 20% opacity on a six (6) minute block average basis, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. This is consistent with the 40 CFR Part 60, Subpart I PM limit of 20% opacity.

General process emissions from the asphalt plant shall be controlled so as to prevent visible emissions in excess of 20% opacity on a six (6) minute block average basis except for no more than one (1) six (6) minute block average in a 1-hour period.

Prior to July 1, 2016, or by the date otherwise stated in 38 M.R.S.A. §603-A(2)(A)(3), the distillate fuel fired at the facility shall have a maximum sulfur content of 0.5% by weight. Per 38 M.R.S.A. §603-A(2)(A)(3), beginning July 1, 2016, or on the date specified in the statute, distillate fuel fired at the

facility shall have a maximum sulfur content of 0.005% by weight (50 ppm), and beginning January 1, 2018, or on the date specified in the statute, distillate fuel fired at the facility shall have a maximum sulfur content of 0.0015% by weight (15 ppm). The specific dates and requirements contained in this paragraph reflect the current dates and requirements in the statute as of the effective date of this license; however, if the statute is revised, the facility shall comply with the revised dates and requirements upon promulgation of the statute revision.

2. New Source Performance Standards

The batch asphalt plant was manufactured in 1988 and is therefore subject to the federal Environmental Protection Agency's (EPA) New Source Performance Standards (NSPS) 40 Code of Federal Regulation (CFR) Part 60, Subpart I *Standards of Performance for Hot Mix Asphalt Facilities* constructed or modified after June 11, 1973.

3. Control Equipment

The asphalt plant shall be controlled by a baghouse.

4. Periodic Monitoring

The performance of the baghouse shall be constantly monitored by either one of the following at all times the asphalt batch plant is operating:

- a. PM detector – when the detector signals excessive PM concentrations in the exhaust stream, Pike shall take corrective action within 24 hours, or immediately if opacity exceeds 20%.
- b. Personnel with a current EPA Method 9 visible emissions certification – when the opacity exceeds 20%, the hot mix asphalt plant is operating with insufficient control and corrective action shall be taken immediately.

Pike shall keep records of baghouse failures and baghouse maintenance.

The facility shall also keep records of production on a 12-month rolling total basis.

5. Contaminated Soils

Pike may process up to 10,000 cubic yards per year of soil contaminated by gasoline or distillate fuel without prior approval from the Department. This limit may be exceeded with written authorization from the Department. The plant owner or operator shall notify the Department (regional inspector) at least 24 hours prior to processing the contaminated soil and specify the

contaminating fuel and quantity, origin of the soil and fuel and the disposition of the contaminated soil.

Pike may process up to 5,000 cubic yards per year of soil contaminated with virgin oil as defined by the Bureau of Air Quality without prior approval from the Bureau of Air Quality. Processing of virgin oil contaminated soils may require a solid waste processing facility license under Maine Solid Waste Management Rules, 06-096 CMR 409 (as amended). The material shall be handled in accordance with the requirements of the Bureau of Remediation and Waste Management.

Virgin Oil Definition:

Virgin oil means any petroleum derived oil, including petroleum fuels, unused motor oils, hydraulic fluids, lubrication oils and other industrial oils, that are not characterized as waste oil. Pike shall not process soils which are classified as hazardous waste or which have unknown contaminants.

When processing contaminated soils, Pike shall maintain records which specify the quantity and type of contaminant in the soil as well as the origin and characterization of the contaminated soil. In addition, when processing contaminated soil, Facility shall maintain records of processing temperature, asphalt feed rates and dryer throughput on an hourly basis. The material shall be handled in accordance with the requirements of the Bureau of Remediation and Waste Management.

C. Hot Oil Heater #1

Hot Oil Heater #1 has a maximum capacity of 2.2 MMBtu/hr, firing distillate fuel with a maximum sulfur content of 0.5% by weight. The unit was manufactured in 1999. To estimate emissions for fee purposes, the maximum amount of fuel (operating 8760 hours per year) that can be fired in the heater is approximately 140,000 gallons.

1. BACT Findings

The BACT emission limits for the Hot Oil Heater #1 were based on the following:

- PM/PM₁₀ – 0.12 lb/MMBtu based on 06-096 115, BACT
- SO₂ – based on firing distillate fuel with a maximum sulfur content of 0.5% by weight.
- NO_x – 20 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- CO – 5 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- VOC – 0.34 lb/1000 gal based on AP-42, Table 1.3-3, dated 5/10

Opacity – 06-096 CMR 101

The BACT emission limits for the heater are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Hot Oil Heater #1 (distillate oil)	0.26	0.26	1.10	0.33	0.09	0.01

Visible emissions from the Hot Oil Heater #1 shall not exceed 20% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.

Prior to July 1, 2016, or by the date otherwise stated in 38 M.R.S.A. §603-A(2)(A)(3), the distillate fuel fired at the facility shall have a maximum sulfur content of 0.5% by weight. Per 38 M.R.S.A. §603-A(2)(A)(3), beginning July 1, 2016, or on the date specified in the statute, distillate fuel fired at the facility shall have a maximum sulfur content of 0.005% by weight (50 ppm), and beginning January 1, 2018, or on the date specified in the statute, distillate fuel fired at the facility shall have a maximum sulfur content of 0.0015% by weight (15 ppm). The specific dates and requirements contained in this paragraph reflect the current dates and requirements in the statute as of the effective date of this license; however, if the statute is revised, the facility shall comply with the revised dates and requirements upon promulgation of the statute revision.

2. Periodic Monitoring

Periodic monitoring for the facility shall include recordkeeping to document fuel use both on a monthly and 12-month rolling total basis. Documentation shall include the type of fuel used and sulfur content of the fuel.

3. New Source Performance Standards

The Hot Oil Heater #1 does not heat water. It does not meet the definition of a “steam generating unit” and therefore is not subject to New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

4. National Emission Standards for Hazardous Air Pollutants

The Hot Oil Heater #1 does not heat water. It does not meet the definition of a “boiler” and therefore is not subject to *National Emission Standards for*

Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (40 CFR Part 63 Subpart JJJJJ).

D. Stock Piles and Roadways

Visible emissions from a fugitive emission source shall not exceed an opacity of 20%, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour.

E. Annual Emissions

1. Total Annual Emissions

Based on the process rate of 240 tons per hour of Hot Mix Asphalt (HMA), and 300,000 tons of asphalt per year on a 12 month rolling total basis and the maximum amount of fuel that can be fired for the hot oil heater; the total allowable annual emissions for the facility are as follows:

Total Licensed Annual Emissions for the Facility

(used to calculate the annual license fee)

Equipment	PM	PM₁₀	SO₂	NO_x	CO	VOC
Asphalt Batch Plant (P818)	7.5	7.5	13.2	18.0	60.0	1.3
Hot oil heater	1.2	1.2	4.9	3.9	0.4	0.1
TOTALS	8.7	8.7	18.1	21.9	60.4	1.4

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans*, 40 CFR Part 52, Subpart A, §52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO₂e).

The quantity of CO₂e emissions from this facility is less than 100,000 tons per year, based on the following:

- the facility's fuel use limits;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and 40 CFR Part 98, *Mandatory Greenhouse Gas Reporting*; and
- global warming potentials contained in 40 CFR Part 98.

No additional licensing actions to address GHG emissions are required at this time.

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source shall be determined by the Department on a case-by case basis. In accordance with 06-096 CMR 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year
PM ₁₀	25
SO ₂	50
NO _x	50
CO	250

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

ORDER

Based on the above Findings and subject to conditions listed below the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-239-71-N-A, subject to the conditions found in Air Emission A-239-71-M-T/R and in the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This

License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

The following shall replace Condition (16) of Air Emission License A-239-71-M-T/R:

(16) Asphalt Batch Plant (P818)

A. Fuel Use

1. The asphalt plant is licensed to fire distillate fuel, specification waste oil, and natural gas. [06-096 CMR 115, BPT]
2. Per the current dates and requirements of 38 M.R.S.A. §603-A(2)(A)(3), the facility shall comply with the following statements; however, if the statute is revised, the facility shall comply with the revised dates and requirements upon promulgation of the statute revision.
 - i. Prior to July 1, 2016, or the date specified in 38 M.R.S.A. §603-A(2)(A)(3), the distillate fuel fired at the facility shall have a maximum sulfur content of 0.5% by weight. [06-096 CMR 115, BPT]
 - ii. Beginning July 1, 2016, or on the date specified in 38 M.R.S.A. §603-A(2)(A)(3), the distillate fuel fired at the facility shall have a maximum sulfur content of 0.005% by weight (50 ppm). [38 M.R.S.A. §603-A(2)(A)(3)]
 - iii. Beginning January 1, 2018, or on the date specified in 38 M.R.S.A. §603-A(2)(A)(3), the distillate fuel fired at the facility shall have a maximum sulfur content of 0.0015% by weight (15 ppm). [38 M.R.S.A. §603-A(2)(A)(3)]

B. The annual throughput of the asphalt plant shall not exceed 300,000 tons of asphalt per year on a 12-month rolling total basis. [06-096 CMR 115, BPT]

C. Emissions from the asphalt plant shall vent to a baghouse, and all components of the asphalt plant shall be maintained so as to prevent PM leaks. [06-096 CMR 115, BPT]

D. The performance of the baghouse shall be constantly monitored by either one of the following at all times the hot mix asphalt plant is operating [06-096 CMR 115, BPT]:

1. PM detector – when the detector signals excessive PM concentrations in the exhaust stream, Pike shall take corrective action within 24 hours, or immediately if opacity exceeds 20%.
 2. Personnel with a current EPA Method 9 visible emissions certification – when the opacity exceeds 20%, the asphalt plant is operating with insufficient control and corrective action shall be taken immediately.
- E. To document maintenance of the baghouse, the licensee shall keep maintenance records recording the date and location of all bag failures as well as all routine maintenance. The maintenance records shall be kept on-site at the asphalt plant location. [06-096 CMR 115, BPT]
- F. Emissions from the asphalt plant baghouse shall not exceed the following [06-096 CMR 115, BPT]:

Pollutant	grs/dscf	lb/hr
PM	0.03	11.9
PM ₁₀	-	11.9
SO ₂	-	21.2
NO _x	-	28.8
CO	-	96.0
VOC	-	2.0

- G. Opacity from the baghouse is limited to no greater than 20% on a six (6) minute block average basis, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]
- H. General process emissions from the hot mix asphalt plant shall be controlled so as to prevent visible emissions in excess of 20% opacity on a six (6) minute block average basis except for no more than one (1) six (6) minute block average in a 1-hour period. [06-096 CMR 101]
- I. The Hot Mix Asphalt Plant is subject to 40 CFR Part 60 Subparts A and I, and Pike shall comply with all applicable requirements, including the notification and recordkeeping requirements of 40 CFR Part 60.7 and the initial performance test requirements of 40 CFR Part 60.8 (testing within 60 days after achieving the maximum operation production rate, but not later than 180 days after initial startup).
- J. Pike may process up to 10,000 cubic yards per year of soil contaminated by gasoline or distillate without prior approval from the Department. This limit may be exceeded with written authorization from the Department. The plant owner or operator shall notify the Department (regional inspector) at least 24

hours prior to processing the contaminated soil and specify the contaminating fuel and quantity, origin of the soil and fuel and the disposition of the contaminated soil. [06-096 CMR 115, BPT]

- K. Pike may process up to 5,000 cubic yards per year of soil contaminated with virgin oil as defined by the Bureau of Air Quality without prior approval from the Bureau of Air Quality. Processing of virgin oil contaminated soils may require a solid waste processing facility license under MEDEP Chapter 409. The material shall be handled in accordance with the requirements of the Bureau of Remediation and Waste Management. [06-096 CMR 115, BPT]
- L. Pike shall not process soils which are classified as hazardous waste or which have unknown contaminants. [06-096 CMR 115, BPT]
- M. When processing contaminated soils, Pike shall maintain records which specify the quantity and type of contaminant in the soil as well as the origin and characterization of the contaminated soil. In addition, when processing contaminated soil, Pike shall maintain records of processing temperature, asphalt feed rates and dryer throughput on an hourly basis. The material shall be handled in accordance with the requirements of the Bureau of Remediation and Waste Management. [06-096 CMR 115, BPT]

The following condition is new to Air Emission License, A-239-71-M-T/R:

(22) Hot Oil Heater #1

A. Fuel

- 1. Per the current dates and requirements of 38 M.R.S.A. §603-A(2)(A)(3), Pike shall comply with the following statements; however, if the statute is revised, the facility shall comply with the revised dates and requirements upon promulgation of the statute revision.
 - i. Prior to July 1, 2016, or the date specified in 38 M.R.S.A. §603-A(2)(A)(3), the distillate fuel fired at the facility shall have a maximum sulfur content of 0.5% by weight. [06-096 CMR 115, BPT]
 - ii. Beginning July 1, 2016, or on the date specified in 38 M.R.S.A. §603-A(2)(A)(3), the distillate fuel fired at the facility shall have a maximum sulfur content of 0.005% by weight (50 ppm). [38 M.R.S.A. §603-A(2)(A)(3)]
 - iii. Beginning January 1, 2018, or on the date specified in 38 M.R.S.A. §603-A(2)(A)(3), the distillate fuel fired at the facility shall have a

maximum sulfur content of 0.0015% by weight (15 ppm). [38 M.R.S.A. §603-A(2)(A)(3)]

2. Compliance shall be demonstrated by fuel records from the supplier showing the quantity, type, and the percent sulfur of the fuel delivered (if applicable). Records of annual fuel use shall be kept on a monthly and 12-month rolling total basis. [06-096 CMR 115, BPT]

B. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Hot Oil Heater #1	0.26	0.26	1.10	0.33	0.09	0.01

- C. Visible emissions from Hot Oil Heater #1 shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period. [06-096 CMR 101]

DONE AND DATED IN AUGUSTA, MAINE THIS 13 DAY OF October, 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Corse for
AVERY T. DAY, ACTING COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-239-71-M-T/R.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: June 8, 2015

Date of application acceptance: June 15, 2015

Date filed with the Board of Environmental Protection:

This Order prepared by Edwin Cousins, Bureau of Air Quality.

