

PROJECT DESCRIPTION

Seekonk Asphalt Corporation is planning to construct a new hot mix asphalt plant at 45 Industrial Court, Seekonk, MA 02771 under the North American Industry Classification System (NAICS) code 324121. The plant will consist of aggregate handling, hot melt asphalt mixing operation, and storage tanks. Emissions from the Seekonk Plant will include criteria pollutants from fuel burning, volatile organic compounds (VOC), hazardous air pollutants (HAPs), and particulate matter (PM). The site location is shown in Figure 1-1. A detailed view is shown in Figure 1-2.

Rock crushing will not occur. The proposed rotary drum dryer burns natural gas and has a heat input of 75 million British thermal units per hour (MMBtu/hr). Massachusetts Department of Environmental Protection's (MassDEP's) requires a plan approval (i.e. air permit) for natural gas combustion equipment with heat input greater than 10 MMBtu/hr per 310 Code of Massachusetts Regulations (CMR) 7.02(4) (a) 2. According to 310 CMR 7.02(5) (a) 2, a Comprehensive Plan Approval is required for natural gas combustion equipment greater than 40 MMBtu/hr. Based on Seekonk Asphalt Corporation's needs and limitations, it was determined that a Non-Major Comprehensive Plan Approval (NMCPA) application would be the appropriate permitting path. The Facility proposes to operate from 7 AM to 7 PM, Monday through Friday, and 7 AM to 5 PM on Saturdays. The Facility proposes production restrictions of 225 tons of asphalt per hour and 250,000 tons of asphalt per consecutive 12-month period.

The Facility proposes the following sources of air emissions be included in the NMCPA:

- ▶ Dryer/Mixer
- ▶ Hot Oil Heater
- ▶ Material Handling and Storage

The following application attachments are discussed in this project description:

- ▶ Attachment 1 – Potential Emissions Calculations
- ▶ Attachment 2 – Equipment Information

Figure 1-1. Site Location – Google Earth

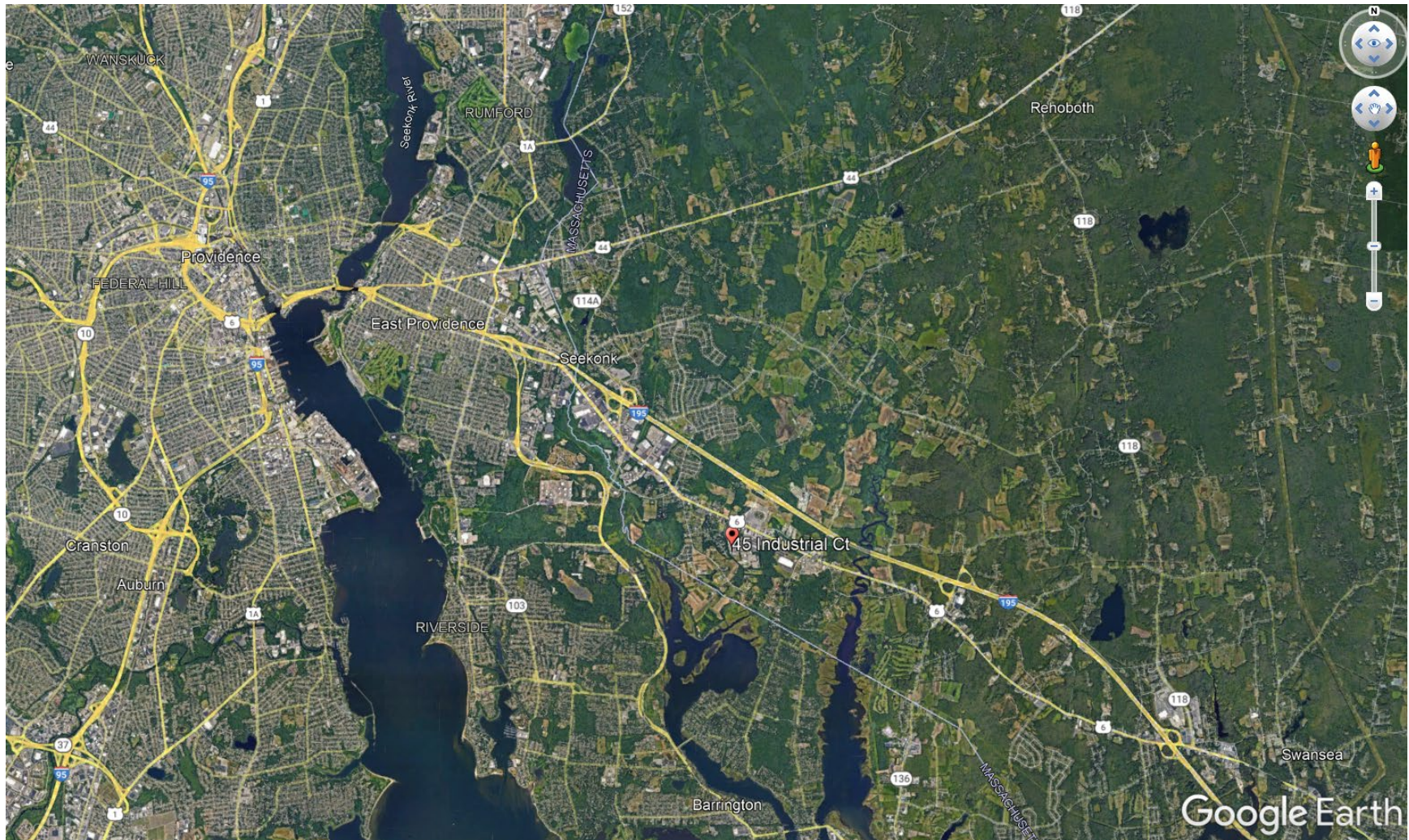


Figure 1-2. Site Location – Google Earth (Close-in View)



1.1 Emission Units

The following sections describe the various emission units at the Facility.

1.1.1 Dryer/Mixer Emissions

The dryer will be an Asphalt Drum Mixers, Inc. Model EX8844 Rotary Drum Dryer or equivalent. The dryer be equipped with one new Novastar low-NO_x burner, possessing a heat input rating of 75,000,000 British thermal units per hour (BTU/hour or 75 MMBTU/hour). The only fuel of use will be natural gas. Based on using a higher heating value of 1,020 BTU per standard cubic foot (BTU/scf) for natural gas, the maximum fuel firing rate is 73,500 cubic feet per hour (SCFH). All exhaust gases from the dryer drum will be vented through a fabric filter baghouse.

Emissions from the dryer/mixer will be ducted to a baghouse with particulate collection efficiency resulting in an outlet particulate concentration of not more than 0.01 grains per dry standard cubic foot (dscf) of exhaust gas. The baghouse will be an Asphalt Drum Mixers, Inc. Model RA720 baghouse, or equivalent. Air will be drawn through the control device with a fan which will vent to the atmosphere through a steel stack.

1.1.2 Hot Oil Heater Emissions

The hot oil heater will be an Asphalt Drum Mixers, Inc. HC-120 is a 1,200,000 Btu/hr heat output helical coil thermal fluid heater, with manifold, for the addition of auxiliary pumps. The hot oil heater will have a low NO_x burner when burning natural gas. The input to the burner is 1,411,765 Btu/hour. The heater operates at a thermal efficiency of 85 percent. The heater has a 3-port manifold, which permits use of 3 independent hot oil circuits with auxiliary pumps. The heater uses a fully modulating, propane or combination burner that fires on natural gas and No. 2 oil. The burner pilot requires natural gas or propane for ignition. The liquid asphalt stored within the and mixed products within storage tanks will be heated with the hot oil circulated from the heater.

1.1.3 Material Handling and Storage Emissions

Emissions are produced from the liquid asphalt tanks, material handling, paved roads, silo filling, and dryer/mixer loadout.

Fugitive vapor emissions from the heated liquid asphalt storage tanks will be controlled with vent condensers. Ecosorb or a similar additive will be used in the asphalt storage tanks to suppress fugitive odors. Emissions from material handling and roadways will be controlled with paved roads and wet suppression.

The raw clean material aggregate and RAP will be trucked to the Facility and stored in storage piles. Storage piles are enclosed on three sides with 12-foot walls and a roof. The aggregate will be moved by front-end loaders to various cold feed bins and the material will be metered from the hoppers onto a covered conveyor belt to be transported into the dryer/mixer. The RAP will be moved directly to the dryer/mixer by the covered conveyors. Mixed product from the mixer will be transferred to the storage silos via an enclosed diverter chute.

When a volume of bituminous concrete is dropped into a silo, an equal volume of gases contained inside the silo are displaced and are controlled by the top of silo emission capture system. The displaced gases, which may contain dust (particulate matter) and hydrocarbon fumes, will be routed to a Butler Justice Blue Smoke

Control System or equivalent. By design, only one silo can be filled at any one time, therefore this system is suitable to control silo filling emissions independent of the number of silos installed.

The bottom of the silo will also be equipped with an emissions capture system. An enclosure will cover the area under the silo and particulate matter and hydrocarbon fumes will be routed to the Butler Justice Blue Smoke Control System or equivalent. The Blue Smoke Control System consists of high efficiency cartridge mist collectors. Constructed with a steel housing, the filtration is accomplished in cells with each cell having seven stages. Each stage is more efficient than the previous. The first three stages are metal and designed to be cleaned when necessary. Stages four, five, six and seven are disposable and are to be replaced when they become plugged. Air will be continuously recirculated through the enclosure by a centrifugal fan and evacuated through the duct collector, then back into the ends of the enclosure and toward the center of the silo, creating an air curtain. The system will be configured to operate during truck load-out operations, even when the dryer/mixer is not in operation.

1.2 Facility Emissions

The proposed permit limits are presented in Table 1-1. The detailed emission calculations and equipment documentation are included in Attachments 1 and 2 to the online application in ePLACE.

The proposed emission units are as follows:

- ▶ Emission Unit 1 (EU 1) – Dryer/Mixer
- ▶ Emission Unit 2 (EU 2) – Hot Oil Heater
- ▶ Emission Unit 3 (EU 3) – Material Handling and Storage

Table 1-1. Facility Proposed Permit Limits (tons per year)

EU #	EU Description	PM₁₀	PM_{2.5}	SO₂	VOC	CO	NO₂	Total HAP
1	Dryer/Mixer	1.45	1.45	0.43	3.75	10.25	1.13	4.57E-01
2	Hot Oil Heater	0.09	0.09	0.03	0.51	0.51	0.89	1.29E-02
3	Material Handling and Storage	0.72	0.19	--	0.19	0.10	--	1.51E-02
Facility Total		2.26	1.73	0.46	4.45	10.86	2.02	0.49