

**ALLEGHENY COUNTY HEALTH DEPARTMENT
AIR QUALITY PROGRAM**

August 26, 2014

SUBJECT: **Lindy Paving, Inc.**
 2340 Second Avenue
 Pittsburgh, PA 15219
 Allegheny County

Synthetic Minor Operating Permit No. 0214

TO: Sandra L. Etzel
 Chief Engineer

FROM: Michael Dorman
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FACILITY DESCRIPTION:

The Lindy Paving Second Ave. facility produces bituminous concrete paving in a counter-flow drum mix asphalt plant. In this type of plant, the material flow in the drum is opposite or counter-flow to the direction of exhaust gases. In addition, the liquid asphalt cement mixing zone is located behind the burner flame zone so as to remove the materials from direct contact with hot exhaust gases.

The plant has a maximum potential production capacity of 600 tons of bituminous concrete per hour. Production is limited to 750,000 tons for any twelve consecutive month’s period and operations are limited to 2,500 hours for any twelve consecutive months. The mixer is supplied with a 200 MMBtu/hr low NO_x burner.

This facility is a synthetic minor source of carbon monoxide (CO) and volatile organic compounds (VOCs) and a minor source particulate matter (PM), particulate matter less than or equal to 10 microns in diameter (PM₁₀), particulate matter less than or equal to 2.5 microns in diameter (PM_{2.5}), sulfur dioxide (SO₂), nitrogen oxides (NO_x) and hazardous air pollutants (HAPs) as defined in section 2101.20 of Article XXI.

PERMIT APPLICATION COMPONENTS:

1. Installation Permit 0214-I002a, issued May 10, 2007 and amended July 8, 2013
2. Operating Permit application No. 0214, received September 4, 2013
3. Operating Permit application No. 0214 Errata document, received September 6, 2013
4. E-mail received 9-17-2013.
5. E-mail sent 9-20-2013.
6. E-mails received 9-20-2013.

7. E-mail received 9-23-2013.
8. E-mail sent 9-24-2013.
9. E-mail received 9-24-2013.
10. E-mail received 9-30-2013.
11. E-mail received 10-8-2013.

EMISSION SOURCES:

Emission Units

I.D.	SOURCE DESCRIPTION	CONTROL DEVICE(S)	MAXIMUM CAPACITY	FUEL	STACK I.D.
P001	Hot Mix Asphalt Plant	Dryer Baghouse & Blue Smoke Capture System	600 tons asphalt/hr	Natural Gas	S001
P002	3 – Heated Aboveground Asphalt Cement Storage tanks	None	30,000 gallons - each	Natural Gas	S002
P003	5 - Product Storage Silos	None	Two (2) at 280 tons each and Three (3) at 300 tons each	NA	NA
P004	4 – Aggregate Storage Piles	Fugitive Dust Suppression & Pile Enclosures	4,500 tons to 7,500 tons	NA	NA
	1 – Recycled Asphalt Pavement Pile	None	15,000 tons	NA	NA
D001	Diesel Fuel Storage Tank	None	2,500 gal	Diesel Fuel	NA

METHOD OF DEMONSTRATING COMPLIANCE:

Compliance with the emission standards set forth in this permit may be demonstrated by the specified emission testing as detailed in the permit. Continuing compliance with the standards of this permit will be the monitoring of the dryer baghouse differential pressure drop to insure proper operation, annual burner tune-ups as specified in the permit, the monitoring of the aggregate moisture content and fines content as well as aggregate handling work practices, the use of the blue smoke capture and control system, weekly inspections of aggregate storage, aggregate handling equipment and enclosed portions of the plant controlled by the blue smoke technology, along with record keeping and reporting requirements. See Operating Permit No. 0214 for the specific conditions for determining compliance with the applicable requirements.

REGULATORY APPLICABILITY:

1. **Article XXI Requirements for Issuance:**

The requirements of Article XXI, Part C for the issuance of operating permits have been met for this facility. Article XXI, Part D, Part E and Part H will have the necessary sections addressed individually.

2. **BACT Analysis:**

Operating Permit Application No. 0214 does not contain a BACT analysis because none is required for an operating permit.

3. **Testing Requirements:**

The permittee shall conduct testing of the facility for PM, PM-10, PM-2.5, NO_x, CO and VOCs at least once every 5 years. The Department reserves the right to require additional testing if necessary in the future

to assure compliance with the terms and conditions of this Synthetic Minor Source Operating Permit.

4. Applicable New Source Performance Standards (NSPS):

The installation is subject to 40 CFR Part 60 Subpart I - *Standards of Performance for Hot Mix Asphalt Facilities*. The requirements for this Part and Subpart are included in this Synthetic Minor Operating Permit.

5. Non-Applicable New Source Performance Standards (NSPS):

No storage tanks at this site meet the applicability requirements of 40 CFR Part 60, Subpart Kb – *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced After July 23, 1984*. The fuel tank on site has a capacity below the applicability threshold of 75 cubic meters (19,812.9 gal).

The installation is not subject to 40 CFR Part 60 Subpart OOO - *Standards of Performance for Nonmetallic Mineral Processing Plants*. The basis for this exemption is 40 CFR §60.670(b) which exempts this facility from 40 CFR Part 60 Subpart OOO because it is subject to 40 CFR Part 60 Subpart I.

6. Applicable NESHAP and MACT Standards:

No NESHAP or MACT Standards are applicable to this facility.

7. New Source Review/Prevention of Significant Deterioration (NSR/PSD):

New Source Review and Prevention of Significant Deterioration (NSR/PSD) do not apply to this facility because it is a synthetic minor source.

8. Risk Management Plan; CAA Section 112(r):

The facility is not required to have a risk management plan at this time because none of the regulated chemicals exceed the thresholds in the regulation.

9. Greenhouse Gas Reporting (40 CFR Part 98):

Greenhouse gases (GHGs) from this facility come from the combustion units. Based on the calculation methodology in 40 CFR Part 98, §98.33(a)(1), potential emissions of CO₂e are 12,517.80 tpy. This is less than the 100,000 tpy major source threshold; therefore the facility is not considered a major source of GHG emissions.

EMISSION CALCULATIONS

Hot Mix Asphalt Plant:

Emissions for PM, PM10, PM2.5, SO₂, NO_x, CO, VOCs and formaldehyde are based on Installation Permit No. 0214-I002a. CO₂ emissions are based on AP-42, Table 11.1-7 (emissions factors for Drum Mix Hot Mix Asphalt Plants).

CO₂

$$33 \text{ lb/ton} \times 750,000 \text{ tpy} = 24,750,000 \text{ lb/yr}$$

$$24,750,000 \text{ lb/yr} \div 2000 \text{ lb/ton} = 12,375 \text{ tpy}$$

Liquid Asphalt Heater

The liquid asphalt is rated at 1.0 MMBtu/hr and is fired with natural gas. Its maximum potential emissions are based on 2,500 hours per year of operation. Emission factors for PM, PM10 and PM2.5 are based on §2104.02.a of Article XXI. All other emission factors are based on AP-42. A factor of 1.15 is added to AP-42 factors to account for their variability.

$$1000000 \text{ Btu/hr} \div 1050 \text{ Btu/ft}^3 = 952.38 \text{ ft}^3/\text{hr}$$

$$952.38 \text{ ft}^3/\text{hr} \div 1000000 = 0.000952 \text{ MMcf/ hr}$$

PM/PM10/PM2.5

$$0.008 \text{ lb/MMBtu} \times 1.0 \text{ MMBtu/hr} = \mathbf{0.008 \text{ lb/hr}}$$

$$(0.008 \text{ lb/hr} \times 2500 \text{ hr/yr}) \div 2000 \text{ lb/ton} = \mathbf{0.01 \text{ tpy}}$$

SO₂

$$0.6 \text{ lb/MMcf} \times 0.000952 \text{ MMcf/hr} \times 1.15 = \mathbf{0.0007 \text{ lb/hr}}$$

$$(0.0007 \text{ lb/hr} \times 2500 \text{ hr/yr}) \div 2000 \text{ lb/ton} = \mathbf{0.0009 \text{ tons/yr}}$$

NO_x

$$100 \text{ lb/MMcf} \times 0.000952 \text{ MMcf/hr} \times 1.15 = \mathbf{0.11 \text{ lb/hr}}$$

$$(0.11 \text{ lb/hr} \times 2500 \text{ hr/yr}) \div 2000 \text{ lb/ton} = \mathbf{0.14 \text{ tons/yr}}$$

CO

$$84 \text{ lb/MMcf} \times 0.000952 \text{ MMcf/hr} \times 1.15 = \mathbf{0.092 \text{ lb/hr}}$$

$$(0.092 \text{ lb/hr} \times 2500 \text{ hr/yr}) \div 2000 \text{ lb/ton} = \mathbf{0.12 \text{ tons/yr}}$$

VOCs

$$5.5 \text{ lb/MMcf} \times 0.000952 \text{ MMcf/hr} \times 1.15 = \mathbf{0.006 \text{ lb/hr}}$$

$$(0.006 \text{ lb/hr} \times 2500 \text{ hr/yr}) \div 2000 \text{ lb/ton} = \mathbf{0.008 \text{ tons/yr}}$$

CO₂

$$120,000 \text{ lb/MMcf} \times 0.000952 \text{ MMcf/hr} = \mathbf{114.24 \text{ lb/hr}}$$

$$(114.24 \text{ lb/hr} \times 2500 \text{ hr/yr}) \div 2000 \text{ lb/ton} = \mathbf{142.80 \text{ tons/yr}}$$

EMISSIONS SUMMARY:

Emissions Summary for Lindy Paving, Second Avenue Facility

Pollutant	Total (tpy [*])
Particulate Matter	21.48
Particulate Matter <10 μm (PM ₁₀)	16.64
Particulate Matter <2.5 μm (PM _{2.5})	14.95
Sulfur Oxides (SO _x)	1.281
Nitrogen Oxides (NO _x)	17.02
Carbon Monoxide (CO)	48.87
Volatile Organic Compounds (VOC)	12.008
Formaldehyde	1.16
Hazardous Air Pollutants (HAP)	2.07
Carbon Dioxide	12,517.80

* A year is defined as any consecutive 12-month period.

RECOMMENDATION:

All applicable Federal, State, and County regulations have been addressed in the permit application. The Synthetic Minor Operating Permit for Lindy Paving, Second Avenue facility should be approved with the emission limitations, terms and conditions in Synthetic Minor Operating Permit No. 0214.