

217/785-1705

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT -- NSPS SOURCE -- RENEWAL

Permittee

William Charles Construction Company
Attn: Jennifer Anderson
5290 Nimitz Road
Loves Park, Illinois 61111

Application No.: 06020131

I.D. No.: 141050ABO

Applicant's Designation:

Date Received: June 22, 2012

Subject: Asphalt Plant

Date Issued:

Expiration Date:

Location: Interstate I-39 and Route 38, Rochelle, Ogle County, 61068

This permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of

- One (1) 350 ton/hr No. 2 fuel/natural gas-fired Drum Mixer/Dryer (120 mmBtu/hr) with Cyclone and Baghouse;
- One (1) 1.00 mmBtu/hr No.2 fuel/natural gas- fired Tank Heater;
- One (1) 35,000 Gal Liquid Asphalt Storage Tank; and
- Asphalt silo filling and truck loadout

Described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., less than 100 tons/year of carbon monoxide (CO)). As a result, the source is excluded from requirements to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit are described in Attachment A.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes the current permit(s) issued for this location.
- 2a. This asphalt plant is subject to New Source Performance Standards (NSPS), 40 CFR 60, Subparts A and I. The Illinois EPA is administering these standards in Illinois on behalf of the United States EPA under a delegation agreement.
- b. The emissions from the asphalt plant shall not contain particulate matter in excess of 0.04 gr/dscf and shall not exhibit 20% opacity or greater, pursuant to the NSPS, 40 CFR 60.92.

- c. Pursuant to 40 CFR 60.11(d), at all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Illinois EPA or USEPA which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
- 3a. Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 Ill. Adm. Code 212.122, except as allowed by 35 Ill. Adm. Code 212.123(b) and 212.124.
- b. Pursuant to 35 Ill. Adm. Code 212.206, no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period to exceed 0.15 kg of particulate matter per MW-hour of actual heat input from any fuel combustion emission unit (e.g., asphalt tank heaters and boilers associated with this drum-mix asphalt plant) using liquid fuel exclusively (0.10 lbs/mmBtu).
- c. Pursuant to 35 Ill. Adm. Code 212.301, no person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 Ill. Adm. Code 212.301 and 212.314.
- d. Pursuant to 35 Ill. Adm. Code 212.321(a), no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 Ill. Adm. Code 212.321.
- 4a. Pursuant to 35 Ill. Adm. Code 214.122(b)(2), no person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source (e.g., asphalt tank heaters and boilers associated with this drum-mix asphalt plant) with actual heat input smaller than, or equal to, 73.2 MW (250 mmBtu/hour), burning liquid fuel exclusively to exceed 0.46 kg of sulfur dioxide per MW-hour of actual heat input when distillate fuel oil is burned (0.3 lbs/mmBtu).

- b. Pursuant to 35 Ill. Adm. Code 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm.
- 5. Pursuant to 35 Ill. Adm. Code 215.301, no person shall cause or allow the discharge of more than 8.0 lbs/hour of organic material into the atmosphere from any emission unit. If no odor nuisance exists then this limitation shall only apply to photochemically reactive material as defined in 35 Ill. Adm. Code 211.4690.
- 6a. The baghouse shall be in operation at all times when the associated drum dryer is in operation and emitting air contaminants.
- b. The Permittee shall follow good operating practices for the baghouse, including periodic inspection, routine maintenance and prompt repair of defects.
- 7a. The drum mixer and drum dryer shall only be operated with natural gas, or distillate fuel oil grades No. 1 and 2 (i.e., diesel) as the fuels. The use of any other fuel in the drum mixer and drum dryer requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- b. Boilers and tank heaters associated with the drum-mix asphalt plant shall only be operated with natural gas or distillate fuel oil grades No. 1 and 2 (i.e., diesel) as the fuels.
- c. At the above location, the Permittee shall not keep, store, or utilize in the drum-mix asphalt plant:
 - i. Distillate fuel oil (Grade No. 1 and 2) with a sulfur content greater than the larger of the following two values:
 - A. 0.28 weight percent, or
 - B. The Weight percent given by the formula: Maximum Weight percent sulfur = $(0.000015) \times (\text{Gross heating value of oil, Btu/lbs})$.
 - ii. Organic liquid by-products or waste materials shall not be used in the drum-mix asphalt plant without written approval from the Illinois EPA.
 - iii. The Illinois EPA shall be allowed to sample all fuels stored at the above location.
- 8. In the event that the operation of this source results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the nuisance.

9a. Emissions and operation of the asphalt plant shall not exceed the following limits:

i. Asphalt Production Limits:

	<u>(Tons/Hour)</u>	Asphalt Concrete Production <u>(Tons/Month)</u>	<u>(Tons/Year)</u>
	352	50,000	300,000

ii. Emissions from Drum Mixer/Dryer:

<u>Pollutant</u>	Emission Factor <u>(Lbs/Tons)</u>	Emissions <u>(Tons/Month)</u>	<u>(Tons/Year)</u>
Particulate Matter (PM)	0.033	0.9	5.0
Nitrogen Oxides (NO _x)	0.055	1.4	8.3
Carbon Monoxide (CO)	0.130	3.3	19.5
Volatile Organic Material (VOM)	0.032	0.8	4.8
Sulfur Dioxide (SO ₂)	0.011	<u>0.3</u>	<u>1.7</u>
	Totals	6.7	39.3

iii. Emissions from Asphalt Silo Loading and Truck Loadout:

<u>Pollutant</u>	Emission Factor <u>(Lbs/Tons)</u>	Emissions <u>(Tons/Month)</u>	<u>(Tons/Year)</u>
CO	0.0007	0.02	0.11
PM	0.0007	0.02	0.11
VOM	0.0048	0.12	0.72

iv. These limits are based on maximum asphalt production and standard AP-42 emission factors.

9a. Emissions and operation of the asphalt plant shall not exceed the following limits:

i. Asphalt Production Limits:

	<u>(Tons/Hour)</u>	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
	350	50,000	300,000

ii. Emissions from Drum Mixer/Dryer:

<u>Pollutant</u>	Emission Factor <u>(Lbs/Ton)</u>	Emissions <u>(Tons/Month)</u>	<u>(Tons/Year)</u>
CO	0.130	3.25	19.50
NO _x	0.055	1.37	8.25
PM	0.045	0.83	4.95
PM ₁₀	0.019	0.57	3.45

SO ₂	0.011	1.45	8.70
VOM	0.032	0.80	4.80

iii. Emissions from Silo Filling:

<u>Pollutant</u>	<u>Emission Factor</u> <u>(lbs/Ton)</u>	<u>Emissions</u> <u>(lbs/Mo)</u>	<u>(Tons/Yr.)</u>
CO	0.00118	35	0.18
PM	0.000586	17	0.09
PM ₁₀	0.000586	17	0.09
VOM	0.0122	366	1.83

iv. Emissions from Truck Load-out:

<u>Pollutant</u>	<u>Emission Factor</u> <u>(lbs/Ton)</u>	<u>Emissions</u> <u>(lbs/Mo)</u>	<u>(Tons/Yr.)</u> <u>)</u>
CO	0.00135	40	0.20
PM	0.000522	15	0.08
PM ₁₀	0.000522	15	0.08
VOM	0.00416	124	0.62

These limits are based on maximum asphalt production and standard AP-42 emission factors (Tables 11.1-3, 11.1-7, 11.1-8, and 11.1-14 AP-42, Volume I, Fifth Edition, Update 2001, December 2000).

b. Emission and operation of the asphalt tank heater burning No. 2 fuel oil shall not exceed the following limits:

i. No. 2 fuel oil usage: 6,394 gal/month, 63,942 gal/year.

ii. Emissions from the combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor</u> <u>(lbs/1,000</u> <u>Gallon)</u>	<u>Emissions</u> <u>(Tons/Mo)</u>	<u>(Tons/Yr.)</u>
Carbon Monoxide (CO)	5.00	0.02	0.16
Nitrogen Oxides (NO _x)	20.00	0.06	0.64
Particulate Matter (PM)	2.00	0.01	0.06
Sulfur Dioxide (SO ₂)	39.76	0.13	1.34
Volatile Organic Material (VOM)	0.34	0.01	0.01

These limits are based on the maximum firing rate of the asphalt tank heater (1.0 mmBtu/hr), a heat content of 137,000 Btu/gal for No.2 fuel oil, 8760 hours/year of operation, and standard AP-42 emission factors (Tables 1.3-2 and 1.3 3, AP-42, Volume I, Fifth Edition, Supplement E, September 1998).

c. Emissions and operation of the asphalt tank heater burning natural gas shall not exceed the following limits:

i. Natural Gas usage: 0.87 mmscf/month, 8.75 mmscf/year.

ii. Emissions from the combustion of natural gas:

<u>Pollutant</u>	<u>Emission Rate</u> <u>(lbs/mmscf)</u>	<u>Emissions</u>	
		<u>(Tons/Mo)</u>	<u>(Tons/Yr.)</u>
Carbon Monoxide (CO)	84	0.04	0.36
Nitrogen Oxides (NO _x)	100	0.04	0.43
Particulate Matter (PM)	7.60	0.01	0.03
Sulfur Dioxide (SO ₂)	0.60	0.00	0.00
Volatile Organic Material (VOM)	5.50	0.01	0.02

These limits are based on maximum firing rate of asphalt tank heater (1.0 mm Btu/hr), a heat content of 1000 Btu/scf, 8760 hours/year of operation, and standard AP-42 emission factors (Tables 1.4-1 and 1.4-2, AP-42, Volume I, Fifth Edition, Supplement D, July 1998).

d. This permit is issued based on negligible emissions of VOM from the one (1) liquid asphalt storage tank. For this purpose, emissions from the one tank shall not exceed nominal emission rates of 0.1 lbs/hour and 0.44 tons/year total.

e. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

10a. Pursuant to 35 Ill. Adm. Code 212.107, 212.109, and 212.110, testing for particulate matter emissions shall be performed as follows:

i. For both fugitive and nonfugitive particulate matter emissions, a determination as to the presence or absence of visible emissions from emission units shall be conducted in accordance with Method 22, 40 CFR Part 60, Appendix A, incorporated by reference in 35 Ill. Adm. Code 212.113, except that the length of the observing period shall be at the discretion of the observer, but not less than one minute. This Condition shall not apply to 35 Ill. Adm. Code 212.301.

ii. Except as otherwise provided in 35 Ill. Adm. Code Part 212, and except for the methods of data reduction when applied to 35 Ill. Adm. Code 212.122 and 212.123, measurements of opacity shall be conducted in accordance with Method 9, 40 CFR Part 60, Appendix A, and the procedures in 40 CFR 60.675(c) and (d), if applicable, incorporated by reference in 35 Ill. Adm. Code 212.113, except that for roadways and parking areas the number of readings

required for each vehicle pass will be three taken at 5-second intervals. The first reading shall be at the point of maximum opacity and second and third readings shall be made at the same point, the observer standing at right angles to the plume at least 15 feet away from the plume and observing 4 feet above the surface of the roadway or parking area. After four vehicles have passed, the 12 readings will be averaged.

- iii. Measurement of particulate matter emissions from stationary emission units subject to 35 Ill. Adm. Code Part 212 shall be conducted in accordance with 40 CFR part 60, Appendix A, Methods 5, 5A, 5D, or 5E.
 - iv. The volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4.
 - v. Upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.
- b. Testing required by Condition 10(a) shall be performed by a qualified independent testing service.
- 11a. The Permittee shall perform all applicable monitoring for the drum-mix asphalt plant as specified in 40 CFR 60.13.
- b. Inspections of the affected drum-mix asphalt plant and control systems equipment and operations shall be performed as necessary but at least once per week when the affected drum-mix asphalt plant is in operation to confirm compliance with the requirements of this permit.
- 12a. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
- b. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
 - i. Records addressing use of good operating practices for the baghouse:
 - A. Operating logs for the affected drum-mix asphalt plant dryer baghouse, including operating data (pressure drop or stack condition), daily upon startup;

- B. Records for periodic inspection of the baghouse with date, individual performing the inspection, and nature of inspection; and
 - C. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
- ii. Asphalt concrete production (tons/month and tons/year);
 - iii. Fuel Usage Records:
 - A. Total natural gas usage (Mft³/month and Mft³/year);
 - B. Distillate fuel oil usage (gallons/month and gallons/year); and
 - C. The sulfur content of the fuel oil used in the drum-mix asphalt plant (% weight), this shall be recorded for each shipment of oil delivered to the source.
 - iv. Monthly and Annual CO, NO_x, PM, SO₂, and VOM emissions from the drum-mix asphalt plant shall be maintained, based on asphalt production, fuel consumption, and the applicable emission factors, with supporting calculations.
- c. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer storage device) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to the Illinois EPA or USEPA request for records during the course of a source inspection.
- 13a. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.
 - b. If there is an exceedance of or a deviation from the requirements of this permit as determined by the record required by this permit, the Permittee shall submit a report to the Agency's Compliance and Systems Management Section in Springfield, Illinois within 30 days after the exceedance/deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and

efforts to reduce emissions and future occurrences. This report should be sent to:

- c. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
5415 North University
Peoria, Illinois 61614

14. The assembly of this plant at a new location will require a construction permit. This permit must be obtained prior to commencing construction at the new location. For this purpose, a new location is defined as a location in Illinois at which the plant does not have a valid operating permit or authorization letter.
15. The operation of this plant at a location in Illinois other than a location identified in a valid operating permit or an authorization letter requires another operating permit or authorization from the Illinois EPA. This operating permit/authorization must be obtained prior to operating at such location.

If you have any questions on this permit, please call German Barria at 217/785-1705.

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

ECB:GB:psj

cc: IEPA, FOS Region 2
Lotus Notes

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emissions from the asphalt plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels, e.g., 100 tons per year of carbon monoxide at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled and control measures are more effective than required in this permit.

<u>Emission Unit</u>	<u>Annual Emissions (Tons/year)</u>				
	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO₂</u>	<u>VOM</u>
Drum Mixer/Dryer	19.50	8.25	4.95	8.70	4.80
Asphalt Tank Heater No.2 Fuel	0.16	0.64	0.06	1.34	0.01
Asphalt Tank Heater Natural Gas	0.36	0.43	0.03	0.00	0.02
Asphalt Silos Filling	0.08		0.20	----	0.62
Asphalt Truck Loadout	0.09		0.18	----	1.83
Liquid Asphalt Storage Tank (1)	----	----	----	----	0.44
Total	20.19	9.32	5.42	10.04	7.72

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