

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
Springfield, Illinois

Project Summary for a
Construction Permit Application from
Continental Tire the Americas, LLC for a
Commercial Vehicle Tire Area Expansion Project at its
Tire Manufacturing Plant in
Mount Vernon, Illinois

Site Identification No.: 081803AAB
Application No.: 12120034

Illinois EPA Contacts:

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Important Dates:

Application Received: December 19, 2012
Comment Period Begins: February 4, 2013
Comment Period Closes: March 6, 2013

I. Introduction

Continental Tire the Americas, LLC (Continental) has applied for a construction permit for changes to the Commercial Vehicle Tire (CVT) Area at its tire manufacturing plant in Mount Vernon. The changes would include new carbon black bins, one new rubber mixing unit (Mixer #21), two modified mixing units, two new extruders and seven new curing presses. The existing Tire Uniformity Grinding Operations and Tire Repair Operations would also experience an increase in throughput.

II. Project Description

A. New Carbon Black Bins

Carbon black, a raw material in the tire making process, is delivered to the plant by truck or railcar. Once unloaded, the carbon black is transferred to a silo for storage prior to use. When called for by the process, carbon black is pneumatically transferred from the silo to a day bin in the rubber mixing department. The handling of carbon black is a source of particulate matter. All carbon black handling operations are controlled by filters.

B. New and Modified Mixers

Raw materials are added to batch-operated Banbury mixers to produce the feedstock for the subsequent tire manufacturing processes. Raw materials are mixed in several stages to achieve the necessary properties and composition.

This project will include construction of one new mixer and associated twin screw roller die (Mixer #21) and modification of two existing mixers (Mixers #10 and #12) by increasing their capacity.

Volatile organic material (VOM) emissions occur during the mixing process as certain raw materials volatilize. For Mixers #12 and #21, these emissions will be controlled by natural gas fired afterburners. Mixer #10 will be uncontrolled. Handling of raw materials will cause particulate matter (PM) emissions, which will be controlled by filters. VOM emissions will also occur during the milling operation, which involves the twin screw roller dies, as the raw materials in the mixed rubber continue to volatilize, and will be controlled by a natural gas fired afterburner.

C. New Extruders

In the extruders, uncured rubber is forced through dies to form rubber compound into a usable shape.

D. New Curing Presses

Tire curing is the operation during the manufacture of tires where the assembled uncured tire, also known as a "green" tire, is vulcanized and converted into a finished tire. Curing presses consist of a frame into which a tire mold of the appropriate size, contour, tread pattern, and sidewall design is placed. Rows of curing presses are called trenches. A green tire is loaded into the mold with a rubber bladder inflated into

the center of the tire, into which steam is injected to provide the pressure and temperature required to form and vulcanize the tire over a specified time.

VOM emissions from volatile compounds in the rubber will evolve due to the high temperatures at which curing occurs.

E. Other Affected Operations

Some existing operations at the plant will not be physically modified but will see increases in throughput from this project. In particular, the existing Tire Uniformity Grinding Operations and Tire Repair Operations may experience an increase in throughput and the plant's boilers will generate more steam for use in the new curing presses.

III. Project Emissions

The changes in emissions from this project, as set forth in the application by Continental, are provided in Attachment 1 and 2 of the draft permit and this project summary. For new equipment, e.g., Mixer #21, the increase in emissions is the potential emissions from the equipment. For the affected existing equipment, e.g., Mixer #10, the increase in emissions is the difference between the unit's actual emissions and the unit's projected emissions. The total increase in emissions is the sum of increases from both new and existing units. Emission increases from downstream units that are affected by this project, e.g., tire repair, have also been identified in Attachments 1 and 2 of the draft permit and this project summary.

The sum of the increases for this project would not result in a significant increase in emissions subject to the federal Prevention of Significant Deterioration of Air Quality (PSD) regulations, 40 CFR 52.21.

IV. Applicable Emission Standards

All emission sources in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emission standards represent the basic requirements for sources in Illinois. The Board has standards for sources of VOM and PM. This project should readily comply with all applicable Board standards.

The mixers and curing presses are considered rubber processing operations and are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63 Subpart XXXX, but are not subject to any emission limitations or other requirements under this rule.

The equipment affected by this project is not subject to federal control requirements of the New Source Performance Standards (NSPS), 40 CFR Part 60 Subpart BBB, because it does not involve cementing or spraying operations addressed by the requirements of the NSPS.

V. Draft Permit

The conditions of the draft permit contain limitations and requirements to assure that the modifications addressed by this application will comply with all applicable Board emissions standards.

The permit conditions also establish appropriate compliance procedures, including inspection practices, testing requirements, recordkeeping requirements, monitoring requirements and reporting requirements. The Permittee must carry out these procedures on an on-going basis to demonstrate that the plant is operated within the limitations set by the permit.

VI. Request for Comments

It is the Illinois EPA's preliminary determination that the project meets all applicable state and federal air pollution control requirements, subject to the conditions proposed in the draft permit. The Illinois EPA is therefore proposing to issue a construction permit for this project.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 IAC Part 166.

Attachment 1: Annual Emission Limits and Increases^a In Emissions For the Project (Tons/Year)

Affected Units	NO _x		CO		VOM ^b		PM ^c		GHG (as CO ₂ e)	
	Limit	Increase	Limit	Increase	Limit	Increase	Limit	Increase	Limit	Increase
Carbon Black Handling Operations										
New Day Bins #13-#24	---	---	---	---	---	---	0.44	0.44	---	---
Existing Day Bins for Mixer #10	---	---	---	---	---	---	n/a	0.03	---	---
Existing Day Bins for Mixer #12	---	---	---	---	---	---	n/a	0.05	---	---
Mixing Operations										
New Mixer #21, Existing Mixers #19 and #20 and Tread End Cementing (RTO EC268-2)	7.50	3.66	6.30	3.08	61.08	16.99	1.10	0.60	10,000	5,000
Modified Mixer #12 (RTO EC68-1)	n/a	0.75	n/a	0.63	n/a	^d	n/a	0.06	n/a	1,000
Modified Mixer #10	---	---	---	---	n/a	4.92	n/a	0.01	---	---
Extrusion Operations										
New Extruders HF and CF	---	---	---	---	0.85	0.85	0.44	0.44	---	---
Curing Operations										
New Presses	---	---	---	---	16.41	16.41	0.44	0.44	---	---
Tire Uniformity and Repair										
Existing Tire Uniformity Grading	---	---	---	---	n/a	0.01	n/a	0.09	---	---
Existing Tire Repair	---	---	---	---	n/a	0.01	n/a	0.01	---	---
Utilities										
Existing Boilers	---	---	---	---	---	---	---	---	---	---
Total:		4.41		3.71		39.19		4.16		6,000
Significance Threshold:		40		100		40		25/15/10		75,000
Greater Than Significant?		No		No		No		No		No

Notes:

--- Minimal or no increase.

- a. Increases in emissions from new units are equal to the unit's potential to emit or permitted emissions (or "limit"). Increases in emissions at existing units are calculated by comparing projected actual emissions with baseline actual emissions as those terms are defined in 40 CFR 52.21(b). Baseline actual emissions are from the period January 2007 through December 2008. Emissions of SO₂ from this project will be negligible, i.e., less than 0.44 tons/year.
- b. VOM emissions attributable to fuel combustion in the RTOs have also been included in the VOM limit/increase. See Attachment 2 for details regarding VOM increases.
- c. All PM assumed to be PM₁₀ and PM_{2.5}. The significant emission rates for PM, PM₁₀, and PM_{2.5} are 25 tons, 15 tons, and 10 tons per year, respectively. PM₁₀ and PM_{2.5} includes both filterable and condensable particulate.
- d. A decrease in emissions is expected.

Attachment 2: Change in VOM Emissions for Affected Units (Tons/Yr)

Unit	BAE ^a	PAE ^b	Change ^c
New Mixer #21	0	16.79	16.79
Mixer #20 ^d	18.61	18.61	0
RTO Combustion	0.21	0.41	0.20
Mixer #19 ^d	25.27	25.27	0
Tread End Cementing ^d			
Subtotal		61.08	16.99
Modified Mixer #12	13.44	4.73	-8.71
New RTO Combustion	0	0.05	0.05
Subtotal		4.78	-8.66
Modified Mixer #10	7.60	12.52	4.92
Subtotal		Total	4.92
New Extruders HF and CF	0	0.85	0.85
Subtotal		0.85	0.85
New Presses	0	16.41	16.41
Subtotal		16.41	16.41
Existing Tire Uniformity Grading	<0.01	0.01	0.01
Subtotal		Total	0.01
Existing Tire Repair	<0.01	0.01	0.01
Subtotal		Total	0.01

Notes:

- a. BAE means Baseline Actual Emissions as defined in 40 CFR 52.21(b)(48).
- b. PAE means Projected Actual Emissions as defined in 40 CFR 52.21(b)(41).
- c. The change in emissions is calculated by comparing the BAE with the PAE.
- d. These units are grouped with new Mixer #21 because they share a common RTO. Mixer #19, Mixer #20 and Tread End Cementing are treated as "new emission units" because they have existed for less than 2 years (See also 40 CFR 52.21(b)(7)(i)). For purposes of calculating the change in emissions at these units for this project, the units' PAE (25.27 tons/year as limited by Construction Permit No. 11010008) are compared with the units' BAE (25.27 tons/year, see 40 CFR 52.21(b)(48)(e)(iii)). Accordingly, the change in emissions is zero.