

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

MEMORANDUM

December 10, 2002

TO: Dawson Lasseter, P.E., Chief Engineer

THROUGH: Phillip Fielder, P.E., New Source Permits Section
Eric Milligan, P.E., New Source Permits Section

THROUGH: Peer Review

FROM: Phil Martin, E.I., New Source Permits Section

SUBJECT: Evaluation of Permit Application No. **2002-414-C (PSD)**
Goodyear Tire & Rubber Company
Facility Modernization Project
#1 Goodyear Boulevard
Lawton, Comanche County, OK 73505

SECTION I. INTRODUCTION

The Goodyear Tire & Rubber Company operates a tire manufacturing plant (SIC 3011) in Lawton, Oklahoma (Goodyear Lawton). An initial construction permit was issued to Goodyear Lawton in May 1977 (Permit # 77-021), and the first tire was produced in February 1979. Since that time, several modifications have occurred and the most recent permit actions are as follows:

- Permit Number 99-103-C (PSD) issued December 11, 2000, for the introduction of silica compounds as tire ingredients.
- Applicability Determination Number 99-103-AD (M-1), issued December 21, 2001 for a new warehouse (no permit action required).
- Permit Number 2002-077-C, issued May 1, 2002, for the Hot Former project. Construction on the project began in June 2002.
- Permit application submitted on June 28, 2002, for Green Tire Spray project. DEQ letter was sent to company stating that no construction permit would be issued for this minor modification, but conditions as appropriate to address the modification will be incorporated into your final Part 70 permit, when issued.
- MACT Hammer Part 1 Application Number 2002-328-MT was received by DEQ in May, 2002. EPA promulgated 40 CFR Part 63, Subpart XXXX on July 9, 2002. Therefore, DEQ has withdrawn the AD and will incorporate any applicable requirements of 40 CFR Part 63, Subpart XXXX into Goodyear's Title V permit.
- Permit Number 99-103-TV, for a facility-wide operating permit, has been applied for.

SECTION II. PROCESS DESCRIPTION

Manufacturing tires requires the use of various types and formulations of rubber compounds. The formulation of ingredients depends on a number of factors including the desired rubber properties and performance characteristics. Formulation differences and changes are driven by the specific function of the compound being evaluated within the tire (tread, belt, ply, sidewall, bead, inner liner, etc.). Production of a tire is a dynamic trade-off between formulation issues and construction techniques. These items impact desired properties such as tire wear, cornering traction, heat build up, rolling resistance, fuel economy, stopping distance, and wet traction. The production of a tire involves the following basic steps:

- A compounder determines desired rubber formulations for various tire components based on customer requirements.
- Various raw materials needed to produce the required compounds are combined in a process known as “Banbury mixing.”
- The mixed rubber is then extruded or calendered into components, which will be used to build a “green,” or uncured, tire. Tread striping and end cementing can occur at the Extruder Line.
- Uncured rubber components are assembled at a tire building machine.
- Uncured tire components are transported to the curing area, where the inside of the “green” tire is sprayed with a release compound in the Green Tire Spray Booth (GTSB) and then cured in a curing press under heat and pressure.
- Grinding for uniformity by Force Variation Machines (FVMs). White sidewall grinding may also occur.
- Final inspection of the cured tire prior to customer release.

SECTION III. PROJECT DESCRIPTION

In May 2002, the State of Oklahoma enacted Oklahoma House Bill 2245, the “Oklahoma Quality Jobs Incentive Leverage Act,” which will provide financial incentives to Goodyear Lawton to create jobs and further modernize the plant.

Based on the availability of the state financial incentives, Goodyear Lawton now proposes to further modernize the Goodyear Lawton plant and increase production capacity of high value-added tires. Proposed equipment for this project includes a Hot Former, a curing press trench, and other supporting equipment. The table below outlines the new equipment associated with the proposed project.

New Equipment Description	Number	New Equipment Description	Number
Hot Former	1	Force Variation Machines	6
Banbury Mixer	1	Green Tire Spray Booth	1
Quad Extruder	1	Curing Cooling Tower Cell	1
Curing Press Trench	30 presses	G3 Tire Building Machines	10

SECTION IV. EMISSIONS

Goodyear Lawton considers the methodology used to quantify VOC emissions to be confidential. For a majority of the process equipment, hourly and annual emissions are calculated using Rubber Manufacturer’s Association (RMA) emission factors and expected annual hours of operation. This method is based on engineering and/or chemical equations and has been determined to be acceptable. This same method will be required to be used to show compliance with the permit conditions. Banbury ethanol emissions are based on 95% being emitted in mixing and 95% destruction efficiency in an oxidizer. The remaining 5% is emitted as fugitives in the cooling process. The following table shows expected emissions from the new activities based on potential to emit minus past actual emissions.

Proposed Sources	Affected EUG	Affected EU ID	VOC Emission Increases				PM ₁₀ Emission Increases	
			RMA VOC		EtOH		(lb/hr)	(TPY)
			(lb/hr)	(TPY)	(lb/hr)	(TPY)		
Hot Former	EUG-HF	HF02	0.42	1.84	--	--	<0.01	<0.01
Banbury (Mixing and Milling) ^a	EUG-BSWBB	BB08, BB08C, BB08CS-01, BB08F, BB08RD, BB08SC	2.39	10.46	4.56	19.97	0.11	0.48
Quad Extruder/Tread Identification Striping and End Cementing	EUG-EXT7	TU08, TU08M1, TLM08, TU07SC1, TU08-CE	16.32	71.47	--	--	<0.01	<0.01
Curing Trench	EUG-CP	CP10	2.22	9.71	9.19	40.25	--	--
FVMs	EUG-GRFVM	FG51, FG52, FG53, FG54, FG55, FG56	0.16	0.69	--	--	0.80	3.49
GTS Booth	EUG-GTSNSPS	SPR08, PL05	3.49	15.30	--	--	0.03	0.14
Additional Cooling Tower Cell ^b			--	--	--	--	0.35	1.54
Extruder #1 Modification ^c	EUG-EXT	TU01, TU01M1, TU01M2, TU01M3, TU01M4, TU01M7, TLM01, TU01SC, TU01-CE	10.77	47.17	--	--	<0.01	<0.01
RTO ^d	EUG-BSWBB		--	--	--	--	<0.01	0.03
		Total	35.77	156.64	13.75	60.22	1.30	5.69

^a The SO₂ emission increase from the Banbury is 0.81 TPY.

^b The cooling tower is an insignificant source and therefore, is not assigned to an EUG.

^c Potential to emit for Extruder #1 is based on the 62 TPY emissions cap established in Permit No. 99-103-C (PSD).

^d Emission increases resulting from the additional RTO for SO₂, NO_x, and CO are <0.01, 2.36, and 0.36 TPY respectively.

Total emission increases from the proposed modernization project also include associated emission increases due to debottlenecking of upstream and downstream processes at the plant. Manufacturing associated emission increases result from both rubber production-dependent processes and tire-production-dependent processes. Emission increases associated with production support equipment, such as boilers, are “non-manufacturing” emission increases.

The following table shows the emission increases associated with rubber production-dependent processes. Past actual emissions are based on the average of the 2000 and 2001 emissions inventories submitted by Goodyear Lawton for each source.

Existing Sources	VOC		
	Past Actual (TPY)	Future Potential (TPY)	Emissions Increase (TPY)
Ozone Pre-Cure	0.40	0.45	0.05
Plant-Wide Fugitive Emissions	4.39	4.94 4.98	0.55 0.59
NPTE Paint Booth	0.34	0.38 0.39	0.04 0.05
Total	5.13	5.77 5.82	0.64 0.69

The following table shows the emission increases associated with tire production-dependent processes. Past actual emissions are based on the average of the 2000 and 2001 emissions inventories submitted by Goodyear Lawton for each source.

Existing Sources	VOC			PM ₁₀		
	Past Actual (TPY)	Future Potential (TPY)	Emissions Increase (TPY)	Past Actual (TPY)	Future Potential (TPY)	Emissions Increase (TPY)
WSW Grinders	1.87	2.26 2.29	0.39 0.42	0.20	2.18 2.32	1.98 2.12
WSW Paint Machines	16.09	16.74 16.79	0.65 0.70	---	---	---
Total	17.96	19.00 19.08	1.04 1.12	0.20	2.18 2.32	1.98 2.12

The following table shows the emission increases for VOC and PM₁₀ from the associated non-manufacturing sources. Past actual emissions are based on the average of the 2000 and 2001 emissions inventories submitted by Goodyear Lawton for each source.

Existing Sources	Past Actuals (TPY)	VOC Future Potentials (TPY)	Emissions Increase (TPY)	Past Actuals (TPY)	PM ₁₀ Future Potentials (TPY)	Emissions Increase (TPY)
	Process Oil Tanks	0.03	0.03	0.00	---	---
Carbon Black Storage and Handling	---	---	---	0.19	0.21 0.22	0.02 0.03
Clay Slurry	---	---	---	0.13	0.15	0.02
Additional Boiler Steam Demand ^a	0.00	0.06	0.06	0.00	0.08	0.08
Gas/Diesel Split Tank and Fuel Oil Tanks	0.37	0.42	0.05	---	---	---
Total	0.40	0.51	0.11	0.32	0.44 0.45	0.12 0.13

^a Emission increases resulting from the additional boiler steam demand for SO₂, NO_x, and CO are 0.01, ~~1.04~~ 1.09, and ~~0.85~~ 0.91 TPY, respectively.

The following table presents a summary for the emission increases from both the proposed and associated sources.

Source Category	VOC Emission Increases		PM ₁₀ Emission Increases (TPY)	SO ₂ Emission Increases (TPY)	NO _x Emission Increases (TPY)	CO Emission Increases (TPY)
	RMA VOC (TPY)	EtOH (TPY)				
Proposed Sources	155.99 156.64	57.53 60.21	5.69	0.81	2.36	0.36
Rubber Production-Dependent Sources	0.64 0.69	---	---	---	---	---
Tire Production-Dependent Sources	1.04 1.12	---	1.98 2.12	---	---	---
Associated Non-Manufacturing Sources	0.11	---	0.12 0.13	0.01	1.04 1.09	0.85 0.91
Total	157.78 158.56	57.53 60.21	7.79 7.94	0.82	3.37 3.45	1.21 1.27

Toxic and Hazardous Air Pollutants (HAPs)

HAPs are emitted from the Hot Former, Banbury, Quad Extruder, curing trench, FVMs, GTS Booth and Extruder #1. HAP emissions are calculated using the potential rubber throughput,

annual hours of operation, and RMA emission factors for each hazardous air pollutant. HAP and air toxics emission estimates are presented in the tables below.

Process	HAP Emissions (TPY)
Hot Former Extruder/Calender	0.96
Banbury ^a	2.06
Quad Extruder	3.41
Curing Trench	2.14 2.29
FVMs	0.05
GTS Booth	0.22
<u>Extruder #1 Modification</u>	<u>2.15</u>
Total	10.99 11.14

^a Value represents 95% control of organic HAPs

Pollutant Name	CAS #	Toxic Category	Total (TPY)	Total (lb/hr)	Total (lb/yr)
2-Butanone	78-93-3	C	0.921	0.210	1,840 1,843
4-Methyl-2-Pentanone	108-10-1	C	5.370 5.399	1.230 1.233	10,740 10,798
Acetone	67-64-1	NS	2.950 2.948	0.673	5,895 5,896
Acetophenone	98-86-2	C	0.816	0.186	1,629 1,632
Aniline	62-53-3	B	0.672 0.676	0.153 0.154	1,340 1,351
C ₁₀ H ₂₀ Alkyl Substituted Cyclohexane		NS	1.450 1.445	0.330	2,891 2,890
C ₁₁ -C ₁₂ Branched Alkane		NS	0.633	0.144	1,261 1,266
Carbon Disulfide^a	75-15-0	B	1.300 1.354	0.298 0.309	2,610 2,708
cis-2-Pentene	627-20-3	NS	0.815	0.186	1,629 1,631
Cyclohexylamine^a	108-91-8	B	4.710 4.711	1.080 1.076	9,641 9,422
Ethanol^{a, b}	64-17-5	B	58.500 61.944	13.300 14.142	116,508 123,888
Heptane	142-82-5	NS	0.603	0.138	1,209 1,207
Hexane	110-54-3	C	1.320 1.318	0.301	2,637
Hydroquinone^a	123-31-9	B	3.960 3.962	0.905	7,928 7,924
Isopentane	78-78-4	NS	0.896	0.205	1,796 1,793
Isophorone	78-59-1	C	1.180	0.270	2,365 2,361

Isopropanol	67-63-0	C	0.731	0.167	1,463 <u>1,461</u>
m-Xylene + p-Xylene		C	0.644 <u>0.674</u>	0.146 <u>0.154</u>	1,279 <u>1,348</u>
Methylene Chloride^a	75-09-2	A	5.840 <u>5.837</u>	1.330 <u>1.333</u>	11,651 <u>11,675</u>
Styrene	100-42-5	B	0.754 <u>0.755</u>	0.172	1,507 <u>1,510</u>
Toluene	108-88-3	C	1.780 <u>1.791</u>	0.406 <u>0.409</u>	3,557 <u>3,581</u>
Zinc (Zn) Compounds		C	13.300 <u>13.266</u>	3.030 <u>3.029</u>	26,543 <u>26,532</u>

^a Pollutants which exceed the DEQ toxic de minimis level are bolded.

^b Ethanol emissions shown in this table also include emissions from the use of silica in mixing and curing operations.

SECTION V. PSD NETTING PROCEDURE

This procedure is based on the suggested emissions netting procedure in the “Draft EPA New Source Review (NSR) Workshop Manual” for PSD and nonattainment area permitting (October 1990). A six-step procedure is used for determining the net emissions change as summarized below.

1. Determine the emissions increases (but not any decreases) from the proposed project. If increases are significant, proceed; if not, the project is not subject to review.
2. Determine the beginning and ending dates of the contemporaneous period as it relates to the proposed modification.
3. Determine which emissions units at the source experienced (or will experience, including any proposed decreases resulting from the proposed project) a creditable increase or decrease in emissions during the contemporaneous period.
4. Determine which emissions changes are creditable.
5. Determine, on a pollutant-by-pollutant basis, the amount of each contemporaneous and creditable emissions increase and decrease.
6. Sum all contemporaneous and creditable increases and decreases with the increase from the proposed modification to determine if a significant net emissions increase will occur.

The emissions increases from the proposed project are computed on a pollutant-by-pollutant basis. These increases include both emissions that result from a physical modification to a source and emissions from sources associated with the physically modified sources. A PSD review applies only to those regulated pollutants with a significant emissions increase resulting from a proposed modification; emission decreases are not considered at this step. A PSD review is required if the proposed project will result in a significant emission increase (i.e., an emissions increase in excess of the PSD significance level). The project’s emissions increases for each pollutant will be compared to the PSD significance levels shown in the following table.

Pollutant	Significant Emission Rate (TPY)
CO	100
NO _x	40
SO ₂	40
PM/PM ₁₀	25/15
Ozone (VOC)	40

The emission increases for new and physically modified equipment are calculated based on the difference between the “future potentials” and the “past actuals.” For proposed new or modified units, which have not begun normal operations, the potential to emit must be used to determine the increase from the unit. The “future potentials” were used for the proposed equipment. The “past actuals” were based on the average of the 2000 and 2001 Emissions Inventories (EIs) submitted by the plant for each emission source. Associated debottlenecking emission increases were calculated by increasing the average “past actual” emissions by the percent increase in throughput expected as a result of the modification.

According to U. S. EPA NSR guidance, the contemporaneous period begins on the date five years prior to construction commencing. The period ends on the date the emissions increase from the proposed modification occur. However, the contemporaneous period is defined differently in the state of Oklahoma. According to OAC 252:100-1-3, Definitions:

an increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if it occurs within 3 years before the date that the increase from the particular change occurs.

Since 2003 represents the start of construction and start of operation, the contemporaneous period begins in the year 2000.

Creditable Emissions Changes

An increase or decrease is creditable only if the relevant reviewing authority has not relied upon it in previously issuing a PSD permit and the permit is in effect when the increase from the proposed modification occurs. For pollutants with PSD increments, an increase or decrease in actual emissions which occurs before the baseline date in an area is creditable only if it would be considered in calculating how much of an increment remains available for the pollutant in question. A decrease is creditable only to the extent that it is federally-enforceable from the moment that the actual construction begins on the proposed modification to the source. The decrease must occur before the proposed emissions increase occurs. A source cannot take credit for a decrease that it has had to make, or will have to make, in order to bring an emissions unit into compliance. Furthermore, a source cannot take credit for an emission reduction from potential emissions from an emissions unit, which was permitted, but never built or operated.

VOC Emissions Netting

First, only the VOC emission increases from the proposed project are calculated to determine if the project increase is greater than PSD significant emission rates. The project emission increase is the sum of emission increases from the proposed emission sources, debottlenecking of existing units, and associated tire production and non-manufacturing emission increases (i.e., combustion emissions associated with increased steam demand). The table on the following page details the VOC emissions increase from the proposed modernization project.

VOC EMISSION INCREASES

Emission Unit(s)	Past Actual Emissions (TPY)	Future Potential Emissions (TPY)	Emissions Increase (TPY)
Proposed Project ^a	14.83	228.35 231.68	213.52 216.85
Rubber Production - Dependent Associated Manufacturing Processes ^b	5.13	5.77 5.82	0.64 0.69
Tire Production - Dependent Associated Manufacturing Processes ^c	17.96	19.00 19.08	1.04 1.12
Associated Non - Manufacturing Production Support Processes ^d	0.40	0.51	0.11
Total	38.32	253.63 257.09	215.31 218.77

- ^a Project emissions increases are calculated using material throughput, emission factors, and control efficiency, if applicable. The emissions increases from modified units are calculated using two-year past actual emission levels and emission caps relied upon in the 1999 PSD permit application.
- ^b Rubber production dependent associated debottlenecking emissions increases are calculated using a percentage increase in rubber production from the past two-year (years 2000 and 2001) production level.
- ^c Tire production dependent associated debottlenecking emissions increases are calculated using the increase in tire production and emission factors.
- ^d Associated non-manufacturing production support processes emissions increases are calculated using a percentage increase in rubber production from year 2000 and 2001 production level, with the exception of boiler associated emissions, which are calculated using a percentage increase in tire curing presses steam use.

The total VOC emissions increase of ~~215.31~~ 218.77 TPY exceeds the PSD significance level of 40 TPY; therefore contemporaneous emission increases and decreases must be evaluated. The creditable emissions increases that occurred during the contemporaneous period are the Hot-Former project and Green Tire Spray Booth project. There are no creditable emission decreases in the contemporaneous period.

VOC Emission Increases from Hot-Former Project	19.85 TPY
VOC Emission Increases from Green Tire Spray Booth Project	15.29 TPY
Total VOC Creditable Emission Increases in Contemporaneous Period	35.14 TPY
Total VOC Emission Increase due to the Modernization Project	215.31 218.77 TPY
Total Project Emission Increases and Creditable Emission Increases	250.45 253.91 TPY

The net emission increase of ~~250.45~~ 253.91 is higher than the Significant Emission Rate (SER) of 40 TPY. Therefore, this project is subjected to PSD review for VOC.

Project PM₁₀ Emissions Increases

The following table details the proposed PM₁₀ emission increases from the proposed modernization project. The total PM₁₀ emissions increase of ~~7.79~~ 7.94 TPY is below the PSD significance level of 15 TPY. Therefore, a contemporaneous netting analysis does not need to be performed.

PM₁₀ EMISSION INCREASES

Emission Units	Past Actual Emissions (TPY)	Future Potential Emissions (TPY)	Emissions Increase (TPY)
Proposed Project ^a	<0.01	5.69	5.69
Rubber Production - Dependent Associated Manufacturing Processes ^b	--	--	--
Tire Production - Dependent Associated Manufacturing Processes ^c	0.20	2.18 <u>2.32</u>	1.98 <u>2.12</u>
Associated Non - Manufacturing Production Support Processes ^d	0.32	0.44 <u>0.45</u>	0.12 <u>0.13</u>
Total	0.52	8.31 <u>8.46</u>	7.79 <u>7.94</u>

^a Proposed project emissions increases are calculated using material throughput, emission factor, and control efficiency, if applicable. The emissions increases from modified units are calculated using two-year past actual emission levels and emission caps relied upon in the 1999 PSD permit application.

^b Rubber production dependent associated debottlenecking emissions increases are calculated using a percentage increase in rubber production based on proposed Banbury.

^c Tire production dependent associated debottlenecking emissions increases are calculated using the increase in tire production based on proposed increases in curing capacity and emission factors.

^d Associated non-manufacturing production support processes emissions increases are calculated using a percentage increase in rubber production based on proposed Banbury with the exception of boiler associated emissions, which are calculated using a percentage increase in tire curing presses steam use.

Emissions Netting for Other Pollutants: CO, NO_x, and SO₂

These pollutants are emitted from the boiler combustion emissions associated with the increased steam demand, emissions from the Banbury, and natural gas combustion from the RTO. The table below shows the emission increases from the proposed modernization project for CO, NO_x, and SO₂, which are below the Significant Emission Rate.

	Net Emissions Increase (TPY)
CO	1.21 <u>1.27</u>
NO _x	3.37 <u>3.45</u>
SO ₂	0.82

The total emissions increases for CO, NO_x, and SO₂ are each below the respective PSD significance rates of 100 TPY, 40 TPY, and 40 TPY. Therefore, a contemporaneous netting analysis does not need to be performed. This project is not subject to PSD review for CO, NO_x, or SO₂.

SECTION VI. PSD REVIEW

A full PSD review of the project emissions of VOCs consists of the following areas:

- determination of best available control technology (BACT),
- evaluation of existing air quality and determination of monitoring requirements,
- evaluation of PSD increment consumption,
- analysis of compliance with National Ambient Air Quality Standards (NAAQS),
- evaluation of source-related impacts on growth, soils, vegetation, visibility, and
- evaluation of Class I area impact.

BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS (BACT)

As part of the PSD review, a BACT analysis for VOCs is required. The first step in this approach is to determine, for each emission unit in question, the most stringent control available for a similar or identical source or source category. If it can be shown that this level of control is technically or economically infeasible for the unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections. Presented below are the five basic steps of a top-down BACT review procedure.

1. Identify all potentially applicable control technologies,
2. Eliminate technically infeasible options,
3. Rank remaining control technologies by control effectiveness,
4. Evaluate most effective controls and document results, and
5. Select BACT.

The BACT definition contains two core requirements that must be met by any BACT analysis, irrespective of whether it is conducted in a top-down manner. First, the BACT analysis must include consideration of the most stringent available technologies (i.e., those which provide the “maximum degree of emissions reduction”). Second, any decision to require a lesser degree of emissions reduction must be justified by an objective analysis of “technical feasibility, and energy, environmental, and economic impacts.”

If the source is subject to a New Source Performance Standard (NSPS), the minimum control efficiency to be considered in a BACT analysis must result in an emission rate less than or equal to the NSPS emission rate. In other words, NSPS represents the maximum allowable emission rate from an emission source. Also, BACT requirements only apply to pollutants that are subject to PSD review and the emission units that are newly installed, physically modified or have

incurred a change in the method of operation if the change was prohibited by a permit condition established after August 7, 1980.

As indicated by the U.S. EPA RBLC database, a few BACT determinations have been made for green tire spraying operations associated with Rubber Tire Manufacturing and Retreading. However, only one of these determinations is noted as BACT under the PSD program, the use of low-solvent sprays. For “extruding,” which includes tread identification striping and end cementing, mixing, curing, or Hot Former calendaring and extruding, there are no BACT determinations for VOC emissions other than no add-on control. In the absence of relevant or applicable past BACT cases in the U.S. EPA RBLC database, potentially applicable VOC control technologies were identified based on principles of control technologies and engineering experience. These candidate control options are listed below.

1. Identify Potentially Applicable Control Technologies

- Thermal oxidation
- Catalytic oxidation
- Carbon adsorption
- Wet scrubbing
- Condensation
- Source Reduction

These control technologies are briefly described in the following paragraphs in relation to tread identification striping, mixing, and curing processes. VOC emissions from the Hot Former process are insignificant (i.e., less than 2 tons per year) making add-on control technologies economically infeasible. Therefore application of these add-on control technologies is not discussed for the Hot Former.

Thermal Oxidation

VOC can be oxidized to carbon dioxide (CO₂) and water vapor (H₂O) at a high temperature (generally at least 300°F higher than auto-ignition temperature of a organic compound) with a residence time of 0.5 to one second. Thermal oxidizers can be designed as straight thermal units, recuperative units, or regenerative thermal oxidizers (RTO). A straight thermal oxidizer does not have heat recovery capability. Therefore, the fuel cost is extremely high and is not suitable for high volume flow applications such as tread identification striping, rubber mixing, or curing processes. In a recuperative unit, the combustion exhaust gas stream preheats the contaminated inlet air through a heat exchanger.

An RTO can achieve a heat recovery higher than a recuperative oxidizer. It usually consists of at least two chambers packed with ceramic media. The exhaust gas enters one hot ceramic bed where the gas is heated to the desired combustion temperature. A relatively small amount of auxiliary fuel may be required in this stage, depending on the heating value of the inlet gas. The gas then passes through the other ceramic bed, where the heat released from combustion is recovered and stored in the bed. The process flow then is switched so that the polluted gas enters

the second ceramic bed first. The system is operated in this alternating cycle, recovering up to 95% of the thermal energy while pollutants are being oxidized.

Catalytic Oxidation

Similar to a RTO, a regenerative catalytic oxidizer (RCO) oxidizes VOC to CO₂ and H₂O. However, a RCO uses catalysts to lower the energy levels required for the oxidation so the oxidation can be accomplished at a lower temperature than a RTO. As a result, the auxiliary fuel required for a RCO will be lower than that required for a RTO.

Adsorption

Adsorption systems can potentially be used to remove VOC from the gas streams. The core component of an adsorption system is an activated carbon or zeolite bed contained in a steel vessel. The VOC laden gases pass through the adsorber bed and the VOC is adsorbed on the activated carbon or zeolite. The cleaned gas is discharged to the atmosphere. The spent adsorbent is regenerated either at an on-site regeneration facility or by an off-site activated carbon supplier. Using steam to replace adsorbed organic compounds at high temperatures regenerates the spent adsorbent.

Wet Scrubbing

Certain VOC can be removed from a gas stream by using an appropriate scrubbing liquid. Mass transfer of VOC occurs when the scrubbing liquid and the contaminated gas stream contact each other. VOC are absorbed into the scrubbing liquid or condensed and removed from the gas stream.

Condensation

VOC emissions from manufacturing facilities can be reduced by chilling the gas streams. As the temperature of the gas stream is lowered, a certain portion of the VOC would be condensed and removed.

Source Reduction

This control technology involves reduction of VOC emissions from tread identification marking by potentially using marking inks that have a lower VOC content or by using intermittent striping on the tread instead of continuous striping. This control technology also involves reduction of VOC emissions from green tire spraying by using spray compounds that have a low VOC content.

2. Elimination of Technically Infeasible Control Options

Several of the six control technologies discussed above are technically infeasible for application to rubber tread ID, mixing, and curing operations performed at Goodyear Lawton. These technologies and the reasons of eliminating them are identified below.

Options for Source Reduction of VOCs from Tread Identification Striping

The two options that have been evaluated by Goodyear Lawton with respect to source reduction of VOCs from tread identification striping are:

- Use of low VOC inks and cements for tread identification striping and end cementing
- Intermittent striping

Goodyear has experimented using low VOC inks. The results of the experiment are unacceptable based on low VOC inks currently available in the market. The feasibility studies have indicated that use of low VOC inks results in “mold fouling.” This phenomenon is explained below.

After the tires are marked with tread identification by striping, they go through a series of manufacturing steps and are then assembled to form a “green” (uncured) tire. The green tires are placed in aluminum molds, and cured in tire curing presses by subjecting them to extremely high temperature and pressure. Exposure of the tires and the striping inks to such extreme conditions limits the ink selection. Among all the low VOC inks that are currently available in the market, there are only a few inks that can sustain such extreme conditions. Goodyear has experimented with the low VOC inks that are currently available for such applications. In the experiments it has been found that these inks tend to leave a mark on the aluminum mold. Repeated use of the molds results in accumulation of the ink residue on the inside surface of the mold along the identification stripe. This accumulation leads to the formation of a ridge on the inside surface of the mold. The formation of this ridge is referred to as mold fouling. Mold fouling interferes with the formation of the treads and develops irregularities on the tire surface. These irregularities result in poor tire quality.

In order to reduce ink usage, Goodyear Lawton has chosen marking stripes that are very narrow yet acceptable to customers. Goodyear Lawton also considered intermittent striping in place of continuous striping to potentially reduce the ink consumption. Goodyear supplies tires to customers worldwide and the prospect of intermittent striping was rejected by the customers as it could potentially present difficulties in identification of the type of tire. Other tire manufacturers also use continuous striping. Intermittent striping is not acceptable to the tire market. Due to these reasons, intermittent striping can also not be considered as a source reduction option.

Options for Source Reduction of VOCs from Mixing and Curing Operations

For VOC source reduction from rubber mixing and curing operations, Goodyear Lawton has evaluated the potential of reformulating the tread rubber by replacing the current coupling agent with a coupling agent that evolves less EtOH during the rubber mixing and curing processes.

Goodyear Lawton has experimented with different rubber formulations and coupling agents, and has begun producing the coupling agent formulations because conventional silica and HDS tires outperform other tires in several aspects. For example, conventional silica and HDS treads are used to improve the performance of the tires by reducing rolling resistance [to meet EPA Corporate Average Fuel Economy (CAFE) standards], increasing tread life, and improving stopping traction.

Goodyear Lawton has not identified alternative rubber formulations that evolve less EtOH during rubber mixing and curing. Because removal of the compounds that evolve EtOH results in degradation of tire performance that is unacceptable to Goodyear's customers, source reduction is technically infeasible.

Condensation

Condensation will not be technically feasible due to the low VOC concentration in each gas stream. The maximum EtOH concentration, which is the primary VOC species, is expected to be in the several hundred parts per million by volume (ppm_v) level. According to an U.S. EPA report (EPA-456/R-95-003, May 1995) it is impractical to use condensation to remove VOCs at a level below several thousand ppm_v.

Adsorption for Rubber Mixing and Curing

Adsorption is a technically infeasible option for the control of VOC emissions from the Banburys (mixing) and curing because the activated carbon or zeolite adsorptivity of VOC is low. In addition, particulate matter and high-molecular weight condensable VOC compounds will coat the adsorbent and render it unusable.

Wet Scrubbing

Wet scrubbing is also not a technically feasible option because of the low VOC concentration of the gas stream. Additionally, wet scrubbing requires certain physical and chemical interaction between the pollutants and the scrubbing liquids. There is no universal scrubbing liquid for all VOC types. Goodyear Lawton uses a variety of inks, which are a complex mixture of hydrocarbons. Equilibrium data for the VOC/solvent system would be required for design of a scrubbing system. The scrubbing medium must be a good VOC solvent for all VOC species. In addition, this scrubbing medium would need to have a very low vapor pressure so it does not add to the VOC load of the gas stream. No suitable scrubbing medium is found for this VOC-laden stream. There have been no demonstrated wet scrubbing applications for this type of exhaust stream. Finally, there are no BACT determinations in the RBLC database that indicate the use of wet scrubbing to control EtOH emissions from tread identification striping and end cementing, mixing, and curing operations. Therefore, wet scrubbing is infeasible technology.

3. Ranking Remaining Control Options By Control Effectiveness

The remaining control technologies can be ranked based on their control efficiencies. An RTO and RCO have approximately the same VOC control efficiency of 95% whereas adsorption for tread identification striping has a control efficiency of 95%.

4. Evaluation Of Most Effective Control Option

Following the “top-down” BACT approach, the highest ranked control option is evaluated first. If the evaluation concludes that this option is technically and economically feasible, and the option does not have unacceptable energy and adverse environmental impacts, the option is determined as BACT. Otherwise, the next ranked control option is evaluated. The evaluation process continues until a control option is found that meets all the BACT requirements. Once an option is determined as BACT, it is unnecessary to evaluate the remaining options that are ranked below the selected BACT.

As indicated above, RTO and RCO are ranked at the same level for VOC emissions from mixing and curing operations. Accordingly, each is considered as being the highest ranked control option for rubber mixing and curing operations.

Adsorption and Oxidation for Tread Identification Striping and End Cementing

Adsorption is a technically feasible option for control of VOC emissions from the tread identification striping and end cementing process. A fixed-bed adsorption system can be used to control the continuous VOC-laden stream from proposed line. Such an adsorption system would be capable of achieving a control efficiency of 95%.

To evaluate the economic impact of this option, a conservative cost analysis (i.e. resulting in lowest cost per ton of VOC removal) for an adsorption system was performed. Under the conservative assumption, the ventilation stream is controlled by an adsorption system. The adsorption system for the tread identification line will treat an inlet flow rate of 30,072 scfm. This flow rate was calculated based on American Conference of Governmental Industrial Hygienists (ACGIH) Guidelines (22nd Edition, Chapter 3, pg 3-20. 1995) for a rectangular high canopy hoods for the line. For purposes of this analysis, it is assumed that the dimensions of the hood to be designed for the proposed extruder line are identical to the dimensions of the hood for the existing EXT-7 equipped with a high canopy hood. Dimensions of the existing hood are used to determine total hood airflow rate for the proposed line. To be conservative the cost analysis is based on the following.

- 100% of the VOCs emitted by the tread identification striping operation are captured by the ventilation system of the line.
- Potential-to-emit (rather than actual emissions) for the line is used to calculate control cost-effectiveness.

Cost evaluation is performed following general procedures outlined in the U.S. EPA's Office of Air Quality Planning and Standards (OAQPS) Control Cost Manual (5th edition, EPA 450/3-90-006, January 1990) and Control Equipment Costing Spreadsheets (OAQPS Control Cost Manual, February 1996).

The results of the cost analysis indicate that the cost-effectiveness of using an adsorption system would be \$5,258 (2002 dollars) per ton of VOC removed for the tread identification striping. This analysis is based on very conservative cost estimates and emission rates. Actual costs are expected to be higher and actual VOC emissions are expected to be lower resulting in even higher cost per ton of VOC removed.

There are no BACT determinations in the RBLC database that indicate the use of RTO to control VOC emissions from tread identification marking operations at Rubber Tire Manufacturing and Retreading Facilities. The control efficiency for RTO/RCO and adsorption are equal. Since the capital cost investment for RTO/RCO is higher than adsorption, an RTO/RCO will be more economically infeasible. Therefore, a cost analysis is not evaluated for RTO/RCO control of Tread Identification Striping.

The end cementing process has an exhaust flow rate similar to the tread identification striping process, but the potential VOC emission rate is less than 20% of the tread identification striping process. Therefore, the use of an adsorption system or an RTO/RCO is economically infeasible for the end cementing process.

Regenerative Thermal Oxidation for Mixing and Curing

The RTO option is technically feasible for mixing and curing processes. It can oxidize 95% of the VOC in the gas streams. Fuel cost is a major factor for a thermal system. Using a RTO can dramatically reduce the cost of supplemental fuel because RTOs can be designed to recover 95% of the heat input.

The results of the cost analysis indicate that the cost-effectiveness of using an RTO is \$1,164 (2002 dollars) per ton of VOC removed for the proposed Banbury (EUG - BSWBB08). The cost effectiveness of an RTO is ~~\$28,960~~ \$27,023 (2002 dollars) per ton for curing operations.

This analysis is also based on very conservative cost estimates and emission rates. Actual costs are expected to be higher and actual VOC emissions are expected to be lower resulting in even higher cost per ton of VOC removed.

Regenerative Catalytic Oxidizer for Mixing and Curing

The RCO option is similar to the RTO option. If installed, an RCO would perform similar to the RTO. Based on cost analyses documented in a U.S. EPA report (EPA-456/R-95-003, May 1995) the cost per ton of pollutant controlled by RCOs are consistently higher than the costs of RTOs. The cost savings in the fuel usage are offset by the initial and subsequent replacement costs of

the catalyst. Since the control efficiencies of an RTO/RCO are approximately equal, it is Goodyear Lawton's preference to utilize a RTO rather than a RCO.

Material Selection

The RBLC search shows that VOC emissions could be controlled by selecting spray compounds containing 1% or less VOC content and that no add-on controls have been installed for VOC emissions from green tire spray operations. The green tire spray operation at Goodyear Lawton is also subject to NSPS Subpart BBB.

5. Selection of BACT

All potentially applicable control technologies are technically or economically infeasible to control VOC emissions from the tread identification striping operations at Goodyear Lawton. Therefore, no add-on VOC controls are proposed for the Tread Identification Striping process.

The above analysis shows that the installation of an RTO to control VOC emissions (vented via the dust collectors) for the proposed Banbury at Goodyear Lawton is considered economically feasible. The analysis shows that cost of RTO control is \$1,154 per ton for controlling VOC emissions from rubber mixing. Therefore, Goodyear Lawton proposes to install an RTO to control VOC emissions from the proposed Banbury (EUG- BSWBB08).

The analysis shows that RTO control costs for reduction of fugitive VOCs from the curing trench are approximately ~~\$28,960~~ \$27,023 per ton of VOC removed, which is economically infeasible. This is primarily due to the fugitive nature of the emissions, the cost of the duct work to capture the emissions and the size of the RTO needed to control the high volume of air flow. Therefore, no controls are proposed for the curing area due to economic infeasibility.

The green tire spray booth is subject to NSPS Subpart BBB, which limits the discharge of VOC into the atmosphere to no more than 1.2 grams of VOC per tire sprayed each month. The low VOC spray compound used at Goodyear Lawton meets the NSPS requirement. All add-on control technologies are technically or economically infeasible to control VOC emissions from the green tire spray booth. BACT for the green tire spray booth is proposed as the use of low VOC spray compounds.

The tread end cementing is subject to NSPS Subpart BBB, which limits the discharge of VOC into the atmosphere to no more than 10 grams of VOC per tire each month. The tread end cementing process used at Goodyear Lawton meets the NSPS requirement. All add-on control technologies are technically or economically infeasible to control VOC emissions from tread end cementing. Therefore, no add-on controls are proposed for tread end cementing.

All potentially applicable control technologies are technically or economically infeasible to control VOC emissions from the Hot Former at Goodyear Lawton. Therefore, no add-on controls are proposed for the Hot Former.

A summary of proposed BACT for the proposed emission units and various operations at Goodyear Lawton is presented in the following table.

Proposed BACT

Process	Control Methodology	VOC Emissions Limits (TPY)	Basis
Tread ID Striping	No additional controls	60.05	Economic infeasibility
Tread End Cementing	No additional controls	10.23	NSPS Subpart BBB 10 g VOC/tire/month
Banbury Mixing	RTO	30.42	95 % control or 20 ppmv
Curing Press	No additional controls	46.63 <u>49.96</u>	Economic infeasibility
Green Tire Spray Booth	Low VOC spray compound	15.30	NSPS Subpart BBB 1.2 g VOC/tire/month
Hot-Former	No additional controls	1.84	Economic infeasibility

AMBIENT MONITORING

The U.S. EPA’s monitoring *de minimis* concentrations establish the levels at which a facility would need to conduct pre-construction ambient air quality monitoring to demonstrate compliance with the NAAQS and PSD increments for criteria pollutants. U.S. EPA has established an ambient monitoring *de minimis* level for ozone which is also unique from the other criteria pollutants because it is based on a mass emission rate (i.e., 100 tpy of VOC) instead of an ambient concentration (i.e., $\mu\text{g}/\text{m}^3$ or ppm_v). Goodyear Lawton proposes to use the existing Lawton ozone monitor in lieu of preconstruction monitoring as discussed below.

A State & Local Ambient Monitoring System (SLAMS) monitor is located approximately 8.7 miles away from Goodyear Lawton. The SLAMS monitor is part of a network of ambient monitors established by the EPA in cooperation with local and state environmental regulatory agencies. This monitor is sited at the United States Public Health System Indian Hospital (USPHS Indian Hospital) on Lawrie Tatum road – northeast of the city of Lawton. Ozone readings at the monitor (SLAMS Monitor ID # 400310671), as listed in the table below, continue to meet the 1-hour standard of 0.12 ppm.

Year	1-hour Ozone Concentration (ppm)			
	1st highest	2nd highest	3rd highest	4th highest
1999	0.099	0.089	0.089	0.089
2000	0.096	0.094	0.093	0.092
2001	0.111	0.094	0.092	0.092

The monitor has reported zero exceedances of the 1-hour value (1995-2001). The fourth highest monitored concentration over a three-year period (1999-2001) was 0.094 ppm. This is below the primary 1-hour ozone standard of 0.12 ppm. Goodyear Lawton proposes to use the existing Lawton monitor in lieu of preconstruction monitoring. This monitor will also be used to determine post-construction ambient impacts.

DISPERSION MODELING

The dispersion modeling methodology for this PSD application is driven by two main regulatory requirements, the DEQ toxic modeling requirements contained in OAC 252:100-41, Part 5, and the PSD modeling requirements of OAC 252:100-8-30, Part 7. For the purposes of this application, the modeling considerations are divided into three primary areas:

- DEQ Toxics Modeling
- PSD Ozone Modeling
- PSD Visibility Analysis

Toxics Modeling

This section summarizes the methodology and results of the air dispersion modeling analysis conducted to estimate worst-case impacts of several toxic pollutants at the Goodyear Lawton facility. All modeling procedures used in this analysis are consistent with current U. S. EPA and Oklahoma DEQ guidelines.

Five toxic pollutants exceed their respective *de minimis* levels for the project and are modeled in this analysis. Modeled concentrations are determined at receptor grids placed from the fence-line up to a distance of 3 km, in addition to discrete receptors placed along the fence-line. The worst-case concentrations are compared with the Maximum Acceptable Ambient Concentration (MAAC) for each pollutant to assess expected impacts.

The proposed operations associated with the Banbury mixing, curing, extruding, and FVM emit air toxics. The previous “Emissions” section details the potential emission rates. The emissions for each air toxic from all four areas (mixing, curing, extruding, and FVM) were added together and then compared with DEQ *de minimis* levels. The table below shows the *de minimis* levels of those toxics that exceeded the *de minimis*.

Pollutant	CAS #	Toxic Category	MAAC	<i>De minimis</i> Levels		Emissions	
				TPY	lb/hr	TPY	lb/hr
			µg/m ³				
Carbon Disulfide	75-15-0	B	62	1.2	1.10	1.30 1.35	0.29 0.31
Cyclohexylamine	75-15-0	B	820	1.2	1.10	4.71	1.08 1.08
Ethanol	64-17-5	B	38,000	1.2	1.10	58.50 61.94	13.30 14.14
Hydroquinone	123-31-9	B	40	1.2	1.10	3.96	0.90 0.91
Methylene Chloride	75-09-2	A	1,736	0.6	0.57	5.84	1.33 1.33

Since the mixing, curing, and associated manufacturing areas are distributed throughout the facility (approximately 360,928 square meters), a pseudo-point stack (Stack CD) representative of all emissions is placed at the center of the manufacturing plant for the purposes of the modeling analysis. The actual height of this stack and pseudo-point source parameters per the Texas Natural Resource Conservation Commission (TNRCC) guidelines (April 1997) are input to the model. Pseudo-point source parameters include the stack diameter and the temperature and velocity of flue gases. A stack release height of 5 feet above the roof of the manufacturing plant is selected.

Since modeled ambient air concentrations from a source are directly proportional to the emission rate, a ratio technique is applied to determine the maximum concentrations at each receptor. Stack CD is modeled with a generic emission rate of 1 gram per second (g/s), which results in a maximum generic 24-hour concentration at each receptor. For each pollutant, the generic maximum 24-hour average concentration produced by Stack CD at a particular receptor is then scaled by the respective compound emission rate from that source. The scaled concentration from Stack CD is then determined on a pollutant-by-pollutant basis according to the following equation:

$$X_{\max}(i) = \frac{X_{G,\max} \cdot E(i)}{E_G}$$

where:

$X_{\max}(i)$	= Maximum 24-hour ground-level concentration of compound i ($\mu\text{g}/\text{m}^3$)
$X_{G,\max}$	= Maximum 24-hour generic concentration ($\mu\text{g}/\text{m}^3$)
$E(i)$	= Actual emission rate of compound i (g/s)
E_G	= Generic emission rate used (1 g/s)

The latest version (dated 02035) of the Industrial Source Complex Short-Term Version 3 (ISCST3) model is utilized to determine maximum ground-level concentrations at the off-property receptors. In the analysis, modeling with ISCST3 is performed using the regulatory default option, which includes stack heights adjusted for stack-tip downwash, buoyancy-induced dispersion, and final plume rise. Ground-level concentrations occurring during “calm” wind conditions are calculated by the model using the calm processing feature. Regulatory default values for wind profile exponents and vertical potential temperature gradients are used since no representative on-site meteorological data are available. Other model options that are used include the use of rural dispersion coefficients and flat terrain. Per U.S. EPA requirements, direction-specific building dimensions are used for both the Schulman-Scire and the Huber-Snyder downwash algorithms.

The land surrounding Goodyear Lawton is relatively flat, and terrain elevations do not rise above stack heights within at least 10 km. For these modeling analyses, all receptor elevations are assumed to be same as the base elevation of the sources. Therefore, the “flat terrain” model option is used.

Direction-specific building dimensions and the dominant downwash structure parameters used as input to the ISCST3 model are determined using the *BREEZE®-WAKE/BPIP* software, developed by Trinity Consultants, Inc. This software incorporates the algorithms of the U.S. EPA - sanctioned Building Profile Input Program (BPIP), version 95086. BPIP is designed to incorporate the concepts and procedures expressed in the “GEP Technical Support” document, the “Building Downwash Guidance” document, and other related documents.

The ISCST3 air dispersion modeling is performed using the meteorological data – Wichita Falls surface station (NWS Number 13966), Oklahoma City upper air station (NWS Number 13967), and Norman upper air station (NWS Number 3948) for the years 1986, 1987, 1988, 1990, and 1991, elevated terrain, and rural dispersion coefficients. 1989 was excluded because of data which were not recorded during 3 weeks when the monitoring station was moved.

The overall maximum concentrations associated with Stack CD are located at the fence-line south of the curing area. For the five years modeled (1986 through 1991, excluding 1989), the year 1991 yielded the maximum concentrations on each receptor grid for all pollutants.

The maximum unitary concentrations are then multiplied by the emission rate of each pollutant to obtain maximum concentrations. As shown in the table below, the maximum calculated 24-hour concentrations are considerably lower than the MAAC for each pollutant. Therefore, emissions of these pollutants are expected to have a negligible off-property impact.

Pollutant	Emission Rate ^a (g/s)	Maximum 24-hour Concentration (µg/m ³)	Oklahoma DEQ MAAC (µg/m ³)	Modeled 24-hour Concentration as % of MAAC
Carbon Disulfide	3.7541E-02 <u>3.8956E-02</u>	4.75 <u>4.93</u>	62	-7.66% <u>7.95%</u>
Cyclohexylamine	1.3552E-01 <u>1.3553E-01</u>	17.14	820	2.09%
Ethanol	1.6827E+00 <u>1.7820E+00</u>	212.78 <u>225.33</u>	38,000	-0.56% <u>0.59%</u>
Hydroquinone	1.1398E-01	14.41	40	36.03%
Methylene Chloride	1.6787E-01 <u>1.6792E-01</u>	21.23	1736	1.22%

^a Emission Rate in g/s calculated from maximum pound per hour emission rate.

PSD Ozone Modeling

VOCs are regulated by the U.S. EPA as precursors to tropospheric ozone formation. Ozone is unique among other criteria pollutants because the U.S. EPA has not established a PSD modeling significance level (i.e., an ambient concentration expressed in µg/m³ or ppm_v). U.S. EPA has

established a PSD significant emission rate (SER) for ozone, which is 40 TPY VOC. Since the project VOC emissions are greater than 100 TPY, an ambient impact analysis is performed to demonstrate compliance with the ozone NAAQS. The Scheffe Method is employed to conservatively determine if the proposed project will cause or contribute to a violation of the 1-hour ozone standard.

The Scheffe Method is a screening procedure used to calculate the increase in ozone above an ambient value due to a VOC dominated point source. A series of lookup tables, based on the Reactive Plume Model-II, are used to conservatively estimate the ozone increase from the proposed project. Use of the Scheffe method requires knowledge of the ratio of maximum annual non-methane volatile organic compounds (NMVOC) to NO_x emissions from the proposed project. The lookup tables have been validated for NMVOC/NO_x values ranging from 1 to 30.

In this study, VOC emissions are treated as NMVOC. The annual VOC emissions are ~~215.31~~ 218.77 TPY and the NO_x emissions are ~~3.37~~ 3.45 TPY. Therefore, the VOC/NO_x ratio is ~~63.89~~ 63.41 to 1.

The land use type is determined to be rural and the look-up table for rural area is used for ozone increment determination. The ozone increment is determined by choosing the column for NMOC/NO_x ratio greater than 20 and interpolating from the ozone increments between 100 TPY and 300 TPY. The ozone increment due to the source emissions is calculated as below:

$$\text{Ozone Increment (ppm)} = 0.004 \text{ ppm} + \frac{(218.77-100) \text{ tpy}}{(300-100) \text{ tpy}} \cdot (0.008 \text{ ppm} - 0.004 \text{ ppm}) = 0.0064$$

The Lawton 1-hour ozone monitoring data is used to determine the 1-hour ozone background concentration. As presented previously, the fourth highest monitored hourly ozone concentration in the three-year period (1999-2001) is determined to be 0.094 ppm.

The predicted 1-hour ozone concentration is the sum of predicted ozone increment and the 4th highest hourly ozone background concentration. Therefore, the predicted 1-hour ozone concentration is 0.100 ppm (~~0.0063~~ 0.0064 ppm + 0.094 ppm), which is less than the 1-hour ozone standard (0.12 ppm).

Also, the Lawton 8-hour ozone monitoring data is in attainment with the 8-hour ozone standard for the three-year period (1999-2001).

PSD Visibility Analysis Considerations

The U.S. EPA’s “Workbook for Plume Visual Impact Screening and Analysis” (EPA-454/R-92-023, October 1992) provides guidance for conducting a visibility impairments analysis through the use of VISCREEN, a plume visibility impact model. The pollutants evaluated in a visibility analysis are NO₂, PM₁₀, soot (organic aerosols) and sulfate (SO₄²⁻). The VISCREEN model does not include VOC emissions as an input for the model. Emissions of PM and NO_x from the proposed project are ~~7.79~~ 7.94 TPY and ~~3.37~~ 3.45 TPY, respectively, which are below the PSD

SERs. Since the proposed project under consideration does not generate pollutants at levels that may impact visibility, no further visibility analysis is required in support of this PSD application. The proposed project is not expected to impact visibility since the emissions increases above the SER are limited to VOC.

CLASS I AREA ANALYSIS - FEDERAL LAND MANAGER (FLM) REVIEW

Sections 160-169 of The Clean Air Act (CAA), as amended in August 1977, establish a detailed policy and regulatory program to protect the quality of the air in regions of the United States in which the air is cleaner than required by the NAAQS to protect public health and welfare. One of the purposes of the PSD program is “to preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic, or historic value.”

Under the PSD program, Congress established a land classification scheme for those areas of the country with air quality better than the NAAQS – Class I allows very little deterioration of air quality, Class II allows moderate deterioration, and Class III allows more deterioration - but in all cases, the pollutant concentrations should not violate any of the NAAQS. Certain existing areas were designated as mandatory Class I which preclude redesignation to a less restrictive class, in order to acknowledge the value of maintaining these areas in relatively pristine condition. These Class I areas include:

- International Parks,
- National Wilderness Areas and National Memorial Parks in excess of 5,000 acres, and
- National Parks in excess of 6,000 acres.

The nearest mandatory Class I area is the 59,000 acre Wichita Mountains National Wildlife Refuge (WMNWR). Goodyear Lawton is located approximately 14.4 kilometers (8.94 miles) from the closest boundary and approximately 37.7 kilometers (23.4 miles) from the farthest boundary of the WMNWR. The WMNWR is managed by The United States Fish and Wildlife Service (U.S. FWS), which is the Federal Land Manager (FLM). This mandatory Class I Federal Area consists of North Mountain and Garden Wilderness Areas within the WMNWR. A copy of this PSD permit application was provided for review to the FLM who submitted no negative comments.

Impact on Visibility

As indicated earlier, the proposed project should not impact visibility since emissions are limited to VOC. VOC does not directly represent a pollutant of concern for visibility analyses as indicated by the fact that the U.S. EPA VISCREEN model does not include VOC emissions as inputs for the model.

In a DEQ document entitled “Periodic Review Report for the Protection of Visibility” (November 2000) an assessment of visibility beginning in 1986 and ending in 1999 in the WMNWR was prepared as required in 40 CFR 51.306 and the Oklahoma Visibility State Implementation Plan (SIP). The report states that “there is no existing visibility impairment in

the Wilderness Area attributable to a source or group of sources.” In addition, “no visibility impairment has existed since the beginning of this program.”

ADDITIONAL IMPACTS ANALYSIS

Mobile Sources

The facility will employ approximately 100 employees as a result of the project. It is anticipated that the permanent positions will be filled by employees from a local labor pool. Additional impacts from mobile sources in the area are not anticipated to increase because the additional personnel will not travel significantly further to work at Goodyear Lawton than their present commute. Project construction is temporary and will last approximately 18 months.

Growth Impacts

A growth analysis is intended to quantify the amount of new growth that is likely to occur in support of the project and to estimate secondary emissions resulting from that associated growth. Associated growth includes residential and commercial/industrial growth resulting from the new facility. Residential growth depends on the number of new employees and the availability of housing in the area, while associated commercial and industrial growth consists of new sources providing services to the new employees and the facility. Associated sources generally do not include mobile or temporary sources. Therefore, temporary growth from construction activities is not anticipated to significantly impact the area.

The number of new permanent jobs created by the project is expected to be approximately 100. Construction will require about 350 personnel and will last about 18 months. To the extent possible, the new positions will be filled by the local labor pool. In addition, most of the temporary construction jobs will be contracted to local construction companies.

Based on 2000 U.S. Census data, the estimated population of Comanche county is 115,000 people. Approximately 80% of the population in the County resides in Lawton. The average unemployment rate in the county was 3.3% in 2001. This indicates a current availability of unemployed local labor to fill the permanent positions. Increased population growth is not expected to occur in the area as a result of the proposed project.

Soil And Vegetation Analysis

The effects of gaseous air pollutants on vegetation may be classified into three categories: acute, chronic, and long-term. Acute effects are those that result from relatively short exposures to high concentrations of pollutants for less than 1 month. Chronic effects occur when organisms are exposed for months or even years to certain threshold levels of pollutants. Long-term effects include abnormal changes in ecosystems and subtle physiological alterations in organisms. Acute and chronic effects are caused by the gaseous pollutant acting directly on the organism, whereas long-term effects may be indirectly caused by secondary agents such as changes in soil pH.

VOCs are regulated by the U.S. EPA as precursors to tropospheric ozone. Elevated ground-level ozone concentrations can damage plant life and reduce crop production. VOCs interfere with the ability of plants to produce and store food, making them more susceptible to disease, insects, other pollutants, and harsh weather. The secondary NAAQS are intended to protect the public welfare from the adverse effects of airborne pollutants. This protection extends to soil, crops, and vegetation.

As presented above, the proposed project is not expected to cause or contribute to a violation of the ozone NAAQS. Therefore, the projected increase in VOCs should not significantly impact soils and vegetation.

Visibility Impairment Analysis

Visibility impairment has been discussed previously. According to a report prepared by the DEQ (with feedback from the Federal Land Manager), no visible impairment has been observed by Refuge staff in the Class I area. Since the proposed project does not represent significant emissions increases in NO_x, PM₁₀, soot, or SO₄²⁻ the increased emissions from the modernization project are not expected to adversely impact visibility in the area.

SECTION VII. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Primary Standards are in Appendix E and Secondary Standards are in Appendix F of the Air Pollution Control Rules. At this time, all of Oklahoma is in attainment of these standards. The air impacts of this project are evaluated in the Air Modeling section.

OAC 252:100-4 (New Source Performance Standards) [Applicable]
Federal regulations in 40 CFR Part 60 are incorporated by reference as they exist on July 1, 2001, except for the following: Subpart A (Sections 60.4, 60.9, 60.10, and 60.16), Subpart B, Subpart C, Subpart Ca, Subpart Cb, Subpart Cc, Subpart Cd, Subpart Ce, Subpart AAA, and Appendix G. NSPS standards are addressed in the "Federal Regulations" section.

OAC 252:100-5 (Registration, Emission Inventory, and Annual Fees) [Applicable]
The owner or operator of any facility that is a source of air emissions shall submit a complete emission inventory annually on forms obtained from the Air Quality Division. An emission inventory was submitted and fees paid for previous years as required.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for Part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the "Insignificant Activities" or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification.

Part 7 includes the requirements for PSD projects in attainment areas. This project is classified as a significant modification to a major facility. Since this is a physical change that requires a significant modification, a construction permit is required. The Title V permit application for this facility will be updated as required to reflect the modifications associated with this project.

OAC 252:100-9 (Excess Emission Reporting Requirements) [Applicable]

In the event of any release which results in excess emissions, the owner or operator of such facility shall notify the Air Quality Division as soon as the owner or operator of the facility has knowledge of such emissions, but no later than 4:30 p.m. the next working day following the malfunction or release. Within ten (10) working days after the immediate notice is given, the owner operator shall submit a written report describing the extent of the excess emissions and response actions taken by the facility. Part 70/Title V sources must report any exceedance that poses an imminent and substantial danger to public health, safety, or the environment as soon as is practicable. Under no circumstances shall notification be more than 24 hours after the exceedance.

OAC 252:100-13 (Open Burning) [Applicable]

Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter. Open burning will not be performed as part of this project.

OAC 252:100-19 (Particulate Matter) [Applicable]

This subchapter sets forth particulate matter emission standards for fuel-burning and industrial process equipment. There is no new fuel-burning equipment associated with this project; however, the proposed control device (RTO) on the Banbury releases insignificant amounts particulate matter from combustion of natural gas and exhaust from the Banbury. The expected PM₁₀ emissions increase due to each new FVM is 0.13 lbs/hr and the increase due to the new Banbury mixer is 0.11 lbs/hr. The allowable emissions from OAC 252:100, Appendix C, are much higher (based on confidential production numbers), so these emissions are in compliance with this subchapter.

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]

No discharge of greater than 20% opacity is allowed except for short-term occurrences that consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. The new FVMs will be ducted to the existing dust collectors with a reported efficiency of 91.9%. The new Banbury will have a dust collector with 99% efficiency. Therefore, PM emissions should be insignificant and the facility will remain in compliance.

OAC 252:100-29 (Fugitive Dust) [Applicable]

No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. Under normal operating conditions, the project will not interfere with the maintenance of air quality standards.

OAC 252:100-31 (Sulfur Compounds) [Applicable]

Part 5 sets forth new equipment standards for sulfur dioxide emissions from fuel burning equipment and hydrogen sulfide from petroleum and natural gas processes. The proposed control device (RTO) on the Banbury releases insignificant amounts of sulfur dioxide from combustion of natural gas and exhaust from the Banbury.

OAC 252:100-33 (Nitrogen Oxides) [Not Applicable]

This subchapter prohibits nitrogen oxide emissions calculated as nitrogen dioxide from any new gas-fired fuel-burning equipment with a rated heat input of 50 MMBtu/hr or greater in excess of 0.20 lb/MMBtu, two-hour maximum. Since the rated heat input of the proposed control device (RTO) is less than 50 MMBtu/hr, this subchapter does not apply.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]

None of the affected sources are associated with this project: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic cracking unit, or petroleum catalytic reforming unit.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]

Part 3 affects new (constructed after December 28, 1974) storage tanks with a capacity between 400 and 40,000 gallons storing a VOC with a true vapor pressure greater than 1.5 psia. There are no storage tanks associated with this project, therefore this part is not applicable.

Part 5 limits the VOC content of coatings in coating lines or operations. Emissions from the Tread Identification Striping are greater than 100 pound per day of VOC. Tread Identification Striping shall not use coatings that as applied contain VOCs in excess of 6.5 pounds of VOC per gallon of coating. The green tire spray and the tread end cement are not one of the types of coatings that are regulated and are therefore, exempt from the requirements of this part.

Part 7 requires fuel-burning and refuse-burning equipment to be operated to minimize emissions of VOC. There is no fuel- or refuse-burning equipment associated with this project.

OAC 252:100-39 (VOC Emissions in Former Nonattainment Areas) [Not Applicable]

Part 7 deals with the manufacture of pneumatic rubber tires, but only applies in Oklahoma County. Since the plant is in Comanche County, this subchapter is not applicable.

OAC 252:100-41 (Hazardous and Toxic Air Contaminants) [Applicable]

Part 3 addresses hazardous air contaminants. NESHAP, as found in 40 CFR Part 61, are adopted by reference as they exist on July 1, 2001, with the exception of Subparts B, H, I, K, Q, R, T, W and Appendices D and E, all of which address radionuclides. In addition, General Provisions as found in 40 CFR Part 63, Subpart A, and the Maximum Achievable Control Technology (MACT) standards as found in 40 CFR Part 63, Subparts F, G, H, I, L, M, N, O, Q, R, S, T, U, W, X, Y, CC, DD, EE, GG, HH, II, JJ, KK, LL, MM, OO, PP, QQ, RR, SS, TT, UU, VV, WW, YY, CCC, DDD, EEE, GGG, HHH, III, JJJ, LLL, MMM, NNN, OOO, PPP, RRR, TTT, VVV, XXX, CCCC, and GGGG are adopted by reference as they exist on July 1, 2001. These standards shall apply to both existing and new sources of hazardous air pollutants. NESHAP are addressed in the "Federal Regulations" section.

Part 5 is a state-only requirement governing toxic air contaminants. New sources (constructed after March 9, 1987) emitting any category "A" pollutant above de minimis levels must perform

a BACT analysis, and if necessary, install BACT. All sources are required to demonstrate that emissions of any toxic air contaminant that exceeds the de minimis level does not cause or contribute to a violation of the MAAC. As shown in the previous “Modeling” section, all regulated toxic air pollutants emitted above de minimis levels for this project are in compliance with the MAAC.

OAC 252:100-43 (Sampling and Testing Methods) [Applicable]
 All required testing must be conducted by methods approved by the Executive Director under the direction of qualified personnel. All required tests shall be made and the results calculated in accordance with test procedures described or referenced in the permit and approved by Air Quality.

OAC 252:100-45 (Monitoring of Emissions) [Applicable]
 Records and reports as Air Quality shall prescribe on air contaminants or fuel shall be recorded, compiled, and submitted as specified in the permit.

The following Oklahoma Air Pollution Control Rules are not applicable to this facility:

OAC 252:100-11	Alternative Emissions Reduction	not requested
OAC 252:100-15	Mobile Sources	not in source category
OAC 252:100-17	Incinerators	not type of emission unit
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain Elevators	not in source category
OAC 252:100-47	Landfills	not in source category

SECTION VIII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Applicable]
 The facility qualifies as a major stationary source because it emits more than 250 TPY of VOCs, a regulated pollutant. Due to the proposed construction and operating modifications which result in increases of more than 40 TPY of VOCs, a PSD review was completed in the “PSD Review” section.

NSPS, 40 CFR Part 60 [Subparts A and BBB Applicable]
Subpart A sets forth general requirements for equipment subject to NSPS. Any physical or operational change to an NSPS affected source requires submittal of initial notification and recordkeeping. In addition, initial performance tests required under each applicable subpart are to be performed within 60 days of achieving maximum production rate and not later than 180 days after initial startup. The DEQ must be notified within 30 days prior to any initial performance test and must receive those results. Goodyear Lawton will comply with requirements set forth in Subpart A.

Subpart BBB, Rubber Tire Manufacturing, affects the following equipment that commences construction, modification, or reconstruction after January 20, 1983: each undertread cementing

operation, each sidewall cementing operation, each tread end cementing operation, each bead cementing operation, each green tire spraying operation, and various Michelin-specific operations.

The Green Tire Spray Booth (part of EUG-GTSNSPS) is an affected source and is subject to the following requirements:

- Monthly performance testing [40 CFR 60.543(b)(1)] must be performed & records of testing maintained [40 CFR 60.545e].
- Discharge into the atmosphere from inside tire spraying shall be no more than 1.2 grams VOC/tire/month [40 CFR 60.542(a)(5)(i)].
- Reports detailing the number of tires sprayed, the mass of VOC used and the VOC/tire emissions shall be included in the results of each of the performance tests conducted [40 CFR 60.546(c)(2)].
- Formulation data to verify the VOC content of the green tire spray in use shall be furnished to the Administrator within 60 days of initial operation and annually thereafter [40 CFR 60.546(j)].

Tread End Cementing from the proposed extruder line (part of EUG-EXT 7) is also an affected source and is subject to the following requirements:

- Monthly performance testing [40 CFR 60.543(b)(1)] must be performed & records of testing maintained [40 CFR 60.545e].
- Discharge into the atmosphere shall be no more than 10 grams VOC/tire/month [40 CFR 60.542(a)(5)(i)].
- Reports detailing the number of tires sprayed, the mass of VOC used and the VOC/tire emissions shall be included in the results each of the performance tests conducted [40 CFR 60.546(c)(2)].
- Formulation data to verify the VOC content of the cement in use shall be furnished to the Administrator within 60 days of initial operation and annually thereafter [40 CFR 60.546(j)].

The permit will require Goodyear Lawton to comply with the applicable requirements under this subpart.

NESHAP, 40 CFR Part 61

[Not Applicable]

There are no emissions of any of the regulated pollutants: arsenic, asbestos, benzene, beryllium, coke oven emissions, mercury, radionuclides or vinyl chloride except for trace amounts of benzene. Subpart J (Equipment Leaks of Benzene) concerns only process streams which contain more than 10% benzene by weight. All streams at Goodyear Lawton are less than 1% benzene by weight.

NESHAP, 40 CFR Part 63

[Applicable]

Subpart XXXX, Rubber Tire Manufacturing. This subpart establishes emission standards for HAPs from rubber tire manufacturing at major HAP sources. The final rule was promulgated on July 9, 2002. This facility has the potential to emit above the 10/25 TPY applicability thresholds.

New or reconstructed sources, which began construction after October 18, 2000, must comply with this subpart upon startup. Existing sources must comply no later than July 11, 2005.

Rubber tire manufacturing includes the production of rubber tires, the production of tire cord, and the application of puncture sealant. Affected tire production sources include processes or equipment that use or process cements or solvents. Affected rubber processing sources include rubber mixing processes (e.g., Banburys); however, there are no emission limitations or other requirements for this source.

For the proposed modernization project, the affected sources include the Banbury, the green tire spray booth and the tire extruding operations, which include tread identification striping and end cementing. For HAPs listed in Table 16 of this subpart, emissions must not exceed 2 lbs/ton of the total cements and solvents. For other HAPs, emissions must not exceed 20 lbs/ton of total cements and solvents. Goodyear Lawton will use cements and solvents so that the monthly average HAP emissions do not exceed the emission limitations listed in this subpart. Initial compliance must be demonstrated within 180 days after startup.

CAM, 40 CFR Part 64 [Applicable]
Compliance Assurance Monitoring (CAM), as published in the Federal Register on October 22, 1997, applies to any pollutant-specific emission unit at a major source, that is required to obtain a Title V permit, if it meets all of the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant
- It uses a control device to achieve compliance with the applicable emission limit or standard
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of 100 TPY

The new Banbury has a potential to emit, prior to any control device, of greater than 100 TPY. Therefore, CAM is applicable to this source. Emissions after the control device are less than 100 TPY and any requirements will be addressed in the Title V permit renewal.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]
This facility does not process or store more than the threshold quantity of any regulated substance (Section 112r of the Clean Air Act 1990 Amendments). More information on this federal program is available on the web page: www.epa.gov/ceppo.

Stratospheric Ozone Protection, 40 CFR Part 82 [Applicable]
This facility does not produce, consume, recycle, import, or export any controlled substances or controlled products as defined in this part, nor does this facility perform service on motor (fleet) vehicles which involves ozone-depleting substances. Therefore, as currently operated, this facility is not subject to these requirements. To the extent that the facility has air-conditioning units that apply, the permit requires compliance with Part 82.

SECTION IX. COMPLIANCE

Testing

Testing of emissions from the new equipment will be performed before the issuance of the operating permit for all equipment contained in this Permit to Construct.

Tier Classification and Public Review

The application for this permit was determined to be a **Tier II** based on the request for a PSD construction permit and a significant modification to an existing major source for which a Title V operating permit is required. The permittee has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant leases the land.

The applicant published the "Notice of Filing a Tier II Application" in *The Lawton Constitution*, a daily newspaper in Comanche County, on October 18, 2002. The notice stated that the application was available for public review at the Lawton Public Library, 110 S.W. 4th St., Lawton, the DEQ Air Quality office at 707 N. Robinson, Oklahoma City, or in the Air Quality section of the DEQ web site at www.deq.state.ok.us. The applicant published a "Notice of Draft Permit" in *The Lawton Constitution*, a daily newspaper in Comanche County, on November 6, 2002. The notice stated that the draft permit was available for public review at the Lawton Public Library, 110 S.W. 4th St., Lawton, the DEQ Air Quality office, or in the Air Quality section of the DEQ web site. The facility is located within 50 miles of the **Oklahoma - Texas** border. The state of Texas was notified of the draft permit. A proposed permit was sent to EPA for review. No comments were received from the public, the state of Texas, or EPA.

Fee Paid

Existing Part 70 Construction permit application fee of \$1,500.

SECTION X. SUMMARY

The applicant has demonstrated the ability to comply with the applicable Air Quality rules and regulations. Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues concerning this facility. Issuance of the permit is recommended.

**PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS**

**The Goodyear Tire & Rubber Company
Lawton Plant Modernization**

Permit No. 2002-414-C (PSD)

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on September 26, 2002. The Evaluation Memorandum dated December 10, 2002, is attached to this permit to explain the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Commencing construction or operations under this permit constitutes acceptance of and consent to, the conditions contained herein:

1. Points of emissions and emission limitations for facility modernization:

[OAC 252:100-8-6(a)(1)]

EUG	EU ID	Equipment Description	Number	VOC Emissions (TPY)	PM₁₀ Emissions (TPY)
EUG-HF	HF02	Hot Former	1	1.84	0.01
EUG-BSWBB	BB08, BB08C, BB08CS-01, BB08F, BB08RD, BB08SC	Banbury Mixer*	1	30.42	0.48
EUG-EXT7	TU08, TU08M1, TLM08, TU07SC1, TU08-CE	Quad Extruder	1	71.47	0.01
EUG-CP	CP10	Curing Press Trench	28-30 presses	46.63 49.96	--
EUG-GRFVM	FG51, FG52, FG53, FG54, FG55, FG56	Force Variation Machines (FVMs)	6	0.69	3.49
EUG-GTSNSPS	SPR08, PL05	Green Tire Spray Booth	1	15.30	0.14
		Curing Cooling Tower Cell	1	--	1.54
EUG-EXT	TU01, TU01M1, TU01M2, TU01M3, TU01M4, TU01M7, TLM01, TU01SC, TU01-CE	Extruder #1 Modification (emission increase)	1	--**	0.01
EUG-HF	HF02	G3 Tire Building Machines	10	--	--

* Banbury will be controlled by an RTO that has insignificant emissions of PM₁₀, CO, SO₂, and NO_x.

** Emissions of Extruder # 1 line remain unchanged at 62 tpy from PSD Permit # 99-103-C

2. Compliance with TPY emissions limitations shall be based on a 12-month rolling total, and demonstrated by means of monthly records maintained on-site. The Annual Emissions Inventory (Turn-Around Document) will reflect the emissions from the modernization project as well as existing sources of emissions. [OAC 252:100-8-6(a)(1)]
3. Upon issuance of this permit, the permittee shall be authorized to operate the facility continuously (24 hours per day, every day of the year). [OAC 252:100-8-6(a)(1)]
4. The Regenerative Thermal Oxidizer (RTO) control device installed for Banbury No. 8 shall be operated when non-productive High Dispersion Silica (HDS) rubber is mixed. [OAC 252:100-8-6(a)(1)]
5. The new Banbury No. 8 shall be vented to a Regenerative Thermal Oxidizer control device. The Regenerative Thermal Oxidizer control device shall reduce the input stream of ethanol by 95 weight percent or to a concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen. [OAC 252:100-45]
6. The permittee shall operate and maintain the thermal oxidizer as follows: [OAC 252:100-8-6(a)(3)(A)]
 - a. Operate at a temperature greater than 1,350 °F in the center bed combustion zone.
 - b. The temperature shall be monitored and recorded continuously using a thermocouple (at least four times an hour and averaged over the hour with a minimum data availability of 90 percent).
 - c. Proper operation of the center bed combustion zone thermocouple shall be verified annually.
 - d. The thermal oxidizer shall only be fueled with pipeline quality natural gas.
 - e. Provide a means for logging all occasions when operating temperatures are less than 3 % of the established temperature.
7. Within 180 days of completion of construction of the thermal oxidizer and the manufacturing systems, compliance with the emissions limitations and control efficiencies of the thermal oxidizer shall be demonstrated by conducting a stack test of the thermal oxidizer. A written report shall be submitted to Air Quality within 60 calendar days of the testing. Performance testing shall be conducted using the following methods found in 40 CFR Part 60, Appendix A:
 - Method 1: sample and velocity traverses
 - Method 2: stack gas velocity and volumetric flow rate
 - Method 3 or 3A: gas analysis for carbon dioxide, oxygen, and dry molecular weight
 - Method 4: moisture content in stack gases
 - Method 9: visual determination of opacity
 - Method 25A: total gaseous hydrocarbons emissions from stationary sources

8. No later than 30 days after each anniversary date of the issuance of the Title V operating permit, the permittee shall submit to Air Quality Division of DEQ, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit. The following specific information is required to be included: [OAC 252:100-8-6 (c)(5)(A) & (D)]

- a. 12-month rolling total emission calculations.

9. The new Green Tire Spray Booth (part of EUG-GTSNSPS) and Tread End Cementing from the new Extruder line (part of EUG-EXT 7) are subject to 40 CFR Part 60, Subpart BBB and shall comply with all applicable requirements including the following:

- a. Monthly performance testing shall be performed [40 CFR 60.543(b)(1)]
- b. Records of testing shall be maintained [40 CFR 60.545e]
- c. Discharge to the atmosphere shall be no more than 1.2 grams VOC/tire/month (for GTSB) and 10 grams VOC /tire/month (for Tread End Cementing) [40 CFR 60.542(a)(5)(i)]
- d. Reports detailing the number of tires sprayed, the mass of VOC used and the VOC/tire emissions shall be included in the results each of the performance tests conducted [40 CFR 60.546(c)(2)]
- e. Formulation data to verify the VOC content of the green tire spray / cement in use shall be furnished to the Administrator within 60 days of initial operation and annually thereafter [40 CFR 60.546(j)]

10. The new Green Tire Spray Booth and the tire extruding operations, which includes tread identification striping and end cementing are subject to 40 CFR Part 63, Subpart XXXX and shall comply with all applicable requirements at the startup date including the following:

- a. For HAPs listed in Table 16 of this subpart, emissions shall not exceed 2 lbs/ton of the total cements and solvents. [40 CFR Part 63 Subpart XXXX Table 1]
- b. For other HAPs, emissions shall not exceed 20 lbs/ton of total cements and solvents. [40 CFR Part 63 Subpart XXXX Table 1]
- c. Initial compliance shall be demonstrated within 180 days after startup. [40 CFR 63.5983(a)]

11. The permittee shall maintain records of operations as listed below. Such records shall be maintained on-site for at least five years after the date of recording and shall be provided to regulatory personnel upon request.

- a. Records and data used to calculate the actual quantity of VOCs emitted during each calendar month. The method used to calculate these emissions shall be the same as the one used in the application for this permit. The records shall be updated within thirty (30) days after the end of each month. Compliance will be based on a 12-month monthly rolling total.
- b. RTO temperatures during periods when Banbury No. 8 is in operation.

12. The new Banbury No. 8 shall be vented to a dust collector with at least 99% efficiency. As part of the operating permit Goodyear Lawton shall specify operating parameters that ensure the proper operation of the dust collector.

13. The permittee shall incorporate these permit conditions into the Title V permit application by submitting appropriate revisions no later than 60 days after the issuance of this permit.

14. In the event of a conflict between this permit and a previous current permit, this permit takes precedence.

The Goodyear Tire & Rubber Company
Kevin Windstrup
Environmental Coordinator
#1 Goodyear Boulevard
Lawton, OK 73505

Re: Construction Permit No. **2002-414-C PSD**
Facility Modernization Project
Goodyear Lawton Tire Manufacturing Plant
#1 Goodyear Boulevard
Lawton, OK, 73505

Dear Mr. Windstrup:

Enclosed is the permit authorizing construction of the referenced facility modification. Please note that this permit is issued subject to certain standard and specific conditions that are attached.

Thank you for your cooperation in this matter. If I may be of further service, please contact me at (405) 702-4199.

Sincerely,

Phil Martin, E.I.
New Source Permits Section
AIR QUALITY DIVISION

Enclosure

cc: Comanche County DEQ Office