

## Air Permit Review

**Permit Issue Date: PROPOSED**  
**CDS ID No. 377100137**

**Region:** Mooresville Regional Office  
**County:** Gaston  
**NC Facility ID:** 3600137  
**Inspector's Name:** Bruce Ingle  
**Date of Last Inspection:** 05/05/2005  
**Compliance Code:** B/In Violation W/regard To Em & Compl

<b>Facility Data</b>			<b>Permit Applicability (this application only)</b>		
<b>Applicant (Facility's Name):</b> Wix Filtration Allen Corporation - Allen Plant  <b>Facility Address:</b> Wix Filtration Allen Corporation - Allen Plant 2900 Northwest Boulevard Gastonia, NC 28052  <b>SIC:</b> 3714 / Motor Vehicle Parts & Accessories <b>NAICS:</b> 336399 / All Other Motor Vehicle Parts Manufacturing  <b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V			<b>SIP:</b> <b>NSPS:</b> <b>NESHAP:</b> <b>PSD:</b> <b>PSD Avoidance:</b> <b>NC Toxics:</b> New TAP emission rates <b>112(r):</b> <b>Other: Renewal</b>		
<b>Contact Data</b>			<b>Application Data</b>		
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<b>Application Number:</b> 3600137.06A <b>Date Received:</b> 12/01/2005 <b>Application Type:</b> Renewal <b>Application Schedule:</b> TV-Renewal <b>Existing Permit Data</b> <b>Existing Permit Number:</b> 3860/T20 <b>Existing Permit Issue Date:</b> 11/10/2005 <b>Existing Permit Expiration Date:</b> 08/31/2006		
Keith Clark EHS Manager (704) 869-3505 P O Box 1967 Gastonia NC, 28053	Stephen Renfrow Plant Manager (704) 869-3701 1601 South Marietta Street Gastonia NC, 28052	Keith Clark EHS Manager (704) 869-3505 P O Box 1967 Gastonia NC, 28053			
<b>Review Engineer:</b> Michael Brandon, P.E.  <b>Review Engineer's Signature:</b> _____ <b>Date:</b> April 17, 2006			<b>Comments / Recommendations:</b>		
			<b>Issue 3860/T21</b> <b>Permit Issue Date: PROPOSED</b> <b>Permit Expiration Date: PROPOSED</b>		

**1. Purpose of Application**

The purpose of this application is for renewal of the Title V permit and to incorporate new TAP modeling for phenol, formaldehyde and di ethyl hexyl phthalate (DEHP).

**2. Facility Description**

The Facility manufactures oil, air, and fuel filters for automobiles and trucks.

**3. Application Chronology**

The application chronology is detailed on the attached IBEAM Report.

**4. Permit Modification/Changes**

The permit has been modified to show each emission unit for each of the filter manufacturing lines. There are no changes to the facility for this renewal. The changes are as follows:

PAGE	SECTION	CHANGE
NA	All Sections	The following sources will be covered under the permit shield as part of this renewal. <u>502(b)(10) changes:</u> control devices (ID Nos. CD-6 and CD-16 under application no. 3600137.01A), emission sources (ID Nos. ES-18, ES-32, and ES-TUPB under application no. 3600137.02A), emission sources (ID No. ES-10-4 and ES-10-5 under application no. 3600137.04A);

PAGE	SECTION	CHANGE
		<p><u>501(c)(2) significant modification:</u>  Emission sources and control devices (ID Nos. ES-32 and CD-8 under application no. 3600137.04B);</p> <p><u>2Q .0515 Minor Modifications:</u>  Preheat oven and paper cure oven at line 32 air filter manufacturing (ID No. ES-32 under application no. 3600137.05A) and afterburner (ID No. CD-10-1) and replacement oven (ID No. ES-16-1) under application no. 3600137.05B.</p> <p>All monitoring, recordkeeping and reporting were incorporated into the Part I operating conditions when they received permission to construct under Part II conditions..</p>
NA	insignificant activities	<p>Changed boiler heat input to 2.5 million Btu/hr, as reported by applicant.  Added natural gas-fired water heater; 2.5 million Btu/hr heat input.  Added the following insignificant activities:  Line No. 6 paint line natural gas-fired washer oven; 1.0 million Btu heat input (ID No. I665),  Line No. 6 paint line natural gas-fired dryer oven; 1.0 million Btu heat input (ID No. I667), and  four natural gas-fired drying ovens; 0.5, 0.2, 0.5, and 0.5 million Btu heat input (ID No. I58 previously ES-58).</p>
3	Section 1 Emission Source Table	Corrected heat input rates for each source.
3	Section 1 Emission Source Table	<p>Oil Filter Line 6 pre-paint (ID No. ES-6-1) was revised to reflect a paper cure oven with a cool down section and a plastisol cure oven as separate emission sources (ID Nos. ES-6A and ES-6B).  Line 6 painting (ID No. ES-6-2) was revised to reflect the painting and curing operations as two separate sources (ID Nos. ES-6C and ES-6D).</p>
3	Section 1 Emission Source Table	Air Filter Line 8 (ID No. ES-8) was revised to reflect a paper cure oven with a cool down section and a plastisol cure oven with two cool down sections as separate emission sources (ID Nos. ES-8A and ES-8B).
3	Section 1 Emission Source Table	<p>Air/Fuel Filter Line 10 emission sources were renamed as follows to conform to the convention adopted for the emission source and control device listings.  ES-10-1→ES-10A; ES-10-2→ES-10B; ES-10-3→ES-10C;  ES-10-4→ES-10D; ES-10-5→ES-10EA; and CD-10-1→CD-10.</p>
3	Section 1 Emission Source Table	<p>Oil/Fuel Filter Line 16 emission sources were renamed as follows to conform to the convention adopted for the emission source and control device listings.  ES-16-1→ES-16A; ES-16-2→ES-16B; and CD-16-13→CD-16.  Line 16 painting (ID No. ES-16-3) was revised to reflect the painting and curing operations as two separate sources (ID Nos. ES-16C and ES-16D).</p>
4	Section 1 Emission Source Table	Air Filter Line 18 (ID No. ES-18) was revised to reflect a paper cure oven and two plastisol ovens as separate emission sources (ID Nos. ES-18A, ES-18B, and ES-18C).
4	Section 1 Emission Source Table	Air Filter Line 32 (ID No. ES-32) was revised to reflect a paper preheat oven, a paper cure oven, a poly-iso cure oven, and a plastisol/poly-iso gasket cure oven as separate emission sources (ID Nos. ES-32A, ES-32B, ES-32C, and ES-32D).
4	Section 1 Emission Source Table	<p>Oil Filter Line 40 pre-paint (ID No. ES-40-1) was revised to reflect a paper cure oven and a plastisol cure oven with a cool down section as separate emission sources (ID Nos. ES-40A and ES-40B).  Line 6 painting (ID No. ES-40-2) was revised to reflect the painting and curing operations as two separate sources (ID Nos. ES-40C and ES-40D).</p>

PAGE	SECTION	CHANGE
4	Section 1 Emission Source Table	Oil Filter Line 53 pre-paint (ID No. ES-53-1) was revised to reflect a paper cure oven with a cool down section and a plastisol cure oven with a cool down section as separate emission sources (ID Nos. ES-53A and ES-53B). Line 53 painting (ID No. ES-53-2) was revised to reflect the painting and curing operations as two separate sources (ID Nos. ES-53C and ES-53D).
4	Section 1 Emission Source Table	Hydraulic Filter Element Line 57 (ID No. ES-57) was revised to reflect end cap cure and the final cure oven as separate emission sources (ID Nos. ES-57A and ES-57B).
8-11	Section 2.1 C.	Section 2.1 C., Section 2.1 D., and Section 2.1 E. were combined as they have identical requirements. Old Section 2.1 E.3.c. SOC requirements for the Line No. 10 plastisol final cure oven (ID No. ES-10E) were fulfilled and removed from the permit.
11-13	new Section 2.1 D.	Recodified old Section 2.1 F.
NA	old Section 2.1 G.	This section was removed because the four natural gas-fired drying (burnishing) ovens are insignificant activities.
13-14	new Section 2.1 E.	Recodified old Section 2.1 H.
14-17	new Section 2.1 F.	Recodified old Section 2.1 I.
16	Section 2.1 F.4.c.	Calculation of VOC emissions from natural gas combustion in Air Filter Line No. 32 was removed from the PSD avoidance condition because the heat input to this line (five Million Btu/hr) is not sufficient to add more than 0.5 ton per year on a maximum use basis. The estimation is, therefore, not significant (i.e., rounding of emissions of less than 0.5 tons is 0 tons) and will no longer be required. The heat input required to result in a significant amount would be 20 million Btu per hour.
19-20	Section 2.2 A.3.	The toxic air pollutant table was revised to reflect the new emission rates and to remove the condition the requiring modeling that was to be performed to determine the new emissions rates.
23	Section 2.2 B.2.c.	Calculation of VOC emissions from natural gas combustion in Air Filter Line No. 18 and Air Filter Line No. 32 was removed from the PSD avoidance condition because the heat input to these lines is not sufficient to add more than 0.5 ton per year on a maximum use basis. The estimation is, therefore, not significant (i.e., rounding of emissions of less than 0.5 tons is 0 tons) and will no longer be required. The heat input required to result in a significant amount would be 20 million Btu per hour.
NA	Section 2.2 C.	The requirement for the Permittee to submit to DAQ by January 25, 2006 information of actual and potential emission rates for emissions of HAP from sources (ID Nos. ES-18, ES-32, and ES-TUPB) was removed as this condition has been fulfilled and the submittal determined to be acceptable.
24	Part II General Conditions	General Conditions were updated.

Emissions from the four burnish ovens (ID No. ES-58) were evaluated as follows:

The Line 58 Burnishing Ovens immerse metallic oil filter parts in a 5-8% aqueous solution of 250-C. The parts are then drip-dried in the oven via forced air at 160°F. 250-C is up to 80% hydrotreated heavy (C20-C50) naphthenic petroleum distillate. The manufacturer, Atotech, stated that the heavy distillate has negligible vapor pressure at 160°F, and remains as thin protective film on the steel parts. Diethanolamine is present as a small fraction of 250-C and a component of tall oil fatty acid soap, and, as such, is also nonvolatile. 2-butoxyethanol (butyl cellosolve or EGMBE) is the volatile component, 2.5% by wt. in 250-C and is delisted as HAP.

Assuming all EGMBE evaporates in the ovens, Wix used 6,270 gallons (47,063 lb) of 250-C in 2005, and 1,650 gallons (12,385 lb) in 2004. Actual emission 2005 is  $47,063 \times 2.5\% = 1,177$  lb/yr VOC. Calculating the potential to emit from the 2005 inventory:  $1,177$  lb/yr  $\times$  1.25 maximum hourly capacity increase factor  $\times$  8760 potential hrs / 2000 actual hrs = 6,444 lb/yr or 3.22 ton/yr for all four ovens.

**5. Regulatory Review**

Future applicability to the MACT for surface coating (40 CFR 63, Subpart M) and the requirement for facility wide modeling of all TAPs with the compliance demonstration for the last MACT were incorporated into this permit in the last modification. There are no new regulatory requirements that apply.

**6. NSPS, NESHAPS, PSD, Attainment Status, 112(r), CAM**

The facility is located in a non-attainment area for VOC. No NSPS or 112(r) requirements apply. The facility will be subject to the NESHAP requirements for surface coating (40 CFR 63, Subpart M) and must submit a compliance demonstration/permit application by of January 7, 2008. CAM does not apply because the afterburners employed at this facility are used to comply with opacity standards and not a regulated pollutant. Additionally, uncontrolled VOC emissions do not exceed 100 tons per year from any of the emissions units.

**7. Facility Wide Toxic Air Pollutants**

Air dispersion modeling was submitted for review on April 14, 2006 to address the revised emission rates for phenol, formaldehyde, and DEHP. The Air Quality Analysis Branch (AQAB) reviewed the modeling submittal and concurred with the analysis in a memo dated April 18, 2006. The ambient impact of TAP s were determined to be as follows:

<b>Phenol</b>	<b>DEHP</b>	<b>Formaldehyde</b>
58% of AAL	6% of AAL	6% of AAL

based on the emission rates tabulated below:

<b>Emission Source Source ID Number</b>	<b>Emission Point ID No.</b>	<b>Toxic Air Pollutant</b>	<b>Allowable TAP Emission Rate</b>
<b>Oil Filter Line No. 6</b>			
paper cure oven (ID No. ES-6A) plastisol cure oven (ID No. ES-6B) via afterburner (ID No. CD-6)	EP6_14	phenol formaldehyde	4.45 lb/hr 0.0309 lb/hr
paint booth (ID No. ES-6C)	EP6-16	formaldehyde	0.00924 lb/hr
<b>Air Filter Line No. 8</b>			
paper cure oven (ID No. ES-8A) plastisol cure (ID No. ES-8B) via afterburner (ID No. CD-8)	EP-8	phenol formaldehyde	0.605 lb/hr 0.00539 lb/hr
<b>Air/Fuel Filter Line No. 10</b>			
paper preheat oven (ID No. ES-10A)	EP10A_1 and EP10A_2	phenol formaldehyde	0.0406 lb/hr 0.00460 lb/hr
paper post cure oven (ID No. ES-10B)	EP10A_3	phenol formaldehyde	0.0203 lb/hr 0.00230 lb/hr
No. 1 gel oven (ID No. ES-10C)	EP10_6	DEHP	0.288 lb/day
No. 2 gel oven (ID No. ES-10D)	EP10_8 and EP10_9	DEHP	0.576 lb/day
final cure oven (ID No. ES-10E) via afterburner (ID No CD-10)	EP10_10	DEHP	0.864 lb/day
<b>Oil/Fuel Filter Line No. 16</b>			
paper oven (ID No. ES-16A) plastisol cure oven (ID No. ES-16B) via afterburner (ID No. CD-16)	EP16_3	phenol formaldehyde DEHP	0.866 lb/hr 0.00410 lb/hr 0.2928 lb/day
paint cure oven (ID No. ES-16D)	EP16_9	formaldehyde	0.0104 lb/hr

<b>Emission Source Source ID Number</b>	<b>Emission Point ID No.</b>	<b>Toxic Air Pollutant</b>	<b>Allowable TAP Emission Rate</b>
<b>Air Filter Line No. 18</b>			
paper cure oven (ID No. ES-18A)	EP18_1 and EP18_2	phenol formaldehyde	0.0316 lb/hr 0.0260 lb/hr
<b>Air Filter Line No. 32</b>			
paper preheat oven (ID No. ES-32A)	EP32_A	phenol formaldehyde	0.955 lb/hr 0.0197 lb/hr
paper cure oven (ID No. ES-32B)	EP32_B	phenol formaldehyde	0.955 lb/hr 0.0197 lb/hr
<b>Oil Filter Line No. 40</b>			
paper cure oven (ID No. ES40A)	EP40_2, EP40_3, and EP40_4	phenol formaldehyde	2.706 lb/hr 0.00608 lb/hr
paint booth (ID No. ES-40C)	EP40_17	formaldehyde	0.0154 lb/hr
<b>Oil Filter Line No. 53</b>			
paper oven cool down section (ID No. ES-53A) not vented to afterburner	EP53_4	phenol formaldehyde	0.458 lb/hr 0.00035 lb/hr
paper cure oven (ID No. ES-53A) plastisol cure oven (ID No. ES-53B) via afterburner (ID No. CD-53)	EP53_17	phenol formaldehyde DEHP	1.375 lb/hr 0.00105 lb/hr 0.7512 lb/day
plastisol oven cool down section (ID No. ES-53B) not vented to afterburner	EP_9	DEHP	0.25 lb/day
paint booth (ID No. ES-53C)	EP53_13	formaldehyde	0.0203 lb/hr
<b>Hydraulic Filter Element Line No. 57</b>			
final cure oven (ID No ES-57B)	ES57_1 and EP57_2	phenol formaldehyde	0.0054 lb/hr 0.000671 lb/hr

These emission rates are based on the three times the actual production rates. Since the impacts are low, the facility is only required to report if production exceeds that for which the emissions estimates were determined and to submit additional modeling with emissions rates based on the new production basis. The production basis for the current modeled emissions rates is as follows:

	<u>phenol and formaldehyde paper usage</u>	<u>Plastisol containing DEHP usage</u>
Line No. 6	779,790 lb/mo.	5,434 lb/mo.
Line No. 8	259,716 lb/mo.	8,175 lb/mo.
Line No. 10	847,455 lb/mo.	28,302 lb/mo.
Line No. 16	406,962 lb/mo.	15,242 lb/mo.
Line No. 18	871,683 lb/mo.	16,226 lb/mo.
Line No. 32	266,265 lb/mo.	39,364 lb/mo.
Line No. 40	619,167 lb/mo.	17,528 lb/mo.
Line No. 53	443,457 lb/mo.	28,443 lb/mo.
Line No. 57	3,846 lb/mo.	1,285 lb/mo.

### 8. Facility Compliance Status

The facility is presently under a special order of consent to install an afterburner on Line No. 10 final cure oven (ID No. ES-10E) because of opacity violations. The last inspection of April 4, 2006 states that the afterburner had been installed and Method 9 opacity readings made. Witness of the opacity testing indicates compliance with the visibility standard of 20 percent opacity.

**9. Statement of Compliance**

Mr. Steve Renfrow, responsible official, certified on November 10, 2005 that the facility was not in compliance and would be in compliance in accordance with the SOC. The SOC stipulations have been met and the facility is now in compliance.

**10. Facility Emissions Review**

There are no changes to the facility's potential emissions, which were reported as follows:

PM- 2.62 tons per year  
sulfur dioxide - 0.207 tons per year  
nitrogen oxides - 34.5 tons per year  
carbon monoxide - 29 tons per year  
volatile organic compounds - 498 tons per year  
total HAP - 33.2 tons per year  
largest single HAP (glycol ethers) - 13.8 tons per year.

**11. Stipulation Review**

Old Section 2.1 E.3.c. SOC requirements for the Line No. 10 plastisol final cure oven (ID Bo. ES-10E) were fulfilled and removed from the permit.

Calculation of VOC emissions from natural gas combustion in Air Filter Line No. 18 and Air Filter Line No. 32 was removed from the PSD avoidance conditions because the heat input to these lines (8.85 million Btu/hr) is not sufficient to add more than 0.5 ton per year on a maximum use basis. The estimation is, therefore, not significant (i.e., rounding of emissions of less than 0.5 tons is 0 tons) and will no longer be required. The heat input required to result in a significant amount would be 20 million Btu per hour.

Allowable TAP limits were updated.

Old Section 2.2 C requirement for the Permittee to submit to DAQ by January 25, 2006 information of actual and potential emission rates for emissions of HAP from sources (ID Nos. ES-18, ES-32, and ES-TUPB) was removed as this condition has been fulfilled and the submittal determined to be acceptable.

General Conditions were updated.

**12. Public Notice/EPA and Affected State Review**

The renewal is subject to a 30-day public comment period and a concurrent 45-day EPA review period. A notice of intent to renew the Title V permit for an additional five years will be published in a local newspaper and provide for an opportunity to comment on the renewal and request a public hearing.

**13. Conclusions, Comments, and Recommendations**

The MRO and the RCO recommend renewal of permit 3860 in revision T21.