

Air Permit Review

Permit Issue Date: PROPOSED

Region: Winston-Salem Regional Office
County: Guilford
NC Facility ID: 4100956
Inspector's Name: Ray Stewart
Date of Last Inspection: 04/24/2007
Compliance Code: 3/In Compliance - Inspection

<p align="center">Facility Data</p> <p>Applicant (Facility's Name): Vertellus Performance Materials, Inc.</p> <p>Facility Address: Vertellus Performance Materials, Inc. 2110 High Point Road Greensboro, NC 27403</p> <p>SIC: 2869/Industrial Organic Chemicals NAICS: 325199/other basic organic chemical manufacturing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>			<p align="center">Permit Applicability (this application only)</p> <p>SIP: 2D .0503, .0516, .0521, .0958, .1806 NSPS: NESHAP: PSD: PSD Avoidance: sulfur dioxide NC Toxics: 2Q .0711 112(r): Other:</p>					
<p align="center">Contact Data</p> <table border="1"> <tr> <td> <p align="center">Facility Contact</p> <p>Bryan Sepessy Operations Manager (336) 292-1790 2110 High Point Road Greensboro NC, 27403</p> </td> <td> <p align="center">Authorized Contact</p> <p>Laurence Slovin President (336) 292-1781 2110 High Point Road Greensboro NC, 27403</p> </td> <td> <p align="center">Technical Contact</p> <p>Terry Wyrick Director Capital Projects (336) 292-1781 2110 High Point Road Greensboro NC, 27403</p> </td> </tr> </table>			<p align="center">Facility Contact</p> <p>Bryan Sepessy Operations Manager (336) 292-1790 2110 High Point Road Greensboro NC, 27403</p>	<p align="center">Authorized Contact</p> <p>Laurence Slovin President (336) 292-1781 2110 High Point Road Greensboro NC, 27403</p>	<p align="center">Technical Contact</p> <p>Terry Wyrick Director Capital Projects (336) 292-1781 2110 High Point Road Greensboro NC, 27403</p>	<p align="center">Application Data</p> <p>Application Number: 4100956.02B Date Received: 10/29/2002 Application Type: Modification Application Schedule: TV-1st Time</p> <p align="center">Existing Permit Data</p> <p>Existing Permit Number: 04769/R14 Existing Permit Issue Date: 03/28/2007 Existing Permit Expiration Date: 06/30/2009</p>		
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<p>Review Engineer: Michael Brandon, P.E. Review Engineer's Signature: _____ Date: _____</p>		<p align="center">Comments / Recommendations:</p> <p>Issue 4769T15 Permit Issue Date: Proposed Permit Expiration Date: 5 Years</p>						

I. Introduction

This facility has had the synthetic minor condition removed from their permit and is required to obtain a first time Title V Operating Permit. This first time Title V Air Permit application Review conveys pertinent emissions data, rules, policies, and engineering assumptions used to construct the Title V operating permit. The primary source of information used to construct the permit is the permit application and subsequent correspondence with the facility.

II. Background Information

The Title V operating permit will replace the existing Air Quality Construction and Operation Permit No. 4769R14 that was issued on March 28, 2007 and is currently scheduled to expire on June 30, 2009.

Vertellus Performance Materials, Inc. submitted a complete Title V application to the Division of Air Quality on November 1, 2002 pursuant to the R11 permit requirement (pursuant to 15A NCAC 2Q .0504) for its submittal within one year of changing the facility status from synthetic minor (i.e., October 30, 2001). The permit is required to go to public notice pursuant to 15A NCAC 2Q .0521.

III. Facility Description

This facility is a chemical manufacturer whose primary products are primary products are DEET (N,N-diethyl-m-toluamide) and products based on citric acid and castor oil.

IV. Statement of Compliance

The facility is presently in compliance with all applicable regulations and permit conditions. The applicant has also certified that the facility will be in compliance with any applicable requirements taking effect during the term of the permit and will meet such requirements on a timely basis.

V. Summary of Emission Sources and Control Devices

The following table identifies all significant emission sources and associated control devices for which the First Time Title V Operating Permit is being issued.

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
B1	natural gas, distillate, and residual fuel oil-fired boiler; 25.1 million Btu heat input	NA	NA
B2	natural gas, distillate, and residual fuel oil-fired boiler; 25.1 million Btu heat input	NA	NA
LPH	natural gas, distillate, and residual fuel oil-fired process heater; 13.558 million Btu heat input	NA	NA
SPH	natural gas and waste oil-fired process heater; 4.5 million Btu heat input	NA	NA
D1	reactor w/process condenser; 2,500 gallons	NA	NA
D2	reactor w/process condenser; 1,600 gallons	NA	NA
D3	reactor w/process condenser; 3,000 gallons	NA	NA
D4	reactor w/process condenser; 2,580 gallons	NA	NA
R1	reactor w/process condenser; 8,000 gallons	NA	NA
R2	reactor w/ two process condensers; 8,000 gallons	NA	NA
R3	reactor w/process condenser; 2,100 gallons	NA	NA
R4	reactor w/process condenser; 5,000 gallons	NA	NA
R5	reactor w/two process condensers; 5,400 gallons	NA	NA
R6	reactor w/two process condensers; 5,400 gallons	NA	NA
R7	reactor w/process condenser; 3,200 gallons	NA	NA
R8	reactor w/process condenser; 5,400 gallons	NA	NA
R9	reactor w/process condenser; 2,100 gallons	NA	NA
MS	methanol still with two process condensers in series and condensate tank; 3,000 gallons	NA	NA
BR	butanol recovery: phase separator tank with heavy phase (water) stripper still/process condenser and light phase enriching still/process condenser	NA	NA
R10	reactor w/process condenser; 1,800 gallons	NA	NA
V3	reactor w/process condenser; 6,600 gallons	NA	NA
R11	reactor w/process condenser; 2,400 gallons	CD3	packed tower scrubber
R12	reactor w/process condenser; 2,400 gallons		
R13	reactor w/process condenser; 5,600 gallons		
V1	reactor w/process condenser; 6,500 gallons		
R14	reactor w/ two process condensers; 5,400 gallons	NA	NA
R15	reactor w/process condenser; 10,000 gallons	NA	NA

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
R20	reactor w/two process condensers in series; 6,600 gallons	CD5	packed bed scrubber; 15 gallons per minute caustic scrubbing liquor injection (odor control)
R21	reactor w/two process condensers in series; 6,600 gallons		
R23	reactor w/two process condensers in series; 6,600 gallons		
R22	reactor w/process condenser; 3,900 gallons	NA	NA
ETS	ethanol still with two process condensers in series and condensate tank; 2,500 gallons	NA	NA
C1	citric acid pneumatic conveyor	CDC1	fabric filter; 34 square feet of filter area
WW1	wastewater stripper	CD6	carbon adsorption

VI. Emission Source-by-Source Evaluation

A. Natural gas, distillate, and residual fuel oil-fired boiler (ID No. B1) Natural gas, distillate, and residual fuel oil-fired boiler (ID No. B2)

- Description
These boilers produce steam for process use. The rated heat inputs are 25.1 million Btu per hour for boiler B1 and B2. Boiler B3 has been removed from the site.
- Applicable Regulatory Requirements
The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

Regulated Pollutant	Limits/Standards	Applicable Regulation
particulate matter	particulate emissions from boilers ID Nos. B1 and B2 shall not exceed 0.386 pounds per million Btu heat input	15A NCAC 2D .0503
sulfur dioxide	sulfur dioxide emissions shall not exceed 2.3 pounds per million Btu heat input	15A NCAC 2D .0516
visible emissions	visible emissions shall not exceed 40 percent opacity from boiler ID No. B1 visible emissions shall not exceed 20 percent opacity from boiler ID Nos. B2	15A NCAC 2D .0521

a. **15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS**

i. Regulatory Analysis

Particulate matter from each combustion device is limited based on total facility heat input at the time of the boilers installation in accordance with the equation $E = 1.090 \times Q^{-0.2594}$ where
E = the allowable particulate emission rate in pounds per million Btu heat input and
Q = is the total heat input for all indirect heat exchange combustion sources the facility.

ii. Monitoring, recordkeeping, reporting Requirements

A comparison of the worst case emitting fuel particulate emission, determined from the US EPA Compilation of Air pollution Emission Factors (AP-42), shows that No. 6 fuel oil can produce emissions of about 0.15 pounds of particulate matter per million Btu heat input. This is based on the AP-42 emission factor equation determination of particulate emission rate equal to $9.19(S)+3.22$ per thousand gallons. The maximum value of S (sulfur content) is 2.1 percent, as limited by permit condition, resulting in 22.519 pounds of particulate per thousand gallons of No. 6 fuel oil. AP-42 assumes that a thousand gallons of No. 6 fuel oil has a heating value of 150 million Btu (150,000 Btu per gallon).

Since it is evident that the particulate standard is not likely to be exceeded under proper operating conditions, no monitoring, recordkeeping, or reporting is required for this standard.

b. **15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES**

i. Regulatory Analysis

Sulfur dioxide emissions from each unit are limited to 2.3 pounds per million Btu heat input. The highest sulfur content that a fuel oil may contain to comply with this limit is 2.1 percent sulfur, determined from the US EPA Compilation of Air pollution Emission Factors (AP-42). The sulfur content is back calculated from the emission factor equation: $157S/\text{thousand gallons for SO}_2$ and $5.7S/\text{thousand gallons for SO}_3$.
 $\text{SO}_2 \text{ lb/million Btu} = (157+5.7)(S)/150 \text{ million Btu} = 2.3 \text{ lb SO}_2/\text{million Btu}$ (i.e., $S \sim 2.12$)

ii. Monitoring Requirements

The Permittee is required monitor the fuel supplier's certification of sulfur content. No monitoring is required for natural gas or distillate fuel oil because they have inherently low sulfur content.

iii. Recordkeeping Requirements

The Permittee is required to maintain records of residual fuel sulfur content via supplier certifications.

iv. Reporting Requirements

Semi annual reports require a summary of fuel supplier certifications.

c. **15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS**

i. Regulatory Analysis

Visual emissions from each source may not exceed 20 percent opacity or 40 percent opacity dependant on if the unit was constructed before or after July 1, 1971.

ii. Monitoring Requirements

The Permittee is required monitor emissions from each source daily to verify that no abnormal emission is occurring during the combustion of residual oils to ensure proper operation of the unit. If an abnormal visible emission occurs, the Permittee is required to correct any abnormal emissions within the monitoring period or conduct a certified Method 9 visible emissions evaluation to demonstrate compliance. No monitoring is required during the combustion of distillate fuel oil and natural gas as they are inherently clean burning fuels.

iii. Recordkeeping Requirements

The Permittee is required to maintain records of daily observations and any corrective actions during the combustion of residual fuel.

iv. Reporting Requirements

Semi annual reports require a summary of monitoring activity and any anomalies.

B. Natural gas, distillate, and residual fuel oil-fired large process heater (ID No. LPH)

1. Description
This process heater produces heat via inert oil media rather than steam for process use. The rated heat input is 13.558 million Btu per hour.
2. Applicable Regulatory Requirements
The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

Regulated Pollutant	Limits/Standards	Applicable Regulation
particulate matter	particulate emissions shall not exceed 0.364 pounds per million Btu heat input	15A NCAC 2D .0503
sulfur dioxide	sulfur dioxide emissions shall not exceed 2.3 pounds per million Btu heat input	15A NCAC 2D .0516
visible emissions	visible emissions shall not exceed 20 percent opacity	15A NCAC 2D .0521
sulfur dioxide	sulfur dioxide emissions shall not exceed 40 tons per consecutive 12 month period	15A NCAC 2Q .0317 PSD avoidance

- a. **15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS**
 - i. Regulatory Analysis
Particulate matter from each combustion device is limited based on total facility heat input at the time of the boilers installation in accordance with the equation $E = 1.090 \times Q^{-0.2594}$ where
E = the allowable particulate emission rate in pounds per million Btu heat input and
Q = is the total heat input for all indirect heat exchange combustion sources the facility.
 - ii. Monitoring, recordkeeping, reporting Requirements
A comparison of the worst case emitting fuel particulate emission, determined from the US EPA Compilation of Air pollution Emission Factors (AP-42), shows that No. 6 fuel oil can produce emissions of about 0.15 pounds of particulate matter per million Btu heat input. This is based on the AP-42 emission factor equation determination of particulate emission rate equal to $9.19(S)+3.22$ per thousand gallons. The maximum value of S (sulfur content) is 2.1 percent, as limited by permit condition, resulting in 22.519 pounds of particulate per thousand gallons of No. 6 fuel oil. AP-42 assumes that a thousand gallons of No. 6 fuel oil has a heating value of 150 million Btu (150,000 Btu per gallon).

Since it is evident that the particulate standard is not likely to be exceeded under proper operating conditions, no monitoring, recordkeeping, or reporting is required for this standard.
- b. **15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES**
 - i. Regulatory Analysis
Sulfur dioxide emissions from each unit are limited to 2.3 pounds per million Btu heat input. The highest sulfur content that a fuel oil may contain to comply with this limit is 2.1 percent sulfur, determined from the US EPA Compilation of Air pollution Emission Factors (AP-42). The sulfur content is back calculated from the emission factor equation: $157S/\text{thousand gallons for SO}_2$ and $5.7S/\text{thousand gallons for SO}_3$.
 $\text{SO}_2 \text{ lb/thousand gallons} = (157+5.7)(S)/150 \text{ million Btu} = 2.3 \text{ lb SO}_2/\text{million Btu}$ (i.e., $S \sim 2.12$)
 - ii. Monitoring Requirements
The Permittee is required monitor the fuel supplier's certification of sulfur content. No monitoring is required for natural gas or distillate fuel oil because they have inherently low sulfur content.

- iii. Recordkeeping Requirements
The Permittee is required to maintain records of residual fuel sulfur content via supplier certifications.
 - iv. Reporting Requirements
Semi annual reports require a summary of fuel supplier certifications.
- c. **15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS**
- i. Regulatory Analysis
Visual emissions from each source may not exceed 20 percent opacity.
 - ii. Monitoring Requirements
The Permittee is required monitor emissions from each source daily to verify that no abnormal emission is occurring during the combustion of residual oils to ensure proper operation of the unit. If an abnormal visible emission occurs, the Permittee is required to correct any abnormal emissions within the monitoring period or conduct a certified Method 9 visible emissions evaluation to demonstrate compliance. No monitoring is required during the combustion of distillate fuel oil and natural gas as they are inherently clean burning fuels.
 - iii. Recordkeeping Requirements
The Permittee is required to maintain records of daily observations and any corrective actions during the combustion of residual fuel.
 - iv. Reporting Requirements
Semi annual reports require a summary of monitoring activity and any anomalies.
- d. **15A NCAC 2Q. 0317: AVOIDANCE CONDITION for 15A NCAC 2D. 0530: Prevention Of Significant Deterioration**
- i. Regulatory Analysis (Performed for permit revision R11)
Circa 1984, the large process heater was installed at this facility at which time facility wide emissions of sulfur dioxide were limited from two existing boilers (ID Nos. ES-B1 and ES-B2) and an existing small process heater (ID No. ES-SPH) to less than 100 tons per year and from the new large process heater to 100 tons per year. Subsequently, total facility sulfur dioxide emissions from the total facility were limited to less than 100 tons per year to avoid Title V applicability. However, sulfur dioxide emissions from the large process heater have never been greater than 40 tons per consecutive 12 month period and greater flexibility in the fuel use at existing sources was desired. No other pollutant from this source would exceed a significant level. Therefore, sulfur dioxide emission limitations for the sources in existence prior to the installation of the large process heater were removed, the synthetic minor source condition was removed, and the sulfur dioxide emissions limitation for the large process heater was modified to limit emissions to less than the PSD significance level of 40 tons per year.
 - ii. Monitoring Requirements
The Permittee is required monitor residual oil sulfur content (not to exceed 2.1 percent by weight) and residual fuel oil use (not to exceed 242,400 gallons per consecutive 12 month period).
 - iii. Recordkeeping Requirements
The Permittee is required to maintain monthly records of residual fuel use and sulfur content. Emissions of sulfur dioxide are required to be calculated monthly and recorded.
 - iv. Reporting Requirements
Semi annual reports require a summary of monitoring activity.

C. Natural gas and waste oil-fired small process heater (ID No. SPH)

1. Description
This process heater produces heat via inert oil media rather than steam for process use. The rated heat input is 4.5 million Btu per hour.
2. Applicable Regulatory Requirements
The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

Regulated Pollutant	Limits/Standards	Applicable Regulation
particulate matter	particulate emissions shall not exceed 0.386 pounds per million Btu heat input	15A NCAC 2D .0503
sulfur dioxide	sulfur dioxide emissions shall not exceed 2.3 pounds per million Btu heat input	15A NCAC 2D .0516
visible emissions	visible emissions shall not exceed 40 percent opacity	15A NCAC 2D .0521
toxic air pollutants sulfur dioxide, particulate matter	virgin fuel equivalency determination criteria	15A NCAC 2Q .0317 TAP avoidance

- a. **15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS**
 - i. Regulatory Analysis
Particulate matter from each combustion device is limited based on total facility heat input at the time of the boilers installation in accordance with the equation $E = 1.090 \times Q^{-0.2594}$ where
E = the allowable particulate emission rate in pounds per million Btu heat input and
Q = is the total heat input for all indirect heat exchange combustion sources the facility.
 - ii. Monitoring, Recordkeeping, and Reporting Requirements
A comparison of the worst case emitting fuel particulate emission, determined from the US EPA Compilation of Air pollution Emission Factors (AP-42), shows that No. 6 fuel oil (waste oil equivalent) can produce emissions of about 21.6 pounds of particulate per thousand gallons of waste oil based on the AP-42 emission factor equation determination of particulate emission rate equal to $9.19(S)+3.22$ per thousand gallons. The maximum value of S (sulfur content) is 2.0 percent, as limited by permit condition for waste oil equivalency. Therefore, the waste oil must have a minimum heat content of 55,958 Btu per gallon.

 $21.6 \text{ lb PM/ thousand gallons} / (0.386 \text{ lb PM} / 106 \text{ Btu}) = 55,958 \text{ Btu/gallon}$

This heating value is about one third of conventional No. 6 fuel oil. It is assumed that the waste oil will meet the minimum heat content requirement based on the virgin fuel oil equivalency demonstration required to avoid the toxic air pollutant regulation. No additional monitoring, recordkeeping, or reporting will be required for particulate compliance.
- b. **15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES**
 - i. Regulatory Analysis
Sulfur dioxide emissions from each unit are limited to 2.3 pounds per million Btu heat input.
 - ii. Monitoring, Recordkeeping, and Reporting Requirements
The highest sulfur content that the waste oil may contain is 2.0 percent sulfur. The minimum heat content back calculated from the AP-42 emission factor equation: $157S/\text{thousand gallons}$ for SO_2 and $5.7S/\text{thousand gallons}$ for SO_3 is 141,478 btu per gallon

SO_2 lb/thousand gallons = $(157+5.7)(S) = 325.4$ lb SO_2 /thousand gallons
 325.4 lb SO_2 /thousand gallons / $(2.3 \text{ lb } \text{SO}_2/10^6 \text{ Btu}) = 141,478$ Btu per gallon

This heating value is approximately equivalent to conventional distillate fuel oil. It is assumed that the waste oil will meet the minimum heat content requirement based on the virgin fuel oil equivalency demonstration required to avoid the toxic air pollutant regulation. No additional monitoring, recordkeeping, or reporting will be required for particulate compliance.

c. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- i. **Regulatory Analysis**
Visual emissions from each source may not exceed 40 percent opacity.
- ii. **Monitoring Requirements**
The Permittee is required monitor emissions from each source daily to verify that no abnormal emission is occurring during the combustion of waste oil to ensure proper operation of the unit. If an abnormal visible emission occurs, the Permittee is required to correct any abnormal emissions within the monitoring period or conduct a certified Method 9 visible emissions evaluation to demonstrate compliance. No monitoring is required during the combustion of natural gas as it is an inherently clean burning fuel.
- iii. **Recordkeeping Requirements**
The Permittee is required to maintain records of daily observations and any corrective actions during the combustion of waste oil fuel.
- iv. **Reporting Requirements**
Semi annual reports require a summary of monitoring activity and any anomalies.

d. 15A NCAC 2Q. 0317: AVOIDANCE CONDITION for 15A NCAC 2Q .0700: Toxic Air Pollutants Procedures

- i. **Regulatory Analysis**
Waste oil generated on site must meet requirements for flash point; sulfur, ash and toxic air pollutant content to demonstrate its properties are equivalent to virgin fuel oil. The toxic components that are regulated include arsenic, cadmium, chromium, lead, and total halogens. Polychlorinated biphenyl content must also be less than 2 ppmw.
- ii. **Monitoring and Recordkeeping Requirements**
The Permittee is required to test each batch of waste oil and to maintain records of the equivalency determination.
- iii. **Reporting Requirements**
Annual reporting of the analytical testing and the amount of waste oil generated each month are required.

D. Citric acid pneumatic conveyor (ID No. C1) with fabric filter (ID No. CDC1)

1. Description
This equipment conveys citric acid to areas requiring its use for manufacture of plasticizer.

2. Applicable Regulatory Requirements
The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

Regulated Pollutant	Limits/Standards	Applicable Regulation
particulate matter	Emissions of particulate matter shall not exceed an allowable emission rate as calculated by the following equation $E = 4.10 \times P^{0.67}$ Where E = allowable emission rate in pounds per hour P = process weight in tons per hour	15A NCAC 2D .0515
visible emissions	visible emissions shall not exceed 20 percent opacity	15A NCAC 2D .0521

a. **15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES**

- i. Regulatory Analysis
The source must comply with the process weight rate determined emission limit. The transfer operation is designed to minimize loss on transfer of process material through the use of pneumatic transfer collection units attached to a fabric filter. The maximum allowable emission rate based on the maximum rated through put for the unit of six tons per hour is 13.62 pounds per hour. Estimated uncontrolled emissions are 13.2 pounds per hour based on the US EPA Compilation of Air Pollutant Emission Factors (AP-42) for lime transfer and conveying (2.2lb PM/ton). Compliance with the particulate emission limit is anticipated with or without fabric filter control.
- ii. Monitoring Requirements
Monthly inspection and maintenance of each transfer unit and baghouse is required. Annual inspection of internals is required for the baghouse.
- iii. Recordkeeping Requirements
The Permittee is required to maintain monthly records of inspections and any maintenance performed on the pneumatic transfer collection unit and control device.
- iv. Reporting Requirements
Semi annual reporting of recordkeeping activities is required.

b. **15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS**

- i. Regulatory Analysis
Visual emissions from the source may not exceed 20 percent opacity. Compliance with this limitation is anticipated due to the use of control equipment.
- ii. Monitoring Requirements
The Permittee is required monitor emissions from the source monthly to verify that no abnormal emission is occurring during operation of the unit. If an abnormal visible emission occurs, the Permittee is required to correct any abnormal emissions within the monitoring period or conduct a certified Method 9 visible emissions evaluation to demonstrate compliance.

- iii. Recordkeeping Requirements
The Permittee is required to maintain records of monthly observations and any corrective actions.
- iv. Reporting Requirements
Semi annual reports require a summary of monitoring activity.

VII. Multiple Emission Source Limits

A. Facility Wide

All facility emission sources are subject to these limits and/or standards:

Regulated Pollutant	Limits/Standards	Applicable Regulation
volatile organic compounds	work practice and house keeping	15A NCAC 2D. 0958
odor	adequate control or odorous emissions	15A NCAC 2D .1807
toxic air pollutants	facility wide emission caps for toluene, benzene, acetic acid, and ammonia	15A NCAC 2Q. 0711
NA	equipment labeling	NCGS 143-215.63 and 143-215.108

1. **15A NCAC 2D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS**
This permit requirement applies facility wide and provides housekeeping and work practice standards to prevent fugitive emissions of VOC to the atmosphere. Monthly inspections are required to ensure the work practice and housekeeping standards are being implemented. Records of inspections are required and semi annual reporting of deviations.
2. **15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS**
This "state enforceable only" permit requirement applies facility wide and prohibits the Permittee from operating the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary. This provision has no recordkeeping or reporting requirement and is complaint based. The facility presently employs caustic scrubber for butyric acid use and chemical manufacture. Additional control of wastewater treatment unit emissions may be required pending DAQ action regarding complaints from the public regarding odor. No notification has been made to the facility at this time.
3. **TOXIC AIR POLLUTANT EMISSIONS LIMITATION AND REPORTING REQUIREMENT**
The facility has permit limits that show the facility to be emitting four TAPs (toluene, benzene, acetic acid, and ammonia) below the TPERs. The Permittee is required to maintain records showing that the following emissions caps will not be exceeded.

Pollutant	TPERs Limitations			
	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)
toluene		98		14.4
benzene	8.1			
acetic acid				0.96
ammonia				0.68

4. **NCGS 143-215.63 and 143-215.108**

As authorized by North Carolina General Statutes 143-215.63 and 143-215.108, and at the specific request of the Winston Salem Regional Office, the facility is required to affix permanent ID numbers to all permitted equipment within one year of the date of permit issuance.

VIII. General Conditions

The General Conditions section of the Title V Operating Permits lists additional applicable rule requirements that the Permittee must adhere to, as with any other permit condition. These requirements in general are common to all Title V facilities. The general conditions include provisions such as annual fee payment, permit renewal and expiration, transfer of ownership or operation, property rights, submission of documents, inspections and entry procedures, reopen for cause, and severability.

IX. Insignificant Activities

The insignificant activities listed in the draft permit have been reviewed and verified. All of the tanks (process vessels and/or storage tanks) listed as significant emission units in the previous permits were determined to have insignificant emissions. An emission source or activity is not exempted from any applicable requirement and the owner or operator of the source is not exempted from demonstrating compliance with any applicable requirement because an emission source or activity is insignificant. Categorically exempt significant activities are not included on this list.

X. Public Notice

Pursuant to 15A NCAC 2Q .0521, a notice of the Title V Operating Permit will be placed in a newspaper of general circulation in the area where the facility is located. The notice will provide for a 30 day comment period, with an opportunity for a public hearing. Copies of the public notice will be sent to persons on the Title V mailing list, affected states, and EPA.

XI. Other Regulatory Considerations

NESHAP (40 CFR 63)

The facility is not a major source of hazardous air pollutants based on its present use of raw materials containing these pollutants. Therefore, there is no regulatory authority to incorporate monitoring, recordkeeping, or reporting for condensers, scrubbers, and the carbon adsorber. However, should it be determined at a future date that hazardous air pollutant emissions could exceed the significant threshold without these devices, an avoidance condition requiring these elements may be incorporated into the permit. Another causation may be for control of odorous pollutants if odor complaints continue to be reported.

NSPS

All of the tanks at the facility are either too small or store volatile organic compounds with vapor pressures less than the threshold values for New Source Performance Standard (40 CFR 60, Subpart Kb) applicability. The regulation was modified on October 17, 2000 to change applicability requirements. These new applicability requirements have been used to determine if the tanks were still subject to any requirement of NSPS Kb. None were found to presently be affected facilities.

NESHAP (40 CFR 61)

Another matter of importance is the applicability of the benzene NESHAP. Past permits have indicated that the Permittee must follow 40 CFR 61, Subpart FF "National Emission Standard for Benzene Waste Operations". This applies to owners and operators of hazardous waste treatment, storage, and disposal facilities that treat, store, or dispose of hazardous waste generated by any chemical manufacturing plant, coke by-product recovery plant, and/or petroleum refinery. This chemical plant is not classified as a hazardous waste treatment, storage, and/or disposal facility.

PSD

This facility is major for PSD review purposes because a chemical plant is a listed category.

XII. Recommendations

The first time Title V application for Vertellus Specialty Chemicals, Inc. has been reviewed by the DAQ to determine compliance with all procedures and requirements under 15A NCAC 2Q .0500 and 40 CFR Part 70. The DAQ has made a preliminary determination that the facility will achieve compliance as specified in the permit with all applicable requirements.