

# DRAFT

## FIRST TIME TITLE V AIR PERMIT APPLICATION REVIEW

Revised July 7, 2003

---

<b>APPLICANT:</b>		<b>SITE LOCATION:</b>	<b>COUNTY:</b>
UCO Fabrics, Inc.		Rockingham	Richmond
<b>TECHNICAL CONTACT:</b>	<b>PHONE:</b>	<b>RESPONSIBLE OFFICIAL:</b>	<b>TITLE:</b>
George Curry	910-997-6471	Bart Van de Woestyne	President & COO
<b>REVIEW ENGINEER:</b>		<b>SIGNATURE:</b>	<b>DATE:</b>
Michael Benson/Charles Yirka			June 26, 2003
<b>REGIONAL CONTACT:</b>		<b>REGIONAL OFFICE:</b>	<b>SIC CODE:</b>
Tom Mckinney		Fayetteville	2253
<b>APPLICATION NUMBER:</b>		<b>EXISTING PERMIT NUMBER:</b>	<b>NEW PERMIT NUMBER:</b>
7700051.02B		06111R07	06111T08

---

### I. Introduction

The U.S. Environmental Protection Agency (EPA) has given interim approval to North Carolina's Title V operating permits program effective on December 15, 1995. Final approval for the Title V program was received October 1, 2001. Title V facilities are required to obtain an operating permit which addresses all applicable regulations under the State Implementation Plan, Federal Implementation Plan, and other provisions of the Clean Air Act (CAA). The Title V Operating Permit will define all of the facility's obligations under the CAA.

This First Time Title V Air Permit application Review intends to convey all 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 above referenced air permit application. This facility has previously been permitted as a Synthetic Minor. Changes in business conditions warrant the Company to exceed Title V thresholds.

### II. Background Information

The Title V operating permit replaces an existing Air Quality Construction and Operation Permit No. 06111R07 for UCO Fabrics, Inc. which was issued on November 19, 2001 and is currently scheduled to expire on October 31, 2006.

Pursuant to 15A NCAC 2Q .0506 UCO Fabrics, Inc. submitted its initial Title V application to the Division of Air Quality on November 6, 2002. The application was considered complete for processing on November 6, 2002. The

permit was required to go to public notice pursuant to 15A NCAC 2Q .0521.

### **III. Facility Description**

UCO Fabrics, INC. produces blue and black denim cloth. Currently the only emissions sources at the facility are two natural gas/No. 6 fuel oil-fired boilers. UCO Fabrics, Inc. is considered major for Title V purposes because potential SO<sub>2</sub> and NO<sub>x</sub> exceed the major source thresholds.

### **IV. Statement of Compliance**

The DAQ has reviewed the compliance status of this facility. On its latest inspection, February 7, 2002, the facility appeared to be operating in compliance with all requirements. The applicant has certified that the facility will be in compliance with all applicable requirements. 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 contains a summary of all permitted emission sources and associated air pollution control devices and appurtenances:

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Control Device ID No.</b>	<b>Control Device Description</b>
ES1	Natural gas/No. 6 fuel oil-fired boiler (57 million Btu per hour heat input capacity)	n/a	n/a
ES2	Natural gas/ No. 6 fuel oil-fired boiler (57 million Btu per hour heat input capacity)	n/a	n/a

### **VI. Emission Source-by-Source Evaluation**

#### **A. Two natural gas/No. 6 fuel oil-fired boilers (ID Nos. ES-1 and ES-2).**

##### **1. Description**

Two natural gas/No. 6 fuel oil-fired boilers with 57 million Btu per hour heat input capacity each.

## 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	0.32 pounds per million Btu	15A NCAC 2D .0503
sulfur dioxide	2.3 pounds per million Btu	15A NCAC 2D .0516
visible emissions	40 percent opacity	15A NCAC 2D .0521
sulfur dioxide	less than 250 tons per year total	15A NCAC 2D .0530 (avoidance)

a. NCAC 2D .0503: "Particulates from Fuel Burning Indirect Heat Exchangers".

i.) Regulation Analysis

The rated heat input for each natural gas/No. 6 fuel oil-fired boilers is 57 million Btu/hour. Allowable emissions are determined by the formula,  $E = 1.090 \times Q^{-0.2594}$ , where E is the allowable particulate emissions in pounds per million Btu, and Q is the maximum heat input in million Btu per hour. Note that the maximum heat input is determined by the summation of all fuel burning indirect heat exchangers located at the facility. Therefore, the allowable particulate emissions for each boiler are:

$$E = 1.090 \times (114)^{-0.2594}$$

$$E = 0.319 \text{ lb/million Btu.}$$

This equates to 18.18 lb/hr allowable particulate emissions ((0.319 lb/million Btu) x (57 million Btu/hr)). Estimated emissions are obtained from the DAQ approved boiler spreadsheets. Note that the Permittee indicated a maximum allowable sulfur content of 1.8 percent, yielding an estimated particulate emission rate of 8.1 lb/hr. However, research into the Permittee's previous oil purchases indicated that they routinely buy No. 6 fuel-oil with a sulfur content of 1.9+ percent. In addition, there is a current specific stipulation for PSD avoidance that limits the sulfur content to 2.1 percent (this stipulation changed with the new shell language, however, the 2.1 % limit still exists in the 2D .0516 stipulation). To allow the Permittee the maximum flexibility in their fuel-oil purchases, while maintaining compliance with PSD avoidance, a sulfur content of 2.1 percent will be used for compliance purposes.

Using the approved DAQ spreadsheet for fuel oil combustion with a 2.1 percent sulfur content, gives an estimated actual particulate emissions rate of 9.13 lb/hr.

Particulate emissions while combusting natural gas are estimated to be 0.42 lb/hr in accordance with the DAQ approved natural gas-fired boiler spreadsheet. No. 6 fuel oil therefore represents the worst possible case, and will be used for compliance purposes.

DRAFT

Actual estimated particulate emissions are less than allowable particulate emissions. Therefore, this facility is expected to be in compliance with 2D .0503.

ii.) Monitoring/Recordkeeping/Reporting Requirements

No monitoring/recordkeeping/reporting is required for particulate emissions from the firing of natural gas or No. 6 fuel oil.

b. NCAC 2D .0516: "Sulfur Dioxide Emissions from Combustion Sources"

i.) Regulation Analysis

This regulation states in part, " sulfur dioxide emissions from any source of combustion...shall not exceed 2.3 pounds of sulfur dioxide per million Btu heat input". The worst-case scenario is obtained from the DAQ approved fuel oil-fired boiler spreadsheet. When combusting fuel oil with a sulfur content of 2.1 percent, the estimated sulfur dioxide emissions are 125.29 lb/hr. This corresponds to 2.198 lb/million Btu ((125.29 lb/hr) x (1 hr/57 million Btu)).

Estimated sulfur dioxide emissions while combusting natural gas are 0.034 lb/hr, which is less than the estimated emissions when combusting No. 6 fuel oil. Therefore, the worst-case scenario is represented when combusting No. 6 fuel oil.

The estimated sulfur dioxide emission rate is less than the allowable emission rate. Therefore, the facility is expected to be in compliance with 2D .0516.

ii.) Monitoring/Recordkeeping/Reporting Requirements

No monitoring/recordkeeping is required when combusting natural gas. When combusting No. 6 fuel oil, records must be maintained in a logbook indicating: the name of the fuel oil supplier, the maximum sulfur content of the fuel oil received during the quarter, the method used to determine the maximum sulfur content, and a statement from the responsible official that the records of fuel oil supplier certification submitted represent all of the No. 6 fuel oil fired during that period.

The permittee must submit a summary report of the fuel oil supplier certifications each July and December for the previous six months.

c. NCAC 2D .0521: "Control of Visible Emissions"

i.) Regulation Analysis

The two natural gas/No. 6 fuel-oil fired boilers were manufactured before July 1, 1971. Previous permits have limited the boilers to 20% visible opacity emissions. This will be updated to allow the boilers 40% visible opacity emissions. Therefore, they are limited to a maximum of 40 percent visible opacity emissions when averaged over a six-minute period, except one occurrence of 90 percent visible opacity is allowed in any hour, but not more than four times in a 24-hour period.

DRAFT

Previous inspections have noted the boiler #1 (ES-1) to be in operation with no visible emissions noted. Boiler #2 (ES-2) is similar to boiler #1, and is expected to have similar emissions when operated in a consistent manner. No visible opacity emissions are expected when combusting natural gas. Minimal emissions are expected when combusting No. 6 fuel-oil. The boilers are expected to remain in compliance with 2D .0521.

ii.) Monitoring/Recordkeeping/Reporting Requirements

No monitoring/recordkeeping is required when combusting natural gas. When combusting No. 6 fuel oil, the Permittee must observe visible emissions once per day. These observations must be recorded in a logbook, with the following information: the date and time of each recorded action, the results of each observation while noting an emissions that were observed in noncompliance and any corrective action taken. The Permittee must submit a summary report each July and December for the preceeding six months.

d. 2D .0530 "Prevention of Significant Deterioration" (avoidance)

i.) Regulation Analysis

In order to avoid applicability of this regulation, the applicant has requested in the past that facility-wide emissions of sulfur dioxide be less than 250 tons per year. The applicant requested SO<sub>2</sub> be included in the avoidance condition with the issuance of this Title V permit during the first public notice period. It is important to note that the Permittee can not exceed the threshold for NO<sub>x</sub> without first exceeding the threshold for SO<sub>2</sub>.

ii.) Monitoring/Recordkeeping/Reporting Requirements

The Permittee shall keep monthly records of the fuel used, the sulfur content of the fuel, and supplier certification of the fuel in a logbook. The permittee shall make monthly calculations and record these calculations in a logbook. The Permittee shall submit quarterly summary reports for the previous 14 months for each 12-month period over the previous 14 months.

**VII. Other Applicable Requirements:**

A. MACT

The facility is subject to 112(j) and have submitted their Part I application (7700051.02A) on May 1, 2002.

B. PSD

There is a facility-wide emission limit of 250 tons per year for sulfur dioxide (see discussion above).

C. NSPS

The facility is not subject to NSPS.

D. TOXICS

The facility is not subject to the NC Toxics program.

DRAFT

## **VIII. Permit Shield (including non-applicable requirements)**

In accordance with 2Q .0512 the permit will contain a provision stating that compliance with the terms, conditions, and limitations of the Title V permit shall be deemed in compliance with applicable requirements specifically identified in the permit, as of the date of permit issuance. If the permit does not expressly state that a permit shield exists then it shall be presumed not to provide such a shield.

## **IX. 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.

## **X. Insignificant Activities**

No insignificant activities were submitted on the Company’s Title V application, nor have any been noted on plant inspections. Because an emission source or activity is insignificant does not mean that the emission source or activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.

## **XI. Public Notice**

Pursuant to 15A NCAC 2Q .0521, a second notice of the draft Title V Operating Permit was placed in a newspaper of general circulation in the area where the facility is located. The notice provided for a 30 day comment period, with an opportunity for a public hearing. Copies of the public notice were sent to persons on the Title V mailing list, EPA, and South Carolina.

## **XII. Recommendations**

The first time Title V application for UCO Fabrics, 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 determination that the facility is complying or will achieve compliance as specified in the permit with all applicable requirements. Therefore, the DAQ proposes to issue the first time Title V permit once the 30-day public notice and 45-day EPA review periods have been completed. Recommend issuance of Initial Title V Permit No. 06111T08.

DRAFT