

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Chowan
NC Facility ID: 2100080
Inspector's Name: Mike Smithwick
Date of Last Inspection: 10/07/2010
Compliance Code: 3 / Compliance - inspection

Facility Data			Permit Applicability (this application only)
Applicant (Facility's Name): Albemarle Sportfishing Boats Facility Address: Albemarle Sportfishing Boats 140 Midway Drive Edenton, NC 27932 SIC: 3732 / Boat Building And Repairing NAICS: 336612 / Boat Building Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other:
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	Application Number: 2100080.11A Date Received: 03/31/2011 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 08995/T05 Existing Permit Issue Date: 04/07/2010 Existing Permit Expiration Date: 12/31/2011
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Review Engineer: Mike Gordon Review Engineer's Signature: _____ Date: _____		Comments / Recommendations: Issue 08995/T06 Permit Issue Date: Permit Expiration Date:	

I. Purpose of Application

Pursuant to 15A NCAC 2Q .0513 Albemarle Sportfishing Boats submitted an application (App. ID No. 2100080.11A) for renewal of a Title V Permit to the Division of Air Quality on March 31, 2011. The application was considered complete for processing on April 1, 2011. The facility conducted modeling that has been reviewed and incorporated into the conditions of the permit as of January 5, 2012. The permit is required to be submitted for public notice pursuant to 15A NCAC 2Q .0521. This permit will replace Permit 08995T05 and be issued as Permit No. 08995T06.

II. Facility Description:

Albemarle Sportfishing Boats produces fiberglass boats. Currently the emissions sources at the facility are from processes to mold and make fiberglass boats and a propane-fired boiler. Albemarle Sportfishing Boats is considered major for Title V purposes because styrene emissions exceed the 10 TPY threshold.

III. Statement of Compliance:

This facility was inspected by Mr. Mike Smithwick of WARO on October 7, 2010. The facility was noted to be in compliance with all permitted requirements.

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:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-1 MACT VVVV	Assembly Operations	N/A	N/A
ES-2 MACT VVVV	Liner lamination/gelcoating	N/A	N/A
ES-3 MACT VVVV	Deck Lamination/gelcoating	N/A	N/A
ES-4 MACT VVVV	Hull lamination/gelcoating	N/A	N/A
ES-7 MACT VVVV	Secondary production area	N/A	N/A
ES-5 112(j)	8.9 million Btu per hour No. 2 fuel oil and propane-fired boiler	N/A	N/A

VI. Emission Source-by-Source Evaluation:

A. Fiberglass boat manufacturing operation consisting of:

- Assembly Operations (ID No. ES-1),
- Liner lamination/gelcoating (ID No. ES-2),
- Deck lamination/gelcoating (ID No. ES-3),
- Hull lamination/gelcoating (ID No. ES-4), and
- Secondary production area (ID No. ES-7)

1. Description:

Spray and brush application of gelcoat.

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	$E=4.10(P^{0.67})$ where P=process weight in tons per hour	15A NCAC 2D .0515
Visible Emissions	20 percent opacity	15A NCAC 2D .0521
Odorous Emissions	State-enforceable only - odorous emissions must be controlled	15A NCAC 2D .1806
Toxic Air Pollutants	State-enforceable only - See Section 2.2.A.3	15A NCAC 2D .1100
	State-enforceable only - See Section 2.2.A.2	15A NCAC 2Q .0711
	State-enforceable only - See Section 2.2.A.4	15A NCAC 2Q .0705
Volatile Organic Compounds	Work Practice Standards - See Section 2.2.A.1	15A NCAC 2D .0958
Hazardous Air Pollutants	40 CFR 63, Subpart VVVV: MACT for Boat Manufacturing See Section 2.2.B	15A NCAC 2D .1111

- a. 15A NCAC 2D .0515: “Particulates from Miscellaneous Industrial Process”.

Processes that have expected particulate emissions are ES-2, ES-3, and ES-4. Allowable particulate emissions are determined by the formula $E = 4.10 (P)^{0.67}$, where P is the process rate in tons per hour, and E is the allowable particulate emissions rate in pounds per hour. The maximum process rate in all three cases is 18 tons per hour. This yields an allowable particulate emissions rate of $E = 4.10 (18)^{0.67} = 28.43$ pounds per hour. All three processes have basic particulate filters as ‘control devices’, and these filters have been estimated to be 86.3 percent efficient. Estimated actual particulate emissions are 0.76, 0.76, and 1.22 pounds per hour for ES-2, ES-3 and ES-4, respectively. Before controls, emissions can be back-calculated as 5.5, 5.5, and 8.9 pounds per hour. This facility is considered to be in compliance with or without particulate controls. Compliance with 2D .0515 is indicated.

The Permittee is unable to exceed the permitted rate when operating continuously therefore no MMR requirements have been included in the permit.

- b. 15A NCAC 2D .0521: “Control of Visible Emissions”.

All sources will be limited to 20 percent visible opacity emissions. Particulate emissions are associated with visible opacity for this facility. Opacity at this facility due to good maintenance practices, site polices, and process, is expected to be continuously at 0 percent and therefore the facility should remain in compliance with 2D .0521.

No MRR requirements are included in this condition.

- c. 15A NCAC 2D .1806: “Control and Prohibition of Odorous Emissions”.

This rule requires the owner or operator of a facility to prevent objectionable odors beyond the facility’s boundary. The most recent inspection showed no odors beyond the property line. This facility is considered to be in compliance with 2D .1806.

B. Propane-fired boiler (ID No. ES-5; 8.9 MBtu per hour maximum heat input)

1. Description:

Propane-fired boiler.

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	0.567 pounds per million Btu heat input	15A NCAC 2D .0503
Sulfur Dioxide	2.3 pounds per million Btu heat input	15A NCAC 2D .0516
Visible Emissions	20 percent opacity	15A NCAC 2D .0521
Hazardous Air Pollutants	Best Combustion Practices	15A NCAC 2D .1109 [CAA § 112(j)]

a. 15A NCAC 2D .0503: “Particulates from Fuel Burning Indirect Heat Exchangers”.

Allowable emissions are determined by the formula $E = 1.090 \times Q^{-0.2594}$, where Q is the sum of all heat input from boilers and process heaters, in million Btu per hour, and E is the allowable particulate emissions, in pounds per hour. Allowable particulate emissions are:

$$E = 1.090 \times (8.9)^{-0.2594} = 0.567 \text{ pounds per hour.}$$

Estimated particulate emissions are obtained from the DAQ spreadsheet for propane-fired boilers (spreadsheet based on EPA Publication AP-42). Estimated particulate emissions are

$$E = (0.04 \text{ lb/hr}) \times (1 \text{ hr}/8.9 \text{ MBtu}) = 0.004 \text{ lb/hr.}$$

Estimated particulate emissions are less than allowable particulate emissions and compliance with 2D .0503 is indicated.

b. 15A NCAC 2D .0516: “Sulfur Dioxide Emissions from Combustion Sources”.

Emissions of sulfur dioxide are limited to 2.3 pounds per million Btu heat input.

Estimated SO2 emissions are obtained from the DAQ spreadsheet for propane-fired boilers (spreadsheet based on EPA Publication AP-42). Estimated SO2 emissions are 0.00 pounds per million Btu heat input (to two decimal places as calculated in the spreadsheet). This was manually confirmed using the AP-42 in the following manner.

$SO_2 = 0.09S$, where S is the sulfur content (gr/100 ft³). DAQ uses a value of S to be 0.1 gr/ft³. Annual fuel use is 861,470 gal/yr. Estimated SO2 emissions are:

$$(0.1) \times (0.09) = 0.009 \text{ lb-SO}_2/1000 \text{ gal}; (861,470 \text{ gal/yr}) \times (0.009 \text{ lb-SO}_2/1000 \text{ gal}) = 7.75 \text{ lb-SO}_2/\text{yr};$$

$$(7.75 \text{ lb-SO}_2/\text{yr}) \times (1 \text{ yr}/8760 \text{ hr}) = 0.000885 \text{ lb/hr.}$$

This is below the significant figures presented in the original form (0.09S) and should be considered 0.00 lb/hr.

Compliance with 2D .0516 is indicated.

- c. 15A NCAC 2D .0521: “Control of Visible Emissions”.

Visible opacity emissions are limited to 20 percent. Past inspections as well as good engineering judgment for this type of boiler indicate that the boiler will be operated with zero percent opacity.

Compliance with 2D .0521 is indicated.

- d. 15A NCAC 2D .1109: CAA § 112(j); Case-by-Case MACT for Boilers & Process Heaters

The facility boiler is subject to the Case-by-Case MACT under 2D .1109. The facility is expected to implement best combustion practices, maintain an inspection schedule, and create and maintain a logbook of such inspections. The facility has an initial compliance date of April 7, 2013 for this emissions source.

D. Other Applicable Regulations

- a. 15A NCAC 2D .0958: “Work Practices for Sources of Volatile Organic Compounds”.

This regulation contains stipulations that are designed to minimize VOC loss. It contains a variety of procedures ranging from storing VOC containing material in tightly closed containers to not filling machines above the fill lines. The most recent inspection showed the facility to be in compliance with 2D .0958.

- b. 15A NCAC 2D .1100: “Control of Toxic Air Pollutants”.

The Company had to perform air dispersion modeling for styrene, TDI, and arsenic. Facility-wide limits were established and included in the permit as follows:

Emission Source	Toxic Air Pollutant	Emission Limit
Facility-Wide	Arsenic (7440-38-2)	0.028 lbs/yr
Facility-Wide	Styrene (100-42-5)	63.39 lb/Hr
Facility-Wide	2,4- Toluene Diisocyanate (584-84-9)	0.14 lb/Day

The facility is considered to be in compliance with the AAL for styrene and TDI as of January 5, 2012. This is based on the modeling analysis conducted by Jerry Freeman, AQAB, in a memo dated April 19, 2011 and by review conducted by the permit engineer that concluded January 5, 2012. The modeling also indicates the Company is in compliance with DAQ’s requirement that a company must do a facility-wide Toxics demonstration when their last MACT takes effect. This demonstration was done previously as well in September 2005.

- c. 15A NCAC 2D .1111: “Maximum Achievable Control Technology”.

This entire facility (excluding the boiler) is subject to 40 CFR 63, Subpart VVVV, “National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing”. This permit will include all specific language for Subpart VVVV that has been developed by DAQ. All compliance options are included because the Company is allowed to switch compliance options at any time during the year, as long as DAQ is notified. The Permittee is considered to be in compliance with 2D .1111 at this time.

- d. 15A NCAC 2Q .0705: “Existing Facilities and SIC Calls”.

In general, 2Q .0705(b) requires a Permittee to submit a permit application to comply with 2D .1100. This application is required to include an “evaluation” for all toxic air pollutants in 2D .1104, for all sources at the facility, excluding exempt sources in 2Q .0702. If the actual emissions from all sources do not exceed the toxic

permitting emissions rates (TPERs) in 2Q .0711, no application is required. However, the Permittee must present documentation of those emission rates upon the Director's request.

Evaluation is defined in 2Q .0703(9) as:

- (a) a determination that the *emissions from the facility*, including emissions from sources exempted by Rule .0702 (a) (24) through (27) of this Section, are less than the rate listed in Rule .0711 of this Section; or
- (b) a determination of ambient air concentrations as described under 15A NCAC 2D .1106, including emissions from sources exempted by Rule .0702 (24) through (27) of this Section.

Emphasis added.

The proposed Permit No. 08995T05 contains facility-wide limits on the following:

Aniline, Benzene, Ethyl Acetate, Methylene Chloride, MEK, MIK, Xylene, Toluene, and n-Hexane. Each pollutant's emission limit is determined by its respective TPER limitation (2Q .0711).

The facility has also conducted facility-wide air dispersion modeling for styrene and 2,3-Toluene Diisocyanate. The facility has shown to be in compliance with 2D .1100.

The proposed first time Title V permit application was issued on January 19, 2007, and contains the specific limits for all pollutants mentioned above.

It is considered that last MACT/Toxics requirements **have been** met in full.

- e. 15A NCAC 2Q .0711: "Emission Rates Requiring a Permit".

The NC Toxic Air Pollutants TPER limits and estimated emissions:

TPERs Limitations				
Pollutant (CAS Number)	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)
Acetaldehyde (75-07-0)				6.8
Acrolein (107-02-8)				0.02
Aniline (62-53-3)			0.25	
Benzene (71-43-2)	8.18			
Benzo(a)pyrene (50-32-8)	2.2			
Beryllium (7440-41-7)	0.28			
Cadmium (7440-43-9)	0.37			
Ethyl Acetate (141-78-6)			36	
Glycol Ethers (110-80-5)		2.5	0.48	

TPERs Limitations				
Pollutant (CAS Number)	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)
Fluorides		0.34	0.064	
Formaldehyde (50-00-0)				0.04
Manganese (7439-96-5)		0.63		
Mercury		0.013		
Methyl Chloroform (71-55-6)		250		64
Methylene Chloride (75-09-2)	1600		0.39	
Methyl Ethyl Ketone (78-93-3)		78		22.4
Methyl Isobutyl Ketone (108-10-1)		52		7.6
n-Hexane (110-54-3)		23		
Sulfuric Acid Mist (7664-93-9)		0.25	0.025	
Toluene (108-88-3)		98		14.4
Xylene (1330-20-7)		57		16.4

Expected actual emissions are less than allowable for all TAPs, and the facility is considered to be in compliance with 2Q .0711.

VII. Other Applicable Requirements:

A. NAA/PSD Issues:

Chowan County has not been triggered for PSD increment tracking. Therefore, PSD increment tracking does not apply. The previously included PSD avoidance limit was examined for maximum worst-worst case emissions VOC (250 TPY). Information submitted by the Company on November 13, 2006 showed that it is impossible for the facility to exceed 250 TPY even under worst-worst-worst case production conditions. Current VOC emissions are ~24 TPY at ~ 100 boats/year. The current capacity of the facility is about ~200 boats/year. The PSD limit would not be exceeded if the Company produces 1,200 boats/year. Therefore, the PSD avoidance limit was removed.

NAA does not apply.

B. NSPS Issues:

This facility is not subject to NSPS.

C. MACT Issues:

This facility is subject to 40 CFR 63, Subpart VVVV (Boat Manufacturing MACT). Specific MACT language for each source was included in this permit. The MACT reporting requirements were synchronized with other reporting requirements in the permit.

The facility is subject to 2D .1109 CAA 112(j) Case-by-case MACT requirements that are incorporated into section 2.1.B.4 of the permit.

D. 112(r) Issues:

This facility is not subject to 112(r).

E. CAM Issues:

This facility is not subject to CAM because actual emissions from all PSEUs are less than 100 TPY.

F. NC Air Toxics:

The facility is subject to both 2D .1100 and 2Q .0711. The facility has demonstrated compliance with 2Q .0705.

VIII. Insignificant Activities

The facility has a 500 kW emergency generator which is listed as an insignificant activity. This generator is not subject to the RICE MACT for new sources since it was constructed before June 12, 2006 (constructed in 1995). However, it is subject to the RICE MACT for existing sources. According to the MACT the facility has to provide initial notification and has no other requirements. RCO determined that when a facility, subject to 40 CFR 63 Subpart ZZZZ, has no other requirements beyond initial notification, then the source is insignificant and is permitted as an insignificant activity.

IX. Facility-wide Emissions Summary:

Criteria pollutant emissions are summarized from the 2010 emissions inventory.

Pollutant	Actual Emissions (TPY, after controls)
PM	0.40
PM10	0.23
PM2.5	0.23
SO2	0.52
NOx	1.83
CO	0.08
VOC	1.98

The facility is considered to be Title V for estimated styrene (a Federal HAP). Although 2010 annual emissions report indicated the facility only emitted 1.5 tons of styrene for the year, with a total of 1.86 total HAP's.

X. Facility Compliance Status/Compliance History:

A review of IBEAM conducted. The facility is considered to be in compliance based on information contained in the reviewed records and application. NOV's for not keeping storage containers tightly closed and having filters installed that were too small have been issued in the past. The last inspection was conducted in October 2010 by Mike Smithwick (WARO). The facility was in compliance with all regulations and requirements at that time.

A statement of compliance (Form E5) was received on March 31, 2011, indicating that the facility is in compliance with all applicable regulations.

XI. Public Notice / EPA and Affected State Review:

Pursuant to 2Q. 0521, a notice of the draft Title V Permit will be posted on the DAQ website. 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 and EPA.

XII. Conclusions, Comments, and Recommendations:

The most recent General Conditions were included in this permit.

A PE seal was not needed for this application.

Form E5, "Title V Compliance Certification", was submitted for this application.

WARO has been sent a draft copy of Permit No. 08995T06.

Recommend issuance of Permit No. 08995T06, absent any comments, at the completion of the public notice period.