NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Fayetteville Regional Office
County: Robeson
NC Facility ID: 7800159
Inspector's Name: Mitchell Revels
Date of Last Inspection: 01/16/2008
Compliance Code: C / In Compliance With Procedural Reqr

Facility Data

Applicant (Facility's Name): Campbell Soup Supply Company

Facility Address:
Campbell Soup Supply Company
2120 Highway 71 North
Maxton, NC 28364

SIC: 2032 / Canned Specialties
NAICS: 311422 / Specialty Canning

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 15A NCAC 2D .0501
NSPS:
NESHAP:
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other:

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Hope Walters Manager-Utilities, Env. and Plant Servs. (910) 844-1261 2120 NC 71 Hwy. N. Maxton NC, 28364	Mark Cacciatore Senior Director of Operations - Maxton 2120 NC 71 Highway North Maxton NC, 28364	Hope Walters Manager-Utilities, Env. and Plant Servs. (910) 844-1261 2120 NC 71 Hwy. N. Maxton NC, 28364

Application Data

Application Number: 7800159.09A
Date Received: 02/16/2009
Application Type: Modification
Application Schedule: TV-Significant

Existing Permit Data
Existing Permit Number: 04090/T24
Existing Permit Issue Date: 05/16/2008
Existing Permit Expiration Date: 04/30/2012

Review Engineer: Jenny Kelvington

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 04090/T25
Permit Issue Date:
Permit Expiration Date:

I. Purpose of Application

This permitting action is a significant modification requesting that Condition 2.2(C) of the Title V permit be removed. This condition limits the number of hours that natural gas/No. 2 fuel oil/No. 6 fuel oil-fired boilers Nos. 4, 5, and 6 (ID Nos. ES-020, ES-021, ES-022) may be vented to Eldon Heat Exchanger/Stack [EP-18] to 6,000 hours per consecutive 12-month period to ensure the annual nitrogen oxide ambient air quality standard is not exceeded at any point beyond the facility premises. Daily recordkeeping and semi-annual reporting are currently required to demonstrate the maximum hours are not exceeded.

The three boilers included in this condition vent to one of two common stacks. When burning fuel oil, the boilers vent to the main stack EP17, which is 213.25 feet in height. When firing natural gas, the boilers vent to the Eldon heat exchanger and then to a common stack EP18, which is 50.0 feet in height. The Eldon heat exchanger takes a slip stream of stack gas to preheat feed water.

During the T20 permit revision issued October 25, 2004, Campbell Soup chose to accept the annual operating restriction of 6,000 hours per year on the Eldon heat exchanger/stack as this limitation was determined necessary at that time to demonstrate compliance with the annual nitrogen oxide NAAQS.

II. Application Chronology

February 16, 2009 – Application received
February 17, 2009 – Acknowledgement letter sent
March 10, 2009 – Tom Anderson, Meteorologist, completed review of the modeling.
March 10, 2009– Permit provided to the applicant and FRO (Christy Richardson) for review.
March 19, 2009 – Documentation of existence of low-NOx burners received.
March XX, 2009 - Draft Permit sent to public notice and EPA review.
April XX, 2009 – End of public notice period.
April XX, 2009 – End of EPA review period.

III. Facility Description

The facility is a canned soup production facility. Railcars and trucks receive grain, flour, and dry food products used to make soup. These ingredients are then stored in nine bulk storage silos, each controlled by a sock-type filter, and removed as needed. Emission sources also include three natural gas/fuel oil-fired boilers, discussed in Section I of this review, one hydrated lime silo with a bin vent filter, and two labeling systems. Each of the three boilers is equipped with low-NO_x burners, which minimize NO_x emissions during natural gas combustion.

IV. Compliance History

At the time of the most recent inspection on January 16, 2008, the facility appeared to the operating in compliance with all applicable air quality requirements. In the past five years, Campbell Soup has received one notice of violation (NOV), which was issued on 15 Sept. 2007 for failure to pay annual fees. The facility is now current with payments.

V. Permit History for Past Five Years

Permit No.	Issuance Date	Description
T20	October 10, 2004	Part I of Sign. Modification to correct error in PSD avoidance condition. With this permitting action, the 6000 hour annual limitation was added for the venting of emissions from boiler Nos. 4, 5, and 6 to the Eldon stack.
T21	February 11, 2005	Part II of Sign. Modification to correct error in PSD avoidance condition
T22	February 1, 2006	Added temporary boiler (ID No. TEMPBOIL; 99.9 mmBtu/hr max. heat input)
T23	January 28, 2008	Administrative amendment to correct permit number.

T24	May 16, 2008	Renewal of Air Quality Permit and removal of temporary boiler (ID No. TEMPBOIL)

VI. Permit Modifications/Changes and ESM Discussion

The following table describes the modifications to the current permit as part of the renewal process.

Page(s)	Section	Description of Change(s)
Attachment	Insignificant Activities	- updated permit revision number
Cover	-	- updated permit revision numbers - amended all dates - updated shell language
All	Header	- updated permit revision number
3	Equipment List	- revised boiler descriptions to show they are equipped with low NO_x burners.
4, 8	2.1.A Table 2.1.B.Table	- removed reference to the condition limiting the number of hours the boilers may be vented to the Eldon Stack per 15A NCAC 2D .0501(e).
4 - 14	2.1 A.1.b 2.1 A.2.b 2.1 A.3.b, d 2.1.A.4.b 2.1.B.1.b 2.1.B.2.b 2.1.B.3.b, d 2.1.B.4.b 2.1.B.5.b 2.1.C.1.b 2.1.C.2.b, c	- changed 15A NCAC 2D .0501(c) reference to 15A NCAC 2D .2601.
6, 10, 14	2.1 A.3.d.ii. 2.1 B.3.d.ii. 2.1 C.2.c.ii.	- added "(Method 9) for 12 minutes" as the method for demonstrating compliance with 15A NCAC 2D .0521.
17	2.2.C	- removed condition limiting the number of hours the boilers may be vented to the Eldon Stack per 15A NCAC 2D .0501(e).
17	2.2.C.1.	- renumbered Condition 2.2.D.1.as 2.2.C.1.
18-27	General Conditions	- updated shell conditions (v2.22.1)

There are no ESM changes as a result of this permitting action.

VII. Regulatory Review

The following regulations are affected by this permitting action:

15A NCAC 2D .0501(c), Compliance with Emission Control Standards requires any source of air pollution to be operated in such a manner that the source does not cause the ambient air quality standards of 2D .0400 to be exceeded at any point beyond the premises on which the source is located. Under this regulation, the permit currently limits use of the Eldon heat exchanger/stack to 6,000 hours per year to

ensure that the NAAQS for NO_2, is not exceeded. Previously, ISC3 modeling performed in 2004 indicated a potential violation of the NAAQS for NO_2 if the Eldon stack was used continuously.

With this application, Campbell Soup provided new modeling based on a more recently accepted model, AERMOD[1], which demonstrates that NO_2 will not exceed the Class II NAAQS or Class II Increment if the three site boilers are allowed to vent emissions to the Eldon stack/heat exchanger for 8,760 hours per year. Mr. Tom Anderson, Meteorologist II, AQAB, evaluated the dispersion modeling analysis and noted that all sources of NO_2 at the Campbell Soup facility along with an inventory of sources in the immediate vicinity of the plant, identical to the offsite source inventory used in the 2004 analysis, were included. Mr. Anderson's review concludes that, assuming the source parameters and pollutant emission rates[2] used are correct, the removal of the Eldon stack/heat exchanger permit restriction is not expected to cause or contribute to an exceedence of the Class II Increment or NAAQS. The modeling demonstration shows NO_2 at 37% of the Class II Increment and at 86% of the Class II NAAQS. Therefore, since compliance is indicated for the unlimited operation of the Eldon heat exchanger/stack, the permit restriction will be removed.

VIII. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS – The Permittee is not currently subject to any New Source Performance Standards for any of its emission sources.

NESHAPS/MACT – The Permittee is not currently subject to any National Emission Standards for Hazardous Air Pollutants promulgated in 40 CFR Part 63. The facility is classified as a Title III minor facility because potential HAP emissions are below the major source thresholds. This permit modification does not affect this status.

PSD – The Permittee is currently subject to multiple PSD Avoidance conditions for boiler Nos. 4, 5, and 6 **(ID Nos. ES-020, ES-021, and ES-022)**. The following table indicates the current requirements and the potential impact of firing natural gas in the boilers 8,760 hours per year.

Emission Source(s)	Regulated Pollutant	Limits/Standards	Potential Emissions from the firing of natural gas in the boilers 8,760 hours per year.
ES-020	Sulfur dioxide	Less than 250 tons per 12-month rolling period	<1 tons
ES-020	Nitrogen oxides	Less than 250 tons per 12-month rolling period	121.5 tons

[1] The American Meteorological Society/EPA Regulatory Model Improvement Committee (AERMIC) developed AERMOD as a replacement to the Industrial Source Complex (ISC) model. With the AERMOD model, air dispersion calculations consider planetary boundary layer meteorology and include Plume Rise Model Enhancement (PRIME) building downwash algorithms

[2] The NO_x emission rates are based on the AP-42 emission factors for natural gas-fired boilers with low NOx burners (LNB), Table 1.4-1, estimating NO_x at 140 lb/MMscf. The low NOx burners are Coen brand DAF (distributed air flow) multi-staged burners, and according to the manufacturer supplied literature, should be around .06 to .08 NO2/million btu or around 50 ppm per volume at 3% excess. Results from November 1993 stack tests show NO_x emissions at 65.6 ppm from natural gas-fired boiler #4 (Nebraska boiler), averaging 43.3 ppm from natural gas-fired boiler #5 (Union Iron), and averaging 66.9 ppm from natural gas-fired boiler #6 (Keeler). The tests show the highest NO_x concentration from any of the three natural gas-fired boilers at 79 ppm. Assuming the test results are at 3% O_2 and 8,710 ft3/MMBtu (per Method 19 of 40 CFR Part 60), the highest NO_x concentration equates to about 100 lb NO_x /MMscf.

Emission Source(s)	Regulated Pollutant	Limits/Standards	Potential Emissions from the firing of natural gas in the boilers 8,760 hours per year.
ES-021 and ES-022	Sulfur dioxide	Less than 250 tons per 12-month rolling period combined	< 1 tons
ES-021 and ES-022	Nitrogen oxides	Less than 250 tons per 12-month rolling period combined	150.3 tons
ES-021 and ES-022	-	Less than 250 million Btu per hour total average maximum heat input rate combined	N/A

The permit modification does not affect the PSD status.

112(r) – The Permittee is currently subject to Section 112(r) of the Clean Air Act and is required to comply with all applicable requirements in accordance with 40 CFR Part 68. The Permittee was required to submit a Risk Assessment Plan on June 21, 1999 or as otherwise specified in 40 CFR 68.10. During the most recent permit renewal (T24), the permit was modified to require the submittal of an updated plan according to the schedules contained in 40 CFR 68.150. According to the most recent inspection report, Campbell Soup is proactive in planning for an accidental release of ammonia at the Robeson County facility. They have a trained emergency response team and coordinate with the local fire department.

CAM – 40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility, that have pre-controlled emissions above the major source threshold, and use a control device to meet an applicable standard. The following table outlines the specific permit conditions for each source/control device arrangement and if the control device is installed to comply with that requirement:

Emission Source ID No(s).	Control Device ID No(s).	Permit Condition(s)	Pre-controlled Emissions (tons/year)
ES-007 through ES-015	CD-002 through CD-010	15A NCAC 2D .0515 15A NCAC 2D .0521	1.1 (each)
ES-023	CD-012	15A NCAC 2D .0515 15A NCAC 2D .0521	2.4

Estimated emissions from each controlled emission source are less than the CAM threshold level; therefore, CAM does not apply.

IX. Facility Wide Air Toxics

The Permittee is required to comply with a 15A NCAC 2D .1100 modeled emission rate for formaldehyde of 0.05 pounds per hour for its fuel burning sources **(ID Nos. ES-020, ES-021, and ES-022)**. The Permittee is required to maintain records of the boiler information as necessary to determine that this limit is not exceeded.

The last permit review noted that this toxic limit was originally introduced to the permit when Campbell Soup owned and operated a can manufacturing facility. At that time, the exemption for combustion sources did not exist and a 0.085 pounds per hour formaldehyde limit was established for

the entire facility. When Silgan Can purchased the can manufacturing facility in 1998, they acquired the portion of the formaldehyde limit associated with the can production while Campbell Soup kept the portion that is attributable to the boilers. Because the modeled rate pre-dates the exemption for combustion sources, the formaldehyde limit remains in the permit. The Permittee does have the opportunity to remove this requirement by submitting a new modeling demonstration but has not chosen to pursue this option.

With all three boilers **(ID Nos. ES-020, ES-021, and ES-022)** firing natural gas, maximum formaldehyde emissions are 0.033 pounds per hour. Since formaldehyde has an hourly limit and not an annual limit, removing the 6,000-hour annual restriction for the boilers does not affect air toxics.

X. Facility Emissions Review

Pollutant(s)	2007 Actual Emissions[#] (tpy)	Potential Emissions as Restricted by the Permit (tpy)
CO	47.0	162
NO_x	78.3	< 500
PM	4.3	51
SO_2	0.3	< 500
VOC	6.6	11
Total HAP	1.1	7

* Based upon 2007 emissions inventory.

Xi. Conclusions, Comments, and Recommendations

A professional engineer's seal was not required for this modification.
A consistency determination was not required for this modification.
FRO recommends issuance of the permit and was presented with a DRAFT permit prior to notice.
RCO concurs with FRO's recommendation to issue the modified air permit.