

Air Permit Review

Region: Wilmington Regional Office
County: New Hanover
NC Facility ID: 6500342
Inspector's Name: Russell Morgan III
Date of Last Inspection: 08/10/2010
Compliance Code: 3 / Compliance - inspection

Permit Issue Date:

Facility Data			Permit Applicability (this application only)	
Applicant (Facility's Name): INVISTA S.a.r.l. Facility Address: INVISTA S.a.r.l. 3325 River Road Wilmington, NC 28412 SIC: 5171 / Petroleum Bulk Stations & Terminals NAICS: 42471 / Petroleum Bulk Stations and Terminals Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: N/A NSPS: N/A NESHAP: 15A NCAC 2D .1109 PSD: N/A PSD Avoidance: N/A NC Toxics: N/A 112(r): N/A Other: N/A	
Contact Data			Application Data	
Facility Contact	Authorized Contact	Technical Contact	Application Number: 6500083.09A Date Received: 09/15/2009 Application Type: 112(j) Part II Application Schedule: TV-Significant Existing Permit Data Existing Permit Number: 00164/T42 Existing Permit Issue Date: 07/19/2010 Existing Permit Expiration Date: 07/31/2012	
William King Site Manager (910) 341-5594 3325 River Road Wilmington, NC 28412	William King Site Manager (910) 341-5594 3325 River Road Wilmington, NC 28412	William King Site Manager (910) 341-5594 3325 River Road Wilmington, NC 28412		
Review Engineer: Fern Paterson, P.E. Review Engineer's Signature: _____ Date: _____			Comments / Recommendations: Issue 00164T43 Permit Issue Date: Permit Expiration Date: 07/31/2012	

I. Purpose of Application

The North Carolina Division of Air Quality (NC DAQ) received a Part 2 MACT "Hammer" application pursuant to 15A NCAC 2D .1109 from INVISTA, S.a.r.l. (INVISTA), located in Wilmington, North Carolina, on September 15, 2009. An addendum to the application was received on April 12, 2010. The application is for nine existing boilers and process heaters, as follows:

B4040 Case-By-Case MACT	PTA steam generator; 202 MMBtu/hr heat input, No. 2 and No. 6 fuel oil, natural gas, organic byproduct (sulfur free), dimethyl ether, and biogas-fired
B7600 Case-By-Case MACT	Terate resin heater; 22 MMBtu/hr heat input, No. 2 and No. 6 fuel oil, natural gas, and organic byproduct (sulfur free) fired
B7602 Case-By-Case MACT	Terate resin heater; 4 MMBtu/hr heat input; natural gas fired
BLR1 Case-By-Case MACT	Boiler; 200 MMBtu/hr heat input, No. 2 and No. 6 fuel oil, natural gas, and organic byproduct (sulfur free) fired

BLR4 Case-By-Case MACT	Boiler; 246 MMBtu/hr heat input, No. 2 and No. 6 fuel oil, natural gas, and organic byproduct (sulfur free) fired
BLR5 Case-By-Case MACT	Boiler; 246 MMBtu/hr heat input, No. 2 and No. 6 fuel oil, natural gas, and organic byproduct (sulfur free) fired
HTR3 Case-By-Case MACT	Hot oil medium process heater; 140 MMBtu/hr heat input, No. 2 and No. 6 fuel oil, natural gas, and organic byproduct (sulfur free) fired
HTR4*** Case-By-Case MACT	Hot oil medium process heater; 167 MMBtu/hr heat input, No. 2 and No. 6 fuel oil, natural gas, biogas, organic byproduct (sulfur free), and VOC gas-fired
HTR5 Case-By-Case MACT	Hot oil medium process heater; 213 MMBtu/hr heat input, No. 2 and No. 6 fuel oil, natural gas, biogas, and organic byproduct (sulfur free) fired

The application also requested that one existing heater (**ID No. HTR1**) be removed from the permit.

II. Permit Modifications/Changes

The following table describes the modifications to the current permit.

Page(s)	Section	Description of Change(s)
N/A	Insignificant Activity	Move the small, natural-gas fired resin heater (ID No. B7602) from the insignificant activity list to the body of the permit.
1	Permit Cover Page	Amend permit revision numbers and issuance/effective dates.
15	Section 1	<ul style="list-style-type: none"> - Add "Case-By-Case MACT" designation to the affected boilers and process heaters (ID Nos. B4040, B7600, B7602, BLR1, BLR4, BLR5, HTR3, HTR4, and HTR5). - Remove HTR1 from the permit.
24	Section 2.1.E.	Add 15A NCAC 2D .1109 to the list of applicable regulations for the affected boilers and process heaters.
26-30	Section 2.1.E.6.	Add Section to include Case-By-Case MACT Hammer requirements applicable to the affected boilers and process heaters.
73-81	Section 3	Update General Provisions with the most recent revision (v. 3.2)

III. Regulatory Review

- A. **15A NCAC 2D .1109 – CAA § 112(j); Case-by-Case MACT for Boilers & Process Heaters** – On July 20, 2007, the D.C. Circuit Court vacated the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, which had been promulgated under 40 CFR 63, Subpart DDDDD. The North Carolina Attorney General's office has determined that the NESHAP vacatur equates to the failure of the U.S. EPA to promulgate a standard as required under Section 112(d) of the Clean Air Act (CAA). As a result, the site-specific Maximum Achievable Control Technology (MACT) standards required under CAA §112(j), commonly referred to as the MACT "hammer" provisions, have been triggered. North Carolina regulations implementing the MACT hammer are found at 15A NCAC 2D .1109.

INVISTA proposed Health-Based Compliance Alternative (HBCA) for HAP emitted from all affected combustion sources. INVISTA performed cancer risk, chronic non-cancer risk, and acute risk assessments. For the chronic risk assessments, air dispersion modeling was conducted to determine average annual concentrations in areas where people live or congregate. For the acute risk assessment, air dispersion modeling was conducted to determine the average 1-hour concentrations at places where the general public has access.

In accordance with the risk assessments, the NCDAQ has established 1-hour and annual emissions limitations for HAP emissions from combustions sources at the facility.

a. Cancer Risk Assessment

The affected boilers and process heaters are potential sources of the following carcinogenic HAPs:

- Arsenic
- Beryllium
- Cadmium
- Chromium (VI)
- Nickel
- Acetaldehyde
- Benzene
- p-Dichlorobenzene
- Formaldehyde
- Naphthalene
- Benzo(a)anthracene
- Benzo(b)fluoranthene
- Benzo(j)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- 1,1,2-Trichloroethane

INVISTA used a D-optimal mixture design-of-experiment (DOE) approach to determine which set of operating conditions at the facility would generate the highest modeled impact. The DOE approach is described in detail and each modeled scenario is listed on Pages 5-5 and 5-6 of the MACT Hammer permit application. Because the DOE approach was used to determine worst-case impacts for given total, facility-wide emissions from the combustion sources, the proposed permit includes facility-wide emissions limits rather than individual emissions limits for each individual source. At the proposed emissions limitations, the cancer-risk estimated from the air dispersion modeling is 0.99 cases of cancer in a million lifetimes.

b. Non-Cancer Chronic Risk Assessment

The affected boilers and process heaters are potential sources of the following HAPs with potential non-cancer, chronic effects on human health:

- Arsenic
- Beryllium
- Cadmium
- Chromium (VI)
- Nickel
- Acetaldehyde
- Benzene
- p-dichlorobenzene
- Ethyl Benzene
- Formaldehyde
- n-Hexane
- Lead
- Manganese
- Mercury
- Naphthalene
- Octachlorodibenzodioxin (OCDD)
- Selenium
- Toluene
- 1,1,2-Trichloroethane

The emissions limitation for all dioxins/furans is based on the modeled emission rate for OCDD. The impacts of each modeled HAP was divided by the associated reference concentrations (RfC), typically available through U.S. EPA's Integrated Risk Information System (IRIS), to determine the hazard

quotient (HQ). The individual hazardous quotients were then summed to determine the overall hazard index (HI). At the proposed emissions limitations, the hazard index is equal to 1.0.

c. Acute Risk Assessment

The affected boilers and process heaters are potential sources of the following HAPs with potential acute effects on human health:

- Acetaldehyde
- Acrolein
- Benzene
- Formaldehyde
- Toluene

The impacts of each modeled HAP was divided by the associated reference concentrations (RfC), typically available through U.S. EPA's Integrated Risk Information System (IRIS), to determine the hazard quotient (HQ). The individual hazardous quotients were then summed to determine the overall hazard index (HI). At the proposed emissions limitations, the hazard index is equal to 1.0.

IV. Draft Permit Review Summary

Dean Carroll and Ashby Armistead of the Wilmington Regional Office were provided a draft permit and draft permit review document on December 1, 2010.

Charity Corry was provided a draft permit for review on December 1, 2010.

Public notice of the proposed permit was posted on the NCDAQ website on **ENTER DATE.**

Ms. Katy Forney and Ms. Gracy DeNois (U.S. EPA, Region IV) were provided a draft permit for review on **ENTER DATE.**

V. Recommendations

The permit modification application for INVISTA, S.à.r.l., located in Wilmington, New Hanover County, North Carolina has been reviewed by NC DAQ to determine compliance with all procedures and requirements. NC DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources.

Issue Permit No. 00164T4