



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 122012-004

Project Number: 2012-10-033
Installation Number: 047-0002

Parent Company: Ingredient, Incorporated

Parent Company Address: 5 Westbrook Corporate Center, Westchester, IL 60154

Installation Name: Ingredient, Incorporated

Installation Address: 1001 Bedford Avenue, North Kansas City, MO 64116

Location Information: Clay County, S23, T50N, R33W

Application for Authority to Construct was made for:
Construction of a 33.4 MMBtu per hour natural gas-fired boiler. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.



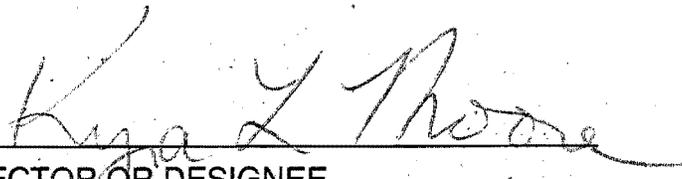
Standard Conditions (on reverse) are applicable to this permit.



Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

DEC - 6 2012

EFFECTIVE DATE



DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2012-10-033
Installation ID Number: 047-0002
Permit Number:

Ingredion, Incorporated
1001 Bedford Avenue
North Kansas City, MO 64116

Complete: October 15, 2012

Parent Company:
Ingredion, Incorporated
5 Westbrook Corporate Center
Westchester, IL 60154

Clay County, S23, T50N, R33W

REVIEW SUMMARY

- Ingredion, Incorporated has applied for authority to construct a 33.4 MMBtu per hour natural gas-fired boiler.
- A small amount of HAP emissions are expected from the combustion of natural gas in the boiler.
- 40 CFR 60 Subpart Dc, "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units" applies to the equipment.
- 40 CFR 63, Subpart JJJJJJ, "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources" does not apply to the proposed equipment.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all criteria pollutants are below de minimis levels. CO₂e is below the major source threshold.
- This installation is located in Clay County, a maintenance area for ozone and an attainment area for all other criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing are not required for the equipment.
- A Part 70 Operating Permit amendment application is required for this installation within 1 year of equipment startup.
- Approval of this permit is recommended without special conditions.

INSTALLATION DESCRIPTION

Ingredion, Incorporated located in North Kansas City is a manufacturer of corn starch products. They are considered a major source for both construction and operating permits. Ingredion, Incorporated was issued a Part 70 Operating Permit in August 2011 which expires in June 2013.

The following New Source Review permits have been issued to Ingredion, Incorporated from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
1076-014	Corn Products
0684-005	Corn Starch Products
0192-002	Sec 5 & 6 Deminimis and Minor
0397-004	Chemical unloading/reaction, storage tanks
0198-029	Cummins diesel fire pump engine and diesel
032008-005	Add dump station

PROJECT DESCRIPTION

Ingredion, Incorporated is seeking authority to install a Johnson model X6X400SS150SJG or comparable, natural gas-fired boiler (EP-83) with a maximum design heat input capacity of 33.4 MMBtu per hour. The new boiler will be used to supply a major portion of the process steam needs for the plant. Currently, the steam is being obtained from an outside supplier that generates it through coal combustion. Hence, the installation will ultimately reduce emissions. It will also significantly reduce the operating costs of the Ingredion facility.

EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, AP-42 Section 1.4 Natural Gas Combustion, July 1998.

The following table provides an emissions summary for this project. Existing potential emissions were taken from permit number 032008-005. Existing actual emissions were taken from the installation's 2011 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2011 EIQ)	Potential Emissions of the Application
PM	25.0	N/A	N/A	0.27
PM ₁₀	15.0	487.20	108.85	1.09
PM _{2.5}	10.0	N/A	0.34	1.09
SO _x	40.0	138.80	72.97	0.09
NO _x	40.0	117.7	31.97	14.34
VOC	40.0	14.4	70.91	0.79
CO	100.0	34.6	26.86	12.05
GHG (CO ₂ e)	75,000 / 100,000	N/A	N/A	17,316
GHG (mass)	0.0 / 100.0 / 250.0	N/A	N/A	17,211
HAPs	10.0/25.0	9.8	3.59	0.27

N/A = Not Applicable

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all criteria pollutants are below de minimis levels. CO₂e is below the major source threshold.

APPLICABLE REQUIREMENTS

Ingredient, Incorporated shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *New Source Performance Regulations*, 10 CSR 10-6.070
 - *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, 40 CFR Part 60, Subpart Dc
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260 does not apply because the boiler combusts pipeline grade natural gas.
- *Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-6.405 applies, and the boilers are in compliance as they combust natural gas with less than 1.2 percent sulfur.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted without special conditions.

Janelle Lewis
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated October 15, 2012, received October 15, 2012, designating Ingredient, Incorporated as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SIC	Standard Industrial Classification
GHG	Greenhouse Gas	SIP	State Implementation Plan
gpm	gallons per minute	SMAL	Screening Model Action Levels
gr	grains	SO_x	sulfur oxides
GWP	Global Warming Potential	SO₂	sulfur dioxide
HAP	Hazardous Air Pollutant	tph	tons per hour
hr	hour	tpy	tons per year
hp	horsepower	VMT	vehicle miles traveled
lb	pound	VOC	Volatile Organic Compound
lbs/hr	pounds per hour		
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. George Bisoglio
Sr. Facility Engineer
Ingredion, Incorporated
1001 Bedford Avenue
North Kansas City, MO 64116

RE: New Source Review Permit - Project Number: 2012-10-033

Dear Mr. Bisoglio:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Janelle Lewis, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:jl

Enclosures

c: Kansas City Regional Office
PAMS File: 2012-10-033

Permit Number: