



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: 082015-013

Project Number: 2015-05-067
Installation Number: 009-0055

Parent Company: International Ingredient Corporation

Parent Company Address: 242 Farm Road 1110, Monett, MO 65708

Installation Name: International Ingredient Corporation

Installation Address: 242 Farm Road 1110, Monett, MO 65708

Location Information: Barry County, S10, T25N, R27W

Application for Authority to Construct was made for:

The installation of a research and development operation to assess new food grade materials, develop potential new products, produce small quantities of materials for customer evaluation and response, and to investigate measures to enhance current production efficiencies. 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.

Daronn A. Williams

Prepared by
Daronn A. Williams
New Source Review Unit

Kyra L Moore

Director or Designee
Department of Natural Resources

AUG 20 2015

Effective Date

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: 2015-05-067
Installation ID Number: 009-0055
Permit Number:

Installation Address:
International Ingredient Corporation
242 Farm Road 1110
Monett, MO 65708

Parent Company:
International Ingredient Corporation
242 Farm Road 1110
Monett, MO 65708

Barry County, S10, T25N, R27W

REVIEW SUMMARY

- International Ingredient Corporation has applied for authority to install a research and development operation to assess new food grade materials, develop potential new products, produce small quantities of materials for customer evaluation and response, and to investigate measures to enhance current production efficiencies.
- The application was deemed complete on May 21, 2015.
- HAP emissions are not expected from the proposed equipment.
- None of the NESHAPs or currently promulgated MACT or NSPS regulations 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 PM₁₀ emissions are above the 1.0 pound per hour insignificant emission exemption level. Potential emissions of all criteria pollutants are below de minimis levels.
- This installation is located in Barry County, an attainment area for all 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 is not required for the equipment.

- Your Basic Operating Permit application that was received on November 25, 2014 (Project 2014-11-064) will be amended to include this permit.
- Approval of this permit is recommended without special conditions.

INSTALLATION DESCRIPTION

International Ingredient Corporation operates an animal feed production facility located at 242 Farm Road 1110 in Monett, Missouri. This facility processes lactose permeate and vegetable materials, and produces protein supplements for animal feeds. This facility is a minor source that operates under a basic operating permit.

The following New Source Review permits have been issued to International Ingredient Corporation from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
012000-013	Animal Feed Supplements
022001-011	Dryer and Recordkeeping
052004-013	Add Dryers
052004-013A	Extension Request to Add Dryers (Dryers were not installed)
072014-011	Processing vegetable material as an alternative to lactose permeate

PROJECT DESCRIPTION

International Ingredient Corporation has applied for authority to install a research and development operation to assess new food grade materials, develop potential new products, produce small quantities of materials for customer evaluation and response, and to investigate measures to enhance current production efficiencies. This project warrants a construction permit because potential emissions of this project exceed the PM₁₀ 1.0 pound per hour insignificant emission exemption level found in 10 CSR 10-6.061(3)(A)3.A.

International Ingredient Corporation will conduct this research and development operation by using food grade vegetable materials that doesn't meet specifications for human consumption. These vegetable materials may be received in a liquefied, slurry state or in a dry state. The liquid vegetable material will be pumped into a 8000 gallon storage tank. From this tank the vegetable materials will be pumped into two 2000 gallon process vessels. The tank and vessels act as holding containers. From the two 2000 gallon process vessels, the material will be pumped into a liquefier. The liquefier will mix the liquid and the dry vegetable materials, which are received via the bag dump (EP-20) and tote dump (EP-21). This mixture will still be very wet and then will be pumped into three mix tanks. Afterward, it will be pumped into a dryer. The dryer is a double drum dryer and it will be heated by the facility's existing boilers. The dried material will be transferred to a hammer mill (EP-24). Because the material handled by the tank, vessels and liquefier will be a slurry and these pieces of equipment will be sealed, no emissions are expected from these units.

The dry vegetable materials are initially placed in either a bag dump or tote dump. The bag dump and tote dump are similar to funnels where the dry materials are routed to either a mixer (EP-22) via gravity or the materials are pumped to the liquefier mentioned previously. The bag dump and the tote dump will not be able to simultaneously feed the mixer. Thus, the throughput of the mixer is based on the tote dump because it has a higher throughput. The bag dump will receive the material manually from large bags (approximately 50 pounds each). The tote dump will receive the material via super sacks. Dry materials will be transferred from the mixer (EP-22) to the hammer mill (EP-24). Material will then be transferred to the sifter (EP-25) and then to the bagger (EP-26). The dry material from the dryer, mixer, hammer mill and sifter will be transferred manually from unit to unit using buckets or wheelbarrows, or by a single portable conveyor.

The following table summarizes the emission sources associated with this project.

Table 2: Summary of Project Emissions

Description	Emission Point #	MHDR	MHDR Units
Bag Dump	EP-20	0.5	tons per hour
Tote Dump	EP-21	1.0	tons per hour
Mixer	EP-22	1.0	tons per hour
Dryer	EP-23	180.0	gallons of liquid feed materials/hour
General Transfer Points ¹	EP-24	1.0	tons per hour
Hammer Mill	EP-25	1.0	tons per hour
Sifter	EP-26	1.0	tons per hour
Bagging	EP-27	0.5	tons per hour

Note 1: Since a considerable amount of emissions from the manual transfer points are **not** expected and because the grain handling emission factor (SCC 3-02-005-30) was developed to account for all grain handling and drop points in a grain elevator, all of the transfer points were grouped.

EMISSIONS EVALUATION

Most of the emission factors used in this permit were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Chapter 9.9.1, “Grain Elevators & Processes” (May 2003).

Dryer emissions were determined by a stack test conducted at International Ingredient Corporation’s sister plant in Monroe, Wisconsin on May 11, 1999. These factors are used in the facility’s EIQs and found in program’s Missouri Emissions Inventory System database. Since the steam generation is already accounted for, these emissions were not included in this project.

The following tables provide an emissions summary for this project. Existing potential emissions were taken from Construction Permit 072014-011. Existing actual emissions were taken from the installation’s 2014 EIQ. Potential emissions of the application represent the potential of all new equipment, assuming continuous operation (8760 hours per year). This equipment associated with this project will not use control devices.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2014 EIQ)	Potential Emissions of the Application
PM	25.0	N/D	N/D	12.36
PM ₁₀	15.0	< 51.62	15.71	10.95
PM _{2.5}	10.0	N/D	7.91	7.79
SOx	40.0	0.08	0.01	N/A
NOx	40.0	19.62	3.10	N/A
VOC	40.0	0.81	0.17	N/A
CO	100.0	4.91	2.60	N/A
HAPs	10.0/25.0	0.02	N/D	N/A

N/A = Not Applicable; N/D = Not Determined

Table 4: Emissions Summary (pounds per hour)

Pollutant	Insignificant Emission Exemption Level	Potential Emissions of the Application
PM	N/D	2.82
PM ₁₀	1.0	2.50
PM _{2.5}	N/D	1.78
SOx	2.75	N/A
NOx	2.75	N/A
VOC	2.75	N/A
CO	6.88	N/A
HAPs	0.5 or SMAL	N/A

N/A = Not Applicable; N/D = Not Determined

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. Potential PM₁₀ emissions are above the 1.0 pound per hour insignificant emission exemption level.

APPLICABLE REQUIREMENTS

International Ingredient Corporation 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

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400

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*, it is recommended that this permit be granted without special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 7, 2015, received May 21, 2015, designating International Ingredient Corporation as the owner and operator of the installation.

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	SDS	Safety Data Sheet
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. Kirk Marcuson
Plant Manager
International Ingredient Corporation
242 Farm Road 1110
Monett, MO 65708

RE: New Source Review Permit - Project Number: 2015-05-067

Dear Mr. Marcuson:

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 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 were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 administrative hearing commission, whose contact information is: Administrative Hearing Commission, Truman State Office Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.

If you have any questions regarding this permit, please do not hesitate to contact Daronn A. Williams, 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:dwl

Enclosures

c: Southwest Regional Office
PAMS File: 2015-05-067

Permit Number: