



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: **052012-003** Project Number: 2012-01-110

Installation Number: 069-0081

Parent Company: Bernie Farmers Gin, LLC

Parent Company Address: 6048 Dalhousie Dr., Cape Girardeau, MO 63701

Installation Name: Bernie Farmers Gin, LLC

Installation Address: 3210 Federal Dr., Malden, MO 63863

Location Information: Dunklin County, S28, T23N, R10E

Application for Authority to Construct was made for:

A 45 bale per hour cotton ginning installation. This review was conducted in accordance with Section (6), 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.

MAY 04 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 startup 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 startup 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.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Bernie Farmers Gin, LLC
Dunklin County, S28, T23N, R10E

1. Particulate matter less than 10 microns in diameter (PM₁₀) Emission Limitation
 - A. Bernie Farmers Gin, LLC shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from the entire installation as defined in Table 1.
 - B. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A.
2. Paved Haul Roads
 - A. Bernie Farmers Gin, LLC shall pave the trash pile shipping (EU-16b), seed shipping haul road (EU-16c), and bale shipping haul road (EU-16d), with materials such as asphalt, concrete, and/or other material(s) that have been approved by the Air Pollution Control Program.
 - B. Maintenance and/or repair of the road surface will be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the installation is receiving or shipping seed.
3. Unpaved Haul Road
Unpaved haul road (module receiving (EU-16a) shall be maintained in accordance with at least one of the following options when the ginning installation is operating.
 - A. Application of Chemical Dust Suppressants
 - 1) The operator shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to unpaved areas.
 - 2) The quantities of the chemical dust suppressant shall be applied and maintained in accordance with the manufacturer's

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- recommendation (if available) and in sufficient quantities to achieve control of fugitive emissions from these areas while the plant is operating.
 - 3) The operator shall record the time, date and the amount of material applied for each application of the chemical dust suppressant agent on the above areas.
 - B. Application of Water-Documented Daily
 - 1) The operator shall apply water to unpaved areas. Water shall be applied at a rate of 100 gallons per day per 1,000 square feet of unpaved or untreated surface area while the plant is operating.
 - 2) Precipitation may be substituted for watering if the precipitation is greater than one quarter of one inch and is sufficient to control fugitive emissions.
 - 3) Watering may also be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads.
 - 4) The operator shall record the date and volume of water application or the amount of precipitation that day. The operators shall also record the rationale for not watering (e.g. freezing conditions or installation not operating).
4. Control Device Requirement-Cyclones
 - A. Bernie Farmers Gin, LLC shall control emissions from EU-01 through EU-11 using a bank of 11 high efficiency cyclones (CD-01) as specified in the permit application, sufficient to maintain no visible emissions from CD-01.
 - B. The cyclones shall be operated and maintained in accordance with the manufacturer's specifications, which shall be kept on site.
 - C. Bernie Farmers Gin, LLC shall observe emissions from CD-01 using a USEPA Method 22 trained observer and USEPA Method 22 procedures.
 - 1) Frequency:
The permittee shall conduct daily observations. A recording of no operation shall be made for days the ginning installation does not operate.
 - 2) Duration:
The duration of the observation shall not be less than six minutes.
 - 3) Threshold:

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- a. The observation of visible emissions from this control device will be considered an excursion and corrective actions shall be implemented within a reasonable period. An excursion does not necessarily indicate a violation of the applicable requirement.
 - b. When the number of excursions exceed three percent of the total number of observations in a six month period and corrective actions fail to return the emission unit to a no visible emission condition, then the permittee shall contact the Air Pollution Control Program Compliance/Enforcement Section within 10 days of the last excursion.
- D. Bernie Farmers Gin, LLC shall maintain an operating and maintenance log for the cyclones which shall include the following:
- 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
5. Control Device Requirement-Trash Pile Watering
- A. Bernie Farmers Gin, LLC shall develop and implement a written plan on when and how to operate wet spray devices on the trash pile during pile filling.
 - B. Water shall be applied at a rate and method sufficient to control fugitive emissions from these areas while the plant is operating, as determined in the written plan.
 - C. Precipitation may be substituted for watering if the precipitation is greater than one quarter of one inch and is sufficient to control fugitive emissions.
 - D. The operator shall record the date and volume of water application or the amount of precipitation that day. The operator shall also record the rational for not watering (e.g. installation not operating, freezing conditions).

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

6. Record Keeping and Reporting Requirements
 - A. Bernie Farmers Gin, LLC shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
 - B. Bernie Farmers Gin, LLC shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2012-01-110
Installation ID Number: 069-0081
Permit Number:

Bernie Farmers Gin, LLC
3210 Federal Dr.
Malden, MO 63863

Complete: January 30, 2012

Parent Company:
Bernie Farmers Gin, LLC
6048 Dalhousie Dr.
Cape Girardeau, MO 63701

Dunklin County, S28, T23N, R10E

REVIEW SUMMARY

- Bernie Farmers Gin, LLC has applied for authority to construct a 45 bale per hour cotton ginning installation.
- Hazardous Air Pollutant (HAP) emissions are expected from combustion of natural gas in the tumble dryer burner (EU-13), first cleaning burner (EU-14), and lint moisture burner (EU-15).
- None of the New Source Performance Standards (NSPS) under 40 CFR 60 apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) under 40 CFR 61 apply to this installation.
- None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations under 40 CFR 63 apply to the proposed equipment.
- High efficiency cyclones are being used to control the filterable particulate matter (PM), PM₁₀, and particulate matter less than 2.5 microns in diameter (PM_{2.5}) emissions from EU-01 through EU-11. Documented watering or chemicals are being used to control the total PM emissions from the unpaved haul roads. Watering will control total PM emissions from the trash pile.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below the de minimis level. Potential emissions of PM are indirectly conditioned to minor source levels. Potential emissions of PM_{2.5} are indirectly conditioned to below the de minimis level.
- This installation is located in Dunklin 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 at the time of permitting since potential PM₁₀ emissions of the application are conditioned below the de minimis level. Ambient air quality modeling was not performed for PM emissions because no ambient air quality standard exists for PM.
- Emissions testing is not required for the equipment.
- No operating permit is required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Bernie Farmers Gin, LLC is a proposed cotton ginning installation to be located in Malden. No permits have previously been issued to the installation from the Air Pollution Control Program. However, a preconstruction prohibition waiver was issued for this project.

The gin will receive modules and process them into lint and mote cotton bales, seed, and trash. Natural gas burners will be used for direct drying. The installation is defined in Table 1.

Table 1: Installation Defined

Emission Unit (EU)	Description	¹ Limited MHDR	MHDR Units
01	Unloading - stationary head module feeder, 120" separator	45	Tons lint per hour
02	Cleaning 1 - one 16 cylinder horizontal precleaner		
03	Cleaning 2 - one 120" 10 cylinder inclined cleaner		
04	Cleaning 3 - one 120" 10 cylinder inclined cleaner		
05	Overflow Fan - distributor conveyor/overflow		
06	Lint Cleaners - lint cleaners, fan		
07	Mote Fan - mote handling		
08	Mote Trash Fan - mote baling		
09	Battery Condensor - 72"x54" battery condenser, bale press		
10	Master Trash Fan - trash fan		
11	Seed Handling - seed handling	17.15	Tons seed per hour
12	Seed Shipping - seed house		
13	Tumble Dry Burner	8	² MMBtu heat input per hour
14	First Cleaning Burner	4	
15	Lint Moisture Burner	0.5	
16a	Unpaved road – module receiving	0.363	Vehicular miles traveled per hour
16b	Unpaved road – trash shipping	0.002	
16c	Paved road – seed shipping	0.104	
16d	Paved road – bale shipping	0.076	

¹ Limited MHDR based upon gin stands. EU-13 through EU-15 are not limited by the gin stands.

² Million British thermal units per hour (MMBtu)

The maximum hourly design rate (MHDR) of the installation is determined by the processing rate of the gin stands. The proposed stands are one Cherokee Magnum 244 Saw Gin Stand and one Cherokee Avenger 174 Saw Gin Stand. The Magnum 244 is rated at 33 lint bales per hour and the Avenger 174 is rated at 12 lint bales per hour, each under ideal conditions.

The MHDRs of module receiving, seed handling, and trash shipping were calculated using the lint bale MHDR, lint bale weight, and the weight ratio of each product to boll. Per weight of boll, approximately 35, 55, and 10 percent weight is lint, seed, and trash, respectively. Conservatively, mote production was calculated assuming a 5 percent weight ratio. Lint bales weigh approximately 485 pounds. Module receiving, seed handling, trash shipping and mote shipping are then 31.18, 17.15, 3.12, and 1.56 tons per hour, respectively. Lint bale production of 45 bales per hour equates to 10.91 tons per hour.

Emission units 01 through 11 will be controlled by a high efficiency 1D-3D cyclone bank. Haul roads will be paved or unpaved with controls, respectively. The trash pile will be watered.

EMISSIONS/CONTROLS EVALUATION

Potential emissions from cotton ginning were calculated using emission factors obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 9.7 *Cotton Ginning*, June 2006. The section does not contain emission factors for PM_{2.5}. PM_{2.5} emission factors were calculated using the ratio of PM_{2.5} to PM₁₀ emission factors according to AP-42 Section 9.9.1 *Grain Elevators and Processes*, May 2003 of 17 percent. The trash pile will be watered, therefore storage pile emissions were considered negligible.

Seed handling and shipping potential emissions were also calculated using AP-42 Section 9.9.1. The uncontrolled emission factors for grain handling and grain shipping by truck were selected. Emissions from seed handling are controlled by the high efficiency cyclone bank; the PM_{2.5} control efficiency of 80 percent from AP-42 Table B.2-3 for AIRS code 007 was applied to all particulate matter emissions from this process.

Natural gas combustion potential emissions were calculated using AP-42 Section 1.4 *Natural Gas Combustion*, July 1998 for small, uncontrolled boilers.

Haul road potential emissions were calculated using AP-42 Section 13.2.1 *Paved Roads* January 2011, and Section 13.2.2 *Unpaved Roads* November 2006, respective to the proposed haul road type. Documented watering or chemical application on unpaved roads was assigned 90, 90, and 40 percent control for PM, PM₁₀, and PM_{2.5}, respectively per AP-42 Table B.2-3 for AIRS codes 061 and 062.

Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8,760 hours per year). The new installation

conditioned potential represents a voluntary PM₁₀ emission limit to less than the de minimis level to avoid ambient impact modeling at the time of permitting. The compliance emission factor is 0.8887 pounds of PM₁₀ per lint bale. The corresponding 12-month rolling total production limit is 33,758 lint bales. The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/A	N/A	516.21	44.21
PM ₁₀	15.0	N/A	N/A	175.16	< 15.0
PM _{2.5}	10.0	N/A	N/A	30.26	2.59
SOx	40.0	N/A	N/A	0.03	0.03
NOx	40.0	N/A	N/A	5.37	5.37
VOC	40.0	N/A	N/A	0.30	0.30
CO	100.0	N/A	N/A	4.51	4.51
HAPs	10.0/25.0	N/A	N/A	0.10	0.10

N/A = Not Applicable

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below the de minimis level. Potential emissions of PM are indirectly conditioned to minor source levels. Potential emissions of PM_{2.5} are indirectly conditioned to below the de minimis level.

APPLICABLE REQUIREMENTS

Bernie Farmers Gin, LLC 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.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *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 (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

David Little
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated December 21, 2011, received January 30, 2012, designating Bernie Farmers Gin, LLC as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Mr. Bruce Dawson
Owner
Bernie Farmers Gin, LLC
6048 Dalhousie Dr.
Cape Girardeau, MO 63701

RE: New Source Review Permit - Project Number: 2012-01-110

Dear Mr. Dawson:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions on the accompanying pages. 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 and your new source review permit application 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 David Little, 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:dpl

Enclosures

c: Southeast Regional Office
PAMS File: 2012-01-110

Permit Number: