

STATE OF MISSOURI



PERMIT BOOK

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: 072015-015

Project Number: 2014-06-076
Installation Number: 021-0060

Parent Company: Ag Processing Inc.

Parent Company Address: P.O. Box 2047, Omaha, NE 68103

Installation Name: Ag Processing Inc.

Installation Address: 900 Lower Lake Road, St. Joseph, MO 64502

Location Information: Buchanan County, S30, T57N, R35W

Application for Authority to Construct was made to:
Increase the oilseed processing limit from 1,314,000 tpy (120,000 bushels per day) to 1,478,250 tpy (135,000 bushels per day). This review was conducted in accordance with Section (8) of 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.

JUL 27 2015

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. The 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' Kansas City Regional Office 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.

Page No.	3
Permit No.	
Project No.	2014-06-076

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(12)(A)10. "Conditions required by permitting authority."

Ag Processing Inc.
Buchanan County, S30, T57N, R35W

1. **Superseding Condition**
The conditions of this permit supersede all special conditions found in PSD permits 052007-007 and 052007-007A previously issued by the Air Pollution Control Program.
2. **VOC BACT Emission Limitation**
 - A. The solvent loss ratio shall not exceed 0.145 gallons of solvent per ton of oilseed based on a 12-month rolling average. The solvent loss ratio shall be calculated using the following equation:
$$\text{Solvent Loss Ratio} = \frac{\text{Actual Solvent Loss (gallons)}}{\text{Actual Oilseed Throughput (tons)}}$$

Ag Processing Inc. shall equate "actual solvent loss" to VOC emissions and shall calculate "actual solvent loss" in accordance with §63.2853. This emission limitation applies during startup and shutdown events unless a malfunction occurs and Ag Processing Inc. elects to operate under §63.2850(e)(2). At the end of any such malfunction period, Ag Processing Inc. shall resume compliance with this emission limitation. If Ag Processing Inc elects to operate under the malfunction period requirements of §63.2850(e)(2), Ag Processing Inc. shall also comply with the provisions of 10 CSR 10-6.050.
 - B. Ag Processing Inc. shall maintain an accurate record of monthly and 12-month rolling total actual solvent loss and solvent loss ratio. Ag Processing Inc. shall maintain records of actual oilseed processed as required by Special Condition 8.B. These recordkeeping requirements apply under all operating scenarios including startup, shutdown, and malfunction.
3. **Leak Detection and Repair (LDAR) Program**
 - A. Ag Processing Inc. shall prepare and implement an LDAR program to control fugitive VOC emissions. Ag Processing Inc. shall retain a written

Page No.	4
Permit No.	
Project No.	2014-06-076

SPECIAL CONDITIONS:

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

copy of their LDAR program onsite. This requirement is part of the BACT determination for this permit.

- B. The following are minimum requirements for the detection portion of the LDAR program:
 - 1) Plant personnel shall check equipment that contains hexane on a daily basis for any signs of a leak, based on sight, sound, or smell. Equipment to be checked during the daily inspection include storage tanks, pumps, piping, ductwork, enclosed conveyors, valves, flanges, seals, sight glasses, and process equipment (including the extractor, desolventizer-toaster, dryer-cooler, distillation equipment, condensers, and heat exchangers).
 - 2) Ag Processing Inc shall install, continuously operate, and maintain a minimum of four fixed-location flammable gas monitors in the solvent extraction area. The fixed-location monitors shall be placed in low-lying areas in close proximity to likely fugitive emission sources. Spare monitors shall be maintained to ensure continuous monitoring. The flammable gas monitors shall be set to audibly and visually alarm at monitored levels of 500 ppm hexane and greater. Ag Processing Inc shall record a representative reading from each monitor at least once per day while the solvent extraction equipment is in operation.

- C. The following are minimum recordkeeping requirements for the LDAR program:
 - 1) Daily inspection observations and representative fixed-location flammable gas monitor readings shall be recorded in writing and shall be signed and dated by the person who conducted the inspection/reading.
 - 2) If leaks are observed, the nature and extent of the observed leak shall be recorded along with documentation regarding corrective actions.

- 4. BACT Control Equipment Requirements
 - A. Ag Processing Inc. shall control emissions from the extraction process using condensers and a mineral oil absorption system. Ag Processing Inc shall control emissions from the desolventizing-toasting process using evaporators, condensers, and a mineral oil absorption system. The evaporators, condensers, and mineral oil absorption systems shall be

Page No.	5
Permit No.	
Project No.	2014-06-076

SPECIAL CONDITIONS:

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

- operated and maintained in accordance with the manufacturer's specifications.
- B. Ag Processing Inc. shall maintain an operating and maintenance log for the evaporators, condensers, and mineral oil absorption systems which shall include:
 - 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.
- C. Ag Processing Inc. shall route breathing and working losses from the solvent storage tanks to a solvent recovery system.
- D. Ag Processing Inc. shall install and operate a chiller for the mineral oil absorption systems. The chiller shall be used during the months of April through October. Operation of the chiller may occur from November through March, but is not required for compliance.
- E. Ag Processing Inc. shall maintain a copy of the manufacturer's specifications to document that the evaporators, condensers, mineral oil absorption system, solvent recovery system, and chiller are being operated within the parameters set forth by the manufacturer(s).
- F. Ag Processing Inc. shall monitor and record the temperature of the uncondensed vapors at the exit of the condenser at least once each day.
- G. Ag Processing Inc. shall monitor and record the temperature of the mineral oil entering the top of the absorption column at least once each day.
- 5. Ag Processing Inc. shall install and operate a vapor recovery tray. The vapor recovery tray shall be located below the sparge tray of the desolventizer-toaster.
- 6. Particulate Requirements
 - A. Ag Processing Inc. shall comply with the particulate emission limitations in Table 1. Ag Processing Inc. shall not operate an emission unit unless the control device associated with the emission unit in Table 1 is also in operation.

Page No.	6
Permit No.	
Project No.	2014-06-076

SPECIAL CONDITIONS:

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

Table 1: Particulate Emission Limitations and Control Device Requirements¹

Emission Unit	Emission Point	Description	Control Device	PM Limit (lb/hr)	PM ₁₀ Limit (lb/hr)	PM _{2.5} Limit (lb/hr)
1001	50	Bean Bin	Oiling	0.35	0.18	0.09
1002	51	Bean Bin	Oiling			
1003	52	Bean Bin	Oiling			
1004	53	Jet Dryer	Cyclone	10.25	4.83	1.90
1005		Cascade Conditioner	Baghouse			
1006		Cascade Cooler				
1007		Secondary Dehulling				
0080		Bean Heater Aspiration	Cyclone			
1008	54	Flake Conveyor	None	0.019	0.009	0.001
1009	55	DC Top Dryer Deck	Cyclone	5.52	3.03	1.51
1010		DC Middle Dryer Deck	Cyclones & Wet Venturi Scrubber			
1011		DC Bottom Dryer Deck				
1012		DC Bottom Cooler Deck				
1014	57	Rail Load Out	Baghouse	1.11	1.11	0.42
1015	58	Pellet Bin	Baghouse	0.06	0.06	0.03
1016	59	Meal Bin 5	Baghouse	0.06	0.06	0.03
1017	60	Meal Bin 6				
0030	6	West Truck Receiving	Baghouse	0.56	0.56	0.28
0050	8	Receiving Legs	Baghouse	1.67	1.67	0.63
0110	14	Hull Grinder Aspiration	Cyclone & Baghouse	0.61	0.61	0.30
0130	19	Flakers	Cyclone	2.32	0.99	0.50
0240	27	Reject	Baghouse	0.16	0.16	0.08
0280	30	Meal Grinding	Baghouse	0.51	0.51	0.25
0300	31	Meal Loadout	Baghouse	1.44	1.44	0.54
0320	31.2	Off Quality Storage Vents	Baghouse	0.02	0.02	0.01
0330	31.3	Hipro Meal Storage Vents	Baghouse	0.02	0.02	0.01
0340	31.4	Pellet Storage Vents	Baghouse	0.06	0.06	0.03

¹ The emission limits apply to the emission point, not to the individual emission units. The emission limits for the bean bins and meal bins are shared as the installation is physically limited to only operating one bin at any given point in time.

Page No.	7
Permit No.	
Project No.	2014-06-076

SPECIAL CONDITIONS:

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

- B. Each control device shall be operated and maintained in accordance with the manufacturer's specifications. A copy of the manufacturer's specifications shall be retained onsite and shall be used to verify that the control devices are being operated within the parameters set forth by the manufacturer(s).
- C. Baghouse Requirements
- 1) Each baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' personnel may easily observe them.
 - 2) Replacement filters for the baghouses shall be kept on hand at all times. The filters shall be made of fibers appropriate for the operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - 3) Ag Processing Inc shall monitor and record the pressure drop across each baghouse at least once each day. The operating pressure drop shall be maintained within the range specified by the manufacturer.
- D. Wet Venturi Scrubber Requirements
- 1) The wet venturi scrubber shall be equipped with a gauge or meter which indicates the pressure drop across the control device. The gauge or meter shall be located such that Department of Natural Resources' personnel may easily observe it.
 - 2) Ag Processing Inc shall monitor and record the pressure drop across the wet venturi scrubber at least once each day. The pressure drop shall be maintained within the ranges specified by the manufacturer.
- E. Cyclone Requirements
- 1) Each cyclone shall be equipped with a gauge or meter which indicates the pressure drop across the control device. The gauges or meters shall be located such that Department of Natural Resources' personnel may easily observe them.
 - 2) Ag Processing Inc. shall monitor and record the pressure drop across each cyclone at least once each day. The pressure drop shall be maintained within $\pm 10\%$ of the average pressure drop

Page No.	8
Permit No.	
Project No.	2014-06-076

SPECIAL CONDITIONS:

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

measured during the performance testing required by Special Condition 7.

- 3) If the pressure gauge plugs or malfunctions, Ag Processing Inc may instead record the air flow rate or fan operation as an indication of proper cyclone operation. The plugged or malfunctioning pressure gauge shall be repaired within five days.
- 4) Ag Processing Inc shall inspect the solids discharge valve on each cyclone at least once each week.

F. Oiling Requirements

- 1) Ag Processing Inc. shall construct, maintain, and operate a dust suppression system that applies grain, vegetable, or white mineral oil on all soybeans stored in the Bean Bins (EU1001, EU1002, and EU1003; EP50, EP51, and EP52).
- 2) The dust suppression system shall be operated and maintained in accordance with good operational practices.
- 3) Oil shall be applied at a rate of not less than one gallon of oil per 1,000 bushels of soybeans. The oil shall be applied at a transfer point prior to entering the Bean Bins.
- 4) Ag Processing Inc shall conduct daily visual observations of the dust suppression system to ensure proper operation.
 - a) Daily observations are not required on calendar days during which no soybeans are received at the installation.
 - b) Ag Processing Inc. shall maintain records of the date and time of each daily observation.
 - (i) Ag Processing Inc. shall note on days during which no soybeans were received that no observations was conducted as no soybeans were received.
 - (ii) Ag Processing Inc shall note any malfunctions of the dust suppression system and the corrective action taken to restore proper operation of the system.
- 5) Ag Processing Inc. shall maintain monthly records which at a minimum shall include:
 - a) Date
 - b) Amount of oil applied during the month (gallons)
 - c) Amount of soybeans received during the month (bushels)
 - d) Average oil application rate for the month (gallons of oil per 1,000 bushels of soybeans)
- 6) Ag Processing Inc. shall notify the Air Pollution Control Program's Compliance/Enforcement Section no later than ten days after the

Page No.	9
Permit No.	
Project No.	2014-06-076

SPECIAL CONDITIONS:

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

end of the month during which records indicate oil was not applied in sufficient quantities to meet the application rate of Special Condition 6.F.3.

- G. Ag Processing Inc. shall maintain an operating and maintenance log for the particulate control devices in Table 1 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.

- 7. Performance Testing Requirements
 - A. To demonstrate compliance with the particulate emission limits in Table 1, Ag Processing Inc shall conduct performance testing on the emission points listed in Table 2 within 180 days of permit issuance.

Table 2: Emission Points for which Performance Testing is Required

Emission Point	Emission Unit	Description	Control Device
8	0050	Receiving Legs	Baghouse
19	0130	Flakers	Cyclone
30	0280	Meal Grinding	Baghouse
31	0300	Meal Loadout	Baghouse
53	1004	Jet Dryer	Cyclone
	1005	Cascade Conditioner	Baghouse
	1006	Cascade Cooler	
	1007	Secondary Dehulling	
	0080	Bean Heater Aspiration	Cyclone
55	1009	DC Top Dryer Deck	Cyclone
	1010	DC Middle Dryer Deck	Cyclones & Wet Venturi Scrubber
	1011	DC Bottom Dryer Deck	
	1012	DC Bottom Cooler Deck	

- B. Performance testing shall occur at the emission points downstream of all emission units and control devices.

- C. The performance testing for EP8, EP19, EP30, and EP31 shall be conducted according to EPA Test Methods 5 and 201A. Other methods may be used upon approval by the Air Pollution Control Program.

Page No.	10
Permit No.	
Project No.	2014-06-076

SPECIAL CONDITIONS:

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

- D. The performance testing for EP53 and EP55 shall be conducted according to EPA Test Methods 5, 201A, and 202. Other methods may be used upon approval by the Air Pollution Control Program.
 - E. During the performance testing, Ag Processing Inc shall note:
 - 1) The pressure drop across each cyclone;
 - 2) The pressure drop across the baghouse;
 - 3) The pressure drop across the wet venturi scrubber;
 - 4) The air flow rate; and
 - 5) The oilseed processing rate (bushels per hour).
 - F. Performance testing shall occur within 10 percent of the maximum oilseed processing rate of 5,625 bushels per hour (135,000 bushels per day).
 - G. A completed Proposed Test Plan Form (enclosed) shall be submitted to the Air Pollution Control Program 30 days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.
 - H. Two copies of a written report of the performance test results shall be submitted to the Director within 30 days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required U.S. EPA Method for at least one sample run.
 - I. The test report is to fully account for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations.
8. Operational Limitations
- A. Ag Processing Inc shall limit oilseed processing to 1,478,250 tons per consecutive 12-month period.
 - B. Ag Processing Inc shall calculate the quantity of oilseed processed according to §63.2855. Ag Processing Inc shall maintain records of their monthly and 12-month rolling total quantity of oilseed processed as required by §63.2862(d)(3).

Page No.	11
Permit No.	
Project No.	2014-06-076

SPECIAL CONDITIONS:

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

9. Hexane Emission Limitation
Ag Processing Inc shall not exceed a monthly weighted average HAP content of extraction solvent of 0.65. Ag Processing Inc shall calculate their monthly weighted average HAP content of extraction solvent according to Equation 1 of §63.2854(b)(2). Ag Processing Inc shall maintain records of their monthly weighted average HAP content of extraction solvent as required by §63.2862(c)(2)(ii).
10. Cooling Tower Restrictions
 - A. Ag Processing Inc shall maintain documentation for the Extraction Cooling Tower (EU1013, EP56.1 and EP56.2) indicating the maximum cooling water circulation rate is 11,000 gallons per minute as designed.
 - B. The Total Dissolved Solids (TDS) concentration of circulated cooling water shall not exceed 4,000 ppm.
 - C. Ag Processing Inc shall conduct testing to determine the TDS concentration of the circulated cooling water.
 - 1) Initial testing shall occur within 90 days of permit issuance.
 - 2) Subsequent testing shall occur:
 - a) Within 90 days of the most recent test, if the TDS concentration of the most recent test was greater than or equal to 3,500 ppm.
 - b) Within one year of the most recent test, if the TDS concentration of the most recent test was less than 3,500 ppm.
11. Paved Haul Roads
 - A. Ag Processing Inc shall maintain and/or repair the following paved haul roads as necessary to achieve control of fugitive emissions:
 - 1) HR1.1 Bean Receiving Haul Road (Segment 1)
 - 2) HR1.2 Bean Receiving Haul Road (Segment 2)
 - 3) HR2.1 Meal/Hulls/Pellet Loadout Haul Road (Segment 1)
 - 4) HR2.2 Meal/Hulls/Pellet Loadout Haul Road (Segment 2)
12. Record Keeping and Reporting Requirements
 - A. Ag Processing Inc shall maintain all records required by this permit for not less than five years and shall make them available immediately to any

Page No.	12
Permit No.	
Project No.	2014-06-076

SPECIAL CONDITIONS:

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

Missouri Department of Natural Resources' personnel upon request.
These records shall include SDS for all materials used

- B. Ag Processing shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 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.
13. Ag Processing Inc shall notify the Air Pollution Control Program before initial startup of any modifications to the facility design that could impact the release parameters or hexane emission rates as specified in the Memorandum from the Modeling Unit titled, "Class II Ambient Air Quality Impact Analysis (AAQIA) for Ag Processing Inc PSD Modeling – Hexane Risk Assessment, December 24, 2014" and listed in Table 14. In the event the Air Pollution Control Program determines that the changes are significant, Ag Processing Inc shall submit an updated AAQIA to the Air Pollution Control Program that continues to demonstrate compliance with Missouri's hexane RALs.
- A. Ag Processing Inc shall ensure that all hexane emission sources are vented vertically and are not covered by rain caps or other obstructions.
 - B. Ag Processing Inc shall preclude public access to property that is considered within the non-ambient air zone with respect to the AAQIA. Installation and maintenance of a fence or other physical barrier shall be employed to preclude public access. A map showing the property boundary (precluded areas) can be found in Figure 4 of the AAQIA, entitled "Ag Processing, Inc. – Property Boundary."

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (8) REVIEW

Project Number: 2014-06-076
Installation ID Number: 021-0060
Permit Number:

Ag Processing Inc
900 Lower Lake Road
St. Joseph, MO 64502

Parent Company:
Ag Processing Inc
P.O. Box 2047
Omaha, NE 68103

Buchanan County, S30, T57N, R35W

REVIEW SUMMARY

- Ag Processing Inc has applied for authority to increase their oilseed processing limit from 1,314,000 tpy (120,000 bushels per day) to 1,478,250 tpy (135,000 bushels per day).
- HAP emissions are expected from the proposed processing increase. The HAP of concern for soybean oilseed processing is Hexane (110-54-3).
- 40 CFR Part 60, Subpart DD – *Standards of Performance for Grain Elevators* is applicable to West Truck Receiving (EU0030, EP6) and Rail Receiving Legs (EU0050, EP8).
- 40 CFR Part 63, Subpart GGGG – *National Emission Standards for Hazardous Air Pollutants: Solvent Extraction for Vegetable Oil Production* is applicable to the installation's soybean oil production process equipment which include: oilseed preparation operations, solvent extractors, desolventizer-toasters, meal dryers, meal coolers, meal conveyor systems, oil distillation units, solvent evaporators and condensers, solvent recovery systems (also referred to as mineral oil absorption systems), vessels storing solvent-laden materials, and crude meal packaging and storage vessels.
- Baghouses, cyclones, a wet venturi scrubber, and oiling are being used to control particulate emissions from the installation. Condensers, evaporators, and a mineral oil absorption system are being used to control VOC emissions from the extraction process.
- This review was conducted in accordance with Section (8) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required*. Potential project emissions of VOC exceed the significant emissions threshold.

- This installation is located in Buchanan 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 performed to assess the risk caused by Hexane at the installation's property boundary. Ambient air quality modeling of ozone was not performed for this review. No model is currently available which can accurately predict ambient ozone concentrations caused by this installation's VOC emissions.
- Emissions testing is required for EP8, EP19, EP30, EP31, EP53, and EP55.
- Ag Processing Inc is required to include the special conditions of this permit as applicable requirements in their Part 70 operating permit renewal application. Ag Processing Inc is required to submit their Part 70 operating permit renewal application by no later than January 17, 2016.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Ag Processing Inc operates a soybean processing facility in St. Joseph, Missouri consisting of a soybean oil extraction plant, a soybean oil refinery plant, and a hydrogen gas plant. The installation is an existing major NSR source. The installation currently operates under Part 70 operating permit OP2011-032A which expires July 17, 2016. Ag Processing Inc is required to include the special conditions of this permit as applicable requirements in their operating permit renewal application which is due by no later than January 17, 2016.

Soybean Oil Extraction Plant

Receiving

Ag Processing Inc receives soybeans by either West Truck Receiving (EU0030, EP6 and EP6F) or Rail Receiving Legs (EU0050, EP8). The soybeans are stored in one of three Bean Bins (EU1001, EU1002, and EU1003; EP50, EP51, and EP52). The installation only has one conveyor to feed the three Bean Bins; therefore, the installation is physically limited to only operating one Bean Bin at a time. The installation is not physically equipped to ship out soybeans; therefore, all soybeans received are processed.

Preparation Process

Soybeans are conveyed from the Bean Bins to the conditioning area, where they are conditioned by a heater. Emissions from the heater are aspirated to a baghouse [Bean Heater Aspiration (EU0080, EP53)]. After the beans are conditioned, they enter a Jet

Dryer (EU1004, EP53). The Jet Dryer uses recirculated air and injected hot air to shrink the hull, releasing the hull/meat bond. After the Jet Dryer, the beans are cracked and dehulled. The half beans and loose hulls enter a Cascade Conditioner (EU1005, EP53). In the Cascade Conditioner, the half beans and loose hulls cascade downward releasing more hulls. The separated hulls are sent to Secondary Dehulling (EU1007, EP53) before entering the Hull Grinding Process. The cracked soybeans are sent to a Cascade Cooler (EU1006, EP53) before being conveyed and fed to smooth, cylindrical roll Flakers (EU0130, EP19) that press the particles into smooth “flakes”. Flakes vary in thickness from 0.01 to 0.02 inches. Flaking allows the soybean oil cells to be exposed and the oil to be more easily extracted. The flakes are conveyed by a Flake Conveyor (EU1008, EP54) to the Extraction Process.

Extraction Process

The extraction process consists of “washing” the oil from the soybean flakes with hexane solvent in a countercurrent extractor. The solvent is then evaporated (i.e. desolventized) from both the solvent/oil mixture (micelle) and the solvent-laden, defatted flakes. The oil is desolventized by exposing the solvent/oil mixture to steam (contact and noncontact). Then the solvent is condensed, separated from the steam condensate, and reused. Residual hexane not condensed is removed with a Mineral Oil Absorption System (EU1019, EPMOS). Fugitive hexane emissions from the Mineral Oil Absorption System are reported as Vent20. The desolventized oil, called “crude” soybean oil, is stored in tanks. After exiting the extractor, meal is cooled/dried by a multi-deck dryer [DC Top Dryer Deck (EU1009, EP55), DC Middle Dryer Deck (EU1010, EP55), DC Bottom Dryer Deck (EU1011, EP55), and DC Bottom Cooler Deck (EU1012, EP55)] before entering the Meal Finishing Process.

A Cooling Tower (EU1013, EP56.1 and EP56.2) reduces the temperature of the water used in the Extraction Process.

Steam is provided by a steam vendor and is not produced onsite.

Meal Finishing Process

Meal from the Extraction Process undergoes Meal Grinding (EU0280, EP30). The majority of ground meal is stored in one of two Meal Bins (EU1016 and EU1017, EP58 and EP59). The installation only has one conveyor to feed the Meal Bins; therefore, the installation is physically limited to only operating one Meal Bin at a time. Off quality meal and high protein meal are stored in separate bins [Off Quality Bin (EU0320, EP31.2) and High Protein Meal Bin (EU0330, EP31.3)].

Hull Grinding Process

Hulls from Secondary Dehulling are ground. Emissions from hull grinding are aspirated to a baghouse [Hull Grinder Aspiration (EU0110, EP14)]. The ground hulls are pelletized and stored in Pellet Bins (EU0340 and EU1015, EP31.4 and EP58).

Shipping

Meal and pellets are shipped off-site by either truck [Truck Loadout (EU0300, EP31 and EP31F) or rail [Rail Loadout (EU1014, EP57 and EP57F)].

The following New Source Review permits have been issued to Ag Processing Inc by the Air Pollution Control Program:

Table 3: Permit History

Permit Number	Description
0392-008	Section (5) permit for a soybean oil refinery and a hydrogen gas plant
1192-013	Section (5) permit for modifications to the soybean load-out facility and modifications to the soybean meal storage facility
0893-004	Section (5) permit for the replacement of two existing hull grinders with new grinders
1193-007	Section (5) permit for additional grain handling equipment
1193-016	Section (5) permit for the replacement of an existing flaking mill with a new flaking mill
0294-003	Section (5) permit for new de-hulling equipment and an increase in soybean meal load-out throughput
0794-006	Section (5) permit for new soybean hot dehulling equipment, an additional extractor, an additional de-solventizer toaster/dryer cooler, and change to equipment associated with EP14
0994-001	Section (6) permit for a new feed mill pelleting operation
0896-014	Section (5) permit to add a pneumatic conveyor and high efficiency cyclone
092001-004	Section (8) permit to increase the maximum allowable daily production rate of the refinery plant (3,000,000 pounds of soybean oil refined per day) that was established in 0392-008 to the maximum reported capacity associated with the refinery operations
1192-013A	Amendment to 1192-003
102006-002	Section (6) permit for a biodiesel plant located adjacent to the soybean processing plant. AGP's biodiesel plant is considered a separate installation for permitting purposes (see the associated permit review summary for further explanation).
052007-007	Section (8) permit
052007-007A	Amendment to 052007-007 to increase the production capacity of the existing soybean processing plant to 120,000 bushels per day (1,314,000 tons per year)

PROJECT DESCRIPTION

Ag Processing Inc has requested to increase the permitted capacity of their existing soybean oil extraction plant from 120,000 bushels per day (1,314,000 tons per year) to 135,000 bushels per day (1,478,250 tons per year). The production increase is not associated with the installation of any new equipment. The installation's existing processing limit was established by PSD Permit 052007-007 in which the installation netted out of PSD permitting requirements for PM and PM₁₀. In order to ensure that the installation is in full compliance with the requirements of §52.21, this project was reviewed using two different approaches.

In the first approach, the PM and PM₁₀ net emissions increase (NEI) analyses from PSD Permit 052007-007 were re-evaluated to ensure that the production increase would not have required a PSD evaluation of PM and PM₁₀ in 2007. PM_{2.5} emissions are not

evaluated in Approach #1 and PM_{2.5} was not a regulated pollutant at the time of issuance of PSD Permit 052007-007.

In the second approach, emissions are evaluated as a new project.

Approach #1

An NEI analysis examines all the emission increases and decreases that have occurred at the installation for the air pollutants of concern during a contemporaneous time period. The amount of these emission increases and decreases are determined by finding the actual emissions (average of a representative two-year period), if available. Typically, if there are not two years of actual emissions data for an emission unit, the potential emissions for the unit are used instead.

After the NEI analysis has determined the amount of actual or potential emissions for all of the emission units where increases and decreases have occurred, or will occur during this period, the increases are added together and the decreases are subtracted from this total. If the resulting level of emissions from the netting is below the significance level for that air pollutant, then the project is evaluated as a de minimis review instead of a major (PSD) review.

An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if it occurs between the date five years before construction commences on the particular change and the date that the increase from the particular change occurs.

The contemporaneous period used for the netting analysis in PSD Permit 052007-007 was the period from December 2001 to August 2008.

An increase or decrease in actual emissions is creditable only if the permitting authority has not relied on it in issuing a permit for the source under 52.21, which permit is in effect when the increase in actual emissions from the particular change occurs.

An increase or decrease in actual emissions of SO₂, PM, or NO_x that occurs before the applicable minor source baseline date is creditable only if it is required to be considered in calculating the amount of maximum allowable increases remaining available.

An increase in actual emissions is creditable only to the extent that the new level of actual emissions exceeds the old level.

A decrease in actual emissions is creditable only to the extent that:

- ◆ The old level of actual emissions or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions;
- ◆ It is enforceable as a practical matter at and after the time that actual construction on the particular change begins; and
- ◆ It is approximately the same qualitative significance for public health and welfare as that attributed to the increase for the particular change.

PM₁₀

Table 4 provides a summary of the PM₁₀ NEI. A comparison of actual emissions before PSD Permit 052007-007 with potential emissions thereafter demonstrates that the PM₁₀ NEI is below the PSD significant threshold of 15 tons per year.

Table 4: Summary of PM₁₀ NEI (tons per year)

		PTE	BAE	NEI
New Emission Sources		27.66	-	27.66
Modified Emission Sources		38.30	13.31	24.99
Debottlenecked Emission Sources		10.03	0.48	9.54
Contemporaneous Credits	Shutdown as part of expansion	-	47.90	-47.90
	Shutdown in the five years previous to Permit 052007-007			
	Project 2004-08-034 ²	-	-	-
Total		75.99	61.70	14.29

PSD Permit 052007-007 included modified grain receiving operations, a new soybean hot dehulling line (cleaning, cracking, and dehulling), a new solvent extraction plant, and a meal load out facility. Ag Processing Inc continued to use the existing grain storage elevators, concrete dry soybean storage silo, and receiving bays.

For the modified and debottlenecked emission units, baseline actual emissions (BAE) were taken as the average rate, in tpy, at which the emission units actually emitted PM₁₀ during the consecutive 24-month period between January 2004 and December 2005. The emission rates were obtained from Ag Processing Inc's 2004 and 2005 EIQ submittals.

Ag Processing Inc received contemporaneous credits of 1.80 tpy for equipment removed in 2003 and 46.1 tpy for equipment removed as part of the project associated with PSD Permit 052007-007.

The emission calculations methodologies for the new, modified, and associated sources are described below. New emission sources were sources constructed as part of the PSD permit that did not exist before. The NEI of new emission sources was calculated as the potential to emit (PTE). Modified emission sources were sources already in operation that were physically modified as part of the PSD permit. Debottlenecked emission sources were sources already in operation that experienced an actual emissions increase due to the PSD permit. The NEI of modified and debottlenecked emission sources were calculated as the difference between the PTE and the BAE.

Table 5 contains a detailed listing of the emission units associated with PSD Permit 052007-007 and each emission unit's NEI. BAE were taken from the installation's 2004 and 2005 EIQs.

² This project was for the installation of two flakers. Even though the PTE for the project was 3.24 tpy, upstream processes limited the throughput to the flakers and throughput was not increased.

Table 5: Detailed PM₁₀ NEI (tpy)

Emission Unit	Emission Point	Description	052007-007 Status	PTE	BAE	NEI
1001	50	Bean Bin	New	0.77	-	0.77
1002	51	Bean Bin	New		-	
1003	52	Bean Bin	New		-	
1004	53	Jet Dryer	New	4.58	-	4.58
1005		Cascade Conditioner	New	1.33	-	1.33
1006		Cascade Cooler	New	1.36	-	1.36
1007		Secondary Dehulling	New	0.30	-	0.30
0080		Bean Heater Aspiration	Modified	13.59	2.71	10.88
1008	54	Flake Conveyor	New	0.04 ³	-	0.04
1009	55	DC Top Dryer Deck	New	4.10	-	4.10
1010		DC Middle Dryer Deck	New	3.03	-	3.03
1011		DC Bottom Dryer Deck	New	3.03	-	3.03
1012		DC Cooler Deck	New	3.11	-	3.11
1013	56.1	Cooling Tower	New	0.22	-	0.22
	56.2			0.22	-	0.22
1014	57	Rail Loadout	New	4.88	-	4.88
	57F	Rail Loadout Fugitives		0.14	-	0.14
1015	58	Pellet Bin	New	0.28	-	0.28
1016	59	Meal Bin	New	0.28	-	0.28
1017	60	Meal Bin	New		-	
0030	6	West Truck Receiving	Debottlenecked	2.44	0.27	2.17
	6F	West Truck Receiving Fugitives		0.26	0.01	0.25
0050	8	Receiving Legs	Debottlenecked	7.32	0.20	7.12
0110	14	Hull Grinder Aspiration	Modified	2.66	0.06	2.60
0130	19	Flakers	Modified	4.36	2.33	2.03
0240	27	Receiving Baghouse (Reject)	Modified	0.69	-	0.69
0280	30	Meal Grinding	Modified	2.22	0.69	1.53
0290	30.1	Flour Unloading	Removed	- ⁴	-	-
0300	31	Meal Loadout	Modified	6.29	0.16	6.12
0320	31.2	Off Quality Storage Vent	Modified	0.07	-	0.07
0330	31.3	Hipro Meal Storage Vent	Modified	0.07	0.02	0.05
0340	31.4	Pellet Storage Vent	Modified	0.27	0.005	0.27
N/A	PHR	Paved Haul Roads	Associated	7.98	7.25	0.73
N/A	UHR	Unpaved Haul Roads	Modified	0.07	0.07	-
0300	31F	Meal Loadout – Fugitives	Associated	0.04	0.01	0.03
0150	21	Discharge Conveyor	Removed	-	0.01	-0.01
0160	22	1600 tpd DC Top Dryer Deck	Removed	-	6.94	-6.94
0170	23	1600 tpd Bottom Dryer Deck	Removed	-	6.94	-6.94
0180	24	1600 tpd DC Top Cooler Deck	Removed	-	10.18	-10.18
0190	25	DC Bottom Cooler Deck	Removed	-	10.18	-10.18

³ The PTE of EU1008 EP54 Flake Conveyor was inaccurately based on an air flow rate of 1,000 acfm and an assumed grain outlet concentration by PSD Permit 052007-007. As there is no fan on this source, emissions are more accurately represented using the drop point equation from AP-42 Section 13.2.4 with a wind speed of 1.3 mph, a moisture content of 4.8%, and 3.7% control efficiency for process enclosure.

⁴ Although EU0290 EP30.1 Flour Unloading was permitted by PSD Permit 052007-007, this emission source was never constructed; therefore, its PTE is considered to be zero in the relaxation calculations. Nothing in this permit allows for the construction or operation of EU0290 EP30.1 Flour Unloading.

0200	25.1	800 tpd DT DC Top Cooler Deck	Removed	-	3.42	-3.42
0210	25.2	800 tpd DT DC Bottom Dryer	Removed	-	3.42	-3.42
0220	25.3	800 tpd DT DC Cooler Deck	Removed	-	5.01	-5.01
0230	26	Receiving from FDS to Soybean Meal	Removed	-	-	-
0140	19.1	Pneumatic Flake Conveyor	Removed	-	0.71 ⁵	-0.71
0250	27.1	Cooling Aspiration for DTS	Removed	-	0.47 ⁵	-0.47
0350	32	Flour Mill	Removed	-	0.33 ⁵	-0.33
0360	33	Raymond Grinder System	Removed	-	0.22 ⁵	-0.22
0370	34	Prater Biermeister Grinding System	Removed	-	0.03 ⁵	-0.03
0380	35	Tank Building Roof Vent	Removed	-	0.04 ⁵	-0.04

PM

A procedure similar to the one used in the PM₁₀ netting analysis was used to determine the PM NEI. Table 6 provides a summary of the PM NEI. A comparison of actual emissions before PSD Permit 052007-007 with potential emissions thereafter shows that the PM NEI is below the PSD significant thresholds of 25 tons per year.

Table 6: Summary of PM NEI (tons per year)

		PTE	BAE	NEI
New Emission Sources		45.54	-	45.54
Modified Emission Sources		95.05	54.05	41.00
Debottlenecked Emission Sources		10.32	0.93	9.39
Contemporaneous Credits	Shutdown as part of expansion	-	79.26	-79.26
	Shutdown in the five years previous to Permit 052007-007			
	Project 2004-08-034 ²			
Total		150.91	134.24	16.67

EMISSIONS/CONTROLS EVALUATION

Unless otherwise noted in the PM and PM₁₀ NEI analyses, emissions were calculated using the same procedures as PSD Permit 052007-007, but at a processing rate of 1,478,250 tpy.

Approach #1 demonstrates that the requested processing rate increase is not a relaxation project as the PM and PM₁₀ NEI remain below the major source significance thresholds of 25.0 tpy and 15.0 tpy, respectively.

Approach #2

No new equipment is being installed to achieve the installation's requested production increase. Table 7 provides a list of emission sources which are considered modified by this project as their processing rate will increase.

⁵ These emission sources were removed from the installation in 2003 and are included in the netting analysis as contemporaneous credits. BAE were taken from the installation's 2002 and 2003 EIQs.

Table 7: Emission Sources Modified by Production Increase

Emission Unit	Emission Point	Description
1001	50	Bean Bin
1002	51	Bean Bin
1003	52	Bean Bin
1004	53	Jet Dryer
1005		Cascade Conditioner
1006		Cascade Cooler
1007		Secondary Dehulling
0080		Bean Heater Aspiration
1008	54	Flake Conveyor
1009	55	DC Top Dryer Deck
1010		DC Middle Dryer Deck
1011		DC Bottom Dryer Deck
1012		DC Cooler Deck
1013	56.1	Cooling Tower
	56.2	
1014	57	Rail Loadout
	57F	Rail Loadout Fugitives
1015	58	Pellet Bin
1016	59	Meal Bin
1017	60	Meal Bin
0030	6	West Truck Receiving
	6F	West Truck Receiving Fugitives
0050	8	Receiving Legs
0110	14	Hull Grinder Aspiration
0130	19	Flakers
0240	27	Receiving Baghouse (Reject)
0280	30	Meal Grinding
0290	30.1	Flour Unloading
0300	31	Meal Loadout
0320	31.2	Off Quality Storage Vent
0330	31.3	Hipro Meal Storage Vent
0340	31.4	Pellet Storage Vent
N/A	PHR	Paved Haul Roads
N/A	UHR	Unpaved Haul Roads
0300	31F	Meal Loadout – Fugitives

PM, PM₁₀, and PM_{2.5}

Project emissions of PM, PM₁₀, and PM_{2.5} were calculated according to the *actual-to-projected-actual applicability test* of §52.21(a)(2)(iv)(c) and are provided in Tables 8, 9, and 10. Projected actual emissions (PAE) excludes the portion of an existing emission source's emissions that the existing emission source could have accommodated (CHA) during the baseline period. All existing emissions sources could have accommodated a soybean processing rate of 1,314,000 tpy. Baseline actual emissions (BAE) were calculated from the average processing rate during the baseline period. The baseline period was determined to be the calendar years of 2012 and 2013.

Table 8: PM Actual-to-Projected Actual Project Emissions

Emission Unit	Emission Point	Description	PAE (tpy)	BAE (tpy)	CHA (tpy)	Project Emissions Increase (tpy)
1001	50	Bean Bin	1.55	1.30	0.07	0.17
1002	51	Bean Bin				
1003	52	Bean Bin				
1004	53	Jet Dryer	10.57	10.57	-	- ⁶
1005		Cascade Conditioner	1.33	1.33	-	- ⁸
1006		Cascade Cooler	1.36	1.36	-	- ⁸
1007		Secondary Dehulling	0.30	0.30	-	- ⁸
0080		Bean Heater Aspiration	31.36	31.36	-	- ⁶
1008	54	Flake Conveyor	0.08	0.07	0.001	0.01
1009	55	DC Top Dryer Deck	5.86	5.86	-	- ⁶
1010		DC Middle Dryer Deck	6.06	6.06	-	- ⁶
1011		DC Bottom Dryer Deck	6.06	6.06	-	- ⁶
1012		DC Cooler Deck	6.22	6.22	-	- ⁶
1013	56.1	Cooling Tower	0.22	0.22	-	- ⁷
	56.2		0.22	0.22	-	- ⁷
1014	57	Rail Loadout	4.88	4.88	-	- ⁸
	57F	Rail Loadout Fugitives	- ⁹	0.41	-0.41	-
1015	58	Pellet Bin	0.28	0.28	-	- ⁸
1016	59	Meal Bin	0.28	0.28	-	- ⁸
1017	60	Meal Bin				
0030	6	West Truck Receiving	2.44	2.44	-	- ⁸
	6F	West Truck Receiving Fugitives	0.82	0.40	0.33	0.09
0050	8	Receiving Legs	7.32	7.32	-	- ⁸
0110	14	Hull Grinder Aspiration	2.66	2.66	-	- ⁶
0130	19	Flakers	10.17	10.17	-	- ⁶
0240	27	Receiving Baghouse (Reject)	0.69	0.69	-	- ⁸
0280	30	Meal Grinding	2.22	2.22	-	- ⁸
0300	31	Meal Loadout	6.29	6.29	-	- ⁸
0320	31.2	Off Quality Storage Vent	0.07	0.07	-	- ⁸
0330	31.3	Hipro Meal Storage Vent	0.07	0.07	-	- ⁸

⁶ Ag Processing Inc believes that they can accommodate the production increase without an increase in particulate emissions from this emission source. Special Condition 6 restricts the emissions from this source to the potential to emit of the source as calculated by PSD Permit 052007-007. Special Condition 7 requires performance testing to verify that the production increase does not increase potential emissions from this source.

⁷ Ag Processing Inc believes that they can accommodate the production increase without an increase in particulate emissions from this emission source. Potential emissions from this source were determined by the maximum water circulation rate and maximum TDS concentration. Special Condition 10 restricts the emissions from this source to the potential to emit of the source as calculated by PSD Permit 052007-007 by limiting the water circulation rate and TDS concentration.

⁸ This emission source is controlled by a baghouse required by Special Condition 6. Baghouses are characterized as constant outlet concentration devices and no modifications are being conducted to increase the air flow rate to this source; therefore, no increase in emissions is expected from baghouse controlled emission sources.

⁹ Projected actual emissions from EU1014 EP57F Rail Loadout were included as zero in project emission calculations as worst-case meal/hull/pellet load out emissions for the project occur when 100% of the meal/hull/pellets are trucked out by EU0300 EP31F Meal Loadout and PHR Paved Haul Roads. The potential to emit of EU1014 EP57F Rail Loadout is 0.62 tpy PM, 0.29 tpy PM₁₀, and 0.04 tpy PM_{2.5}.

0340	31.4	Pellet Storage Vent	0.27	0.27	-	- ⁸
N/A	PHR	Paved Haul Roads	27.86	11.76	13.11	2.99
0300	31F	Meal Loadout – Fugitives	0.33	0.06	0.23	0.04
Project:			137.82	121.18	13.35	3.30
PSD Significance Level/De Minimis Level:						25.0

Table 9: PM₁₀ Actual-to-Projected Actual Project Emissions

Emission Unit	Emission Point	Description	PAE (tpy)	BAE (tpy)	CHA (tpy)	Project Emissions Increase (tpy)
1001	50	Bean Bin	0.77	0.65	0.04	0.08
1002	51	Bean Bin				
1003	52	Bean Bin				
1004	53	Jet Dryer	4.58	4.58	-	- ⁶
1005		Cascade Conditioner	1.33	1.33	-	- ⁸
1006		Cascade Cooler	1.36	1.36	-	- ⁸
1007		Secondary Dehulling	0.30	0.30	-	- ⁸
0080		Bean Heater Aspiration	13.59	13.59	-	- ⁶
1008	54	Flake Conveyor	0.04	0.03	0.001	0.004
1009	55	DC Top Dryer Deck	4.10	4.10	-	- ⁶
1010		DC Middle Dryer Deck	3.03	3.03	-	- ⁶
1011		DC Bottom Dryer Deck	3.03	3.03	-	- ⁶
1012		DC Cooler Deck	3.11	3.11	-	- ⁶
1013	56.1	Cooling Tower	0.22	0.22	-	- ⁷
	56.2		0.22	0.22	-	- ⁷
1014	57	Rail Loadout	4.88	4.88	-	- ⁸
	57F	Rail Loadout Fugitives	- ⁹	0.19	-0.19	-
1015	58	Pellet Bin	0.28	0.28	-	- ⁸
1016	59	Meal Bin	0.28	0.28	-	- ⁸
1017	60	Meal Bin				
0030	6	West Truck Receiving	2.44	2.44	-	- ⁸
	6F	West Truck Receiving Fugitives	0.39	0.19	0.16	0.04
0050	8	Receiving Legs	7.32	7.32	-	- ⁸
0110	14	Hull Grinder Aspiration	2.66	2.66	-	- ⁶
0130	19	Flakers	4.36	4.36	-	- ⁶
0240	27	Receiving Baghouse (Reject)	0.69	0.69	-	- ⁸
0280	30	Meal Grinding	2.22	2.22	-	- ⁸
0300	31	Meal Loadout	6.29	6.29	-	- ⁸
0320	31.2	Off Quality Storage Vent	0.07	0.07	-	- ⁸
0330	31.3	Hipro Meal Storage Vent	0.07	0.07	-	- ⁸
0340	31.4	Pellet Storage Vent	0.27	0.27	-	- ⁸
N/A	PHR	Paved Haul Roads	5.57	2.35	2.62	0.60
0300	31F	Meal Loadout – Fugitives	0.16	0.03	0.11	0.02
Project:			73.61	70.13	2.73	0.75

PSD Significance Level/De Minimis Level:	15.0
---	------

Table 10: PM_{2.5} Actual-to-Projected Actual Project Emissions

Emission Unit	Emission Point	Description	PAE (tpy)	BAE (tpy)	CHA (tpy)	Project Emissions Increase (tpy)
1001	50	Bean Bin	0.39	0.33	0.02	0.04
1002	51	Bean Bin				
1003	52	Bean Bin				
1004	53	Jet Dryer	1.73	1.73	-	- ⁶
1005		Cascade Conditioner	0.67	0.67	-	- ⁸
1006		Cascade Cooler	0.68	0.68	-	- ⁸
1007		Secondary Dehulling	0.15	0.15	-	- ⁸
0080		Bean Heater Aspiration	5.12	5.12	-	- ⁶
1008	54	Flake Conveyor	0.01	0.01	0.0001	0.001
1009	55	DC Top Dryer Deck	2.05	2.05	-	- ⁶
1010		DC Middle Dryer Deck	1.51	1.51	-	- ⁶
1011		DC Bottom Dryer Deck	1.51	1.51	-	- ⁶
1012		DC Cooler Deck	1.55	1.55	-	- ⁶
1013	56.1	Cooling Tower	0.22	0.22	-	- ⁷
	56.2		0.22	0.22	-	- ⁷
1014	57	Rail Loadout	1.84	1.84	-	- ⁸
	57F	Rail Loadout Fugitives	- ⁹	0.03	-0.03	-
1015	58	Pellet Bin	0.14	0.14	-	- ⁸
1016	59	Meal Bin	0.14	0.14	-	- ⁸
1017	60	Meal Bin				
0030	6	West Truck Receiving	1.22	1.22	-	- ⁸
	6F	West Truck Receiving Fugitives	0.06	0.03	0.02	0.01
0050	8	Receiving Legs	2.76	2.76	-	- ⁸
0110	14	Hull Grinder Aspiration	1.33	1.33	-	- ⁶
0130	19	Flakers	2.18	2.18	-	- ⁶
0240	27	Receiving Baghouse (Reject)	0.34	0.34	-	- ⁸
0280	30	Meal Grinding	1.11	1.11	-	- ⁸
0300	31	Meal Loadout	2.37	2.37	-	- ⁸
0320	31.2	Off Quality Storage Vent	0.03	0.03	-	- ⁸
0330	31.3	Hipro Meal Storage Vent	0.03	0.03	-	- ⁸
0340	31.4	Pellet Storage Vent	0.14	0.14	-	- ⁸
N/A	PHR	Paved Haul Roads	1.37	0.58	0.64	0.15
0300	31F	Meal Loadout – Fugitives	0.02	-	0.02	-
Project:			30.89	30.02	0.67	0.20
PSD Significance Level/De Minimis Level:						10.0

Emissions from cyclone and baghouse controlled sources were determined based on the maximum anticipated grain outlet concentration, the maximum physical air flow rates as listed in Table 11, and 8,760 hours of annual operation. Emissions from these sources are limited to the calculated hourly PTE by Special Condition 6. Special Condition 7 requires testing of the majority of these sources to demonstrate compliance with Special Condition 6.

Table 11: Maximum Physical Air Flow Rates

Emission Unit	Emission Point	Description	Maximum Physical Air Flow Rate (dscfm)
1001	50	Bean Bin	No fan
1002	51	Bean Bin	
1003	52	Bean Bin	
1004	53	Jet Dryer	9,385
1005		Cascade Conditioner	19,887
1006		Cascade Cooler	
1007		Secondary Dehulling	
0080		Bean Heater Aspiration	27,841
1008	54	Flake Conveyor	No fan
1009	55	DC Top Dryer Deck	15,609
1010		DC Middle Dryer Deck	48,835
1011		DC Bottom Dryer Deck	
1012		DC Bottom Cooler Deck	
1014	57	Rail Load Out	43,344
1015	58	Pellet Bin	1,478
1016	59	Meal Bin 5	1,478
1017	60	Meal Bin 6	
0030	6	West Truck Receiving	16,254
0050	8	Receiving Legs	48,762
0110	14	Hull Grinder Aspiration	17,732
0130	19	Flakers	19,341
0240	27	Reject	3,675
0280	30	Meal Grinding	14,776
0300	31	Meal Loadout	41,866
0320	31.2	Off Quality Storage Vents	No fan
0330	31.3	Hipro Meal Storage Vents	No fan
0340	31.4	Pellet Storage Vents	1,500

Emissions from EU1008 EP54 Flake Conveyor were calculated using Equation 1 from AP-42 Section 13.2.4 “Aggregate Handling and Storage Piles” (November 2006). The average wind speed of 9.14 mph as observed in the St. Joseph airport was used in emissions calculations. A moisture content of 4.8% was employed in emissions calculations. Although many agricultural documents demonstrate higher moisture contents for soybeans, Equation 1 is not valid at moisture contents above 4.8%. A capture efficiency of 3.7% percent was included in emissions calculations to account for process enclosure.

Emissions from the Bean Bins (EU1001, EU1002, and EU1003; EP50, EP51, and EP52) were determined based on the maximum anticipated grain outlet concentration, a maximum air flow rate of 1,100 acfm, and the maximum annual hours of operation. The maximum annual hours of operation are based upon the oilseed processing limit (1,478,250 tpy), the maximum combined capacity of the bins (648,780 bushels), the

average weight of a bushel of oilseed (0.03 tons), and the bean receiving MHDR of 900 tph. Emissions from this source are controlled by the application of oil and are limited to the calculated hourly PTE by Special Condition 6.

Emissions from EU1013 EP56.1 and EP56.2 Cooling Tower were determined based on the maximum water circulation rate, the maximum TDS concentration, and the drift loss. Special Condition 10 ensures that the variables used to determine the PTE do not increase due to the production increase.

Emissions from PHR Paved Haul Roads were calculated using Equation 2 from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 13.2.1 “Paved Roads” (January 2011). PHR Paved Haul Roads includes emissions from the Bean Receiving Haul Road and the Meal/Hulls/Pellet Loadout Haul Road. The silt loading used in emissions calculations was 8.0 g/m². Empty trucks were assumed to weigh 14 tons while loaded trucks were assumed to weigh 40 tons. For the Bean Receiving Haul Road, loaded trucks enter the property and travel 0.0758 miles to EU0030 EP6 West Truck Receiving, the empty trucks then travel 0.2983 miles to leave the property. For the Meals/Hulls/Pellet Loadout Haul Road, empty trucks enter the property and travel 0.2083 miles to EU0300 EP31 Meal Loadout, the loaded trucks then travel 0.1269 miles to leave the property. The maximum number of trips for the Bean Receiving Haul Road is based on the oilseed processing rate limit in Special Condition 8 of 1,478,250 tpy. The exact weight of meal/hulls/pellets produced from a ton of oilseed varies; however, an average weight of 0.8 pounds meal/hulls/pellets per pound of oilseed was used to determine the maximum number of trips for the Meal/Hulls/Pellet Loadout Haul Road.

Emissions from receiving and load out do not achieve 100% capture. Fugitive emissions from EU0030 EP6F West Truck Receiving, EU0300 EP31F Meal Loadout, and EU1014 EP57F Rail Loadout were calculated using Equation 1 from AP-42 Section 13.2.4 “Aggregate Handling and Storage Piles” (November 2006). The average wind speed of 9.14 mph as observed in the St. Joseph airport was used in emissions calculations. A moisture content of 4.8% was employed in emissions calculations. Although many agricultural documents demonstrate higher moisture contents for soybeans, Equation 1 is not valid at moisture contents above 4.8%. The capture efficiency for these sources was determined to be the ratio of actual air flow rate to the baghouse to the induced air flow rate. Where the actual air flow rate to EU0030 EP6 baghouse is 16,500 acfm, to EU0300 EP31 baghouse is 42,500 acfm, and to EU1014 EP57 is 44,000 acfm and the induced air flow rate was calculated using an equation derived by Anderson and Dennis as:

$$Q_{ind} = 10 \times A_u \times \sqrt[3]{\left(\frac{R \times S^2}{D}\right)}$$

Where:

Q_{ind} = Volume of Induced Air (cfm)

A_u = Enclosure open area at upstream end (point where air is induced into the system by action of the falling material (ft²) = 49 for EP6F, 168 for EP31F, and 238 for EP57F.

R = Material flow rate (tph) = 900 for EP6F, 250 for EP31F, and 500 for EP57F.

S = Height of material free fall (ft) = 8 for EP6F, 5 for EP31F, and 6.5 for EP57F.
D = Average particle diameter (ft) = 0.0295 for EP6F and 0.0984 for EP31F and EP57F.

VOC

Project VOC emissions are based on the BACT limit of 0.145 gallons of solvent per ton of oilseed, assuming the solvent is 100% VOC. Project emissions of VOC exceed the PSD significance level; therefore, a BACT analysis was performed. For additional discussion of BACT, please refer to the BACT Analysis later in this permit.

Hexane

Project Hexane emissions are based on the BACT limit of 0.145 gallons of solvent per ton of oilseed and the monthly weight average HAP content of extraction solvent limit of 0.65. SDS for the extraction solvent indicates that Hexane is the only HAP contained within the material. Project emissions of Hexane exceed the major source threshold. A case-by-case MACT analysis was not performed as the installation is subject to and required to comply with MACT GGGG. EPA has not yet conducted a Risk and Technology Review (RTR) for MACT GGGG to determine if there are residual risks; therefore, Missouri regulations require the installation to undergo modeling to determine the impact of Hexane emissions beyond the installation’s property boundary. For additional discussion of the modeling analysis, please refer to the AAQIA later in this permit.

The following table provides an emissions summary for Approach #2. Existing potential emissions were taken from PSD Permit 052007-007. Existing actual emissions were taken from the installation’s 2013 EIQ. Potential emissions of the application represent the potential of the modified equipment, assuming continuous operation (8,760 hours per year) unless otherwise noted above.

Table 12: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Project NEI
PM	25.0	Major	N/A	3.30
PM ₁₀	15.0	Major	30.60	0.75
PM _{2.5}	10.0	N/D	8.39	0.20
SO _x	40.0	1.76	0.01	N/A
NO _x	40.0	Major	1.74	N/A
VOC	40.0	Major	282.72	65.49
CO	100.0	246.51	1.46	N/A
GHG (CO ₂ e)	100,000	N/D	N/A	N/A
HAPs	25.0	Major	208.42	42.57
Hexane	10.0	Major	208.42	42.57

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

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (8) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential project emissions of VOC exceed the PSD significant emissions threshold.

APPLICABLE REQUIREMENTS

Ag Processing Inc shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific recordkeeping, 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

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

SPECIFIC REQUIREMENTS

- 10 CSR 10-6.070 *New Source Performance Regulations*
 - 40 CFR Part 60, Subpart DD – *Standards of Performance for Grain Elevators* is applicable to EU0030 EP6 West Truck Receiving and EU0050 EP8 Rail Receiving Legs
- 10 CSR 10-6.075 *Maximum Achievable Control Technology Regulations*
 - 40 CFR Part 63, Subpart GGGG – *National Emission Standards for Hazardous Air Pollutants: Solvent Extraction for Vegetable Oil Production* is applicable to the installation's soybean oil production process equipment which include: oilseed preparation operations, solvent extractors, desolventizer-toasters, meal dryers, meal coolers, meal conveyor systems, oil distillation units, solvent evaporators and condensers, solvent recovery systems (also referred to as mineral oil absorption systems), vessels storing solvent-laden materials, and crude meal packaging and storage vessels.

- 10 CSR 10-6.400 *Restriction of Emission of Particulate Matter From Industrial Processes*
 - EU0030 6F West Truck Receiving, EU0300 31F Meal Loadout, and EU1014 EP57 Rail Loadout are fugitive emission sources exempt from this regulation per 10 CSR 10-6.400(1)(B)7.
 - EU1001 EP50 Bean Bin, EU1002 EP51 Bean Bin, EU1003 EP52 Bean Bin, EU1005 EP53 Cascade Conditioner, EU1006 EP53 Cascade Cooler, EU1007 EP53 Secondary Dehulling, EU1008 EP54 Flake Conveyor, EU1015 EP58 Pellet Bin, EU1016 EP59 Meal Bin, EU1017 EP60 Meal Bin, EU0240 EP27 Receiving Baghouse (Reject), EU0320 EP31.2 Off Quality Storage Vent, EU0330 EP31.3 Hipro Meal Storage Vent, and EU0340 EP31.4 Pellet Storage Vent each have emissions below 0.5 lb/hr PM; therefore, these emission sources are exempt from this regulation per 10 CSR 10-6.400(1)(B)12.
 - EU1014 EP57 Rail Loadout, EU0030 EP6 West Truck Receiving, EU0050 EP8 Receiving Legs, EU0280 EP30 Meal Grinding, EU0110 EP14 Hull Grinder Aspiration, and EU0300 EP31 Meal Loadout are required by Special Condition 6 to be controlled by baghouses. Baghouses achieve greater than 90% particulate control; therefore, these emission sources are exempt from this regulation per 10 CSR 10-6.400(1)(B)15.
 - This regulation is applicable to EU1004 EP53 Jet Dryer, EU0080 EP53 Bean Heater Aspiration, EU1009 EP55 DC Top Dryer Deck, EU1010 EP55 DC Middle Dryer Deck, EU1011 EP55 DC Bottom Dryer Deck, EU1012 EP55 DC Bottom Cooler Deck, and EU0130 EP19 Flakers. These sources are all required to complete stack testing by Special Condition 7. Stack testing results may be used to demonstrate compliance with this regulation in the installation's Part 70 operating permit.

BACT ANALYSIS

PSD Permit 052007-007 contains a VOC BACT analysis which included pre- and post-construction ozone monitoring and resulted in a VOC BACT emission limit of 0.145 gallons of solvent loss per ton of soybean processed.

Pre- and post-construction ozone monitoring for this production increase are not being required by this permit. After the completion of Ag Processing, Inc's post-construction monitoring for PSD Permit 052007-007, the Air Pollution Control Program chose to continue using the location to monitor ozone as part of Missouri's ozone monitoring network. The monitoring site is now known as the Savannah site (ID: 29-003-0001) and is representative for Ag Processing, Inc.

While the VOC emissions increase associated with this project exceeds the PSD significance threshold, a BACT review is not warranted as there is no new equipment and no physical changes to existing equipment associated with this project. The previously determined VOC BACT emission limit remains valid for this project as no controls were eliminated in PSD Permit 052007-007 due to economic feasibility and no new or improved control devices have been identified beyond those discussed in PSD Permit 052007-007.

AAQIA

N-Hexane emissions will be emitted from the extraction building in the form of process and fugitive emissions that will be released through two stacks and four vents. Ambient air quality modeling was performed to determine compliance with the long- and short-term risk assessment levels (RALs) for n-Hexane. The results of the ambient air quality modeling are provided in Table 13.

Table 13: Ambient Air Quality Modeling Analysis Results

Pollutant	Modeled Impact ($\mu\text{g}/\text{m}^3$)	RAL ($\mu\text{g}/\text{m}^3$)	Time Period
Hexane	3692.30	4200	24-hour
	415.24	420	Annual

Table 14 contains a list of the release parameters and hexane emission rates relied on for the ambient air quality modeling analysis. Any changes to the release parameters and hexane emission rates affect the results in Table 13 and require a new ambient air quality modeling analysis.

Table 14: Hexane Release Parameters and Emission Rates

Emission Source	Model I.D.	Description	Release Type	Easting	Northing	Elevation	Emission Rate	
				(m)	(m)	(m)	(lb/hr)	(g/s)
EP55	EPDC	Multi-Deck Dryer	Point	339343.70	4399180.80	249.59	61.23	7.715
EPMOS	EPMOS	Mineral Oil Absorption System	Point	339327.70	4399213.50	248.09	15.31	1.929
Vent20	Vent1	Fugitive Air Vents	Point	339322.90	4399221.60	248.09	8.2025	1.034
Vent20	Vent2		Point	339320.00	4399217.10	248.09	8.2025	1.034
Vent20	Vent3		Point	339326.30	4399201.80	248.09	8.2025	1.034
Vent20	Vent4		Point	339318.80	4399207.20	248.09	8.2025	1.034
Emission Source	Model I.D.	Description	Release Type	Stack Height	Stack Exit Temperature	Stack Exit Velocity	Stack Diameter	Comments
				(m)	(K)	(m/s)	(m)	
EP55	EPDC	Multi-Deck Dryer	Point	25.91	328.15	23.01	1.37	-
EPMOS	EPMOS	Mineral Oil Absorption System	Point	22.86	305.37	11.43	0.20	-
Vent20	Vent1	Fugitive Air Vents	Point	1.52	305.37	6.39	1.03	Confirm Vertical
Vent20	Vent2		Point	1.52	305.37	6.39	1.03	
Vent20	Vent3		Point	1.52	305.37	6.39	1.03	
Vent20	Vent4		Point	1.52	305.37	6.39	1.03	

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (8) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Alana L. Hess, P.E.
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 June 23, 2014, received June 27, 2014, designating Ag Processing Inc 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		



**Missouri Department of Natural Resources
Air Pollution Control Program**

**Response to Public Comments on the
Prevention of Significant Deterioration Permit for
Ag Processing Inc (021-0060)
Project 2014-06-076**

The draft Prevention of Significant Deterioration Permit, Project 2014-06-076, for Ag Processing Inc (021-0060) was placed on public notice as of May 22, 2015, for a 40-day comment period. The public notice was published on the Department of Natural Resources' Air Pollution Control Program's web page at: <http://www.dnr.mo.gov/env/apcp/PermitPublicNotices.htm> and in the St. Joseph's News-Press on Friday, May 22, 2015.

On June 18, 2015, the Air Pollution Control Program received comments from Mark A. Smith, Air Permitting and Compliance Branch Chief for EPA Region VII. The Air Pollution Control Program did not receive any other comments on the draft Prevention of Significant Deterioration Permit while it was on public notice. EPA's comments are addressed below.

EPA Comment #1:

Ag Processing Inc – St. Joseph submitted an application to modify an existing PSD major source permit to construct. The pollutant of concern, associated with this construction permit modification, is PM_{2.5}. The application indicated that hexane was the only pollutant that triggered a refined air quality assessment which MDNR appears to have undertaken. However, it appears to EPA that Ag Processing Inc and/or MDNR should have considered the increase in PM_{2.5} as part of their air quality analysis.

The United States Court of Appeals for the District of Columbia Circuit (Court) on January 22, 2013 vacated and remanded portions of the U.S. EPA rule establishing significant impact levels (SILs) and vacated the rule establishing the significant monitoring concentration (SMC) for PM_{2.5}. SILs and SMCs are screening tools that are used by regulatory authorities to determine whether a new source or a major modification to an existing source may be exempted from certain requirements (e.g., source impact analysis and pre-construction pollutant monitoring) under §165 of the Clean Air Act. Taking the Court's decision at face value, a new major source or a major modification at an existing major stationary source involving PM_{2.5} would need to collect PM_{2.5} preconstruction monitoring data in advance of a PSD permit application and would also need to complete an ambient air quality impact analysis including a multi-source NAAQS and increment analysis. The draft permit to construct does not include any air quality impact analysis regarding PM_{2.5} and EPA recommends MDNR and Ag Processing Inc address this deficiency.

MDNR's Response:

As indicated by Table 10 in the permit, the project's PM_{2.5} emissions increase is 0.20 tons per year which is below the significant emission rate for PM_{2.5} of 10 tons per year established by §52.21(b)(23)(i); therefore, this project is not a major modification for PM_{2.5}. The pollutant of

concern associated with this PSD permit is VOC. The installation included PM_{2.5} emission calculations in the application as PM_{2.5} emissions from the installation were not required to be calculated when the installation was originally constructed.

EPA Comment #2:

Several of the draft construction permit conditions require Ag Processing Inc (permittee) to operate and maintain control devices in “accordance with manufacturer’s specifications;” “in accordance with good operational practices;” and “to maintain pressure drop within ranges specified by the manufacturer.” EPA contends these conditions are too vague and as such are not enforceable as a practical matter.

Permit conditions must contain sufficient detail to ensure the facility and the public clearly understand the obligations and how compliance will be evaluated. Vague permit provisions preclude the permittee from understanding its obligations and preclude regulators and the public from ensuring the permittee is complying with its obligations. Any standard that is based on what a manufacturer or industry specifies is practically unenforceable because the compliance criteria are not in the permit, not necessarily available to the public, and subject to change at the manufacturer’s will.

According to EPA, a permit “must contain more explicit monitoring requirements” than just manufacturers specifications. As such, the following sections should be amended to include more specific compliance requirements that make clear the permittee’s obligations to the permittee, regulators and the public in order to ensure practical enforceability.

- ◆ Special Condition 4.A.;
- ◆ Special Condition 6.B.;
- ◆ Special Condition 6.C.3.;
- ◆ Special Condition 6.D.2.; and
- ◆ Special Condition 6.F.2.

MDNR’s Response:

The Missouri Air Pollution Control Program has been using the permit language in question for close to 30 years without any detrimental effect to the quality of Missouri’s air. Practical implementation over the past 30 years has proven the effectiveness of the wording and proven to be protective of the standards they were intended for; however, if inspectors should note improper adherence with any of the provisions, the permit can be reopened to incorporate more specific wording.

EPA Comment #3:

Special Condition 4.E requires Ag Processing Inc to “maintain” a copy of the manufacturer’s specification to document that the evaporators, condensers, mineral oil absorption system, solvent recovery system and chiller are being operated within the parameters set forth by the manufacturer(s). EPA contends that simply maintaining a copy of the manufacturer’s specifications will not document operational compliance. MDNR should include the explicit activities the manufacturer(s) require the permittee to undertake to verify compliance, in each of the appropriate special conditions.

MDNR’s Response:

The Air Pollution Control Program has added Special Conditions 4.F and 4.G to the PSD permit. Special Condition 4.F and 4.G require Ag Processing Inc to monitor and record the temperature

at two locations. The recorded temperatures are deemed sufficient documentation to demonstrate that the evaporators, condensers, and mineral oil absorption system are operating in accordance with the manufacturer's specifications.

EPA Comment #4:

Special Condition 13 includes a reference to a “**Table 15**” (emphasis added), however, there is no Table 15 in this draft Permit to Construct. EPA recommends MDNR amend Special Condition 13.

MDNR's Response:

Special Condition 13 should have referred to Table 14. The permit has been modified to correct this error.

EPA Comment #5:

Table 1, in Special Condition 6.A., presents particulate emission limitations that apply to the emission points impacted by the increased oilseed production at Ag Processing Inc. The PM_{2.5} limit which, encompasses emission points EP50, EP51, and EP52, is set at 0.09 lb/hr. However, the Ag Processing Inc application, submitted for this construction permit, indicates the post-project emissions from the combination of emission points EP50, EP51, and EP52 is 0.27 tpy or 0.06 lb/hr. Additionally, Table 1 shows an emission limit of 0.001 lb/hr for emission point EP54; whereas the Ag Processing Inc application shows a post-project emission limit for EP54 at 0.23 tpy or 0.05 lb/hr. EPA recommends MDNR rectify the discrepancy between Ag Processing Inc's post-project emissions and the emission limits established in Special Condition 6.

MDNR's Response:

The Air Pollution Control Program disagreed with the calculations performed by Ag Processing Inc in the PSD application for EP50, EP51, EP52, and EP54; therefore, the emission limitations in Table 1 are based on the following:

- ◆ In the application, Ag Processing Inc based the potential to emit of EP50, EP51, and EP52 on a combined 1,162 hours of annual operation; however, based on the new annual processing rate limit of 1,478,250 tons per year, the combined storage capacity of the bins of 648,780 bushels, an average bushel weight of 0.03 tons, and the bean receiving MHDR of 900 tons per hour the annual hours of operation were calculated to be 1,664 hours.
- ◆ In the application, Ag Processing Inc assumed an air flow rate of 962 scfm and a grain outlet concentration of 0.007 gr/dscf PM_{2.5} for EP54. As this is not a baghouse controlled source, it was unclear to the Air Pollution Control Program how the PM_{2.5} grain outlet concentration was determined. It was determined that a more appropriate method of calculating emissions from this fugitive source would be to use Equation 1 from AP-42 Section 13.2.4 “Aggregate Handling and Storage Piles” (November 2006).

EPA Comment #6:

Special Condition 11.A requires the permittee to maintain and/or repair paved haul roads. This special condition is too vague to be enforceable as a practical matter. Permit conditions must contain sufficient detail to ensure the facility and the public clearly understand obligations in the permit and how compliance with these requirements will be evaluated. As such, MDNR should amend Special Condition 11.A. to include specific compliance requirements the permittee must undertake to maintain and/or repair haul roads to ensure practical enforceability.

MDNR's Response:

Special Condition 11.A has been modified to clarify that the installation is required to maintain and/or repair the haul roads as necessary to achieve control of fugitive emissions.

EPA Comment #7:

Special Condition 4.A. and 4.C. make reference to permittee requirements "as specified in permit application 2006-04-052." These references, to a previous permit application, do not establish a clear legal obligation for the permittee nor do they allow for clear regulatory compliance verification. MDNR should include the specific details regarding the emission controls associated with the extraction process; the desolventizing-toasting process; and solvent storage tanks.

MDNR's Response:

The Air Pollution Control Program has removed all references to permit application 2006-04-052 from this permit. The PSD permit application for this project does not specify that these control systems will remain in place; however, the installation would be unable to comply with the solvent loss ratio limit in Special Condition 2.A without properly maintaining and operating the existing controls on the extraction and desolventizing-toasting processes.

Mr. Mark Craigmile
Senior Vice President of Operations
Ag Processing Inc
P.O. Box 427
St. Joseph, MO 64502

RE: New Source Review Permit - Project Number: 2014-06-076

Dear Mr. Craigmile:

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. 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, your new source review permit application, and submittal of an operating permit renewal application are 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 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 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.

Mr. Mark Craigmile
Page Two

If you have any questions regarding this permit, please do not hesitate to contact Alana Hess, 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:ahl

Enclosures

c: Kansas City Regional Office
PAMS File: 2014-060-76

Permit Number: