



## 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: **022012-005**

Project Number: 2011-11-009  
Installation Number: 143-0079

Parent Company: Monsanto Company

Parent Company Address: 800 North Lindbergh Boulevard, St. Louis, MO 63167

Installation Name: Monsanto Company

Installation Address: 2992 State Highway V, Matthews, MO 63867

Location Information: New Madrid County, S3, T24N, R14E

Application for Authority to Construct was made for:

The installation of seed treatment equipment to the Pre-Foundation operations at Monsanto Company's Matthews facility. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

FEB 10 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 Departments' Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

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

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

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

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

Page No.	3
Permit No.	
Project No.	2011-11-009

### 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."*

Monsanto Company  
New Madrid County, S3, T24N, R14E

1. **Superseding Condition**  
The conditions of this permit supersede all special conditions found in the previously issued construction permit 072010-003 issued by the Air Pollution Control Program.
2. **Emission Limitation**
  - A. Monsanto Company shall emit less than 15.0 tons of particulate matter less than ten (10) microns in diameter (PM<sub>10</sub>) in any consecutive 12-month period from the entire installation (see Table 1).
  - B. Monsanto Company shall demonstrate compliance with the emission limit in special condition 1.A by recording the 12-month rolling total PM<sub>10</sub> emissions. Monsanto Company shall use forms approved by the Air Pollution Control Program that contain at minimum the following information:
    - 1) Monthly throughput of each emission unit in tons.
    - 2) Emission factor for the unit
    - 3) Source of the emission factor
    - 4) Type of Control device
    - 5) Control device efficiency
      - a) For baghouses use 99.0 percent
      - b) For high efficiency cyclones use 80.0 percent
      - c) For haul road watering use 50.0 percent
    - 6) Monthly PM<sub>10</sub> emissions for each unit in tons
    - 7) Monthly PM<sub>10</sub> emissions for the entire installation in tons
    - 8) 12-month total PM<sub>10</sub> emissions for the entire installation in tons
3. **Emission Limitation**
  - A. Monsanto Company shall emit less than 40.0 tons of Volatile Organic Compounds (VOC) in any 12-month period from the Treater (EP-F27) while operating at this site.

Page No.	4
Permit No.	
Project No.	2011-11-009

#### SPECIAL CONDITIONS:

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

- 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 Conditions 3.A.
4. Alternative Treatment Solutions
- A. When considering an alternative treatment solution that is different to those listed in the Application for Authority to Construct, the Monsanto Company must calculate the potential emissions for each individual Hazardous Air Pollutant (HAP) in each alternative treatment solution. If the potential HAP emissions for the alternative solution are *less* than the Screen Modeling Action Level (SMAL), as listed in Attachment AA, then the Monsanto Company does not need to obtain approval from the Air Pollution Control Program before the use of the alternative treatment solution. If the potential HAP emissions for the alternative solution are *equal to or greater* than the SMAL, then the Monsanto Company must obtain approval from the Air Pollution Control Program before use of the alternative treatment solution.
  - B. Calculations of alternative solution shall be maintained for five years after the last day the alternative coating is used and shall be made available for Department of Natural Resources' employee on request. The Monsanto Company shall use electronic forms approved by the Air Pollution Control Program that contain at minimum the following information:
    - 1) Name of the proposed alternative treatment solution
    - 2) Proposed application rate
    - 3) Density of the proposed alternative treatment solution in pounds per gallon
    - 4) Individual HAP content in weight percentage
    - 5) Potential individual HAP emissions in tons per year
    - 6) SMAL for each individual HAP in tons per year
5. Haul Road Dust Suppression
- A. Monsanto Company shall apply water or another effective suppressant for dust control to all unpaved haul roads whenever conditions exist which would cause visible fugitive emissions to enter the ambient air beyond the property boundary.
  - B. Watering may 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.

Page No.	5
Permit No.	
Project No.	2011-11-009

## SPECIAL CONDITIONS:

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

6. Control Device Requirement-Baghouse
  - A. Monsanto Company shall control emissions from the following equipment using baghouses as specified in the permit application.
    - 1) Inside Receiving (EU-1)
    - 2) Scalp (EU-2)
    - 3) Bulk Storage Bins (EU-3)
    - 4) Cleaner Surge Bin Line 1 (EU-6)
    - 5) Cleaner Line 1 (EU-7)
    - 6) Cleaner Surge Bin Line 2 (EU-8)
    - 7) Cleaner Line 2 (EU-9)
    - 8) Color Sorter Surge Bin Line 1 (EU-10)
    - 9) Color Sorter Primary Line 1 (EU-11)
    - 10) Color Sorter Secondary Line 1 (EU-12)
    - 11) Color Sorter Surge Bin Line 2 (EU-13)
    - 12) Color Sorter Primary Line 2 (EU-14)
    - 13) Color Sorter Secondary Line 2 (EU-15)
    - 14) Gravity Surge Bin #1 Line 1 (EU-16)
    - 15) Gravity Table #1 Line 1 (EU-17)
    - 16) Gravity Surge Bin #2 Line 1 (EU-18)
    - 17) Gravity Table #2 Line 1 (EU-19)
    - 18) Gravity Surge Bin #1 Line 2 (EU-20)
    - 19) Gravity Table #1 Line 2 (EU-21)
    - 20) Gravity Surge Bin #2 Line 2 (EU-22)
    - 21) Gravity Table #2 Line 2 (EU-23)
    - 22) Bagging Bins (EU-24)
    - 23) Bagger #1 Line 1 (EU-25)
    - 24) Bagger #2 Line 1 (EU-26)
    - 25) Bagger #1 Line 2 (EU-27)
    - 26) Bagger #2 Line 2 (EU-28)
    - 27) Box Dumper (EU-F1)
    - 28) Cleaner Surge Bin (EU-F2)
    - 29) Cleaner (EU-F3)
    - 30) Spiral Surge Bin (EU-F4)
    - 31) Spirals (EU-F5)
    - 32) Gravity Surge Bin #1 (EU-F6)
    - 33) Gravity Table #1 (EU-F7)
    - 34) Gravity Surge Bin #2 (EU-F8)
    - 35) Gravity Table #2 (EU-F9)
    - 36) Clean Seed Bins (EU-F10)

Page No.	6
Permit No.	
Project No.	2011-11-009

### SPECIAL CONDITIONS:

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

- 37) Bagging Bin #1 (EU-F11)
  - 38) Bagger #1 (EU-F12)
  - 39) Bagging Bin #2 (EU-F13)
  - 40) Bagger #2 (EU-F14)
  - 41) Bag Unloading Hoppers (EU-F24)
  - 42) Treater Surge Bin (EU-F25)
  - 43) Treater Surge Bin (EU-F26)
  - 44) Treater (EU-F27)
  - 45) Post Treater Surge Bin (EU-F28)
  - 46) Treated Clean Seed Bin (EU-F29)
- B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The 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 employees may easily observe them.
- C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
- D. Monsanto Company shall monitor and record the operating pressure drop across the baghouses at least once every calendar day. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
- E. Monsanto Company shall maintain an operating and maintenance log for the baghouses 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. Record Keeping and Reporting Requirements
- A. Monsanto Company 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.

Page No.	7
Permit No.	
Project No.	2011-11-009

**SPECIAL CONDITIONS:**

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

- B. Monsanto Company shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

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

Project Number: 2011-11-009  
Installation ID Number: 143-0079  
Permit Number:

Monsanto Company  
2992 State Highway V  
Matthews, MO 63867

Complete: November 11, 2011

Parent Company:  
Monsanto Company  
800 North Lindbergh Boulevard  
St. Louis, MO 63167

New Madrid County, S3, T24N, R14E

REVIEW SUMMARY

- Monsanto Company has applied for authority to install seed treatment equipment to the Pre-Foundation operations at their Matthews facility.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. The HAP of concern from this process is toluene.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- Baghouses are being used to control the PM<sub>10</sub> emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of Volatile Organic Compounds (VOC) for this project are conditioned below de minimis levels. Installation-wide potential emissions of PM<sub>10</sub> are also conditioned below the de minimis levels.
- This installation is located in New Madrid County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed since potential emissions of the application are conditioned below de minimis levels.
- 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

Monsanto Company is an existing soybean seed processing facility. The installation receives bulk soybean seeds, then cleans, sorts, conditions and bags the seeds for sale or ships them by bulk by truck.

The following permits have been issued to Monsanto Company from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
072010-003	Soybean Seed

### Process Description

The installation is separated into two independent sections called production and pre-foundation. Production starts with soybean seed received via hopper trucks, which are unloaded in the inside receiving area (EU-1). Seeds are then processed through a scalperator (EU-2) for initial cleaning and then transferred into storage bins (EU-3). From the bins the seeds can be processed in one of two lines. On both lines, seeds pass through a surge bin (EU-6 or EU-8) and into a cleaner (EU-7 or EU-9). From the cleaners, the seeds are conveyed to a surge bin (EU-10 or EU-13) and then to the primary color sorters (EU-11 and EU-14) and secondary color sorters (EU-12 and EU-15). After the color sorters the seeds are passed to series of surge bins and gravity tables (EU-16 through EU-23). Materials rejected from the scalperator, cleaners, sorters and gravity tables are collected into a set of two cull bins (EU-4) that serve both lines. From the gravity tables seeds are conveyed into bagging bins (EU-24). Seeds can be packaged into 50-pound bags or mini-bulk bags (EU-25 through EU-28) or loaded out in bulk by truck (EU-30).

Pre-foundation operations are similar to production operations. Seeds arrive at pre-foundation via the foundation receiving area where they are unloaded (EU-F15) and conveyed to a bulk receiving bin (EU-F16). From the receiving bin seeds are conveyed to a surge bin (EU-F2) and into a cleaner (EU-F3). Seeds can also be introduced into the system via a box dumper (EU-F1) that bypasses receiving. After cleaning, the seeds pass through another surge bin (EU-F4) and into spirals (EU-F5) and next pass through a series of surge bins and gravity tables (EU-F6 through EU-F9). Materials rejected from the cleaner, spirals and gravity tables are collected in a cull bin (EU-F17).

After the gravity tables, seeds flow into clean seed bins (EU-F10). From the bins, seed can be packed into 50-pound bags or mini-bulk bags (EU-F11 through EU-F14).

Table 2: Equipment List

Emission Unit	Description
EU-1	Inside Receiving
EU-2	Scalp
EU-3	8 Bulk Storage Bins
EU-4	2 Cull Bins
EU-5	Cull Bin Loadout
EU-6	Cleaner Surge Bin Line 1
EU-7	Cleaner Line 1
EU-8	Cleaner Surge Bin Line 2
EU-9	Cleaner Line 2
EU-10	Color Sorter Surge Bin Line 1
EU-11	Color Sorter Primary Line 1
EU-12	Color Sorter Secondary Line 1
EU-13	Color Sorter Surge Bin Line 2
EU-14	Color Sorter Primary Line 2
EU-15	Color Sorter Secondary Line 2
EU-16	Gravity Surge Bin #1 Line 1
EU-17	Gravity Table #1 Line 1
EU-18	Gravity Surge Bin #2 Line 1
EU-19	Gravity Table #2 Line 1
EU-20	Gravity Surge Bin #1 Line 2
EU-21	Gravity Table #1 Line 2
EU-22	Gravity Surge Bin #2 Line 2
EU-23	Gravity Table #2 Line 2
EU-24	8 Bagging Bins
EU-25	Bagger #1 Line 1
EU-26	Bagger #2 Line 1
EU-27	Bagger #1 Line 2
EU-28	Bagger #2 Line 2
EU-29	Internal Handling
EU-30	Transfer Mini Bulk to True Bulk
EU-31	Haul Roads
EU-F1	Box Dumper
EU-F2	Cleaner Surge Bin
EU-F3	Cleaner
EU-F4	Spiral Surge Bin
EU-F5	Spirals (2)
EU-F6	Gravity Surge Bin #1
EU-F7	Gravity Table #1
EU-F8	Gravity Surge Bin #2
EU-F9	Gravity Table #2
EU-F10	2 Clean Seed Bins

Emission Unit	Description
EU-F11	Bagging Bin #1
EU-F12	Bagger #1
EU-F13	Bagging Bin #2
EU-F14	Bagger #2
EU-F15	Foundation Receiving
EU-F16	2 Receiving Bulk Bins
EU-F17	Cull Bin
EU-F18	Cull Bin Loadout
EU-F19	Internal Handling
EU-F20	Haul Roads
EU-F21	Outside Receiving
EU-F22	21 Outside Storage Bins
EU-F23	Outside Storage Loadout
EU-F24	Bag Unloading Hoppers
EU-F25	Treater Surge Bin
EU-F26	Treater Surge Bin
EU-F27	Treater
EU-F28	Post Treater Surge Bin
EU-F29	Treated Clean Seed Bin

## PROJECT DESCRIPTION

Monsanto Company is installing seed treatment equipment to the Pre-Foundation operations at their Matthews facility (143-0079). The new equipment being installed includes a Bag Unloading Hoppers (EU-F24), Treater Surge Bin (EU-F25), Treater Surge Bin (EU-F26), Treater (EU-F27), Post Treater Surge Bin (EU-F28), Treated Clean Seed Bin (EU-F29) as well as new Internal Handling equipment (EU-F19). In addition to the new equipment, some existing equipment will be utilized in the seed treatment process. Monsanto has stated that they will not be able to receive more untreated seed as a result of the seed treatment process. The maximum hourly design rate of the new seed treatment equipment is 24 ton of seed treated per hour. There will be an increase in haul road traffic within the plant due to the transferring of untreated and treated seed. The increase in haul road related emissions were taken into account for this project.

## EMISSIONS/CONTROLS EVALUATION

Emission factors were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 9.9.1 "Grain Elevators & Processes," May, 2003. Emissions from haul roads were calculated using the predictive equation from AP-42, Section 13.2.2 "Unpaved Roads," November, 2006. VOC emissions from the seed treatment process were calculated using a mass balance calculation. Potential emissions of the application represent the potential of the new equipment without controls, assuming continuous operation (8760 hours per year). The following table provides an emissions summary for this project.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis/SMAL <sup>a</sup> Levels	Existing Potential Emissions	Existing Actual Emissions (2010 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM <sub>2.5</sub>	10.0	N/A	1.30	1.10	N/A
PM <sub>10</sub>	15.0	<15.0	2.98	8.45	<15.0
PM	25.0	N/A	N/A	23.63	N/A
SO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
NO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	68.37	<40.0
CO	100.0	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	N/A	0.01	N/A
Toluene	10.0 <sup>a</sup>	N/A	N/A	0.01	N/A

N/A = Not Applicable; SMAL = Screen Modeling Action Level

<sup>a</sup> Screen Modeling Action Level

### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC for this project are conditioned below de minimis levels. Installation-wide potential emissions of PM<sub>10</sub> are also conditioned below the de minimis levels.

### APPLICABLE REQUIREMENTS

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

#### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *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

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

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Gerad Fox  
Environmental Engineer

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Date

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 4, 2011, received November 7, 2011, designating Monsanto Company as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Southeast Regional Office Site Survey, dated November 15, 2011.



Mr. Brad Dykstra  
Environmental Compliance Specialist  
Monsanto Company  
800 North Lindbergh Boulevard  
St. Louis, MO 63167

RE: New Source Review Permit - Project Number: 2011-11-009

Dear Mr. Dykstra:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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 with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Gerad Fox at the Department's 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:grfl

Enclosures

c: Southeast Regional Office  
PAMS File: 2011-11-009

Permit Number:

MISSOURI DEPARTMENT OF NATURAL RESOURCES  
FOLDER TRANSMITTAL ROUTING SHEET

Document #:  
Division Log #:  
Program Log #:

DEADLINE:

Penalty for Missing Deadline: \$

Monsanto Company

2011-11-009

Originator: Gerad Fox

Telephone: 6-3835

Date: 2/16/2012

Typist: Linda

File Name: P:\APCP\Permits\Users\Gerad Fox\Non-Construction\90-Day Permits\Monsanto Company\  
2011-11-009 Monsanto Company.docx

FOR SIGNATURE APPROVAL OF:

DNR Director    DNR Deputy Director    Division Director    Division Deputy Director   X Other: Kyra L. Moore

PROGRAM APPROVAL: Approved by: \_\_\_\_\_ Program: APCP Date: \_\_\_\_\_

Other Program Approval (Section/Unit): \_\_\_\_\_ Date: \_\_\_\_\_

Comments:

ROUTE TO:

DIVISION DIRECTOR APPROVAL: \_\_\_\_\_ Date: \_\_\_\_\_

Comments:

FINANCIAL REVIEW – DIVISION OF ADMINISTRATIVE SUPPORT:

DAS Director: \_\_\_\_\_

Date: \_\_\_\_\_

Fee Worksheet Received By: \_\_\_\_\_

Date: \_\_\_\_\_

Accounting: \_\_\_\_\_

Date: \_\_\_\_\_

Budget: \_\_\_\_\_

Date: \_\_\_\_\_

General Services: \_\_\_\_\_

Date: \_\_\_\_\_

Internal Audit: \_\_\_\_\_

Date: \_\_\_\_\_

Purchasing: \_\_\_\_\_

Date: \_\_\_\_\_

Comments:

LEGAL REVIEW:

General Counsel: \_\_\_\_\_

Date: \_\_\_\_\_

AGO: \_\_\_\_\_

Date: \_\_\_\_\_

Comments:

DEPARTMENT DIRECTOR APPROVAL: \_\_\_\_\_

Date: \_\_\_\_\_

Comments:

NOTARIZATION NEEDED

INITIALS/DATE

## STANDARD CONDITIONS:

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Page No.	3
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*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."*

Monsanto Company  
New Madrid County, S3, T24N, R14E

1. **Superseding Condition**  
The conditions of this permit supersede all special conditions found in the previously issued construction permit 072010-003 issued by the Air Pollution Control Program.
2. **Emission Limitation**
  - A. Monsanto Company shall emit less than 15.0 tons of particulate matter less than ten (10) microns in diameter (PM<sub>10</sub>) in any consecutive 12-month period from the entire installation (see Table 1).
  - B. Monsanto Company shall demonstrate compliance with the emission limit in special condition 1.A by recording the 12-month rolling total PM<sub>10</sub> emissions. Monsanto Company shall use forms approved by the Air Pollution Control Program that contain at minimum the following information:
    - 1) Monthly throughput of each emission unit in tons.
    - 2) Emission factor for the unit
    - 3) Source of the emission factor
    - 4) Type of Control device
    - 5) Control device efficiency
      - a) For baghouses use 99.0 percent
      - b) For high efficiency cyclones use 80.0 percent
      - c) For haul road watering use 50.0 percent
    - 6) Monthly PM<sub>10</sub> emissions for each unit in tons
    - 7) Monthly PM<sub>10</sub> emissions for the entire installation in tons
    - 8) 12-month total PM<sub>10</sub> emissions for the entire installation in tons
3. **Emission Limitation**
  - A. Monsanto Company shall emit less than 40.0 tons of Volatile Organic Compounds (VOC) in any 12-month period from the Treater (EP-F27) while operating at this site.

Page No.	4
Permit No.	
Project No.	2011-11-009

#### SPECIAL CONDITIONS:

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

- 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 Conditions 3.A.
4. Alternative Treatment Solutions
- A. When considering an alternative treatment solution that is different to those listed in the Application for Authority to Construct, the Monsanto Company must calculate the potential emissions for each individual Hazardous Air Pollutant (HAP) in each alternative treatment solution. If the potential HAP emissions for the alternative solution are *less* than the Screen Modeling Action Level (SMAL), as listed in Attachment AA, then the Monsanto Company does not need to obtain approval from the Air Pollution Control Program before the use of the alternative treatment solution. If the potential HAP emissions for the alternative solution are *equal to or greater* than the SMAL, then the Monsanto Company must obtain approval from the Air Pollution Control Program before use of the alternative treatment solution.
  - B. Calculations of alternative solution shall be maintained for five years after the last day the alternative coating is used and shall be made available for Department of Natural Resources' employee on request. The Monsanto Company shall use electronic forms approved by the Air Pollution Control Program that contain at minimum the following information:
    - 1) Name of the proposed alternative treatment solution
    - 2) Proposed application rate
    - 3) Density of the proposed alternative treatment solution in pounds per gallon
    - 4) Individual HAP content in weight percentage
    - 5) Potential individual HAP emissions in tons per year
    - 6) SMAL for each individual HAP in tons per year
5. Haul Road Dust Suppression
- A. Monsanto Company shall apply water or another effective suppressant for dust control to all unpaved haul roads whenever conditions exist which would cause visible fugitive emissions to enter the ambient air beyond the property boundary.
  - B. Watering may 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.

Page No.	5
Permit No.	
Project No.	2011-11-009

## SPECIAL CONDITIONS:

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

6. Control Device Requirement-Baghouse
  - A. Monsanto Company shall control emissions from the following equipment using baghouses as specified in the permit application.
    - 1) Inside Receiving (EU-1)
    - 2) Scalp (EU-2)
    - 3) Bulk Storage Bins (EU-3)
    - 4) Cleaner Surge Bin Line 1 (EU-6)
    - 5) Cleaner Line 1 (EU-7)
    - 6) Cleaner Surge Bin Line 2 (EU-8)
    - 7) Cleaner Line 2 (EU-9)
    - 8) Color Sorter Surge Bin Line 1 (EU-10)
    - 9) Color Sorter Primary Line 1 (EU-11)
    - 10) Color Sorter Secondary Line 1 (EU-12)
    - 11) Color Sorter Surge Bin Line 2 (EU-13)
    - 12) Color Sorter Primary Line 2 (EU-14)
    - 13) Color Sorter Secondary Line 2 (EU-15)
    - 14) Gravity Surge Bin #1 Line 1 (EU-16)
    - 15) Gravity Table #1 Line 1 (EU-17)
    - 16) Gravity Surge Bin #2 Line 1 (EU-18)
    - 17) Gravity Table #2 Line 1 (EU-19)
    - 18) Gravity Surge Bin #1 Line 2 (EU-20)
    - 19) Gravity Table #1 Line 2 (EU-21)
    - 20) Gravity Surge Bin #2 Line 2 (EU-22)
    - 21) Gravity Table #2 Line 2 (EU-23)
    - 22) Bagging Bins (EU-24)
    - 23) Bagger #1 Line 1 (EU-25)
    - 24) Bagger #2 Line 1 (EU-26)
    - 25) Bagger #1 Line 2 (EU-27)
    - 26) Bagger #2 Line 2 (EU-28)
    - 27) Box Dumper (EU-F1)
    - 28) Cleaner Surge Bin (EU-F2)
    - 29) Cleaner (EU-F3)
    - 30) Spiral Surge Bin (EU-F4)
    - 31) Spirals (EU-F5)
    - 32) Gravity Surge Bin #1 (EU-F6)
    - 33) Gravity Table #1 (EU-F7)
    - 34) Gravity Surge Bin #2 (EU-F8)
    - 35) Gravity Table #2 (EU-F9)
    - 36) Clean Seed Bins (EU-F10)

Page No.	6
Permit No.	
Project No.	2011-11-009

### SPECIAL CONDITIONS:

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

- 37) Bagging Bin #1 (EU-F11)
  - 38) Bagger #1 (EU-F12)
  - 39) Bagging Bin #2 (EU-F13)
  - 40) Bagger #2 (EU-F14)
  - 41) Bag Unloading Hoppers (EU-F24)
  - 42) Treater Surge Bin (EU-F25)
  - 43) Treater Surge Bin (EU-F26)
  - 44) Treater (EU-F27)
  - 45) Post Treater Surge Bin (EU-F28)
  - 46) Treated Clean Seed Bin (EU-F29)
- B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The 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 employees may easily observe them.
- C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
- D. Monsanto Company shall monitor and record the operating pressure drop across the baghouses at least once every calendar day. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
- E. Monsanto Company shall maintain an operating and maintenance log for the baghouses 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. Record Keeping and Reporting Requirements
- A. Monsanto Company 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.

Page No.	7
Permit No.	
Project No.	2011-11-009

**SPECIAL CONDITIONS:**

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

- B. Monsanto Company shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

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

Project Number: 2011-11-009  
Installation ID Number: 143-0079  
Permit Number:

Monsanto Company  
2992 State Highway V  
Matthews, MO 63867

Complete: November 11, 2011

Parent Company:  
Monsanto Company  
800 North Lindbergh Boulevard  
St. Louis, MO 63167

New Madrid County, S3, T24N, R14E

REVIEW SUMMARY

- Monsanto Company has applied for authority to install seed treatment equipment to the Pre-Foundation operations at their Matthews facility.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. The HAP of concern from this process is toluene.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- Baghouses are being used to control the PM<sub>10</sub> emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of Volatile Organic Compounds (VOC) for this project are conditioned below de minimis levels. Installation-wide potential emissions of PM<sub>10</sub> are also conditioned below the de minimis levels.
- This installation is located in New Madrid County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed since potential emissions of the application are conditioned below de minimis levels.
- 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

Monsanto Company is an existing soybean seed processing facility. The installation receives bulk soybean seeds, then cleans, sorts, conditions and bags the seeds for sale or ships them by bulk by truck.

The following permits have been issued to Monsanto Company from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
072010-003	Soybean Seed

### Process Description

The installation is separated into two independent sections called production and pre-foundation. Production starts with soybean seed received via hopper trucks, which are unloaded in the inside receiving area (EU-1). Seeds are then processed through a scalperator (EU-2) for initial cleaning and then transferred into storage bins (EU-3). From the bins the seeds can be processed in one of two lines. On both lines, seeds pass through a surge bin (EU-6 or EU-8) and into a cleaner (EU-7 or EU-9). From the cleaners, the seeds are conveyed to a surge bin (EU-10 or EU-13) and then to the primary color sorters (EU-11 and EU-14) and secondary color sorters (EU-12 and EU-15). After the color sorters the seeds are passed to series of surge bins and gravity tables (EU-16 through EU-23). Materials rejected from the scalperator, cleaners, sorters and gravity tables are collected into a set of two cull bins (EU-4) that serve both lines. From the gravity tables seeds are conveyed into bagging bins (EU-24). Seeds can be packaged into 50-pound bags or mini-bulk bags (EU-25 through EU-28) or loaded out in bulk by truck (EU-30).

Pre-foundation operations are similar to production operations. Seeds arrive at pre-foundation via the foundation receiving area where they are unloaded (EU-F15) and conveyed to a bulk receiving bin (EU-F16). From the receiving bin seeds are conveyed to a surge bin (EU-F2) and into a cleaner (EU-F3). Seeds can also be introduced into the system via a box dumper (EU-F1) that bypasses receiving. After cleaning, the seeds pass through another surge bin (EU-F4) and into spirals (EU-F5) and next pass through a series of surge bins and gravity tables (EU-F6 through EU-F9). Materials rejected from the cleaner, spirals and gravity tables are collected in a cull bin (EU-F17).

After the gravity tables, seeds flow into clean seed bins (EU-F10). From the bins, seed can be packed into 50-pound bags or mini-bulk bags (EU-F11 through EU-F14).

Table 2: Equipment List

Emission Unit	Description
EU-1	Inside Receiving
EU-2	Scalp
EU-3	8 Bulk Storage Bins
EU-4	2 Cull Bins
EU-5	Cull Bin Loadout
EU-6	Cleaner Surge Bin Line 1
EU-7	Cleaner Line 1
EU-8	Cleaner Surge Bin Line 2
EU-9	Cleaner Line 2
EU-10	Color Sorter Surge Bin Line 1
EU-11	Color Sorter Primary Line 1
EU-12	Color Sorter Secondary Line 1
EU-13	Color Sorter Surge Bin Line 2
EU-14	Color Sorter Primary Line 2
EU-15	Color Sorter Secondary Line 2
EU-16	Gravity Surge Bin #1 Line 1
EU-17	Gravity Table #1 Line 1
EU-18	Gravity Surge Bin #2 Line 1
EU-19	Gravity Table #2 Line 1
EU-20	Gravity Surge Bin #1 Line 2
EU-21	Gravity Table #1 Line 2
EU-22	Gravity Surge Bin #2 Line 2
EU-23	Gravity Table #2 Line 2
EU-24	8 Bagging Bins
EU-25	Bagger #1 Line 1
EU-26	Bagger #2 Line 1
EU-27	Bagger #1 Line 2
EU-28	Bagger #2 Line 2
EU-29	Internal Handling
EU-30	Transfer Mini Bulk to True Bulk
EU-31	Haul Roads
EU-F1	Box Dumper
EU-F2	Cleaner Surge Bin
EU-F3	Cleaner
EU-F4	Spiral Surge Bin
EU-F5	Spirals (2)
EU-F6	Gravity Surge Bin #1
EU-F7	Gravity Table #1
EU-F8	Gravity Surge Bin #2
EU-F9	Gravity Table #2
EU-F10	2 Clean Seed Bins

Emission Unit	Description
EU-F11	Bagging Bin #1
EU-F12	Bagger #1
EU-F13	Bagging Bin #2
EU-F14	Bagger #2
EU-F15	Foundation Receiving
EU-F16	2 Receiving Bulk Bins
EU-F17	Cull Bin
EU-F18	Cull Bin Loadout
EU-F19	Internal Handling
EU-F20	Haul Roads
EU-F21	Outside Receiving
EU-F22	21 Outside Storage Bins
EU-F23	Outside Storage Loadout
EU-F24	Bag Unloading Hoppers
EU-F25	Treater Surge Bin
EU-F26	Treater Surge Bin
EU-F27	Treater
EU-F28	Post Treater Surge Bin
EU-F29	Treated Clean Seed Bin

## PROJECT DESCRIPTION

Monsanto Company is installing seed treatment equipment to the Pre-Foundation operations at their Matthews facility (143-0079). The new equipment being installed includes a Bag Unloading Hoppers (EU-F24), Treater Surge Bin (EU-F25), Treater Surge Bin (EU-F26), Treater (EU-F27), Post Treater Surge Bin (EU-F28), Treated Clean Seed Bin (EU-F29) as well as new Internal Handling equipment (EU-F19). In addition to the new equipment, some existing equipment will be utilized in the seed treatment process. Monsanto has stated that they will not be able to receive more untreated seed as a result of the seed treatment process. The maximum hourly design rate of the new seed treatment equipment is 24 ton of seed treated per hour. There will be an increase in haul road traffic within the plant due to the transferring of untreated and treated seed. The increase in haul road related emissions were taken into account for this project.

## EMISSIONS/CONTROLS EVALUATION

Emission factors were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 9.9.1 "Grain Elevators & Processes," May, 2003. Emissions from haul roads were calculated using the predictive equation from AP-42, Section 13.2.2 "Unpaved Roads," November, 2006. VOC emissions from the seed treatment process were calculated using a mass balance calculation. Potential emissions of the application represent the potential of the new equipment without controls, assuming continuous operation (8760 hours per year). The following table provides an emissions summary for this project.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis/SMAL <sup>a</sup> Levels	Existing Potential Emissions	Existing Actual Emissions (2010 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM <sub>2.5</sub>	10.0	N/A	1.30	1.10	N/A
PM <sub>10</sub>	15.0	<15.0	2.98	8.45	<15.0
PM	25.0	N/A	N/A	23.63	N/A
SO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
NO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	68.37	<40.0
CO	100.0	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	N/A	0.01	N/A
Toluene	10.0 <sup>a</sup>	N/A	N/A	0.01	N/A

N/A = Not Applicable; SMAL = Screen Modeling Action Level

<sup>a</sup> Screen Modeling Action Level

### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC for this project are conditioned below de minimis levels. Installation-wide potential emissions of PM<sub>10</sub> are also conditioned below the de minimis levels.

### APPLICABLE REQUIREMENTS

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

#### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *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

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

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Gerad Fox  
Environmental Engineer

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Date

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 4, 2011, received November 7, 2011, designating Monsanto Company as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Southeast Regional Office Site Survey, dated November 15, 2011.



Mr. Brad Dykstra  
Environmental Compliance Specialist  
Monsanto Company  
800 North Lindbergh Boulevard  
St. Louis, MO 63167

RE: New Source Review Permit - Project Number: 2011-11-009

Dear Mr. Dykstra:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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 with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Gerad Fox at the Department's 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:grfl

Enclosures

c: Southeast Regional Office  
PAMS File: 2011-11-009

Permit Number: