

Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

SEP 17 2019

Ms. Teri Mercial
Environmental Compliance Manager
Monsanto Company - Marshall
830 North Miami
Marshall, MO 65340

RE: New Source Review Permit - Project Number: 2018-12-030

Dear Ms. Mercial:

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, 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.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.



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If you have any questions regarding this permit, please do not hesitate to contact Chia-Wei Young, 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



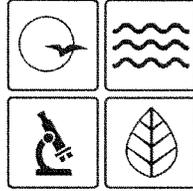
Susan Heckenkamp
New Source Review Unit Chief

SH:cj

Enclosures

c: Northeast Regional Office
PAMS File: 2018-12-030

Permit Number: **092019-005**



MISSOURI
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: **092019-005**

Project Number: 2018-12-030
Installation Number: 195-0034

Parent Company: Monsanto Company

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

Installation Name: Monsanto Company - Marshall

Installation Address: 903 Industrial Drive, Marshall MO 65340

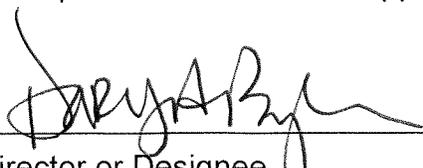
Location Information: Saline County, S10, T50N, R21W

Application for Authority to Construct was made for:

Installation of a soybean cleaning and sorting operation at an existing soybean processing 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.



Director or Designee
Department of Natural Resources

SEP 17 2019

Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of 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 Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's 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 source(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 using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

SPECIAL CONDITIONS:

The special conditions listed in this permit were included based on the authority granted to 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 (3)(E). "Conditions required by permitting authority."

Monsanto Company - Marshall
Saline County, S10, T50N, R21W

1. **Superseding Condition**
The conditions of this permit supersede all of the special conditions found in the previously issued construction permits 012019-002, 072010-004B, 072010-004A, 072010-004, and 0792-009 issued by the Missouri Air Pollution Control Program.
2. **PM₁₀ Emissions Limitation - Existing Equipment**
 - A. Monsanto Company – Marshall shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from the following existing equipment at the installation. The emissions shall include the SSM emissions as reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050.

Table 1: Existing Equipment with 15.0 tpy PM₁₀ Limit

Emission Unit	Emission Point	Description	*MHDR (tph)
EU-1	EP-1	Inside Receiving	60
EU-2	EP-2	Scalper (LMC Screen/Conveyor)	60
EU-3	EP-3	Pod Bin	12
EU-4	EP-4	Pod Bin Loadout	12
EU-5	EP-5	Aspirator	60
EU-6	EP-5	17 Bulk Storage Bins	60
EU-7	EP-6	Cleaner Surge Bin	60
EU-8	EP-6	Cleaner (Crippen 588)	16.5
EU-9	EP-7	Color Sorter Surge Bin	60
EU-10	EP-7	Color Sorter (Primary)	16.5
EU-11	EP-7	Color Sorter (Secondary)	3.3
EU-12	EP-8	Gravity Surge Bin #1 (3600)	15
EU-13	EP-8	Gravity Table #1 (Oliver 3600)	15
EU-14	EP-9	Gravity Surge Bin #2 (160)	4.95
EU-15	EP-9	Gravity Table #2 (Oliver 160)	4.95
EU-17	EP-9	4 True Bulk/Bagging Bins (1,000 Bushels Each)	15
EU-18	EP-11	6 Bagging Bins	15
EU-19	EP-11	Bemis Bagger Surge Bin	15
EU-20	EP-11	Bemis Bagger	15
EU-21	EP-11	Mini Bulk Bagger Surge Bin/Soy	25.5

SPECIAL CONDITIONS:

		Box Filling Surge Drum	
EU-22	EP-11	Mini Bulk Bagger/Soy Box Filling Station	25.5
EU-23	EP-12	Tower True Bulk Loadout	62.49
EU-24	EP-13	Cull Bin	6
EU-25	EP-14	Cull Loadout	19.89
EU-26	EP-15	Internal Handling	16.5
EU-27	EP-16	Outside Receiving	40.5
EU-28	EP-17	30 Outside Storage Bins	40.5
EU-29	EP-18	Outside Storage Loadout	40.5
EU-30	EP-19	Transfer to Outside True Bulk Bins	40.5
EU-31	EP-20	17 Outside True Bulk Bins (1,100 Bushels Each)	40.5
EU-32	EP-21	Outside True Bulk Bin Loadout	54
EU-33	EP-22	Transfer Mini Bulk to True Bulk	54
EU-33a	EP-22	Mini Bulk to True Bulk	54
EU-34	EP-23	Haul Roads	5.63 VMT/hr

*The MHDR is based on weight of 60 lb/bushel.

- B. Monsanto Company – Marshall shall develop forms, which can be electronic forms, to track the PM₁₀ emissions from the equipment and activities in Table 1 to demonstrate compliance with the PM₁₀ emissions limit in Special Condition 2.A.
- C. The forms required in Special Condition 2.B. shall include, at a minimum, the following information.
- 1) Monthly throughput of each emission unit, in tons.
 - 2) Emission factors for the units (As given in Attachment A)
 - 3) Source of emission factors (As given in Attachment A)
 - 4) Control devices associated with the units in Table 1, as specified in Special Condition 4.
 - 5) The control efficiency used for the dust collectors shall be 99.0%.
 - 6) Monthly PM₁₀ emissions for each unit in tons.
 - 7) Total Monthly PM₁₀ emissions for all of the equipment listed in Table 1.
 - 8) The twelve (12) month rolling total PM₁₀ emissions for all of the equipment listed in Table 1.
 - 9) Indication of compliance with PM₁₀ emission limit in Special Condition 2.A.

SPECIAL CONDITIONS:

3. PM₁₀ Emissions Limitation – New Equipment
- A. Monsanto Company - Marshall shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from the new soybean cleaning and sorting operation. A complete listing of each equipment/activities from the operation is given below in Table 2. The emissions shall include the SSM emissions as reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050.

Table 2: Equipment/Activities for the New Soybean Cleaning and Sorting Operation

Emission Unit	Emission Point	Description	*MHDR (tph)
EU-35	EP-24	Inside Receiving	150
EU-36	EP-24	Four Bulk Receiving Bins	150
EU-37	EP-24	Scalperator	30
EU-38	EP-24	Scalperator Surge Bin	30
EU-39	EP-24	Cleaner Surge Bin	24
EU-40	EP-25	Cleaner	24
EU-41	EP-24	Color Sorter Surge Bin	18
EU-42	EP-24	Color Sorter	18
EU-43	EP-24	Four Clean Seed Bulk Storage Bins	150
EU-44	EP-24	Mini Bulk to True Bulk	150
EU-45	EP-24	Mini Bulk Bager Surge Bin	150
EU-46	EP-24	Mini Bulk Bagger	150
EU-47	EP-26	True Bulk Loadout	150
EU-48	EP-24	Cull Bin	90
EU-49	EP-27	Cull Loadout	90
EU-50	EP-28	Portable Conveyor	75
EU-51	EP-24	Internal Handling	150
EU-52	EP-29	Haul Roads	150

*The MHDR does not take into account the bottleneck of the process, which is the cleaner (EU-40).

- B. Attachment B or equivalent forms, such as electronic forms, shall be used to demonstrate compliance with Special Conditions 3.A. The equivalent forms shall use the same information (i.e. emission factor, calculation methods, and etc.) as indicated in Attachment B.
4. Control Device Requirement – Cartridge Dust Collector
- A. Monsanto Company – Marshall shall control emissions from the following equipment using cartridge dust collectors as specified in the permit application.

SPECIAL CONDITIONS:

Table 3: Equipment to be Controlled by Cartridge Dust Collectors

Emission Unit	Description
EU-2	Scalper
EU-5	Aspirator
EU-6	17 Bulk Storage Bins
EU-7	Cleaner Surge Bin
EU-8	Cleaner
EU-9	Color Sorter Surge Bin
EU-10	Color Sorter Primary
EU-11	Color Sorter Secondary
EU-12	Gravity Surge Bin #1
EU-13	Gravity Table #1
EU-14	Gravity Surge Bin #2
EU-15	Gravity Table #2
EU-17	True Bulk Bagging Bins (4)
EU-18	Gabbing Bins (6)
EU-19	Bemis Bagger Surge Bin
EU-20	Bemis Bagger
EU-21	Mini Bulk Bagger Surge Bin/Soy Box Filling Surge Bin
EU-22	Mini Bulk Bagger/Soy Box Filling Station
EU-33a	Transfer Mini Bulk to True Bulk
EU-35	Inside Receiving
EU-36	Four Bulk Receiving Bins
EU-37	Scalperator
EU-38	Scalperator Surge Bin
EU-39	Cleaner Surge Bin
EU-40	Cleaner
EU-41	Color Sorter Surge Bin
EU-42	Color Sorter
EU-43	Four Clean Seed Bulk Storage Bins
EU-44	Mini Bulk to True Bulk
EU-45	Mini Bulk Bager Surge Bin
EU-46	Mini Bulk Bagger
EU-51	Internal Handling

- B. The dust collectors shall be operated and maintained in accordance with the manufacturer's specifications.
- C. The dust collectors 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' employees may easily observe them.

SPECIAL CONDITIONS:

- D. Replacement filters for the dust collectors 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).
- E. Monsanto Company - Marshall shall monitor and record the operating pressure drop across the filters at least once every 24 hours while the baghouse is in operation. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
- F. Monsanto Company - Marshall shall maintain a copy of the filter manufacturer's performance warranty on site.
- G. Monsanto Company - Marshall shall maintain an operating and maintenance log for the filters which shall include the following:
- 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
5. Capture Device Requirements
- A. Emission units listed in Table 4 below shall be totally enclosed (e.g. completely enclosed in ductwork except for material entry and exit) and vented to its respective cartridge filters. The enclosures of the emission units shall be constructed and maintained such that no visible emissions (not 0% opacity) are allowed to occur from these sources except through the gases exiting from the cartridge filter.

Table 4: Equipment to be Totally Enclosed

Emission Unit	Emission Point	Description	*MHDR (tph)
EU-37	EP-24	Scalperator	30
EU-38	EP-24	Scalperator Surge Bin	30
EU-39	EP-24	Cleaner Surge Bin	24
EU-41	EP-24	Color Sorter Surge Bin	18
EU-42	EP-24	Color Sorter	18
EU-45	EP-24	Mini Bulk Bager Surge Bin	150

- B. Monsanto Company – Marshall shall conduct Method 22 observation of the enclosures required in Special Condition 5.A. in accordance with the following schedule to ensure compliance with the no visible emissions requirement in Special Condition 5.A.
- 1) For the first six (6) weeks of operations, the observations shall be conducted once per week when the equipment is in operation.

SPECIAL CONDITIONS:

- 2) If the weekly observations shows compliance with the no visible emissions requirement in Special Condition 5.A., observations shall be made once per month for the remainder of the season.
 - 3) If all observations required in Special Conditions 5.A.1) and 5.B.2) shows compliance with the no visible emissions requirement in Special Condition 5.A., then no more observations are necessary.
 - 4) If any observations required in Special Condition 5.A.1) and 5.A.2) shows noncompliance with the no visible emissions requirement in Special Condition 5.A., then immediate repair shall be made to restore the enclosure to no visible emissions.
 - 5) After repairs are made in accordance with Special Condition 5.B.4), another Method 22 observations shall be made. If this subsequent test shows compliance with the no visible emissions condition, then the installation shall continue with the Method 22 observation schedule outlined in Special Condition 5.B.1) and 5.B. If repairs cannot return the enclosure to no visible emissions, then the installation shall submit a permit amendment request to the Missouri Air Pollution Control Program's New Source Review Unit to take into account the new information.
- C. Monsanto Company – Marshall shall maintain an operating and maintenance log for each enclosure and associated ducting which shall include the following:
- 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions.
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
 - 3) A record of regular inspection schedule and the Method 22 observations required in Special Condition 5.B., the date and results of all inspections and Method 22 observations, including any actions or maintenance activities that result from the inspections. The starting and ending date of the season in which the Method 22 observations were conducted. Either paper copy or electronic formats are acceptable.
6. Alternative Treatment Solutions
- A. When considering an alternative soybean treatment solution that is different to those listed in the Application for Authority to Construct for Permit No. 072010-004, Monsanto Company – Marshall 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 solutions are less than the Screening Model Action Level (SMAL), as listed in Attachment AA, then the Monsanto Company – Marshall does not need to obtain approval from the Air Pollution Control Program before the use of the alternative treatment solution. If the

SPECIAL CONDITIONS:

potential HAP emissions for the alternative solution are equal to or greater than the SMAL, the Monsanto Company – Marshall must obtain approval from the Air Pollution Control Program before use of the alternative treatment solution.

- B. Calculations for the alternative solutions 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' personnel on request. The Monsanto Company – Marshall shall use electronic forms approved by the Air Pollution Control Program that contain, at a minimum, the following information.
- 1) Name of proposed alternative treatment solution.
 - 2) Proposed application rate.
 - 3) Density of 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.
7. Haul Road Control – New Soybean Cleaning and Sorting Operation
- A. Monsanto Company – Marshall shall control fugitive emissions from the haul roads used by the new soybean cleaning and sorting operation by paving or traveling on already paved haul roads.
- B. The roads used by the new soybean cleaning and sorting operation shall be paved with asphalt, concrete, or other material approved by the Air Pollution Control program. The pavement shall be applied in accordance with industry standards for such pavement so as to achieve control of fugitive emissions while the plant is in operation.
- C. Maintenance and/or repair of the road surfaces shall be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions while the plant is operating.
8. Haul Road Control – Unpaved Road
- A. Monsanto Company – Marshall 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.

SPECIAL CONDITIONS:

9. Record Keeping and Reporting Requirements
 - A. Monsanto Company - Marshall 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. These records shall include SDS for all materials used.
 - B. Monsanto Company - Marshall shall report to the Air Pollution Control Program's Compliance/Enforcement Section, by mail at P.O. Box 176, Jefferson City, MO 65102 or by email at AirComplianceReporting@dnr.mo.gov, 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.

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

Project Number: 2018-12-030
Installation ID Number: 195-0034
Permit Number: 092019-005

Installation Address:

Monsanto Company - Marshall
903 Industrial Drive
Marshall, MO 65340

Parent Company:

Monsanto Company
800 North Lindbergh Blvd
St. Louis, MO 63167

Saline County, S10, T50N, R21W

REVIEW SUMMARY

- Monsanto Company - Marshall has applied for authority to install a soybean cleaning and sorting operation at an existing soybean processing facility.
- The application was deemed complete on January 3, 2019.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
 - 40 CFR Subpart DD, *Standards of Performance for Grain Elevators*, of the NSPS does not apply to the installation because the facility does not fit the definition of a grain terminal or a grain storage elevator.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Cartridge dust collectors are being used to control particulate emissions for some of the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM are greater than the de minimis level, but less than the major source level. Potential emissions of all other pollutants are conditioned below the de minimis level.
- This installation is located in Saline 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 all

pollutants, except PM, are conditioned below de minimis levels. PM emissions are greater than the de minimis level, but PM does not have modeling requirements.

- Emissions testing is not required for the equipment as a part of this permit.
- No operating permit is required.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Monsanto Company operates an existing soybean storage and conditioning process located in Saline County. The installation consists of seed receiving, cleaning, sorting, packaging, and bulk loadout equipment.

Operations begin when soybean seeds arrive at the facility via hopper trucks, which are unloaded at the inside receiving area and mineral oil is applied. The seeds are next processed through cleaning operations, which include a scalperator and cleaner. Pods and stems collected during the receiving/scalping operation are collected into a separate pod bin. Seeds are collected into storage bins before being transferred through a surge bin and into the cleaner.

Following the cleaner, the seed enters a surge bin, pass into the color sorters, and enter into additional surge bins. Materials rejected from the cleaner, color sorters, and gravity tables are collected into a cull bin.

From the color sorter, the seeds flow into the four clean seed bulk storage bins. At this point, the seeds may either be shipped in bulk (true bulk) or flow into surge bins to be packaged into mini bulk bags. The facility also has the ability to transfer seeds from mini bulk to bulk load out to trucks.

The installation is a minor source for construction permits and is not required to have an operating permit since emissions of all pollutants are less than 100 tpy.

The following New Source Review permits have been issued to Monsanto Company - Marshall from the Air Pollution Control Program.

Table 5: Permit History

Permit Number	Description
0792-009	Installation of new gravity separator
072010-004	Addition of screen/conveyor
072010-004A	Amend wording to the application of dust suppressants
072010-004B	Control device improvements
012019-002	Addition of surge bin, filling station, and modification to bagger surge bin and mini bulk bagger.

PROJECT DESCRIPTION

The installation proposes to add a soybean cleaning and sorting operation, called the “modular facility.” Similar to the existing equipment, soybean seeds arrive at the modular facility via trucks which are unloaded in the receiving building and transferred to exterior bulk storage bins. The seeds are next processed through the cleaning operations, which include a surge bin above the scalperator and cleaner. Pods and stems collected during the cleaning operations are transferred to a cull bin.

The receiving equipment has a maximum hourly design rate of 5,000 bushels (150 tons) per hour. Once in the bins, the seed can either go to the scalperator, or the scalperator can be bypassed and the seed can go directly to the cleaner. The scalperator has a maximum hourly design rate of 1000 bushels (30 tons) per hour while the cleaner has a maximum hourly design rate of 800 bushels (24 tons) per hour. After the cleaner, seeds go through a color sorter, which acts as a bottleneck of the process. The color sorter has a maximum hourly design rate of 600 bushels (18 tons) per hour.

All remaining seeds are then transferred to exterior bulk storage bins to await packaging. The modular facility has the ability to package product in mini bulk bags, hard side boxes, or bulk shipments. The modular facility also has the ability to transfer seeds from mini bulk bags and hard side boxes to bulk loadout.

One haul road will be utilized by the modular facility. The traffic is maintained in only one direction. Haul roads used by the modular facility will be paved. A portable conveyor is used as a backup at the end of the season or to remove seed from outside seed bins. It is included as part of this project.

Cartridge dust collectors will be used to control particulate emissions from all of the equipment except for the true bulk loadout (EU-47), the cull bin (EU-48), cull loadout (EU-49), and the portable conveyor (EU-50)

The installation has also asked that all of the special conditions from previous permits issued to the installation be transferred onto this permit so that they will all be in one document. Special conditions from all previous permits issued to the installation are superseded by the special conditions of this permit.

The application for the modular facility was submitted to the Missouri Air Pollution Control Program in December, 2018. Three months before this, another application from the same installation was submitted to the Missouri Air Pollution Control program to modify the main Monsanto facility (Project 2018-09-030). Although the applications for both projects were submitted within a short time period, the two projects are unrelated to each other and should be evaluated separately. The two projects had completely separate capital approval processes within the company. The capital expenditure for the changes at the main facility was approved on 3/9/2018 while the capital expenditure for the modular facility was approved on 11/29/2018. The modification at the main facility includes the addition of a soy box filling surge bin (EU-21a), a sly box filling station (EU-22a), and a duct collector (CE-8) and these improvements were made to enhance the process efficiency and improve air emission

control. The modular facility is a completely stand-alone facility that receives its own materials and processes them. There will be no production reliance between the main facility and the modular facility. No raw or partially processed material will be transferred between the main and modular facilities.

The permit for the modifications at the main facility has already been issued under Permit No. 012019-002.

EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 9.9.9, *Grain Elevators & Processes*, 5/2003.

For truck unloading, the emission factors for straight trucks were used to estimate potential emissions. The emission factor for straight trucks is greater than the emission factor for hopper trucks. Therefore, this permit does not have a condition limiting the types of trucks that can be used for the new modular facility. Furthermore, the facility has a 15.0 tpy PM₁₀ limit for the new operation. The emission factors that corresponds to the proper truck type shall be used to track PM₁₀ emissions for compliance.

For the scalperator and the cleaner, the emission factors in AP-42 are controlled using cyclones. The uncontrolled emissions were calculated by assuming that the cyclones have a control efficiency of 80%. This percentage was chosen because a higher control efficiency leads to a higher, and therefore, more conservative uncontrolled emission factor. The uncontrolled emission factors were then applied capture and control efficiencies from the use of the cartridge dust collectors to obtain controlled emission factors.

For all of the equipment that uses dust collectors for emissions control, the capture efficiency used is 100% for equipment under total enclosure and 75% for equipment not totally enclosed. The installation is required to conduct Method 22 visible emissions observation to ensure that 100% capture of dust is achieved. The 75% capture for equipment not under total enclosure is deemed a conservative estimate since the facility uses local ventilation points such as slots and hoods, and the facility must minimize dust inside the facility for safety reasons.

The installation recommended the use of 98% control efficiency for the cartridge filters. The EPA Air Pollution Control Technology Fact Sheet for cartridge filters suggests that a minimum control efficiency of 99% can be achieved with cartridge filters. Therefore, 98% was accepted for use as a conservative estimate.

Emissions from the paved haul roads were calculated using emission factors from the equations in AP-42, Section 13.2.1, *Paved Roads*, 1/2011. All of the potential emissions from the emission units, except for the portable conveyor, were calculated using the maximum hourly design rate of the bottleneck, which is 600 bushels/hr (18 tons/hr).

The portable conveyor is evaluated at its own MHDR of 75 tph because it can be moved around and is not tied to the modular facility.

The following table provides an emissions summary for this project. Existing potential emissions were taken from Permit No. 012019-002. Existing actual emissions were taken from the installation's 2018 EIQ.

The project conditioned potential emissions includes a 15.0 tpy limit on PM₁₀ which only includes equipment from the new modular facility. The new conditioned potential emissions of the entire installation, which is the sum of the existing potential emissions and the project conditioned potential emissions remain below the operating permit trigger level of 100 tpy. Therefore, no operating permit is required.

Table 6: Emissions Summary (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2018 EIQ)	Potential Emissions of the Project	Project Conditioned Potential Emissions
PM	25.0	50.0	N/D	56.59	36.95
PM ₁₀	15.0	<15.0	2.65	22.97	<15.0
PM _{2.5}	10.0	8.29	1.05	3.98	2.60
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	10.05	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
GHG (CO ₂ e)	N/A	N/A	N/A	N/A	N/A
GHG (mass)	N/A	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	10.0001	N/A	N/A

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

Note 1: VOC and HAPs existing actual emissions are from the treater drum (EU-16) that has been removed from the site.

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 PM are greater than the *de minimis level* but below the major source level. Potential emissions of all other pollutants are less than their respective *de minimis levels*.

APPLICABLE REQUIREMENTS

Monsanto Company - Marshall 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

- *Operating Permits*, 10 CSR 10-6.065
- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation. Does not apply if DemPAL.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

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

STAFF RECOMMENDATION

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

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated December 18, 2018, received December 26, 2018, designating Monsanto Company as the owner and operator of the installation.

Attachment A: PM₁₀ Emission Factors for Existing Equipment

Emission Unit	Emission Point	Description	¹PM₁₀ Emission Factor
EU-1	EP-1	Inside Receiving	0.0078 lb/ton
EU-2	EP-2	Scalper (LMC Screen/Conveyor)	0.22875 lb/ton
EU-3	EP-3	Pod Bin	0.0063 lb/ton
EU-4	EP-4	Pod Bin Loadout	0.029 lb/ton
EU-5	EP-5	Aspirator	0.22875 lb/ton
EU-6	EP-5	17 Bulk Storage Bins	0.0063 lb/ton
EU-7	EP-6	Cleaner Surge Bin	0.0063 lb/ton
EU-8	EP-6	Cleaner (Crippen 588)	0.22875 lb/ton
EU-9	EP-7	Color Sorter Surge Bin	0.0063 lb/ton
EU-10	EP-7	Color Sorter (Primary)	0.034 lb/ton
EU-11	EP-7	Color Sorter (Secondary)	0.034 lb/ton
EU-12	EP-8	Gravity Surge Bin #1 (3600)	0.0063 lb/ton
EU-13	EP-8	Gravity Table #1 (Oliver 3600)	0.068 lb/ton
EU-14	EP-9	Gravity Surge Bin #2 (160)	0.0063 lb/ton
EU-15	EP-9	Gravity Table #2 (Oliver 160)	0.068 lb/ton
EU-17	EP-9	4 True Bulk/Bagging Bins (1,000 Bushels Each)	0.0063 lb/ton
EU-18	EP-11	6 Bagging Bins	0.0063 lb/ton
EU-19	EP-11	Bemis Bagger Surge Bin	0.0063 lb/ton
EU-20	EP-11	Bemis Bagger	0.034 lb/ton
EU-21	EP-11	Mini Bulk Bagger Surge Bin/Soy Box Filling Surge Drum	0.0063 lb/ton
EU-22	EP-11	Mini Bulk Bagger/Soy Box Filling Station	0.034 lb/ton
EU-23	EP-12	Tower True Bulk Loadout	0.029 lb/ton
EU-24	EP-13	Cull Bin	0.0063 lb/ton
EU-25	EP-14	Cull Loadout	0.029 lb/ton
EU-26	EP-15	Internal Handling	0.034 lb/ton
EU-27	EP-16	Outside Receiving	0.0078 lb/ton
EU-28	EP-17	30 Outside Storage Bins	0.0063 lb/ton
EU-29	EP-18	Outside Storage Loadout	0.029 lb/ton
EU-30	EP-19	Transfer to Outside True Bulk Bins	0.0078 lb/ton
EU-31	EP-20	17 Outside True Bulk Bins (1,100 Bushels Each)	0.0063 lb/ton
EU-32	EP-21	Outside True Bulk Bin Loadout	0.029 lb/ton
EU-33	EP-22	Transfer Mini Bulk to True Bulk	0.029 lb/ton
EU-33a	EP-22	Mini Bulk to True Bulk	0.029 lb/ton
EU-34	EP-23	Paved Haul Roads	24.83 lb/VMT
EU-34	EP-23	Unpaved Haul Roads	34.741 lb/VMT

Note 1: All emission factors, except for haul roads, taken from AP-42, Table 9.9.1-1. Haul road emission factors taken from Attachment A of Permit 012019-002, which does not give a source for the emission factor.

Attachment B – PM₁₀ Compliance Worksheet – New Equipment

Monsanto Company - Marshall
 Saline County, S10, T50N, R21W
 Project Number: 2018-12-030
 Installation ID Number: 195-0034
 Permit Number: **092019-005**

This sheet covers the month of _____ in the year _____.

Emission Unit	Description	Control Device	Uncontrolled Emission Factor	Monthly Throughput (tons)	¹ Monthly Emissions (tons)
EU-35	Inside Receiving	Dust Collector	0.059 lb/ton (Straight Trucks) or 0.0078 lb/ton (Hopper Trucks)		
EU-36	Bulk Receiving Bins	Dust Collector	0.0063 lb/ton		
EU-37	Scalperator	Dust Collector	0.095 lb/ton		
EU-38	Scalperator Surge Bin	Dust Collector	0.0063 lb/ton		
EU-39	Cleaner Surge Bin	Dust Collector	0.0063 lb/ton		
EU-40	Cleaner	Dust Collector	0.095 lb/ton		
EU-41	Color Sorter Surge Bin	Dust Collector	0.0063 lb/ton		
EU-42	Color Sorter	Dust Collector	0.034 lb/ton		
EU-43	Clean Seed Bulk Storage Bins	Dust Collector	Dust Collector 0.0063 lb/ton		
EU-44	Mini Bulk to True Bulk	Dust Collector	0.029 lb/ton		
EU-45	Mini Bulk Bagger Surge Bin	Dust Collector	0.0063 lb/ton		
EU-46	Mini Bulk Bagger	Dust Collector	0.034 lb/ton		
EU-47	True Bulk Loadout	None	0.029 lb/ton		
EU-48	Cull Bin	None	0.0063 lb/ton		
EU-49	Cull Loadout	None	0.029 lb/ton		
EU-50	Portable Conveyor	None	0.034 lb/ton		
EU-51	Internal Handling	Dust Collector	0.034 lb/ton		
EU-52	Haul Roads	None	0.00622 lb/ton		
² Total Emissions of the Current Month (tons) =					
³ Total Emissions from the Previous Eleven Months (ton) =					
⁴ Total Emissions from the Current 12-Month Period (tons) =					

Note 1: Monthly emissions (tons) calculated using [Monthly Throughput (tons)] x [Emission Factors (lb/ton)] x [1-Control Efficiency/100] ÷ 2,000 lb/ton. The following control efficiency shall be used: For equipment without total enclosure ducted to a dust collector (i.e. EU-35, 36, 40, 43, 44, 46, 51), the control efficiency is 73.5%. This is calculated from a 75% capture and 98% device efficiency. For equipment with total enclosure (i.e. EU-37, 38, 39, 41, 42, 45), the control efficiency is 98.0%. This is assuming a 100% capture and 98% device efficiency. For uncontrolled equipment, the control efficiency is 0%.

Note 2: Total Emissions of the Current Month calculated by adding the Monthly Emissions (tons) of all of the emission units.

Note 3: Total Emissions from the Previous Eleven Months (ton) calculated by summing the Monthly Emissions (tons) of the previous eleven (11) months.

Note 4: Total Emissions from the Current 12-Month Period (tons) calculated by adding the Total Emissions of the Current Month (tons) and the Total Emissions from the Previous Eleven Months (tons). A total less than 15.0 tpy indicates compliance.

APPENDIX A

Abbreviations and Acronyms

%percent	Mgal1,000 gallons
°Fdegrees Fahrenheit	MWmegawatt
acfmactual cubic feet per minute	MHDRmaximum hourly design rate
BACTBest Available Control Technology	MMBtuMillion British thermal units
BMPsBest Management Practices	MMCFmillion cubic feet
BtuBritish thermal unit	MSDSMaterial Safety Data Sheet
CAMCompliance Assurance Monitoring	NAAQSNational Ambient Air Quality Standards
CASChemical Abstracts Service	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CEMSContinuous Emission Monitor System	NO_xnitrogen oxides
CFRCode of Federal Regulations	NSPSNew Source Performance Standards
COcarbon monoxide	NSRNew Source Review
CO₂carbon dioxide	PMparticulate matter
CO_{2e}carbon dioxide equivalent	PM_{2.5}particulate matter less than 2.5 microns in aerodynamic diameter
COMSContinuous Opacity Monitoring System	PM₁₀particulate matter less than 10 microns in aerodynamic diameter
CSRCode of State Regulations	ppmparts per million
dscfdry standard cubic feet	PSDPrevention of Significant Deterioration
EIQEmission Inventory Questionnaire	PTEpotential to emit
EPEmission Point	RACTReasonable Available Control Technology
EPAEnvironmental Protection Agency	RALRisk Assessment Level
EUEmission Unit	SCCSource Classification Code
fpsfeet per second	scfmstandard cubic feet per minute
ftfeet	SDSSafety Data Sheet
GACTGenerally Available Control Technology	SICStandard Industrial Classification
GHGGreenhouse Gas	SIPState Implementation Plan
gpmgallons per minute	SMALScreening Model Action Levels
grgrains	SO_xsulfur oxides
GWPGlobal Warming Potential	SO₂sulfur dioxide
HAPHazardous Air Pollutant	SSMStartup, Shutdown & Malfunction
hrhour	tphtons per hour
hphorsepower	tpytons per year
lbpound	VMTvehicle miles traveled
lbs/hrpounds per hour	VOCVolatile Organic Compound
MACTMaximum Achievable Control Technology	
µg/m³micrograms per cubic meter	
m/smeters per second	