



Eric R. Greitens, Governor • Todd Sampsell, Acting Director

# DEPARTMENT OF NATURAL RESOURCES

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**JAN 17 2017**

Mr. Brian Wanzenried  
Director of Environmental  
Gavilon Fertilizer, LLC - St. Joseph  
1331 Capitol Avenue  
Omaha, NE 68102

RE: New Source Review Permit Amendment - Permit Number: 122014-002A  
Project Number: 2016-11-028; Installation Number: 021-0131

Dear Mr. Wanzenried:

This amendment is in response to your plans to revise the conditions related to liquid urease inhibitor usage at the St. Joseph fertilizer location. Specifically, Gavilon has proposed to refer to liquid urease inhibitor as fertilizer additives and coatings. Gavilon proposed this change because it gives the facility greater flexibility to use other products that meet VOC emission limitations, yet serve purposes other than urease inhibition. All special conditions in permit 122014-002 are being superseded to replace liquid urease inhibitor with fertilizer additives and coatings.

Gavilon also proposed to increase the VOC content limit of the fertilizer additives and coatings that the facility is allowed to use. Gavilon has intentions to use a product marketed under the name DCrease. Method 24 VOC testing conducted by Gavilon shows that the VOC content is 32.1 percent by weight, which yields a VOC concentration greater than the limit currently permitted in Special Condition 2 of permit 122014-002. As such, Gavilon proposed to increase the permitted VOC limit for fertilizer additives and coatings to 4.0 pounds per gallon. In order to remain a de minimis source at this VOC content level, Gavilon has requested to limit usage of all fertilizer additives and coatings to less than 20,000 gallons per each period of 12 consecutive calendar months.

In addition to the changes related to VOC emissions from additives and coatings, Gavilon also requested the usage of fertilizer additives and coatings that contain HAPs. Gavilon intends to use a reformulated Arborite liquid urease inhibitor that contains a HAP. Specifically, Gavilon has learned that the carrier solvent in the Arborite reformulation, which is part of a proprietary solvent mixture, contains ethylene glycol. The carrier solvent contains less than 1% of ethylene glycol by weight. Potential ethylene glycol emissions are less than the SMAL,; therefore no ethylene glycol modeling was conducted.

In order to maintain flexibility in the types of fertilizer coatings and additives that Gavilon will be allowed to use, Gavilon proposed to limit the concentration of each individual HAP from all fertilizer additives and coatings combined to less than 1.0 pound per gallon. Gavilon also requested a limit for the concentration of all combined HAPs in fertilizer additives and coatings to less than 2.5 pounds per gallon. At these concentration levels, combined with the 20,000 gallon limited requested, emissions of each individual HAP will be less than 10 tons per year and emissions of total combined HAPs will be less than 25 tons per year. It is important to note that if potential emissions of an alternative fertilizer additive



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and coating exceed the screen modeling action level (SMAL) for an individual HAP (see Special Condition 3.E), then a new permit will be needed prior to its usage.

Potential emissions from the Arborite AG-NT and DCrease application were calculated using mass balance, citing the SDS. The application rate of the fertilizer coatings and additives is 150 gallons per hour, which is based on the manufacturers recommended application rate of three quarts per ton of dry urea and the MHDR of 200 tons per hour for the truck loading auger. Arborite has a density of 9.2 pounds per gallon and a VOC content of 10.9 percent, resulting in a VOC concentration of 1.0 pounds per gallon. DCrease has a density of 9.67 pounds per gallon and a VOC content of 32.1 percent, resulting in a VOC concentration of 3.1 pounds per gallon. In order to allow the use of different formulations of fertilizer additives and coatings in the future, a VOC concentration of 4.0 pounds per gallon was used to calculate the potential emissions. DCrease does not contain any HAPs. The reformulated Arborite contains 1% ethylene glycol by weight. In order to allow the use of different formulations of fertilizer additives and coatings in the future, an individual HAP concentration of 1.0 pounds per gallon and a combined HAP concentration of 2.5 pounds per gallon were used to calculate the potential emissions.

The following table provides an updated emissions summary for the changes as a result of this project. Potential emissions of the application represent the potential of the equipment, assuming continuous operation (8760 hours per year). Unconditioned potential emissions of VOC have increased as a result of the higher VOC concentration; however a new throughput limits established in Special Condition 2 of this permit continues to keep the VOC emission of the project at less than or equal to 40 tons per year. A voluntary 10 tons per year individual HAP and 25 tons per year combined HAPs per year limit to remain below the de minimis level has been taken as a result of reformulations and to provide greater flexibility.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2015 EIQ)	Potential Emissions of the Application	<sup>1</sup> Conditioned Potential Emissions of the Application
PM	25.0	N/A	N/D	0.086	N/D
PM <sub>10</sub>	15.0	N/A	3.90	0.025	N/D
PM <sub>2.5</sub>	10.0	N/A	0.36	0.003	N/D
SO <sub>x</sub>	40.0	N/A	N/D	N/D	N/D
NO <sub>x</sub>	40.0	N/A	N/D	N/D	N/D
VOC	40.0	N/A	0.74	2549.22	<40.0
CO	100.0	N/A	N/D	N/D	N/D
HAPs	10.0/25.0	N/A	N/D	15.11	<10.0/25.0
Ethylene Glycol	10.0 <sup>2</sup>	N/A	N/A	15.11	<10.0

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

<sup>1</sup> Conditioned potential emissions of the application were not determined for PM, PM<sub>10</sub>, and PM<sub>2.5</sub> because they were determined to be negligible.

<sup>2</sup> The SMAL for ethylene glycol is 10 tons per year

Mr. Wanzenried  
Page Three

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.ao.mo.gov/ahc](http://www.ao.mo.gov/ahc).

If you have any questions regarding this amendment, please do not hesitate to contact Chad Stephenson, 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



Kendall B. Hale  
Permits Section Chief

KBH:csj

Enclosures

c: Kansas City Regional Office  
PAMS File: 2016-11-028

Page No.	4
Permit No.	122014-002A
Project No.	2016-11-028

**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."*

Gavilon Fertilizer, LLC - St. Joseph  
Buchanan County, S20, T57N, R35W

1. **Superseding Condition**  
The conditions of this permit supersede all special conditions found in the previously issued construction permit 122014-002 issued by the Air Pollution Control Program.
2. **Fertilizer Additives and Coating Throughput Limitation**
  - A. Gavilon Fertilizer, LLC - St. Joseph shall limit the volume of fertilizer additives and coatings (EP-11) use to not exceed 20,000 gallons in any consecutive 12-month period.
  - 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 2.A.
3. **Use of Alternative Fertilizer Additives and Coatings**
  - A. When using alternative fertilizer additives or coatings that are different than the material listed in the Application for Authority to Construct, Gavilon Fertilizer, LLC - St. Joseph shall calculate and verify that the VOC concentration in the alternative material does not exceed 4.0 pounds per gallon.
  - B. When using alternative fertilizer additives or coatings that are different than the material listed in the Application for Authority to Construct, Gavilon Fertilizer, LLC - St. Joseph shall calculate and verify that the HAP concentration in the alternative material does not exceed 2.5 pounds per gallon of combined HAP.
  - C. When using alternative fertilizer additives or coatings that are different than the material listed in the Application for Authority to Construct, Gavilon Fertilizer, LLC - St. Joseph shall calculate and verify the HAP concentration in the alternative material does not exceed 1.0 pounds per gallon per individual HAP and compare it to the SMAL.

Page No.	5
Permit No.	122014-002A
Project No.	2016-11-028

**SPECIAL CONDITIONS:**

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

- D. Attachment B 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., 3.B., and 3.C.
  - E. In cases where the potential individual HAP emissions for the alternative fertilizer additives or coatings at 20,000 gallons per year is above the SMAL for any chemical listed in Appendix B, Gavilon Fertilizer, LLC - St. Joseph shall submit an application for Authority to Construct to the Air Pollution Control Program.
4. Record Keeping and Reporting Requirements
- A. Gavilon Fertilizer, LLC - St. Joseph 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. Gavilon Fertilizer, LLC - St. Joseph 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 show an exceedance of a limitation imposed by this permit.



## Attachment B – Alternative Fertilizer Additives and Coatings Compliance Worksheet

Site Name: Gavilon Fertilizer LLC - St. Joseph  
 Site Address: 201 E Florence Rd, St. Joseph, MO 64501  
 Site County: Buchanan, S20, T57N, R35W

Inhibitor name: \_\_\_\_\_ Date: \_\_\_\_\_ (copy this sheet as needed)

A	B	C	D	E	F	G	H
Individual HAP Name and CAS No.	Product Density (lb/gal)	HAP Content (max weight %)	HAP Concentration (lb/gal)	Individual HAP PTE (tons per year)	Individual HAP SMAL (tons per year)	Coating VOC (weight %)	VOC Concentration (lb/gal)
<i>Ethylene Glycol</i> 107-27-1	9.2	1.0%	0.092	0.92	10.0	10.9%	1.00
<i>Ethylene Chloride</i> 75-00-3	9.2	0.5%	0.046	0.475	10.0		
Combined HAPs							

- A. Record all individual HAPs from this fertilizer additives or coating SDS.
- B. Record the Product Density (lbs/gal)
- C. Record the Individual HAP Content % from the SDS
- D. Calculate the individual HAP concentration by using the following equation:  $D = B \times C / 100$ . A individual HAP concentration of less than 1.0 lb/gal is necessary for compliance with Special Condition 3.C. Combine the HAP concentration of all HAPs in the fertilizer additive or coating. A combined HAP concentration of 2.5 lb/gal is necessary for compliance with Special Condition 3.B.
- E. Calculate the Individual HAP PTE (tons per year):  $E = 20,000 \text{ gal/yr} \times B \times C / 2000 \text{ lb/ton} / 100$
- F. Record the individual HAP SMAL from Appendix B or the most recent HAP SMAL Table, located at <http://dnr.mo.gov/env/apcp/docs/cp-hapsmaltbl6.pdf> Seek approval from the Air Pollution Control Program New Source Review Unit before using this coating if the individual HAP potential to emit is greater than the SMAL.
- G. Record or calculate the in VOC weight % from the SDS. Verify VOC status according to 10 CSR 10-6.020 *Definitions and Common Reference Tables (2)(V)13*.
- H. Calculate the VOC concentration by using the following equation:  $H = B \times G / 100$ . A VOC concentration of 4.0 lb/gal is necessary for compliance with Special Condition 3.A.

Appendix B: Table of Hazardous Air Pollutants and Screening Model Action Levels (May 3, 2012 Revision 10)

Chemical	CAS #	SMAL (ton/yr)	Group ID	VOC	PM	Chemical	CAS #	SMAL (ton/yr)	Group ID	VOC	PM	Chemical	CAS #	SMAL (ton/yr)	Group ID	VOC	PM	
ACETALDEHYDE	75-07-0	9		Y	N	CARBARYL	63-25-2	10		V	Y	DICHLOROPROPANE, [1,2-]	78-87-5	1		Y	N	
ACETAMIDE	60-35-5	1		Y	N	CARBON DISULFIDE	75-15-0	1			Y	DICHLOROPROPENE, [1,3-]	542-75-6	1			Y	N
ACETONITRILE	75-05-8	4		Y	N	CARBON TETRACHLORIDE	56-23-5	1			Y	DICHLORVOS	62-73-7	0.2			Y	N
ACETOPHENONE	98-86-2	1		Y	N	CARBONYL SULFIDE	463-58-1	5			Y	DIETHANOLAMINE	111-42-2	5			Y	N
ACETYLAMINOFLUORINE, [2-]	53-96-3	0.005	V	Y	Y	CATECHOL	120-80-9	5			Y	DIETHYL SULFATE	64-67-5	1			Y	N
ACROLEIN	107-02-8	0.04		Y	N	CHLORAMBEN	133-90-4	1			Y	DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	5	P	Y	N	
ACRYLAMIDE	79-06-1	0.02		Y	N	CHLORDANE	57-74-9	0.01			Y	DIMETHOXYBENZIDINE, [3,3-]	119-90-4	0.1	V	Y	Y	
ACRYLIC ACID	79-10-7	0.6		Y	N	CHLORINE	7782-50-5	0.1		N	N	DIMETHYL BENZIDINE, [3,3-]	119-93-7	0.008	V	Y	Y	
ACRYLONITRILE	107-13-1	0.3		Y	N	CHLOROACETIC ACID	79-11-8	0.1			Y	DIMETHYL CARBAMOYL CHLORIDE	79-44-7	0.02			Y	N
ALLYL CHLORIDE	107-05-1	1		Y	N	CHLOROACETOPHENONE, [2-]	532-27-4	0.06			Y	DIMETHYL FORMAMIDE	68-12-2	1			Y	N
AMINOBIIPHENYL, [4-]	92-67-1	1	V	Y	N	CHLOROACETOPHENONE, [2-]	532-27-4	0.06			Y	DIMETHYL HYDRAZINE, [1,1-]	57-14-7	0.008			Y	N
ANILINE	62-53-3	1		Y	N	CHLOROBENZENE	108-90-7	10			Y	DIMETHYL PHTHALATE	131-11-3	10			Y	N
ANISIDINE, [ORTHO-]	90-04-0	1		Y	N	CHLOROBENZILATE	510-15-6	0.4	V		Y	DIMETHYL SULFATE	77-78-1	0.1			Y	N
ANTHRACENE	120-12-7	0.01	V	Y	N	CHLOROFORM	67-66-3	0.9			Y	DIMETHYLAMINOAZOBENZENE, [4-]	60-11-7	1			Y	N
ANTIMONY COMPOUNDS		5	H	N	Y	CHLOROMETHYL METHYL ETHER	107-30-2	0.1			Y	DIMETHYLANILINE, [N-N-]	121-69-7	1			Y	N
ANTIMONY PENTAFLUORIDE	7783-70-2	0.1	H	N	Y	CHLOROPRENE	126-99-8	1			Y	DINITRO-O-CRESOL, [4,6-] (Note 6)	534-52-1	0.1	E	Y	Y	
ANTIMONY POTASSIUM TARTRATE	28300-74-5	1	H	N	Y	CHROMIUM COMPOUNDS		0.002	L	N	Y	DINITROPHENOL, [2,4-]	51-28-5	1			Y	N
ANTIMONY TRIOXIDE	1309-64-4	1	H	N	Y	CHROMIUM COMPOUNDS		5	L	N	Y	DINITROTOLUENE, [2,4-]	121-14-2	0.02			Y	N
ARSENIC COMPOUNDS		0.005	I	N	Y	CHRYSENE	218-01-9	0.01	V	Y	N	DIOXANE, [1,4-]	123-91-1	6			Y	N
ASBESTOS	1332-21-4	0	A	N	Y	COBALT COMPOUNDS		0.1	M	N	Y	DIPHENYLHYDRAZINE, [1,2-]	122-66-7	0.09	V	Y	Y	
BENZ(A)ANTHRACENE	56-55-3	0.01	V	Y	N	COKE OVEN EMISSIONS	8007-45-2	0.03	N	Y	N	DIPHENYLMETHANE DIISOCYANATE, [4,4-]	101-68-8	0.1	V	Y	N	
BENZENE	71-43-2	2		Y	N	CRESOL, [META-]	108-39-4	1	B	Y	N	EPICHLOROHYDRIN	106-89-8	2			Y	N
BENZIDINE	92-87-5	0.0003	V	Y	N	CRESOL, [ORTHO-]	95-48-7	1	B	Y	N	ETHOXYETHANOL, [2-]	110-80-5	10	P	Y	N	
BENZO(A)PYRENE	50-32-8	0.01	V	Y	N	CRESOL, [PARA-]	106-44-5	1	B	Y	N	ETHOXYETHYL ACETATE, [2-]	111-15-8	5	P	Y	N	
BENZO(B)FLUORANTHENE	205-99-2	0.01	V	Y	N	CRESOLS (MIXED ISOMERS)	1319-77-3	1	B	Y	N	ETHYL ACRYLATE	140-88-5	1			Y	N
BENZO(K)FLUORANTHENE	207-08-9	0.01	V	Y	N	CUMENE	98-82-8	10		Y	N	ETHYL BENZENE	100-41-4	10			Y	N
BENZOTRICHLORIDE	98-07-7	0.006		Y	N	CYANIDE COMPOUNDS		0.1	O	Y	N	ETHYL CHLORIDE	75-00-3	10			Y	N
BENZYL CHLORIDE	100-44-7	0.1		Y	N	DDE	72-55-9	0.01	V	Y	Y	ETHYLENE GLYCOL	107-21-1	10			Y	N
BERYLLIUM COMPOUNDS		0.008	J	N	Y	D(2-ETHYLHEXYL) PHTHALATE, (DEHP)	117-81-7	5			Y	ETHYLENE GLYCOL MONOBUTYL ETHER (Delisted)	111-76-2					
BERYLLIUM SALTS		2E-05	J	N	Y	DIAMINOTOLUENE, [2,4-]	95-80-7	0.02			Y	ETHYLENE GLYCOL MONOHEXYL ETHER	112-25-4	5	P	Y	N	
BIPHENYL, [1,1-]	92-52-4	10	V	Y	N	DIAZOMETHANE	334-88-3	1			Y	ETHYLENE IMINE [AZIRIDINE]	151-56-4	0.003			Y	N
BIS(CHLOROETHYL)ETHER	111-44-4	0.06		Y	N	DIBENZ(A,H)ANTHRACENE	53-70-3	0.01	V	Y	N	ETHYLENE OXIDE	75-21-8	0.1			Y	N
BIS(CHLOROMETHYL)ETHER	542-88-1	0.0003		Y	N	DIOXINS/FURANS		6E-07	D,V	Y	N	ETHYLENE THIUREA	96-45-7	0.6			Y	Y
BROMOFORM	75-25-2	10		Y	N	DIBENZOFURAN	132-64-9	5	V	Y	N	FORMALDEHYDE	50-00-0	2			Y	N
BROMOMETHANE	74-83-9	10		Y	N	DIBROMO-3-CHLOROPROPANE, [1,2-]	96-12-8	0.01			Y	GLYCOL ETHER (ETHYLENE GLYCOL ETHERS)		5	P	Y	N	
BUTADIENE, [1,3-]	106-99-0	0.07		Y	N	DIBROMOETHANE, [1,2-]	106-93-4	0.1			Y	GLYCOL ETHER (DIETHYLENE GLYCOL ETHERS)		5	P	Y	N	
BUTOXYETHANOL ACETATE, [2-]	112-07-2	5	P	Y	N	DIBUTYL PHTHALATE	84-74-2	10			Y	HEPTACHLOR	76-44-8	0.02			Y	N
BUTYLENE OXIDE, [1,2-]	106-88-7	1		Y	N	DICHLOROBENZENE, [1,4-]	106-46-7	3			Y	HEXACHLOROBENZENE	118-74-1	0.01			Y	N
CADMIUM COMPOUNDS		0.01	K	N	Y	DICHLOROBENZIDENE, [3,3-]	91-94-1	0.2	V	Y	Y	HEXACHLOROBUTADIENE	87-68-3	0.9			Y	N
CALCIUM CYANAMIDE	156-62-7	10		Y	Y	DICHLOROETHANE, [1,1-]	75-34-3	1			Y	HEXACHLOROCYCLOHEXANE, [ALPHA-]	319-84-6	0.01	F	Y	N	
CAPROLACTAM (Delisted)	105-60-2					DICHLOROETHANE, [1,2-]	107-06-2	0.8			Y	HEXACHLOROCYCLOHEXANE, [BETA-]	319-85-7	0.01	F	Y	N	
CAPTAN	133-06-2	10		Y	Y	DICHLOROETHYLENE, [1,1-]	75-35-4	0.4			Y	HEXACHLOROCYCLOHEXANE, [DELTA-]	319-86-8	0.01	F	Y	N	
						DICHLOROMETHANE	75-09-2	10		N	N	HEXACHLOROCYCLOHEXANE, [TECHNICAL]	608-73-1	0.01	F	Y	N	
						DICHLOROPHOENOXY ACETIC ACID, [2,4-]	94-75-7	10	C	Y	Y							



