West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Final Permitting Action Under 45CSR30 and Title V of the Clean Air Act
(Group 6/8)
(Larvin)

Permit Number: **R30-03900007-2005**
Plant Identification Number: **03900007**
Permittee: **Bayer CropScience, LP**
Facility Name: **Institute Site**
Mailing Address: **P.O. Box 1005**
Institute, WV 25112

Physical Location:	Institute, Kanawha County, West Virginia
UTM Coordinates:	432.0 km Easting • 4,248.3 km Northing • Zone 17
Directions:	The facility is located west of Institute, WV, adjacent to State Route 25 and West Virginia State College.

Facility Description

Bayer CropScience, an agricultural chemical based company, operates a multi-product, multi-process chemical plant. The Plant has five basic manufacturing units along with several other production facilities primarily responsible for producing raw materials used in the manufacture of agricultural chemicals. The principal products produced at the Institute site are SEVIN brand carbaryl, TEMIK brand aldicarb, LARVIN brand thiodicarb, methomyl, RHODIMET AT-88, oxamyl, BPMC, Carbofuran, and Carbosulfan.
SIC Codes: 2879; 2869

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Criteria Pollutants	**Potential Emissions (Group 6)**	**2002 Actual Emissions (Group 6)**
Carbon Monoxide (CO)	69.4	0.01
Nitrogen Oxides (NO_X)	347.3	80.79
Particulate Matter (PM_{10})	0.02	0.005
Total Particulate Matter (TSP)	1.05	0.01
Sulfur Dioxide (SO_2)	2.07	0.23
Volatile Organic Compounds (VOC)	39.56	3.12
PM_{10} is a component of TSP.		
Hazardous Air Pollutants	**Potential Emissions (Group 6)**	**2002 Actual Emissions (Group 6)**
Acetonitrile	0.06	0.01
Acetaldoxime	0.63	<0.01
Ethylene Glycol	0.03	<0.01
Hexane	19.70	1.24
Hydrogen Chloride	0.83	<0.01
Methanol	15.17	0.77
Methyl Isocyanate	0.009	<0.001
Methyl Mercaptan	0.02	<0.01
Naphthalene	0.0005	<0.00001
Some of the above HAPs may be counted as PM or VOCs.		

Title V Program Applicability Basis

This facility has the potential to emit over 100 tons per year of the criteria pollutants CO, NOx, SO2, VOC's, as well as over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutants, 10 tons per year of a single HAP and over 25 tons per year of aggregate HAPs, (Bayer CropScience) is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

Group 6 at this facility* has been found to be subject to the following applicable rules:

Federal and State:	45CSR1	NOx budget trading program. (#2 Powerhouse – Group 1)
	45CSR6	Open burning prohibited.
	45CSR7	Particulate Matter emissions
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Permits for construction, modification, relocation, etc.
	45CSR16	New Stationary Sources
	45CSR21	Volatile Organic Compound emissions
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. Part 63 MMM	Pesticide Active Ingredient (PAI) MACT
State Only:	45CSR4	No objectionable odors.
	45CSR27	Toxic Air Pollutants

*Other groups at this facility may be subject to additional applicable state and federal rules.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR15, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	**Date of Issuance**	**Permit Determinations or Amendments That Affect the Permit *(if any)***
R13-641	2/5/1982	
CO-27-92-12	4/30/1992	
CO-R21-97-4	2/19/1997	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

Determinations and Justifications

Methomyl, Larvin, Oxime

1. 45CSR6 - *To Prevent and Control Air Pollution from Combustion of Refuse.*
   The maximum allowable particulate matter that may be discharged from any incinerator into the open air is limited by the requirements in 45CSR6. To convert to lbs/hr to determine the corresponding 45CSR6 limit:

   The emission limitation from 45CSR§6-4.1 is:
   Emissions (lb/hr) = F x Incinerator Capacity (tons/hr)

The Flare B330 (7c) Incinerator Capacity (tons/hr) is 0.81 tons/hr. The F factor is 5.43. Therefore, the corresponding particulate matter limit (via 45CSR6-4.1) is (0.81*5.43) equal to 4.4 lbs/hr. This is given in Condition 4.1.11.

The facility uses natural gas as fuel for the flares to burn waste VOC gases, so there is essentially no particulate matter that is expected to be generated by this process, which is much less than the 4.4 lbs/hr that they are currently allowed to emit. Therefore, compliance with the PM limit shall be shown by ensuring that the flare is operating correctly. Condition 4.1.4 requires that the flare operate either when the Boilers #3 and #4 are not in operation, or a total of 60 hours per year as a backup when the Boilers #3 and #4 are in operation. Condition 4.1.10 requires the flare pilot light be active during all times of operation in order to perform correct combustion. Condition 4.2.2 requires that the facility continuously monitor the flame flare presence. Condition 4.4.2 requires the facility keep records of any time that the flare pilot is absent, as well as natural gas usage of the flare.

The flare is also subject to the opacity limits of Rule 6. For Flare (7c), the permittee is required to conduct monthly 40 CFR 60, Appendix A, Method 22 visible emissions observations (Method 22 observations). If during these observations or at any other time, visible emissions appear, a Method 9 evaluation must be conducted within twenty-four (24) hours unless corrective action is taken and recorded. The permit provides for reduced periodic visual observations following collection of sufficient readings to show that the flare meets opacity limits. The permittee is required to keep appropriate records of all evaluations, observations, and corrective actions. Based on the EPA's approval of similar provisions for other like facilities, WVDAQ believes that the periodic monitoring approach for this facility is appropriate.

For Emergency Flare (7c (a)), this flare is only used in extreme emergencies. It may only be used 2 hours per occurrence, and may not be used more than once per 15 years. The incinerator capacity for the Flare (7c (a)) is 371 tons/hr. The F factor is 2.72. The corresponding particulate matter limit is (371*2.72) is equal to 1,009 lbs/hr. For any occurrence that the flare is operating, a Method 22 visible emissions observation and Method 9 evaluation must be conducted unless corrective action is taken and recorded.

2. 45CSR7 - *To prevent and control PM air pollution from manufacturing processes and associated operations*

   The baghouses (3c and 5c) are subject to the particulate matter emissions limits of 45CSR§7-4.1. The limits are calculated by interpolation from Table 45-7A with the corresponding process weight rates. The permittee has more stringent PM limits given in Condition 4.1.6. Therefore, compliance with the more stringent limits of Condition 4.1.6 will show compliance with the limits calculated from Rule 7. Condition 4.2.3 requires material balances around the baghouse, as well as monthly pressure drop measurements and monthly baghouse inspection to show that the baghouse is operating correctly. By monitoring the pressure drop and replacement of the bags as required to show proper operation and maintenance, as well as calculating the emission rates through material balances, this will show compliance with the Rule 7 limit.

3. 45CSR13 – *Permits for Construction*

   The R13-641 application shows that the hydrocarbons used in the process are treated by either the Fugitive Air Scrubber A330 for odor reduction or through the Boiler #3 and #4 or Flare B330 system. In order to show compliance with the emission limits, it is necessary to limit the production to that listed in the application as well as the proper operation of the control devices.

   Condition 4.1.1 limits the production of Methomyl per year. Condition 4.1.2 limits the total amount of production of Larvin in the process. Condition 4.4.1 requires the facility to keep daily records of the amount of Methomyl and Larvin produced.

   Condition 4.1.9 and 4.1.10 set the operating conditions for the Scrubber (A330) and Flare (B330). Condition 4.2.1 requires the facility to maintain the proper pump design and to keep the circulation flow with valves fully open in order to show that it is operating correctly. Condition 4.2.2 requires the facility to continuously monitor the presence of flame in the flare in order to show that it is operating

correctly. Condition 4.4.2 requires the facility to record any times that the flare is not operating, and to keep natural gas records of the fuel usage.

5. 40CFR63 Subpart MMM - PAI MACT – *Pesticide Active Ingredient MACT*
Bayer CropScience is subject to the Pesticide Active Ingredient MACT. All of the applicable standards, monitoring, recordkeeping, and reporting requirements for the equipment and for equipment leaks have been incorporated into this permit.

   With regards to testing, Condition 4.1.16 refers to 40CFR§63.1362 which requires testing under 40CFR§63.1362(b)(2) and (b)(3).

   40CFR§63.1362(b)(2) has limits for organic HAP emissions from existing sources. (b)(3) has HCl and CL2 concentration limits. There is a scrubber (C-337) that had testing done on it September 30, 2003 with the resulting limit given in Condition 4.1.9 that has a liquor flow rate of greater than 2.37 gallons per minute.

   Emissions are further sent to a boiler. There is an exclusion for the boiler:

   40CFR§63.1365(a)(4)(i)
   (4) Exemptions from compliance demonstrations. An owner or operator using any control device specified in paragraphs (a)(4)(i) through (ii) of this section is exempt from the initial compliance provisions in paragraphs (c), (d), and (e) of this section.
   (i) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

6. 40CFR Subpart 60 Kb - Tanks
The storage tanks subject to 40CFR60 Subpart Kb are also subject to the storage tank provisions of 40CFR63 Subpart MMM. 40CFR63.1360(i)(3) states that storage tanks that are subject to Subpart Kb are only required to comply with the provisions of Subpart MMM, which are included in the Permit.

7. 45CSR21 – *Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds*
The facility has an existing Rule 21 consent order that is applicable to this Group. For the Larvin Group, the facility must use Leak Detection and Repair (LDAR) monitoring that is as stringent as 45CSR§21-37 or 40CFR63, Subpart H. The VOC limits for this Group are established by the Rule 21 Consent Order and are specified in Condition 4.1.20.

8. 45CSR27 – *Prevent and Control Air Pollution From the Emission of Toxic Air Pollutants*
The facility has the Potential to Emit Chloroform greater than 1,000 lbs/yr (identified in the PTE through the Boilers addressed in Group 1). Therefore they are subject to Rule 27. The facility has an existing Rule 27 Consent Order that incorporates the Best Available Technology Plan, along with Chloroform limits for the Boilers #3 and #4. This limit is given in Condition 4.1.21. To show compliance with the chloroform fugitive emission limits given in Condition III.3 (referencing Attachment A) of the Rule 27 Consent Order, Leak Detection and Repair Program will be used regarding to minimize fugitive emissions. This is given in Condition 4.1.19, which incorporates the requirement from the Consent Order. To show compliance with the Chloroform limits from the Consent Order, Condition 4.1.1 and 4.1.2 require the facility to operate within their permitted production amount. Condition 4.1.3 and 4.1.4 require the facility to use the Boilers or Flare B330 as control devices during production of Larvin.

   There are additional flare and boiler requirements that come from the PAI MACT and included in the Permit.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:
None

Request for Variances or Alternatives

None

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: May 19, 2006
Ending Date: June 19, 2006

All written comments should be addressed to the following individual and office:

Mike Egnor
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 – 57th Street SE
Charleston, WV 25304

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

Mike Egnor
West Virginia Department of Environmental Protection
Division of Air Quality
601 – 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext: 1208 • Fax: 304/926-0478

Response to Comments (Statement of Basis)

Not applicable.