

F. No. J-11011/300/2015-IA.II (I)
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

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Dated: 28th March, 2017

To,

The Director and Site Manager
M/s Bayer Vapi Private Limited
Plot No. 306/3, Phase II,
GIDC Estate, Vapi, Gujarat

Sub: Expansion of Pesticides industry and pesticide specific intermediates (excluding formulations) from 17562 MTA to 26572 MTA at Plot No. 306/3, Phase II, GIDC Estate, District Valsad, Gujarat by M/s Bayer Vapi Private Limited – Environmental Clearance – reg.

Ref: Online Proposal No. IA/GJ/IND2/33091/2015 dated 30th August, 2016.

Sir,

This has reference to your online proposal no. IA/GJ/IND2/33091/2015 dated 30th August, 2016, along with project documents including Form I, Terms of References, Pre-feasibility Report and EIA/EMP Report regarding the above mentioned project.

2. The Ministry of Environment, Forest and Climate Change has examined the application. It is noted that the proposal is for Expansion of Pesticides industry and pesticide specific intermediates (excluding formulations) from 17562 MTA to 26572 MTA at Plot No. 306/3, Phase II, GIDC Estate, District Valsad, Gujarat by M/s Bayer Vapi Private Limited. As informed and as per the documents submitted by the Project Proponent (PP), the total plot area is 29.4 Ha, out of which green belt will be developed in area of 10.6 ha (36 %). The total cost of the proposed project is Rs. 582.46 Crore. Total capital cost of air pollution and water pollution control measures is Rs. 2,030 Lakhs. It is reported that no Wildlife Sanctuary /National Park/Reserved/Protected Forest is located within 10 km distance from the project site. Daman Ganga River is flowing at a distance of 3.92 km southwest direction of the plant site. Kolak River is flowing at a distance of 2.62 km northeast direction of the plant site. The company proposes to manufacture the following products in the unit:

S. No	Name of Products	Category	Capacity (MT/Annum)		
			Existing	Proposed	Total Production after expansion
1	Cypermethrin	Insecticides	2496	0	2496
2	Alphamethrin	Insecticides	480	0	480
3	Deltamethrin	Insecticides	504	0	504
4	Permethrin	Insecticides	1374(Either individual or	0	1374 (Either individual or
5	Transfluthrin	Insecticides			

			total production of 2 products)		total production of 2 products)
6	Acrinathrin	Insecticides	45	0	45
7	Imidacloprid	Insecticides	720	0	720
8	Beta Cyfluthrin	Insecticides	982.32	0	982.32 (Either individual or total production of 2 products)
9	Cyfluthrin	Insecticides	(Either individual or total production of 2 products)		
10	Ethofumesate	Herbicide	1560 (Either individual or total production of 2 products)	1740 (Either individual or total production of 2 products)	3300 (Either individual or total production of 3 products)
11	NC 9770	Intermediate			
12	Aclonifen	Herbicide	0		
13	Triafamone	Herbicide	0	180 (Either individual or total production of 2 products)	180 (Either individual or total production of 2 products)
14	Sulphonyl Indole	Intermediate			
15	MetaphenoxyBenza ldehyde	Intermediate	3000	0	3000
16	NaCMTS	Intermediate	1200	0	1200
17	Cypermethric Acid Chloride (CMAC)/ Cypermethric Acid (CMA)	Intermediate	2400	0	2400
18	Cypermethric Acid Chloride from DV Ester	Intermediate	600 (Either individual or total production of 2 products)	0	600 (Either individual or total production of 2 products)
19	Acid Chloride Preparation	Intermediate			
20	Metaphenoxy Benzyl Alcohol	Intermediate	1200	0	1200
21	Becisthemic Acid	Intermediate	180	0	180
22	Chrysanthemic Acid	Intermediate	180 (Either individual or total production of 2 products)	0	180 (Either individual or total production of 2 products)
23	Allethrolones	Intermediate			
24	TCA	Intermediate	410.4 (Either individual or total production of 2 products)	129.6	540 (Either individual or total production of 2 products)
25	RTCMA	Intermediate			
26	DM Base	Intermediate	50.4	0	50.4
27	Fipronil	Insecticides	0	540	540

28	Ethiprole	Insecticides	0	1020	1020
29	Fluopyram	Fungicide	0	3000	3000 (Either individual or total production of 2 products)
30	PYACN	Intermediate		(Either individual or total production of 2 products)	
31	Tembotrione	Herbicide	0	1020	1020
32	Pyrasulfotle	Herbicide	0	300	300
33	Amid Chloride	Intermediate	0	1020	1020
34	Flumethrin	Insecticides	0	60	60
35	R & D Products	Not Specified	0	180	180
B. Product not to be produced after expansion					
1	D. Trans Allethrin	Insecticides	180	(-) 180	0
Total Capacity			17562.12	9009.6	26571.72

S. No	Name of By-products	Capacity (MT/Annum)		
		Existing	Proposed	Total Production after expansion
1.	Aluminum Chloride solution	15768	-7	15761
2.	Recovered Methanol*	1669.2	-858.2	811
3.	Potassium Chloride	543.6	-3.6	540
4.	Potassium bromide/Sodium bromide	6654	-2	6652
5.	Sodium bi-Sulphite*	4076.4	-25.4	4051
6.	Sodium Sulphite solution	1620	-45	1575
7.	Organic Solvent (Mono bromo Toluene)	2095.2	-0.2	2095
8.	Ammonia solution	541.56	-541.56	0
9.	Ammonium Chloride Crystal	1620	-6	1614
10.	Potassium Chloride solution.	3000	-47	2953

3. All Pesticides industry and pesticide specific intermediates (excluding formulations) units producing technical grade pesticides are listed at Sl.No. 5(b) of Schedule of Environmental Impact Assessment (EIA) Notification under Category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

4. The project proposal was considered by the Expert Appraisal Committee (Industry -2) in its 3rd meeting held during 18th-19th January, 2016 and 14th meeting held during 26th-27th October, 2016. The Project Proponent and the accredited consultant M/s EQMS India Pvt. Ltd., Delhi gave a detailed presentation on the salient features of the project and proposed environmental protection measures to be undertaken, as per Terms of References (TORs) awarded in the 3rd meeting of the EAC held during 18th-19th January, 2016 for preparation of EIA-EMP report. The TOR has been issued by Ministry vide letter of even no. dated 05th March, 2016.

5. Public hearing was exempted as per Section 7(i), III. Stage (3), Para (i)(b) of EIA Notification as the project is located in the notified Industrial area/estate.

6. The PP has obtained environmental clearance (EC) for the existing unit vide Ministry's letter no. J-11011/526/2008-IA II(I) dated 22nd September, 2008.
7. The PP informed the EAC that the ambient air quality (AAQ) monitoring was carried out at 8 locations during December, 2015 to February, 2016. The baseline data indicates the ranges of concentrations as:- PM₁₀ (70 µg/m³ to 113 µg/m³), PM_{2.5} (26 µg/m³ to 54 µg/m³), SO₂ (11.5 µg/m³ to 24.6 µg/m³) and NO_x (15.1 µg/m³ to 33 µg/m³). AAQ modeling study for point source emissions indicates that the maximum incremental ground level concentration (GLCs) after the proposed project would be 4 µg/m³, 2.24 µg/m³ and 1.3 µg/m³ with respect to PM₁₀, SO₂ and NO_x respectively. The resultant concentrations are within the National Ambient Air Quality Standards (NAAQS).
8. The total power requirement will increase from 29000 to 33000 KVA after proposed expansion which will be sourced from Dakshin Gujarat Vij Company Limited. Additional 03 Nos of D.G sets having capacity 1500 KVA (01 Nos) and 750 KVA (2 Nos) will be used as standby. 03 Nos of Fire hydrant pumps will be operated on DG coupled set shaving capacity 325 KVA each in case of emergency only. Existing unit has 4 x 10 TPH boilers with 45 m stack height. One additional 15 TPH Natural gas fired boiler will be used for steam generation. Two stage scrubbers will be provided to control Cl₂ and HCl with online pH meters. PP has confirmed that Methyl Chloride, Phosphorous Pentoxide, Ammonia will not be generated from proposed expansion.
9. The total water requirement after proposed expansion will reduced from 3220 m³/day to 2964 m³/day due to recycling of water, which will be met from GIDC supply. Total Wastewater generation will be reduced from 949 m³/day to 900 m³/day but EAC suggested PP to further reduce the wastewater quantity by recycling 65 m³/day of wastewater, which will reduce the fresh water and wastewater generation from 2900 m³/day to 835 m³/day. The wastewater will be segregated at source and treated based on its characteristics viz High COD & High TDS and Low COD & Low TDS. High COD & High TDS effluents will be sent to MEE followed by RO while Low COD & Low TDS effluents will be treated in ETP followed by RO. The treated wastewater is discharged to Common Effluent Treatment Plant (CETP) operated by Vapi Green Enviro Ltd (formerly known as Vapi Waste & Effluent Management Co. Ltd). The ETP sludge, distillation residue, ash from incineration will be disposed of to TSDF. Process residue will be sent for common incineration. Used/spent oil will be sold to Authorized Recyclers/Processors. Discarded containers/ bag will be sent to the authorized re-processor.
10. The EAC, in its 14th meeting held during 26th-27th October, 2016, has found that the final EIA/EMP report submitted by the PP is adequate. The EAC after detailed deliberations, on the basis of the information and presentation made by the PP, has recommended the project for environmental clearance with certain conditions.
11. Based on the proposal and information submitted by the Project Proponent, and considering the recommendation of the Expert Appraisal Committee (Industry-2), the Ministry of Environment, Forest and Climate Change hereby accords Environmental Clearance to the above project under the provisions of EIA Notification dated 14th September 2006, subject to the compliance of the following Specific and General Conditions:

A. Specific Conditions:



- i) National Emission Standards for Pesticide Manufacturing and Formulation Industry issued by the Ministry vide G.S.R. 46(E) dated 3rd February, 2006 and amended time to time shall be followed by the unit.
- ii) Adequate stack height shall be provided to gas fired boiler to control particulate emissions.
- iii) Two stage water scrubber followed by alkali scrubber shall be provided to process vent to control process emissions viz. HCl, SO₂, Cl₂, NO_x, HBr. Acidic scrubber shall be provided to process vent to control process emissions viz. NH₃ & HC. The scrubbed water should be sent to ETP for further treatment. Efficiency of scrubber shall be monitored regularly and maintained properly. Scrubbers vent shall be provided with on-line detection and alarm system to indicate higher than permissible value of controlled parameters. At no time, the emission levels shall go beyond the prescribed standards. The system should be interlocked with the pollution control equipment so that in case of any increase in pollutants beyond permissible limits, plant should be automatically stopped.
- iv) In plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive emissions shall be controlled by providing closed storage, closed handling & conveyance of chemicals/materials, multi cyclone separator and water sprinkling system. Dust suppression system including water sprinkling system shall be provided at loading and unloading areas to control dust emissions. Fugitive emissions in the work zone environment, product, raw materials storage area etc. shall be regularly monitored and records maintained.
- v) A proper Leak Detection and Repair (LDAR) Program for pesticide industry shall be prepared and implemented as per CPCB guidelines. Focus shall be given for prevention of fugitive emissions for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to.
- vi) Company shall take all the measures in order to protect the machineries and equipment for pesticide producing unit from ageing.
- vii) Continuous monitoring system for chlorine, HCl, Cl₂ as well as VOCs shall be installed at all important places/areas. Effective measures shall be taken immediately, when monitoring results indicate above the permissible limits. Alarm for chlorine leakage if any in the liquid chlorine storage area is provided alongwith automatic start of the scrubbing system.
- viii) The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.
- ix) Solvent management shall be carried out as follows :
 - (a). Chilled brine circulation system shall be provided to condensate solvent vapors and reduce solvent losses. It shall be ensured that solvent recovery should not be less than 95%.
 - (b). Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
 - (c). The condensers shall be provided with sufficient HTA and residence time so as to achieve more than 95% recovery
 - (d). Solvents shall be stored in a separate space specified with all safety measures.
 - (e). Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
 - (f). Entire plant shall be flame proof. The solvent storage tanks should be provided with breather valve to prevent losses.

- x) Total water requirement from GIDC water supply shall not exceed 2900 m³/day and prior permission should be obtained from the competent authority.
- xi) Industrial effluent generation shall not exceed 900 m³/day. As proposed, wastewater will be segregated at source and treated based on its characteristics viz High COD & High TDS and Low COD & Low TDS. High COD & High TDS effluents will be sent to MEE followed by RO while Low COD & Low TDS effluents will be treated in ETP followed by RO. The treated wastewater shall be discharged to Common Effluent Treatment Plant (CETP) for final treatment.
- xii) Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.
- xiii) Hazardous chemicals shall be stored in tanks in tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm. Solvent transfer shall be by pumps.
- xiv) The by-products which fall under the purview of the Hazardous Waste Rules, be handled as per the provisions of the said Rules and necessary permissions shall be obtained under the said Rules.
- xv) The company shall obtain Authorization for collection, storage and disposal of hazardous waste under the Hazardous Waste (Management, Handling and Trans-Boundary Movement) Rules, 2008 and amended as on date for management of Hazardous wastes and prior permission from MPCB shall be obtained for disposal of solid / hazardous waste in the TSDF. Measures shall be taken for fire fighting facilities in case of emergency. Membership of TSDF for hazardous waste disposal shall be obtained.
- xvi) ETP sludge, inorganic waste shall be sent to TSDF site. High calorific value waste such as spent organic shall be sent to cement factory/incinerated.
- xvii) The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended in October, 1994 and January, 2000. All Transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.
- xviii) The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.
- xix) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- xx) Green belt should be developed at least in 10.6 ha area in and around the plant premises to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with DFO. Selection of plant species should be as per the CPCB guidelines.
- xxi) At least 2.5 % of the total cost of the project shall be earmarked towards the Enterprise Social Commitment and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Bhopal. Implementation of such program shall be ensured accordingly in a time bound manner
- xxii) All the recommendations made in the risk assessment report should be satisfactorily implemented.
- xxiii) The unit shall adhere to Zero Liquid Discharge (ZLD).
- xxiv) Continuous online (24 x7) monitoring to be installed for flow measurement and measurement of pollutants within the treatment unit. Data to be uploaded on company's website and provided to the respective RO of MEF&CC, CPCB and SPCB.

B. General Conditions:



- i. The project authorities must strictly adhere to the stipulations made by the Gujarat State Pollution Control Board, State Government and any other statutory authority.
- ii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.
- iii. The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one station is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- iv. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed.
- v. The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- vi. The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.
- vii. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
- viii. The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management and risk mitigation measures relating to the project shall be implemented.
- ix. The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.
- x. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
- xi. A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- xii. The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.
- xiii. A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.
- xiv. The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of



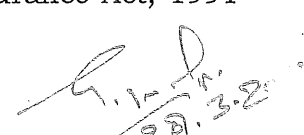
Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.

- xv. The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.
- xvi. The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at <http://moef.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.
- xvii. The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.

12. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

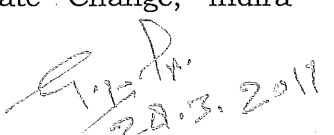
13. The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.

14. The above conditions will be enforced, *inter alia* under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules.


(Yogendra Pal Singh)
Scientist 'D'

Copy to:-

1. The Secretary, Forests and Environment Department, Government of Gujarat, Block 14, 8th floor, Sachivalaya, Gandhinagar-382 010, Gujarat.
2. The Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (WZ), E-5, Kendriya Paryavaran Bhawan, E-5 Arera Colony, Link Road-3, Ravishankar Nagar, Bhopal - 462016
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex East Arjun Nagar, Delhi - 110 032.
4. The Chairman, Gujarat Pollution Control Board, Paryavaran Bhawan, Sector-10A, Gandhinagar-382 010, Gujarat.
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh, New Delhi- 110 003.
6. Guard File/Monitoring File/Website/Record File.


(Yogendra Pal Singh)
Scientist 'D'