



सत्यमेव जयते

**File No: IA-J-11011/538/2022-IA-II(I)**  
**Government of India**  
**Ministry of Environment, Forest and Climate Change**  
**IA Division**

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Date **05/09/2023**



To,

Shri Saurabh Mundhra  
M/s APPLIED CHEMICALS PRIVATE LIMITED  
3-4, Commercial Complex, Second Floor, Room No. 2, Rani Bazaar Industrial Area, Bikaner, Rajasthan  
- 334001  
appliedchemicalspvtltd@gmail.com

**Subject: Proposed Speciality Chemicals, Pesticide Intermediates & Pesticide Technical - 750 MT/Month manufacturing plant located at Survey No. 1091, Dahej Industrial Estate (PCPIR), Dahej 2, Vill. Vadadla, Taluka Vagra, Dist. Bharuch, Gujarat by M/s. Applied Chemicals Pvt. Ltd. - Environmental Clearance**

Sir/Madam,

This is in reference to your application submitted to MoEF&CC vide proposal number IA/GJ/IND3/432920/2023 dated 10.06.2023 for grant of prior Environmental Clearance (EC) to the proposed project under the provision of the EIA Notification 2006 and as amended thereof. The proposal is for the environmental clearance to the Proposed Speciality Chemicals, Pesticide Intermediates & Pesticide Technical - 750 MT/Month manufacturing plant located at Survey No. 1091, Dahej Industrial Estate (PCPIR), Dahej 2, Vill. Vadadla, Ta: Vagra, Dist: Bharuch, Gujarat by M/s. Applied Chemicals Pvt. Ltd.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC23A2412GJ5156202N
(ii) File No.	IA-J-11011/538/2022-IA-II(I)
(iii) Clearance Type	Fresh EC
(iv) Category	A
(v) Project/Activity Included Schedule No.	5(f) Synthetic organic chemicals industry ,5(b) Pesticides industry and pesticide specific intermediates (excluding formulations),5(f) Synthetic organic chemicals industry
(vi) Sector	Industrial Projects - 3
(vii) Name of Project	Applied Chemicals Private Limited

(viii) Name of Company/Organization	APPLIED CHEMICALS PRIVATE LIMITED
(ix) Location of Project (District, State)	BHARUCH, GUJARAT
(x) Issuing Authority	MoEF&CC
(xi) Applicability of General Conditions as per EIA Notification, 2006	No

1. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A, B and C)/ EIA & EMP Reports were submitted to the MoEF&CC for an appraisal by the 53rd EAC Meeting (Industry-3 Sector) held during 14th-16th June, 2023 under the provision of EIA notification 2006 and its subsequent amendments.
2. The above-mentioned proposal has been considered by 53rd EAC Meeting (Industry-3 Sector) held during 14th-16th June, 2023 . The minutes of the meeting and all the project documents are available on PARIVESH portal which can be accessed from the PARIVESH portal by scanning the QR Code above or through the following web link [https://parivesh.nic.in/utildoc/6650044\\_1688888108274.pdf](https://parivesh.nic.in/utildoc/6650044_1688888108274.pdf).
3. The brief about configuration of products and byproducts as submitted by the Project Proponent in Form-1 (Part A, B and C)/ EIA & EMP Reports / presented during undefined are annexed to this EC as Annexure (1).
4. The 53rd EAC Meeting (Industry-3 Sector) held during 14th-16th June, 2023 , based on information submitted viz: Form 1 (Part A, B and C), EIA/EMP report etc & clarifications provided by the project proponent and after detailed deliberations on all technical aspects and compliance thereto furnished by the Project Proponent, recommended the proposal for grant of Environment Clearance under the provision of EIA Notification, 2006 and as amended thereof subject to compliance of Specific and Standard EC conditions as given in this letter.
5. The MoEF&CC has examined the proposal in accordance with the provisions contained in the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and based on the recommendations of the Expert Appraisal Committee hereby accords Environment Clearance to the instant proposal of **M/s. Applied Chemicals Pvt. Ltd.** under the provisions of EIA Notification, 2006 and as amended thereof subject to compliance of the Specific and Standard EC conditions as given in Annexure (1)
6. The Ministry reserves the right to stipulate additional conditions, if found necessary.
7. The Environmental Clearance to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
8. The Project Proponent is under obligation to implement commitments made in the Environment Management Plan, which forms part of this EC.
9. Validity of EC is upto Ten years from the date of issuance of this EC. Validity of EC becomes perpetual subject to the start of production operations by the project or activity on or before the Ten years from the date of issuance of this EC. In case the project proponent fails to start the production operations within the EC validity date, application for EC validity extension shall be submitted to the regulatory authority as per the provision contained in the Para 9.0 of EIA notification, 2006 and its amendment.
10. General Instructions:
  - (a) The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC/SEIAA website where it is displayed.
  - (b) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
  - (c) The project proponent shall have a well laid down environmental policy duly approved by the Board of Directors (in case of Company) or competent authority, duly prescribing standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions.
  - (d) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the

project proponent (during construction phase) and authorized entity mandated with compliance of conditions (during perational phase) shall be prepared. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Six monthly progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.

(e) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(f) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

(g) Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

11. This issues with the approval of the Competent Authority

### **Copy To**

1. The Principal Secretary, Forests & Environment Department, Government of Gujarat, Sachivalaya, 8th Floor, Gandhi Nagar - 382 010 (Gujarat)
2. The Deputy Director General of Forests (C) Ministry of Env., Forest and Climate Change, Integrated Regional Office, Gandhi Nagar, A-Wing – 407 & 409, Aranya Bhawan, Near CH-3 Circle, Sector-10A, Gandhi Nagar - 382010
3. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, Delhi -32
4. The Member Secretary, Gujarat Pollution Control Board, Paryavaran Bhawan, Sector 10 A, Gandhi Nagar-382 043 (Gujarat)
5. The Member Secretary, Central Ground Water Authority, Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001
6. The District Collector, District Bharuch, Gujarat.
7. Guard File/Monitoring File/PARIVESH

**Annexure 1**

### **Specific EC Conditions for (Synthetic organic chemicals industry )**

#### **1. Specific Conditions**

S. No	EC Conditions
1.1	<ol style="list-style-type: none"> <li>1. The PP shall develop Greenbelt over an area of 10321.0 m<sup>2</sup> (33% ), by planting 3225 number of trees within a period of one year of grant of EC. The saplings selected for the plantation should be of sufficient height, preferably 6-ft (about 2 m). The budget earmarked for the plantation shall be kept in separate account and should be audited annually. PP should annually submit the audited statement along with proof of activities viz. photographs (before &amp; after with geo-location date &amp; time), details of the expert agency engaged, details of species planted, number of species planted, survival rate, density of plantation etc. to the Regional Office of MoEF&amp;CC before 1<sup>st</sup> July of every year for the activities carried out during the previous year.</li> <li>2. A separate Environmental Management Cell (having qualified persons with Environmental Science/Environmental Engineering/specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the General Manager- ESH Manager-</li> </ol>



S. No	EC Conditions
	<p>Safety Manager- safety Executive- Firemen- Environment Manager- Env Executive- ETP operator. In addition to this one safety &amp; health officer as per the qualification given in Factories Act 1948 shall be engaged within a month of grant of EC. PP should annually submit the audited statement of amount spent towards the engagement of qualified persons in EMC along with details of person engaged to the Regional Office of MoEF&amp;CC before 1<sup>st</sup> July of every year for the activities carried out during previous year.</p> <ol style="list-style-type: none"> <li>3. The company shall 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. The budget propose under EMP is 9.535 Crore (Capital cost) and 6.303 Crore per annum (Recurring cost) shall be kept in separate account and should be audited annually. The PP should submit the annual audited statement along with proof of implementation of activities proposed under EMP duly supported by photographs (before &amp; after with geo-location date &amp; time) and other document as applicable to the Regional Office of MoEF&amp;CC before 1<sup>st</sup> July of every year for the activities carried out during previous year.</li> <li>4. Agrobriquette shall be used as the primary fuel for boiler and thermopack, during it's unavailability coal shall be used in case of emergency. The PP shall use alternative greener fuel over the next five years after commissioning of the projects.</li> <li>5. The total water requirement shall not exceed 361 KL/Day of which fresh water requirement of 344 KL/Day and will be met from GIDC Water Supply letter no. GIDC/DEE/WS/BRH/308 Dated: 15/03/2023. The PP should ensure that water supply should not be above the permissible limit as mentioned in the letter and fresh water shall be withdrawn only after obtaining valid agreement from Concerned Authority. The PP should submit the details of utilization to the Integrated Regional Office (IRO), MoEF&amp;CC before 1<sup>st</sup> July of every year for the activities carried out during the previous year.</li> <li>6. Effluent shall be treated in ETP having primary followed by Fenton Treatment, RO, MEE &amp; Bio reactor. The wastewater generation shall be 226 KLD (Domestic: 4 KLD, Industrial: 222 KLD). Wastewater generated shall be segregated into concentrated and Dilute streams. Concentrated stream shall be treated in Primary followed by Multiple Effect Evaporator (MEE) and Dilute stream will be treated in Primary followed by Fenton treatment &amp; finally at Bio reactor. The utility stream shall be treated in RO system. RO permeate shall be reused for in industrial purpose. RO Reject shall be sent to ETP. Total 212 KLD Waste Water (99 KLD MEE Condensate + 14 KLD ATFD Condensate + 99 KLD Diluted Waste Water) will be treated in Bio Reactor System. Clear supernatant from Bio Reactor shall be collected in Storage Tank and sent to Common Effluent Treatment Plant of Dahej Industrial Estate for further treatment, Domestic waste water 4 KLD will be treated in proposed STP of 4 KLD. The treated water from STP will be reused for gardening and flushing.</li> <li>7. No banned chemicals shall be manufactured by the project proponent. No banned raw materials shall be used in the unit. The project proponent shall adhere to the notifications/guidelines of the Government in this regard.</li> <li>8. The project proponent shall comply with the environment norms for Pesticide Industry as notified by the Ministry of Environment, Forest and Climate Change, <i>vide</i> GSR 446 (E), dated 13.6.2011 under the provisions of the Environment (Protection) Rules, 1986.</li> <li>9. The project proponent shall comply with the environment norms for 'synthetic organic chemical as notified by the Ministry of Environment, Forest and Climate Change, <i>vide</i> GSR 608 (E), dated 21<sup>st</sup> July, 2010 under the provisions of the Environment (Protection) Rules, 1986.</li> <li>10. The project proponent shall utilize modern technologies for capturing of carbon emitted and shall also develop carbon sink/carbon sequestration resources capable of capturing more than emitted. The implementation report shall be submitted to the IRO, MoEF&amp;CC in this regard.</li> <li>11. All necessary precautions shall be taken to avoid accidents and action plan shall be implemented</li> </ol>

S. No	EC Conditions
	<p>for avoiding accidents. The project proponent shall implement the onsite/offsite emergency plan/mock drill etc. and mitigation measures as prescribed under the rules and guidelines issued in the Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989, as amended time to time, and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.</p> <p>12. The volatile organic compounds (VOCs)/Fugitive emissions shall be controlled at 99.97 % with effective chillers/modern technology. Regular monitoring of VOCs shall be carried out.</p> <p>13. The storage of toxic/hazardous raw material shall be bare minimum with respect to quantity and inventory. Quantity and days of storage shall be submitted to the Regional Office of Ministry and SPCB along with the compliance report.</p> <p>14. The occupational health centre for surveillance of the worker's health shall be set up. The health data shall be used in deploying the duties of the workers. All workers &amp; employees shall be provided with required safety kits/mask for personal protection.</p> <p>15. Training shall be imparted to all employees on safety and health aspects for handling chemicals. Safety and visual reality training shall be provided to employees. Action plan for mitigation measures shall be properly implemented based on the safety and risk assessment studies.</p> <p>16. 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.</p> <p>17. The solvent management shall be carried out as follows: (a) Reactor shall be connected to chilled brine condenser system. (b) Reactor and solvent handling pump shall have mechanical seals to prevent leakages. (c) Solvents shall be stored in a separate space specified with all safety measures. (d) Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done. (e) Entire plant shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses. (f) All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation.</p> <p>18. The PP shall undertake waste minimization measures as below (a) Metering and control of quantities of active ingredients to minimize waste; (b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. (c) Use of automated filling to minimize spillage. (d) Use of Close Feed system into batch reactors. (e) Venting equipment through vapor recovery system. (f) Use of high pressure-hoses for equipment cleaning to reduce wastewater generation.</p>

**Standard EC Conditions for (Synthetic organic chemicals industry )**

**1**

S. No	EC Conditions
<b>1.1</b>	No further expansion or modifications in the plant, other than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable. 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/SEIAA, as applicable, to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.
<b>1.2</b>	The Project proponent shall strictly comply with the rules and guidelines issued under the Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989, as amended time to time, the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996, and Hazardous and Other Wastes (Management and Trans-Boundary Movement) Rules, 2016 and

S. No	EC Conditions
	other rules notified under various Acts.
1.3	The energy source for lighting purpose shall be preferably LED based, or advanced having preference in energy conservation and environment betterment.
1.4	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 the Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
1.5	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. The activities shall be undertaken by involving local villages and administration. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
1.6	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.
1.7	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.
1.8	The project proponent shall also upload/submit six monthly reports on Parivesh Portal on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data to the respective Integrated 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.
1.9	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 Integrated Regional Office of MoEF&CC by e-mail.
1.10	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 and at <a href="https://parivesh.nic.in/">https://parivesh.nic.in/</a> . 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.
1.11	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.
1.12	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of

S. No	EC Conditions
	India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.

## Annexure 2

### Details of the Project

S. No.	Particulars	Details	
a.	Details of the Project	Applied Chemicals Private Limited	
b.	Latitude and Longitude of the project site	21.72084262493959,72.63574402009638	
c.	Land Requirement (in Ha) of the project or activity	Nature of Land involved	Area in Ha
		Non-Forest Land (A)	3.1263
		Forest Land (B)	0
		Total Land (A+B)	3.1263
d.	Date of Public Consultation	Public consultation for the project was held on	
e.	Rehabilitation and Resettlement (R&R) involvement	NO	
f.	Project Cost	67.65 crores	
g.	EMP Cost	9.535 Crore (capital)	
h.	Employment Details	50	

### Details of Products & By-products

Name of the product /By-product	Product / By-product	Quantity	Unit	Mode of Transport / Transmission	Remarks (eg. CAS number)
Group-3 Herbicide Intermediates -1 (Product No. 24-37)	Product	150	MT/month	Road	
Group-2 Fungicide Intermediates -2 (product No. 23 4,6-Dichloropyrimidine)	Product	20	MT/month	Road	
Group-4 Herbicide Intermediates -2 (Product No. 38 2-Nitro-4-Methanesulphonybenzoic Acid)	Product	20	MT/month	Road	
Group-6 Insecticide Technical (Product No. 56-69)	Product	50	MT/month	Road	



Name of the product /By-product	Product / By-product	Quantity	Unit	Mode of Transport / Transmission	Remarks (eg. CAS number)
Group-9 Research & Development Products (Product No. 103 R & D Pilot & R & D Lad Products)	Product	10	MT/month	Road	
Group-1 Fungicide Intermediates -1 (Product No. 1-22)	Product	150	MT/month	Road	
Group-5 Insecticide Intermediates (Product No. 39- 55)	Product	150	MT/month	Road	
Group-7 Herbicides Technical (Product No. 70-86)	Product	150	MT/month	Road	
Group-8 Fungicides Technical (Product No. 87- 102)	Product	50	MT/month	Road	





**GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE  
(IA DIVISION-INDUSTRY-3 SECTOR)**

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**Dated: 07.07.2023**

**MINUTES OF THE 53<sup>rd</sup> EXPERT APPRAISAL COMMITTEE (INDUSTRY-3 SECTOR)  
MEETING HELD ON 14<sup>th</sup>-16<sup>th</sup> June, 2023**

**Venue:** Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003 through **Video Conferencing (VC)**

**Time: 10:30 AM onwards**

**(i) Opening Remarks by the Chairman**

Prof. (Dr.) A.B. Pandit, Chairman welcomed the Committee members and opened the EAC meeting for further deliberations.

**(ii) Details of Agenda items by the Member Secretary**

The Member Secretary apprised the Committee about the details of Agenda items to be discussed during this Expert Appraisal Committee (EAC) meeting.

**(iii) Confirmation of Minutes of the 52<sup>nd</sup> EAC Meeting and Agenda No. 49.20**

The EAC noted that the final minutes of the 52<sup>nd</sup> EAC meeting held on 30-31 May, 2023 were issued after incorporating the comments offered by the members and approved by the Chairman. The EAC confirmed the MoM with the following modifications (52.15 & 52.16) based on the request of the Project Proponents (PPs).

**Agenda No. 52.15**

**Proposed Expansion of the Specialty Chemicals (Organic Products) Production Capacity: 2955 MT/Annum to 3020 MT/Annum and no change of Inorganic Products Production Capacity: 60300 MT/Annum & CPP in existing unit located at Plot Nos. 2, 4 to 13, 14/1, 2, 3, 19, 20 to 58, Surat Navsari Road, Village: Bhestan, Tehsil: Chorasi, District: Surat, Gujarat by M/s. Navin Fluorine International Ltd. - Consideration of EC**

**[Proposal No. IA/GJ/IND3/429642/2023; File No. IA-J-11011/181/2022-IA-II(I)]**

1. The proposal was recommended by the EAC in its 52<sup>nd</sup> Meeting held on 30<sup>th</sup>-31<sup>st</sup> May, 2023 and the MoM were published on 12.6.2023. Subsequently, the PP vide e-mail dated 14.6.2023 requested the following modification in the MoM:

- xxvii. The storage of toxic/hazardous raw material shall be bare minimum with respect to quantity and inventory. Quantity and days of storage shall be submitted to the Regional Office of Ministry and SPCB along with the compliance report.
- xxviii. The occupational health centre for surveillance of the worker's health shall be set up. The health data shall be used in deploying the duties of the workers. All workers & employees shall be provided with required safety kits/mask for personal protection.
- xxix. Training shall be imparted to all employees on safety and health aspects for handling chemicals. Safety and visual reality training shall be provided to employees. Action plan for mitigation measures shall be properly implemented based on the safety and risk assessment studies.
- xxx. 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.
- xxxi. The solvent management shall be carried out as follows: (a) Reactor shall be connected to chilled brine condenser system. (b) Reactor and solvent handling pump shall have mechanical seals to prevent leakages. (c) Solvents shall be stored in a separate space specified with all safety measures. (d) Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done. (e) Entire plant shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses. (f) All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation.
- xxxii. The PP shall undertake waste minimization measures as below (a) Metering and control of quantities of active ingredients to minimize waste; (b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. (c) Use of automated filling to minimize spillage. (d) Use of Close Feed system into batch reactors. (e) Venting equipment through vapor recovery system. (f) Use of high pressure-hoses for equipment cleaning to reduce wastewater generation.

**Agenda No. 53.16**

**Proposed Speciality Chemicals, Pesticide Intermediates & Pesticide Technical - 750 MT/Month manufacturing plant located at Survey No. 1091, Dahej Industrial Estate (PCPIR), Dahej 2, Vill. Vadadla, Ta: Vagra, Dist: Bharuch, Gujarat by M/s. Applied Chemicals Pvt. Ltd. - Consideration of EC**

**[Proposal No. IA/GJ/IND3/432920/2023; File No. IA-J-11011/538/2022-IA-II(I)]**

1. The proposal is for the environmental clearance to the Proposed Speciality Chemicals, Pesticide Intermediates & Pesticide Technical - 750 MT/Month manufacturing plant located at Survey No. 1091, Dahej Industrial Estate (PCPIR), Dahej 2, Vill. Vadadla, Ta: Vagra, Dist: Bharuch, Gujarat by M/s. Applied Chemicals Pvt. Ltd.

2. The project/activity is covered under Category 'A' of Item 5(b) & 5(f) **Pesticides industry and pesticide specific intermediates, synthetic organic chemical (excluding formulations of Schedule of EIA Notification, 2006 (as amended).**
3. The ToR was issued by the Ministry, vide letter no. IA-J-11011/538/2022-IA-II(I), dated 5.1.2023. The PP applied for Environment Clearance in the Common Application Form and submitted EIA/EMP Report and other documents. The PP in the Form reported that it is a **Fresh EC case**. The proposal is placed in this 53<sup>rd</sup> EAC meeting on 14<sup>th</sup>-16<sup>th</sup> June, 2023, wherein the PP along with accredited Consultant, M/s. Aqua-Air Environmental Engineers Pvt. Ltd. (NABET Accreditation No.: NABET/EIA/2023/IA0062 (Rev. 03) Valid Up to October 7, 2023] made a detailed presentation on the salient features of the project. The information submitted by the PP is as follows:
4. The PP reported that the Existing land area is 31263 m<sup>2</sup>, and no R& R is involved in the Project. The details of products to be manufactured are as follows

GROUP	NAME OF PRODUCTS	CAS NO.	QUANTITY (MT/MONTH)
<b>Group-1</b>	<b>Fungicide Intermediates -1</b>		
1	2- Chloro -4-( 4- Chlorophenoxy) Acetophenone	119851-28-4	150
2	3,4'-Dichloro Diphenyl Ether	6842-62-2	
3	4- Methyl -1,3 Dioxolane	1072-47-5	
4	2,4 Dichloro Velero phenone	61023-66-3	
5	1-(4-ChloroBenzyl) Methyl-3, 3-Methyl-2-Oxo Cyclopentane Carboxylate	80969-68-2	
6	(Methyl (E) -2-{2-[6-Chloropyrimidine-4-4Xyloxy] Phenyl} -3-Methoxy Acetate)	131860-97-4	
7	2,4'-Dichloro Acetophenone / 4-Chlorophenacyl Chloride	937-20-2	
8	2,5-Dichloro Acetophenone	2476-37-1	
9	2- Amino 2',4,4'- Tri Chloro Di Phenyl Ether	56966-52-0	
10	2- Hydrazine 4- Methyl Benzothioate (HMBT)	20174-68-9	
11	(4-Chlorophenyl)-4, 4-Dimethyl Pentanone	66346-01-8	
12	1,2,4-Triazole	288-88-0	
13	1-Cyanoacetyl-3-Ethyl Urea	41078-06-2	
14	2-(Bromomethyl) -2-(2-Chlorophenoxy Phenyl)-4-Methyl-1,3-Dioxolane	873012-43-2	
15	2-2[2-Chloro-4-(4-Chlorophenoxy Phenyl)]-2,4-Dimethyl-1,3-Dioxolane	441347-97-3	

16	2-Acetotylbutyrolactone(2ABL)	517-23-7	
17	2-Chlorobenzyl Chloride (2CBC)	611-19-8	
18	Methyl (2e) -(Methoxyimino) (2-Methylphenyl) Acetate/ 2- Methyl Phenyl Glyoxylate Ortho Methyl Oxime	120974-97-2	
19	3'-(Trifluoromethyl) Acetophenone	349-76-8	
20	Benzofuran-2(3h)-One/ 2- Coumaranone	553-86-8	
21	3-(A-Methoxy) Methylenebenzofuran-2(3h)-One	40800-90-6	
22	2-Cyanophenol	611-20-1	
Group-2	Fungicide Intermediates -2		
23	4,6-Dichloropyrimidine	1193-21-1	20
Group-3	Herbicide Intermediates -1		
24	2, 4 – Dichlorophenol	120-83-2	150
25	Triazinone	33509-43-2	
26	4- HPPA	94050-90-5	
27	5- Chloro 2,3 - Difluoro Pyridine (CDFP)	89402-43-7	
28	2,6 Dimethyl - N-(Propoxy) Aniline	61874-13-3	
29	4-4' Bi Pyridine	553-26-4	
30	Methyl 2,6 Bis ((4,6 Dimethoxy Pyrimidin-2- yl) Oxy) Benzoate	142966-13-0	
31	2-Chloro Acetic Acid-1-Methyl Hexyl Ester (For Herbicide Safener)	383412-05-3	
32	5-Chloro 8-Hydroxy Quinoline (For Herbicide Safener & Pharma)	130-16-5	
33	2-(4-Hydroxyphenoxy) Propionic Acid (R)	94050-90-5	
34	2,6-Dichlorobenzoxazole	3621-82-7	
35	5-Ethoxy-7-Fluoro-[1, 2, 4] Triazole [1, 5-c] Pyrimidine-2-Thiol	166524-72-7	
36	Methyl 2-Amino-3-Chloro Benzoate	77820-58-7	
37	2-Chloro-4--(Methylsulfonyl)-3-((2,2,2-Trifluoroethoxy) Methyl) Benzoic Acid	120100-77-8	
Group-4	Herbicide Intermediates -2		
38	2-Nitro-4-Methanesulphonylbenzoic Acid	110964-79-9	20
Group-5	Insecticide Intermediates		



39	4-Bromo-2-Chloro Phenol	3964-56-5	150
40	2-Chloro 5-Chloromethyl Pyridine (CCMP)	70258-18-3	
41	N- Nitro Imino Imidazolidine (NII)	5465-96-3	
42	2-Chloro 5-Chloromethyl Thiazole (CCMT)	105827-91-6	
43	3-Methyl 4-Nitroimino 1,3,5 Oxidiazine (MNIO)/ 3,6-Dihydro-3-Methyl-N-Nitro-2H-1,3,5- Oxadiazin-4-Amine	153719-38-1	
44	Para Chloro Isovaleric Acid Chloride	51631-50-6	
45	Lambda Cyhalothric Acid	72748-35-7	
46	Na-Salt3, 5, 6-Trichloropyridinol (Na -TCP)	6515-38-4	
47	5- Amino -1 - (2,6 - Dichloro 4- Tri Fluro Methyl Phenyl) -3- Cyano 4- Trifluoromethyl Thio Pyrazole	205650-65-3	
48	1-(4-Phenoxy Phenoxy)-2-Propanol	57650-78-9	
49	4-(Trifluoromethyl) Pyridine-3-Carboxylic Acid	15803-66-2	
50	Aminoacetonitrile Hydrochloride	6011-14-9	
51	N-(6-Methyl-3-Oxo-2,5-Dihydro- 1,2,4-Triazin- 4(3H)-Yl) Acetamide	136738-23-3	
52	2-Amino-5-Chloro-N,3-Dimethylbenzamide	890707-28-5	
53	3-Bromo-1-(3-Chloropyridin-2-Yl)-1H-Pyrazole- 5-Carboxylic Acid	500011-86-9	
54	4-Hydroxy-3-(2,4,6-Trimethylphenyl)-1-Oxaspiro [4.4] Non-3-En-2-One	148476-30-6	
55	3,3-Dimethylbutyryl Chloride	7046-65-5	
<b>Group- 6</b>	<b>Insecticide Technical</b>		50
56	Profenophos	41198-08-7	
57	Imidacloprid	138261-41-3	
58	Thiamethoxam	153719-23-4	
59	Acetamiprid	135410-20-7	
60	Pyriproxyfen	95737-68-1	
61	Fipronil	120068-37-3	

62	Chlorantraniliprole	500008-45-7	
63	Cyantraniliprole	736994-63-1	
64	Ethiprole	181587-01-9	
65	Flonicamid	158062-67-0	
66	Pymetrozine	123312-89-0	
67	Cyclaniliprole	1031756-98-5	
68	Tralopyril	122454-29-9	
69	Ethylene Dibromide (EDB)	106-93-4	
<b>Group-7</b>	<b>Herbicides Technical</b>		
70	Clodinafop Propagyl	114420-56-3	150
71	Quizalofop Ethyl	76578-14-8	
72	Aclonifen	74070-46-5	
73	Imazethapyr & Isomers Technical	81335-77-5	
74	Bispyribac Sodium Technical	125401-92-5	
75	Glufosinate Ammonium	77182-82-2	
76	Metribuzine	21087-64-9	
77	Pendimethalin	40487-42-1	
78	Propanil	709-98-8	
79	Sulfentrazone Technical	122836-35-5	
80	Flufenacet Technical	142459-58-3	
81	Cloquintocet Mexyl (T)	99607-70-2	
82	Pretilachlor Technical	51218-49-6	
83	Paraquate Technical	4685-14-7	
84	Chlorimuron Ethyl Technical	90982-32-4	
85	Triclopyr Butotyl Technical	64700-56-7	

86	Tembotrione Technical	335104-84-2	
<b>Group-8</b>	<b>Fungicides Technical</b>		
87	Difenoconazole	119446-68-3	50
88	Tebuconazole	107534-96-3	
89	Tricyclazole	41814-78-2	
90	Hexaconazole	79983-71-4	
91	Propiconazole	60207-90-1	
92	Metconazole	125116-23-6	
93	Prothioconazole	178928-70-6	
94	Paclobutrazol	76738-62-0	
95	Penconazole	66246-88-6	
96	Pyraclostrobin	175013-18-0	
97	Azoxystrobin	131860-33	
98	Pyroxystrobin	131860-33-8	
99	Picoxystrobin	117428-22-5	
100	Trifloxystrobin	141517-21-7	
101	Kresoxim Methyl	143390-89-0	
102	Thiophanate Methyl	23564-05-8	
<b>Group-9</b>	<b>Research &amp; Development Products</b>		
103	R & D Pilot & R & D Lad Products		10
	<b>TOTAL</b>		<b>750.0</b>

- The PP reported that there is no violation case as per the Notification No. S.O. 804(E) dated 14.03.2017 and no direction is issued under E (P) Act/Air Act/Water Act.
- There are no National Parks, Wildlife Sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. lies within 10 km distance from the project site. River Narmada is flowing at distance of 10.0 Km in the South direction. There is no forest land

involved in the proposed project. Schedule-I species i.e., Grey mongoose, Shikra, Indian peafowl, Indian ratsnake, Indian cobra., were observed in the 10 km radius from the proposed project for which Conservation plan has been prepared and submitted to Deputy conservator of Forest dated on 28.4.2023.

7. The PP reported that **Ambient air quality** monitoring was carried out at 10 locations during March, 2022 to May, 2022 and the baseline data indicates the ranges of concentrations as: PM<sub>10</sub> (75.10 – 85.12 µg/m<sup>3</sup>), PM<sub>2.5</sub> (43.32 – 45.98 µg/m<sup>3</sup>), SO<sub>2</sub> (14.29 – 17.45 µg/m<sup>3</sup>) and NO<sub>2</sub> (16.06 – 19.10 µg/m<sup>3</sup>), respectively. AAQ modeling study for point source emissions indicated that the maximum incremental GLCs after the proposed project would be 0.089 µg/m<sup>3</sup>, 0.268 µg/m<sup>3</sup> and 0.096 µg/m<sup>3</sup> with respect to PM<sub>10</sub>, SO<sub>x</sub> and NO<sub>x</sub>. The resultant concentrations are within the National Ambient Air Quality Standards (NAAQS). **Noise quality** monitoring was carried out at 9 locations and the baseline data indicate the ranges as: Leq (Day) (47.6 – 53.8 dB (A)), Leq (Night) (39.3 – 43.8 dB (A)). **Ground water quality monitoring** was carried out at 10 locations and the baseline data indicate the ranges as: pH (7.4 – 8.1), TSS (<10.0-12.0 mg/l), Total Hardness (198.5 – 558.6 mg/l), Total Dissolved Solids (512.0 – 1958.0 mg/l) & Chlorides (83.5 – 589.7 mg/l). The resultant concentrations are within the Indian Standard (IS 10500:2012). **Surface water quality monitoring** was carried out at 7 locations and the baseline data indicate the ranges as: pH (7.7-8.4), DO (6.2-6.5 mg/l), COD (6.6 – 17.5 mg/l) & BOD (1.8-4.9 mg/l). **Soil quality monitoring** was carried out at 9 locations and the baseline data indicate the ranges as: pH (7.5 – 8.6), Nitrogen (N) (1454.6 – 3668.9 mg/l), Phosphorus (P) (15.6 – 36.6 mg/l), Potassium (K) (165.7 – 872.9 mg/l) & Electric Conductivity (0.3 – 2.8 mS/cm).
8. The PP reported that the total water requirement is 361 KL/Day of which fresh water requirement of 344 KL/Day and will be met from GIDC Water Supply letter no. GIDC/DEE/WS/BRH/308 Dated: 15/03/2023. Effluent will be treated in ETP having primary followed by Fenton Treatment, RO, MEE & Bio reactor. The wastewater generation will be 226 KLD (Domestic: 4 KLD, Industrial: 222 KLD). Wastewater generated will be segregated into concentrated and Dilute streams. Concentrated stream will be treated in Primary followed by Multiple Effect Evaporator (MEE) and Dilute stream will be treated in Primary followed by Fenton treatment & finally at Bio reactor. The utility stream will be treated in RO system. RO permeate will be reused for in industrial purpose. RO Reject will be sent to ETP. Total 212 KLD Waste Water (99 KLD MEE Condensate + 14 KLD ATFD Condensate + 99 KLD Diluted Waste Water) will be treated in Bio Reactor System. Clear supernatant from Bio Reactor shall be collected in Storage Tank and sent to Common Effluent Treatment Plant of Dahej Industrial Estate for further treatment, Domestic waste water 4 KLD will be treated in proposed STP of 4 KLD. The treated water from STP will be reused for gardening and flushing.
9. The Power requirement will be 1000 KVA from DGVCL, DG Set (500 KVA x 1 Nos.). Unit will have 1 No. DG sets of 500 KVA capacity and used as standby during power failure. Stack (height 11 m) will be provided as per CPCB norms to the proposed DG sets.



10. Unit will have 1 No. of Boilers (8 TPH) & 1 No. of Thermopack (2 lac KCal/hr). Adequate Stack Height of 32 m will be installed for controlling the particulate emissions within the statutory limit of 150 mg/Nm<sup>3</sup> for the proposed boilers.

**11. Details of Process Emissions Generation and its Management: Flue Gas Stack**

S. no.	Source of Emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel	Type of emissions i.e., Air Pollutants	Air Pollution Control Measures (APCM)
1	Steam Boiler (Capacity: 8.0 MT/hr.) × 1 Nos	32	Briquette/ Coal	35.00 MT /Day	PM <150 <sub>3</sub> mg/Nm <sup>3</sup>	Three- Filed ESP System + Wet Scrubber
2	Thermo Pack (Capacity: 2.0 Lac Kilo Cal/ hr.)		Briquette/ Coal	2.2 MT /Day	SO <sub>2</sub> <100 ppm	
3	D. G. Set - Stand By (Capacity: 1x500 KVA)	11	HSD	500 Liters/day	NOx<50 ppm	Adequate Stack Height

**Note: In case of non-availability of Briquettes, company will use the imported coal.**

**Process Stack**

Sr. No.	Vent attached to	Vent Height & Diameter	Pollutants	Air pollution Control System
1	Reaction Vessel (2-Chloro-4-(4-Chlorophenoxy) Acetophenone, 2,4 Di Chloro Valerophenone, 1-(4-Chloro Benzyl) Methyl-3,3-Methyl-2-Oxo Cyclopentane Carboxylate, 2,4-Dichloro Acetophenone, 2,5-Dichloro Acetophenone, HMBT, 3-Dichloro-4-(2-Bromomethyl-4-Methyl-1,3-Dioxolane-2-yl)-4-Chloro Diphenyl Ether, 4,6-Dichloro Pyrimidine, 2-Cyano Phenol, 2,4 Dichloro Phenol, Triazinone, 2,6-Di Chloro Benzoxazole, CCMT, Para Chloro	Height-11 Meters	HCl	Two Stage Scrubbing System with both as Water for 30 % HCl Soln

	Isovaleric Acid Chloride, Lambda Cyhalothric Acid, Na TCP, Pyrazole Sulfide, N-(6-Methyl-3-Oxo--4,5-Dihydro-1,2,4-Triazin-4(3H)-yl) Acetamide, Profenophos, Ethiprole, Pymetrozine, Propiconazole, Prothioconazole, Paclobutrazol, Penconazole, Pyraclostrobin, Pyroxystrobin, Trifloxystrobin, Trifloxystrobin)			
2	Reaction Vessel (Methyl (2E) - (Methoxyimino) (2-Methylphenyl) Acetate)	Height-11 Meters	NO <sub>x</sub>	Two Stage Scrubbing System with First Stage as Water for 30 % HCl Soln & Second Stage Dilute Alkali Scrubber for 35-38 % Nitrosyl Sulphuric Acid
3	Reaction Vessel (CCMT, Methyl 2, 6 Bis ((4, 6 Dimethoxy pyrimidin-2- yl) Oxy) Benzoate)	Height-11 Meters	SO <sub>2</sub>	Two Stage Scrubbing System with First Stage as Water for 30 % HCl Soln & Second Stage Dilute Alkali Scrubber for 20 % Sodium Sulphite Soln
4	Reaction Vessel (3-Dichloro-4-(2-Bromomethyl-4-Methyl-1,3-Dioxolane-2-yl)-4-Chloro Diphenyl Ether, Ortho Chloro Benzyl Chloride, 4-Bromo-2-Chloro Phenol, Hexaconazole, Propiconazole)	Height-11 Meters	HBr	Two Stage Scrubbing System with both as Water for 30 % HBr Soln
5	Reaction Vessel (Triazinone, 2,2'-Dithiobis (5-Ethoxy-7-Fluro [1,2,4] Triazole [1,5C] Pyrimidine)	Height-11 Meters	H <sub>2</sub> S	Two Stage Scrubbing System with both Alkali for Sodium

				Hydrosulphide Solution
6	Reaction Vessel (4-Hydroxy-3-(2,4,6-Trimethylphenyl)-1-Oxaspiro [4.4] Non-3-En-2-One, 3,3-Dimethyl Butyryl Chloride, Flonicamid)	Height-11 Meters	HCl + SO <sub>2</sub>	Two Stage Scrubbing System with First Stage as Water for 30 % HCl Soln & Second Stage Dilute Alkali Scrubber for 20 % Sodium Sulphite Soln

**12. Details of Solid Waste/ Hazardous Waste Generation and its Management:** 43 Nos. of Categories of Hazardous Wastes & 2 no. of non-hazardous waste shall be generated from this Unit.

**Hazardous/Solid Wastes**

S. No	Name of Waste	Source of Generation	Cat No.	Proposed Quantity (MT/Year)	Disposal Method
1	Discarded Containers / Bags / Liners	Storage & handling of Raw Materials	Sch-I/ 33.1	100.0	Collection, Storage, Transportation, Decontamination & Disposal by selling to registered recycler.
2	Used / Spent Oil	Equipment & Machineries	Sch-I/ 5.1	50.0	Collection, Storage, Transportation, Decontamination & Disposal by selling to registered recycler.
3	ETP Sludge	In-house ETP	Sch-I/ 35.3	360.0	Collection, Storage, Transportation & Disposal to nearby Common registered TSDF site.
4	MEE Salt	Process	Sch-I/ 28.1	3960.0	Collection, Storage, Transportation & Disposal to nearby Common registered TSDF site by following protocol of Hazardous Waste Rule – 2016.

5	Recover red Solvent	Process	Sch-I/ 28.6	261284.0	Collection, Storage, Management & Recovery within the premises and reuse in plant premises.
6	Aluminum Chloride Solution (18- 20%)	Process(2-Chloro-4-(4-Chlorophenoxy) Acetophenone, 2,4 Dichloro Valerophenone, 2,4-Dichloro Acetophenone, 2,5-Dichloro Acetophenone, 3-Dichloro-4-(2-Bromomethyl-4-Methyl-1,3-Dioxolane-2-yl)-4-Chloro Diphenyl Ether, Pymetrozine, Propiconazole)	Sch-II/ Class B (15)	18276.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
7	30-33% Hydrochloric Acid	Process(2-Chloro-4-(4-Chlorophenoxy) Acetophenone, 2,4 Dichloro Valeropheno	Sch-II- Class B (15)	14605.0	Collection, Storage, Transportation & Disposal by selling to authorised end user registered under Rule-9.



		ne, 1-(4-Chloro Benzyl) Methyl-3,3-Methyl-2-Oxo Cyclopentan e Carboxy- late, 2,4-Dichloro Aceto- phenone, 2,5-Dichloro Acetophenon e , 2-Amino- 4-Methyl Benzo- thiazole, 3-Dichloro-4-(2-Bromomethy l-4-Methyl- 1,3-Dioxolane-2- yl)-4-Chloro Diphenyl Ether, , 2-HPAA disodium salt, 2-Cyano Phenol, 4,6-dihydroxypyr imidine, 4,6-Dichloro Pyrimidine, 2,4 Di Chloro Phenol, Triazinone, PEDA, 2,6-			
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		Di Chloro Benzoxazole, CCMP, CCMT, Para Chloro Isovaleric Acid Chloride, Lambda Cyhalothric Acid, Na TCP, Pyrazole Sulfide , N- (6-Methyl-3- Oxo--4,5- Dihydro- 1,2,4- Triazin- 4(3H)-yl) Acetamide, 4-Hydroxy- 3-(2,4,6- trimethyl phenyl)-1- oxaspiro [4.4] non-3- en-2-one, 3,3-Dimethyl Butyryl Chloride, Profenophos, Ethiprole, Flonicamid,P enconazole , Pyraclostrobi n, Pyroxystrobi n)			
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8	Sodium Chloride Salt	<p>Process (3,4'-Dichloro Diphenyl Ether),Methyl</p> <p>-2- [2-(6-Chloro Pyrimidine-4-yl) Oxyphenyl -3-Methoxyprop-2-Enoate, 2-Amino-2',4,4'-Trichloro diphenyl Ether, 4,6-dihydroxy pyrimidine, 2-Nitro-4-Methanesulfonyl Benzoic Acid, Lambda Cyhalothric Acid, 1-(4-Phenoxyphenoxy)-2-Propanol, 4-Hydroxy-3-(2,4,6-trimethylphenyl)-1-oxaspiro [4.4] non-3-en-2-one, Pymetrozine,</p>	Sch-I/28.1	3892.0	Collection, Storage, Transportation & Disposal to nearby Common registered TSDF site by following protocol of Hazardous Waste Rule – 2016.
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		Clodinafop Propagyl, Aclonifen, Pretilachlor, Trifloxystrobin, Kresoxim Methyl, Thiophenate Methyl)			
9	Sodium Sulphate	Process (Methyl (2E) - (methoxyimino) (2-Methylphenyl) acetate, 2-Nitro Imino Imidazolidine (NII), Metribuzine)	Sch-I/ 28.1	9546.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
10	Methyl Bisulfate	Process (Trifloxystrobin, Methyl (2E) - (methoxyimino) (2-Methylphenyl) acetate)	Sch-I/ 28.1	1201.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
11	Iron Sludge	Process (2-Amino-2',4,4' - Trichloro Diphenyl Ether, 5-Chloro-8-Hydroxy Quinoline)	Sch-I/ 35.3	3314.0	Collection, Storage, Transportation & Disposal to nearby Common registered TSDF site by following protocol of Hazardous Waste Rule – 2016.



12	Ammonium Sulphate	Process (Ortho-Tolyl Thiourea, 5-Chloro-8-Hydroxy Quinoline, 2-Nitro Imino Imidazolidine (NII))	Sch-I/ 28.1	10609.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
13	Ammonium Hydroxide	Process (2-Hydrazino-4-Methyl Benzo Thiazole (HMBT))	Sch-I/ 28.1	360.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
14	Spent/ Recovered Catalyst	Process(1-(4-Chlorophenyl)-4,4-dimethyl -3-pentanone, 3-Dichloro-4-(2-Bromo methyl-4-Methyl-1,3-Dioxolane-2-yl)-4-Chloro Diphenyl Ether, 2-Amino 3-Chloro Benzoic Acid, Sulfentrazone, Triclopyr, Propiconazole)	Sch-I/ 28.2	280.0	Collection, Storage, Transportation & send to regenerator Unit for reactivation and return back to factory premises for reuse in Process.

15	Acetic Acid	Process (CCMP, 2-amino-5-chloro-N, 3-dimethylbenz amide)	Sch-I/ 28.1	5234.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
16	28% Hydrobromic Acid	Process(3-Dichloro-4-(2-Bromomethyl-4-Methyl-1,3-Dioxolane-2-yl)-4-Chloro Diphenyl Ether, 4-Bromo-2-Chloro Phenol, Hexaconazole, Propiconazole, Tralopyril)	Sch-I/ 28.1	4500.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
17	10% Sodium Hypochlorite soln.	Process (Ortho Chloro Benzyl Chloride)	Sch-I/ 28.1	563.0	Collection, Storage, Management & Reused in ETP within plant Premises.
18	Phosphoric Acid	Process (4,6-Dichloro Pyrimidine, CCMP)	Sch-I/ 28.1	5017.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
19	Sodium Bicarbonate	Process (4,6-Dichloro Pyrimidine)	Sch-I/ 28.6	158.0	Collection, Storage, Management & Reused in ETP within Plant Premises.

20	Spent Carbon	Process (4,6-Dichloro Pyrimidine)	Sch-I/ 28.1	48.0	Collection, Storage, Transportation & Disposal to nearby Common registered TSDF site.
21	30% Sodium Hydrosulfide Soln	Process (Triazinone)	Sch-I/ 28.1	2340.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
22	Inorganic Mixed Salt (Sodium Chloride Salt & Sodium Bicarbonate Salt)	Process (Methyl 2, 6-Bis (4, 6-Dimethoxypyrimidin-2-yl) oxy) Benzoate, Imidacloprid)	Sch-I/ 35.3	7386.0	Collection, Storage, Transportation & Disposal to nearby Common registered TSDF site by following protocol of Hazardous Waste Rule – 2016.
23	Sodium Methyl Sulphate	Process (Methyl 2, 6-Bis (4, 6-Dimethoxypyrimidin-2-yl) oxy) Benzoate)	Sch-I/ 28.1	540.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
24	Sulphur Dichloride (SCl <sub>2</sub> )	Process (2,6-Di Chloro Benzoxazole)	Sch-I/ 28.1	785.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
25	Residue	Process (2-Chloro-4-(4-Chlorophenoxy) Acetophenon	Sch-I/ 36.1	4007.0	Collection, Storage, Transportation and sent for co-processing in cement industries or common incineration facility.

		<p>e, 3,4'- Dichloro Diphenyl Ether), 4- Methyl-1,3- Dioxane, 2,4 Di Chloro Valeropheno ne,</p> <p>Methyl-2- [2- (6-Chloro Pyrimidine- 4-yl) Oxyphenyl- 3- Methoxyprop -2-Enoate, 2,4-Dichloro Acetophenon e,2,5- Dichloro Acetophenon e, 2- Amino- 2',4,4'- Trichloro Diphenyl Ether, (HMBT), 1- (4- Chloropheny l)-4, 4- dimethyl-3- pentanone, 2- [2-Chloro-4- (4- Chloropheno xy) Phenyl]- 2,4- Dimethyl-</p>			
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		1,3-Dioxolane, Ortho Chloro Benzyl Chloride, Methyl (2E) - (methoxyimino) (2-Methylphenyl) Acetate, 3-(Trifluoromethyl), CCMP, CCMT, Para Chloro Isovaleric Acid Chloride, Lambda Cyhalothric Acid, 1-(4-Phenoxyphenyl)-2-Propanol, Amino acetonitrile Hydrochloride, N-(6-Methyl-3-Oxo-4,5-Dihydro-1,2,4-Triazin-4(3H)-yl) Acetamide, 2-Amino-5-Chloro-N, 3-Dimethyl Benzamide, 3-Bromo-1-			
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		(3-Chloropyridin-2-yl)-1H-Pyrazole-5-Carboxylic Acid, 3,3-Dimethyl Butyryl Chloride, Imidacloprid, Thiamethoxam, Acetamiprid, Pyriproxyfen, Chlorantraniliprole, Cyantraniliprole, Clodinafop Propagyl, Quizalofop Ethyl, Aclonifen, Imazethapyr, Bispyribac-Sodium, Thiophenate Methyl)			
26	30% HF	Process(2-Ethoxy-4-Fluoro-6-Hydrazinylpyrimidine)	Sch-I/ 28.1	589.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
27	Benzyl Chloride	Process (CCMP)	Sch-I/ 28.1	1530.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.

28	20 % Sodium Sulphite Soln	Process (Methyl 2, 6-Bis (4, 6-Dimethoxy pyrimidin-2-yl) oxy) Benzoate, CCMT, 4-Hydroxy-3-(2,4,6-trimethylphenyl)-1-oxaspiro [4.4] non-3-en-2-one, 3,3-Dimethyl Butyryl Chloride, Flonicamid, Kresoxim Methyl, Kresoxim Methyl)	Sch-I/ 28.1	14253.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
29	Spent Sulfuric Acid	Process (Para Chloro Isovaleric Acid Chloride, 3,3-Dimethyl Butyryl Chloride, Pendimethalin, Sulfentrazone, Ethylene Di Bromide)	Sch-I/ 28.1	44240.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.

30	Sodium Bromide Soln	Process (Para Chloro Isovaleric Acid Chloride, Profenophos, Cyclaniliprole, Quizalofop Ethyl, Paclobutrazol)	Sch-II- Class B (15)	7940.0	Collection, Storage & reuse in manufacturing Plant excess quantity will be sold to end users having Rule 9 Permission.
31	Sodium Ethoxide	Process(4-Hydroxy-3-(2,4,6-trimethylphenyl)-1-oxaspiro [4.4] non-3-en-2-one)	Sch-I/ 28.1	459.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
32	Sodium Carbonate	Process (Ethylene Di Bromide)	Sch-I/ 28.1	413.0	Collection, Storage, Management & Reused in ETP within plant Premises.
33	Sodium Fluoride	Process (Clodinafop Propagyl)	Sch-I/ 28.1	230.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
34	Potassium Chloride + Potassium Bicarbonate Salt	Process (Cloquintocet Mexyl (93%), Azoxystrobin, Picoxystrobin)	Sch-I/ 28.1	7244.0	Collection, Storage & reuse in manufacturing Plant excess quantity will be sold to end users having Rule 9 Permission.
35	Potassium	Process (Difenoconazole, Hexaconazole)	Sch-I/ 28.1	255.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.



	Bromide, Propiconazole)				
36	Methane Sulfonic Acid Sodium Salt	Process (Penconazole)	Sch-I/ 28.5	280.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
37	Sodium Bisulphate	Process (Kresoxim Methyl)	Sch-I/ 28.4	248.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9
38	40-45% Soln of Spent Nitric Acid	Process (2-Nitro-4-Methanesulfonyl Benzoic Acid)	Sch-I/ 28.1	3744.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
39	Propionic Acid	Process (Fipronil Disulfinyl)	Sch-I/ 28.1	333.0	Collection, Storage, Transportation & Disposal by selling to authorized end user registered under Rule-9.
40	Off Spec Materials	Storage & handling of Products	Sch-I/ 36.1	250.0	Collection, Storage, Transportation and sent for co-processing in cement industries or nearest incineration site.
41	Expiry Date Materials	Storage & handling of Raw Materials and Products	Sch-I/ 36.1	250.0	Collection, Storage, Transportation and sent for co-processing in cement industries or nearest incineration site.
42	Insulation Waste	Storage & handling of Products	Other-1/ S1	2	Collection, Storage, Transportation & Disposal to nearby Common registered TSDF site.

43	Waste Glass Wool	Storage & handling of Products	Other-1/ S2	1	Collection, Storage, Transportation & Disposal to nearby Common registered TSDF site.
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**DETAILS OF NON-HAZARDOUS WASTE GENERATION AND DISPOSAL**

Sr. No.	Particulars	Source	Unit	Category	Quantity per year	Hazardous waste disposal /Management
1	STP sludge	STP	MT/year	-	10.0	Collection, Storage, Transportation, Disposal at TSDF Site
2	Ash from utilities	Boiler	MT/year	-	1200.0	Collection, Storage, Transportation and sell to brick manufacturer.

13. The Budget earmarked towards the Environmental Management Plan (EMP) is ₹ 9.535 Crore (capital) and the Recurring Cost (operation and maintenance) will be about ₹ 6.303 Crore per annum. Industry proposes to allocate Rs. 1.33 Crore towards Corporate Social Responsibility.
14. Total 31263.0 m<sup>2</sup> land area is available at site, out of which 10321.0 m<sup>2</sup> (33%) area shall be developed as Green Belt Area. Trees will be planted in the plant premises with a spacing of 2m x 2m and Approx. 3225 number of trees will be developed accordingly.
15. The PP reported that the Public hearing is exempted as per the Para 7.III. Stage (3) (i) (b) of the EIA Notification, 2006 the Proposed Project is located in Notified Industrial Area of PCPIR, Dahej which is covered within PCPIR region (Petroleum, Chemical & Petrochemical Investment Region) & PCPIR has obtained Environmental and CRZ clearance vide file no. 21-49/2010-IA-III dated 14th September, 2017.
16. The PP proposed to set up an Environment Management Cell (EMC) by engaging General Manager- ESH Manager- Safety Manager- safety Executive- Firemen- Environment Manager- Env Executive- ETP operator for the functioning of EMC.
17. The PP reported that the total 2558 Nos. of trees to be planted for carbon sequestrations. The total carbon sequestered through trees (2558 trees) = 3440.459 Ton CO<sub>2</sub> eq./year. Solar Panel of 180 KW to be installed for power requirement. The total carbon sequestered through solar energy = 213.3 Ton CO<sub>2</sub> eq./year. Total emissions reduction = carbon sequestration through trees + electricity generation by solar power plant. Total emissions reduction = 3440.459 + 213.3 = 3653.759 t CO<sub>2</sub> eq. /year.

18. The PP submitted the Disaster Management Plan and On-site and Off-site Emergency Plans in the EIA report.
19. The estimated project cost is Rs. 67.65 crores. Total Employment will be 50 Nos. persons.
20. **Deliberations by the EAC:**

The EAC constituted under the provisions of the EIA Notification, 2006 comprising expert members/domain experts in various fields, examined the proposal submitted by the PP in desired format along with the EIA/EMP reports prepared and submitted by the Consultant accredited by the QCI/ NABET on behalf of the PP.

The EAC noted that the PP has given an undertaking to the effect that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP reports. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the PP.

The EAC noted that the EIA reports are in compliance of the ToR issued for the project, reflecting the present environmental status and the projected scenario for all the environmental components. The EAC deliberated on the proposed mitigation measures towards Air, Water, Noise and Soil pollutions. The EAC advised that the storage of toxic/explosive raw materials/products shall be undertaken with utmost precautions and following the safety norms and best practices.

The EAC inter-alia, deliberated on the fuel, Greenbelt, Plant layout showing green belt with trees in rows, recycle of water, STP, Comparative study between Briquettes and Imported Coal for Carbon Foot Print, Life Cycle Assessment, compliance of OM dated 18.5.2023 and advised the PP to submit the following:

- Undertaking for the use of Fuel.
- Undertaking for Green belt development.
- Undertaking for Recycle of water.
- Comparative study between Briquettes and Imported Coal for Carbon Foot Print.
- Undertaking for LCA.
- Plot layout showing green belt with trees in rows.
- Supporting documents of the compliance of OM dated 18.5.2023 regarding the verification of the consultant.

The PP submitted the above information/documents and the EAC found these to be satisfactory.

The EAC deliberated on the Onsite and Offsite Emergency plans and various mitigation measures to be proposed during the implementation also of the project and advised the PP to implement the provisions of the Rules and guidelines issued under the Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989, as amended time to time, and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.

The EAC deliberated on the proposal with due diligence in the process as notified under the provisions of the EIA Notification, 2006, as amended from time to time and accordingly made the recommendations to the proposal. The expert members of the EAC found the proposal in order and recommended for grant of environmental clearance.

The EAC is of the view that its recommendation and grant of environmental clearance by the regulatory authority to the project/activity is strictly under the provisions of the EIA Notification 2006 and its subsequent amendments. It does not tantamount/construe to approvals/consent/permissions etc. required to be obtained or standards/conditions to be followed under any other Acts/ Rules/ Subordinate legislations, etc., as may be applicable to the project. The PP shall obtain necessary permission as mandated under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, as applicable from time to time, from the State Pollution Control Board, prior to construction & operation of the project.

21. The EAC, after detailed deliberations, **recommended the project for the grant of environmental clearance, subject to the compliance of the terms and conditions as under, and general terms and conditions in Annexure-I:**

- (i) The PP shall develop Greenbelt over an area of 10321.0 m<sup>2</sup> (33% ), by planting 3225 number of trees within a period of one year of grant of EC. The saplings selected for the plantation should be of sufficient height, preferably 6-ft (about 2 m). The budget earmarked for the plantation shall be kept in separate account and should be audited annually. PP should annually submit the audited statement along with proof of activities viz. photographs (before & after with geo-location date & time), details of the expert agency engaged, details of species planted, number of species planted, survival rate, density of plantation etc. to the Regional Office of MoEF&CC before 1<sup>st</sup> July of every year for the activities carried out during the previous year.
- (ii) A separate Environmental Management Cell (having qualified persons with Environmental Science/Environmental Engineering/specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the General Manager- ESH Manager- Safety Manager- safety Executive- Firemen- Environment Manager- Env Executive- ETP operator. In addition to this one safety & health officer as per the qualification given in Factories Act 1948 shall be engaged within a month of grant of EC. PP should annually submit the audited statement of amount spent towards the engagement of qualified persons in EMC along with details of person engaged to the Regional Office of MoEF&CC before 1<sup>st</sup> July of every year for the activities carried out during previous year.
- (iii) The company shall 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. The budget propose under EMP is ₹ 9.535 Crore (Capital cost) and ₹ ₹ 6.303 Crore per annum (Recurring cost) shall be kept in separate account and should be audited annually. The PP should submit the annual audited statement along with



proof of implementation of activities proposed under EMP duly supported by photographs (before & after with geo-location date & time) and other document as applicable to the Regional Office of MoEF&CC before 1<sup>st</sup> July of every year for the activities carried out during previous year.

- (iv) Agrobriquette shall be used as the primary fuel for boiler and thermopack, during it's unavailability coal shall be used in case of emergency. The PP shall use alternative greener fuel over the next five years after commissioning of the projects.
- (v) The total water requirement shall not exceed 361 KL/Day of which fresh water requirement of 344 KL/Day and will be met from GIDC Water Supply letter no. GIDC/DEE/WS/BRH/308 Dated: 15/03/2023. The PP should ensure that water supply should not be above the permissible limit as mentioned in the letter and fresh water shall be withdrawn only after obtaining valid agreement from Concerned Authority. The PP should submit the details of utilization to the Integrated Regional Office (IRO), MoEF&CC before 1<sup>st</sup> July of every year for the activities carried out during the previous year.
- (vi) Effluent shall be treated in ETP having primary followed by Fenton Treatment, RO, MEE & Bio reactor. The wastewater generation shall be 226 KLD (Domestic: 4 KLD, Industrial: 222 KLD). Wastewater generated shall be segregated into concentrated and Dilute streams. Concentrated stream shall be treated in Primary followed by Multiple Effect Evaporator (MEE) and Dilute stream will be treated in Primary followed by Fenton treatment & finally at Bio reactor. The utility stream shall be treated in RO system. RO permeate shall be reused for in industrial purpose. RO Reject shall be sent to ETP. Total 212 KLD Waste Water (99 KLD MEE Condensate + 14 KLD ATFD Condensate + 99 KLD Diluted Waste Water) will be treated in Bio Reactor System. Clear supernatant from Bio Reactor shall be collected in Storage Tank and sent to Common Effluent Treatment Plant of Dahej Industrial Estate for further treatment, Domestic waste water 4 KLD will be treated in proposed STP of 4 KLD. The treated water from STP will be reused for gardening and flushing.
- (vii) No banned chemicals shall be manufactured by the project proponent. No banned raw materials shall be used in the unit. The project proponent shall adhere to the notifications/guidelines of the Government in this regard.
- (viii) The project proponent shall comply with the environment norms for Pesticide Industry as notified by the Ministry of Environment, Forest and Climate Change, *vide* GSR 446 (E), dated 13.6.2011 under the provisions of the Environment (Protection) Rules, 1986.
- (ix) The project proponent shall comply with the environment norms for 'synthetic organic chemical as notified by the Ministry of Environment, Forest and Climate Change, *vide* GSR 608 (E), dated 21<sup>st</sup> July, 2010 under the provisions of the Environment (Protection) Rules, 1986.

- (x) The project proponent shall utilize modern technologies for capturing of carbon emitted and shall also develop carbon sink/carbon sequestration resources capable of capturing more than emitted. The implementation report shall be submitted to the IRO, MoEF&CC in this regard.
- (xi) All necessary precautions shall be taken to avoid accidents and action plan shall be implemented for avoiding accidents. The project proponent shall implement the onsite/offsite emergency plan/mock drill etc. and mitigation measures as prescribed under the rules and guidelines issued in the Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989, as amended time to time, and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.
- (xii) The volatile organic compounds (VOCs)/Fugitive emissions shall be controlled at 99.97 % with effective chillers/modern technology. Regular monitoring of VOCs shall be carried out.
- (xiii) The storage of toxic/hazardous raw material shall be bare minimum with respect to quantity and inventory. Quantity and days of storage shall be submitted to the Regional Office of Ministry and SPCB along with the compliance report.
- (xiv) The occupational health centre for surveillance of the worker's health shall be set up. The health data shall be used in deploying the duties of the workers. All workers & employees shall be provided with required safety kits/mask for personal protection.
- (xv) Training shall be imparted to all employees on safety and health aspects for handling chemicals. Safety and visual reality training shall be provided to employees. Action plan for mitigation measures shall be properly implemented based on the safety and risk assessment studies.
- (xvi) 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.
- (xvii) The solvent management shall be carried out as follows: (a) Reactor shall be connected to chilled brine condenser system. (b) Reactor and solvent handling pump shall have mechanical seals to prevent leakages. (c) Solvents shall be stored in a separate space specified with all safety measures. (d) Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done. (e) Entire plant shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses. (f) All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation.
- (xviii) The PP shall undertake waste minimization measures as below (a) Metering and control of quantities of active ingredients to minimize waste; (b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. (c) Use of automated filling to minimize spillage. (d) Use of Close Feed system into batch reactors. (e) Venting equipment through vapor recovery system. (f) Use of high pressure-hoses for equipment cleaning to reduce wastewater generation.

### Annexure-III

#### **List of the Expert Appraisal Committee (Industry-3) members participated during Video Conferencing (VC) meeting**

S. No.	Name of Member	Designation
1.	<b>Prof. (Dr.) A.B. Pandit</b> Vice Chancellor, Institute of Chemical Technology, Mumbai, Sir JC Bose Fellow, Government of India Email: ab.pandit@ictmumbai.edu.in	Chairman
2.	<b>Dr. Ashok Kumar Saxena, IFS</b> Bungalow No. 38, Sector-8A, Gandhinagar, Gujarat – 382008 E-mail: ashoksaxena1159@gmail.com	Member
3.	<b>Prof. (Dr.) S. N. Upadhyay</b> Research Professor (Hon.), Department of Chemical Engineering & Technology, Indian Institute of Technology (Banaras Hindu University), Varanasi E-mail: <a href="mailto:snupadhyay.che@iitbhu.ac.in">snupadhyay.che@iitbhu.ac.in</a>	Member
4.	<b>Dr. Suresh Panwar</b> House No.4, Gayateri Green Society, NH 58 Bypass, Kankerkhara, Meerut, Uttar Pradesh Email- <a href="mailto:spcpri@gmail.com">spcpri@gmail.com</a>	Member
5.	<b>Shri Tukaram M Karne</b> "SHREYAS ORNATE" F-1, 95-Tulasibagwale Colony, Sahakarnagar-2, PUNE: 411 009, Maharashtra E-mail: <a href="mailto:tmkarne@gmail.com">tmkarne@gmail.com</a>	Member
6.	<b>Prof. (Dr.) Suneet Dwivedi,</b> Professor in K Banerjee Centre of Atmospheric and Ocean Studies, University of Allahabad, Allahabad - 02 Uttar Pradesh E-mail: <a href="mailto:dwivedisuneet@rediffmail.com">dwivedisuneet@rediffmail.com</a> <a href="mailto:/suneetdwivedi@gmail.com">/suneetdwivedi@gmail.com</a>	Member
7.	<b>Shri Santosh Gondhalkar</b> 'Shree' Apartment, Flat 401, Plot No. 22, Tukaram Society, Santnagar, Pune- 411009 E-mail: <a href="mailto:santoshgo@gmail.com">santoshgo@gmail.com</a>	Member

8.	<b>Shri Sanjay Bisht</b> Scientist 'E', Room No. 517, Office of the Director General of Meteorology, Indian Meteorological Department, Musam Bhawan, Lodhi Road, New Delhi -110003 E-mail: <a href="mailto:sanjay.bist@imd.gov.in">sanjay.bist@imd.gov.in</a>	Member
9.	<b>Shri Dinabandhu Gouda</b> Additional Director, DH IPC-I, Room No. 309A, Third Floor, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi – 110032 E-mail: <a href="mailto:dinabandhu.cpcb@nic.in">dinabandhu.cpcb@nic.in</a>	Member
10.	<b>Dr. M. Ramesh</b> Scientist 'E' Ministry of Environment, Forest and Climate Change Indira Paryavaran Bhawan, Room No. V-203, Vayu Wing, Jor Bagh Road, New Delhi-110003 Tel. 011-20819338 E-mail: <a href="mailto:ramesh.motipalli@nic.in">ramesh.motipalli@nic.in</a>	Member Secretary

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**MOM approved by**



**(Prof. Aniruddha B. Pandit)**  
**Chairman**

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