May 1, 2017

The Director
Ministry of Environment & Forests,
Western Region Office, Kendriya Paryavaran Bhavan,
Link Road # 3, E – 5, Ravi Shankar Nagar,
Bhopal – 462 016 (M.P.)

Kind Attn : **Mr. B. B. Barman**

Dear Sir,

Sub : **Half yearly Compliance Report to conditions of Environmental Clearances (October 2016 to March 2017) obtained**

Ref : (1) Environmental Clearance No. J-11011/32/2007-IA-II (I) dtd 23.2007 & (2) EC Application no. IA/GJ/IND2/59852/2016 and ToR vide letter # J-11011/330/ 2016-IA.II (I) dated 9th December, 2016

We are submitting herewith the half yearly compliance report (soft copy also enclosed in the form of CD) to the Environmental Clearance obtained to our Unit from MoEF dated 23rd July, 2007 (period from Oct-2016 to Mar-2017).

We are operating our plants with valid Consents & Authorization from Gujarat Pollution Control Board.

We have applied for Environmental Clearance for expansion of our plants / addition of new products. MoEF have given ToR vide letter # J-11011/330/ 2016-IA.II (I) dated 9.12.2016 (copy attached for your kind reference).

Our Unit has invested INR 21.48 Crores in Environmental Management System so far and the investment detail is attached along with the report. We have also enclosed a filled up data sheet for existing Environmental Clearance obtained for your kind perusal.

Cont...Pg 2 .....

**UPL Limited** (erstwhile United Phosphorus Ltd.) **Factory & Regd. Office:** 3-11, GIDC, Vapi 396 195, Gujarat, India.
**P** +91 260 6533101 **F:** +91 260 2401823 **CIN:** L24219GJ1985PLC025132
www.uplonline.com

UPL

….. Pg 2 …..

We would like to request you to kindly visit our Vapi unit and verify our compliances against given conditions of exiting obtained Environmental Clearance.

Thanking you,

Yours faithfully,
For **UPL Limited**

**Subodh D Namjoshi**
Sr. General Manager - Manufacturing

Encl : As above

Copy to : The Zonal Officer
Central Pollution Control Board
Parivesh Bhavan, Opp- VMC Ward Office # 10,
Subhanpura,
Vadodara – 390 023.

The Regional Officer
Gujarat Pollution Control Board
Vapi.

***GPCB XGN ID # 24711***

RECEIVED
Sign :
08/05/17

**UPL Limited** (erstwhile United Phosphorus Ltd.) **Factory & Regd. Office:** 3-11, GIDC, Vapi 396 195, Gujarat, India.
**P** +91 260 6533101 **F** : +91 260 2401823 **CIN** : L24219GJ1985PLC025132 www.uplonline.com

| Sr. No | Conditions | Compliance Status |
|---|---|---|
| 2 | The Ministry of Environment & Forests has examined the proposal. It is noted that the proposal is to expand the existing Pesticides Unit at plot 3-11, GIDC, Vapi, Gujarat. The cost of the expansion is Rs. 37.70 Crores out which cost for environment management will be Rs. 04.00 Crores. The land area is 58,101 sq m out of which built up area is 49,068 sq m. Area required for expansion is 733.6 sq m which will be within the existing buildings only. Out of this, area under Green belt is 3000 sq m. River Damanganga is at 1.5 km and River Kotak is at 7 km from the site. The project does not involve an eco-sensitive zone in 7 km area of the site. The following changes in existing Product Mix and final quantities will be as follows: | **Noted.** |

| Sr. No | Conditions | | Compliance Status | | |
|---|---|---|---|---|---|
| | **S.No.** | **Products** | **Existing (A) MTM** | **Proposed Expansion (B) MTM** | **Capacity After Expansion (A) + (B)= (C) MTM** |
| | 1 | Aluminum Phosphide (Fumigant) | 150 | **50** | **200** |
| | 2 | Zinc Phosphide (Rodenticide) | 40 | **0** | **40** |
| | 3 | Cypermethrin (Insecticide) | 113.7 | **286.3** | **400** |
| | 4 | Alpha Cypermethrin (Insecticide) | 0 | **10** | **10** |
| | 5 | Permethrin (Insecticide) | 20.83 | **79.17** | **100** |
| | 6 | Desmedipham (DMP) (Herbicide) OR Penmedipham (PMP) Either OR | 0 | **100** | **100** |
| | 7 | Bifenthrin (Insecticide) | 0 | **20** | **20** |
| | 8 | Clodinofop (UPH-203) (Herbicide) | 0 | **20** | **20** |
| | 9 | Safner (UPH-203 S) (Herbicide) | 0 | **5** | **5** |
| | 10 | Thiomethaxam (STAR) (Insecticide) | 0 | **5** | **5** |
| | 11 | Magnesium Phosphide (Fumigant) | 0 | **8** | **8** |
| | 12 | Metametron (Herbicide) | 25 | **0** | **25** |
| | 13 | Sulfosulfuron (Herbicide) | 0 | **2** | **2** |
| | 14 | Heptenophos (Pesticide) | 8.33 | **0** | **8.33** |
| | **Total Pesticide** | | **357.86** | **584.97** | **942.83** |
| | 15 | Red Phosphorus (Non Pesticide) | 100 | **-20** | **80** |
| | **Formulation Products** | | | | |
| | 16 | Pesticide Formulation Product | 300 | **0** | **300** |
| | **Intermediate Products** | | | | |

| Sr. No | Conditions | | Compliance Status | | |
|---|---|---|---|---|---|
| | 17 | Dichloro Vinyl Acid Chloride (DVACL) | 120 | **180** | **300** |
| | 18 | Metaphenoxy Benzaldehyde (MPBAD) | 90 | **185** | **275** |
| | 19 | ASAM | 0 | **2** | **2** |
| | 20 | Hydrazide | 20 | **0** | **20** |
| | 21 | Phosphorous Pentasulfide | 350 | **-350** | **0** |
| | **Total Pesticide Intermediates** | | **580** | **17** | **597** |

**The following will be the change in the quantities of By-products:**

| | S. No. | Byproducts | Existing (MTM) | After Expansion (MTM) |
|---|---|---|---|---|
| | 1 | Phosphoric Acid (100 %) | 15 | 25 |
| | 2 | Hydrochloric Acid (30 %) | 200 | 2048 |
| | 3 | Spent Sulfuric Acid (46 -68 %) | 335 | 1025 |
| | 4 | Aluminum Chloride (20 %) | 615 | 1130 |
| | 5 | Sodium Sulfite (20%) | 440 | 930 |
| | 6 | Phosphorous Oxychloride | 165 | 412 |
| | 7 | Ammonium Chloride | 82 | 34.8 |

| Sr. No | Conditions | Compliance Status |
|---|---|---|
| 3 | The solvent recovery is about 95%. All liquid raw material will be stored in storage Tanks and Drums and will be transported by road.<br>Water consumption will be 3790 KLD which will be met through GIDC water supply.<br><br>All the incinerable waste shall be sent to the common incineration system of BEIL for incineration. Other waste shall be sent to the approved TSDF site of BEIL, Ankleshwar for which unit has membership.<br><br>Natural gas will be used for Boiler as alternative fuel. | Solvent recovery is above 96% from spent solvent and will be further improved. With additional chilled water / brine in secondary condenser, the solvent vapour recovery is increasing and fugitive emissions are reduced. To reduce fugitive emissions, scrubbers are also provided through condenser.<br><br>All liquid raw materials are being kept in drums & suitable storage tanks only.<br><br>The entire water requirement is met by GIDC water supply only. Our water consumption is well within the limit prescribed by GPCB. Water cess return is also being submitted regularly. Avg water consumption is @ 623.27 KLD against GPCB permissible limit of 3815.23 KLD for period Oct 2016 to Mar 2017. **The copy of water-cess assessment is attached herewith as Annexure-8.**<br><br>We have taken membership **(Please refer Annexure- 4)** of BEIL and sending hazardous wastes (landfillable and incinerable) to BEIL regularly. The detail of wastes disposed off is given below (Oct 2016 to Mar 2017):<br><br>Average Landfillable waste @ 271.95 MT per Month against GPCB permitted quantity @ 1337.81 MT per Month.<br><br>Average Incineration waste @ 24.05 MT per Month against GPCB permitted quantity @ 715.12 MT per Month.<br><br>We are using natural gas as a fuel for boiler.<br>**Complied.** |
| 4 | The project activity is listed at 5(b) and 5(f) in the Scheduled of EIA Notification, 2006 and is of A Category. The project is submitted under the EIA Notification, 2006 for evaluation of completeness of Draft EIA/EMP and for additional TORs, if any, as per Para 2.2.2 (b) of the Interim Operational Guidelines dated 13th October 2006 issued by the Ministry.<br>Since the proposed project is in industrial area, It would not need Public Consultation as per Para 7(i) III. Stage (3) (b) Public Consultation of EIA Notification, 2006. | **Noted.** |
| 5 | Based on the information provided, the Ministry of Environment and Forests hereby accords environmental clearance to above project under the provisions of EIA Notification dated 14th September 2006 subject to the compliance of the following Specific and General conditions: | **Noted.** |
| **A. SPECIFIC CONDITIONS:** | | |

<table>
<tr><th>Sr. No</th><th>Conditions</th><th>Compliance Status</th></tr>
<tr><td>i</td><td>The gaseous emissions (SO2, NOX, VOC and HC) particulate matter from various process units shall conform to the standards prescribed by the concerned authorities from time to time. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.</td><td>We do process stack monitoring once in a month through our lab and through third party (ENPRO Envirotech and Engineers Pvt Ltd). Summarized monitoring data of ENPRO Envirotech and Engineers Pvt Ltd is given below:
<table>
<tr><th>Parameter</th><th>Average Monitoring results (Oct 2016 to Mar 2017)</th><th>GPCB Permissible Limit</th></tr>
<tr><td colspan="3">Flue Gas Stack Emissions- Fuel as Natural Gas</td></tr>
<tr><td colspan="3">Stack attached to Boiler 1- 10 TPH</td></tr>
<tr><td>PM</td><td>16-130 mg/nm3</td><td>150</td></tr>
<tr><td>SO2</td><td>45.3-52.3 ppm</td><td>100</td></tr>
<tr><td>Nox</td><td>4.3-14.1 ppm</td><td>50</td></tr>
<tr><td colspan="3">Stack attached to Thermic fluid heater-Propanil plant</td></tr>
<tr><td>PM</td><td>BDL mg/nm3</td><td>150</td></tr>
<tr><td>SO2</td><td>BDL ppm</td><td>100</td></tr>
<tr><td>Nox</td><td>8.8-12.3 ppm</td><td>50</td></tr>
<tr><td colspan="3">Stack attached to Boiler 2- 8 TPH</td></tr>
<tr><td>PM</td><td>28-121 mg/nm3</td><td>150</td></tr>
<tr><td>SO2</td><td>BDL-55.4 ppm</td><td>100</td></tr>
<tr><td>Nox</td><td>3.1-17.2 ppm</td><td>50</td></tr>
<tr><td colspan="3">Stack attached to DG Set-1250 KVA</td></tr>
<tr><td>PM</td><td>82 mg/nm3</td><td>150</td></tr>
<tr><td>SO2</td><td>33.4 ppm</td><td>100</td></tr>
<tr><td>Nox</td><td>21.9 ppm</td><td>50</td></tr>
<tr><td colspan="3">Process Stack Emission</td></tr>
<tr><td colspan="3">Stack attached to Mist Eliminator & Water Scrubber- ALP plant firing chamber</td></tr>
<tr><td>PM</td><td>2.9-5.6 mg/nm3</td><td>20</td></tr>
<tr><td>P2O5 as H3PO4</td><td>2.64-3.45 mg/nm3</td><td>5</td></tr>
<tr><td colspan="3">Stack attached to Mist Eliminator- ZnP plant Reactor</td></tr>
<tr><td>PM</td><td>9.6-13.5 mg/nm3</td><td>20</td></tr>
<tr><td>P2O5 as H3PO4</td><td>1.86-3.04 mg/nm3</td><td>5</td></tr>
<tr><td colspan="3">Stack attached to Lambda Cyhalothrin Plant- Alkali Scrubber</td></tr>
<tr><td>HCl</td><td>4.9 mg/nm3</td><td>20</td></tr>
<tr><td>SO2</td><td>12.4 mg/nm3</td><td>40</td></tr>
<tr><td colspan="3">Stack attached to Metribuzine Plant- Water + Caustic Scrubber</td></tr>
<tr><td>HBR</td><td>2.1-3.8 mg/nm3</td><td>5</td></tr>
</table>
All parameters are well within GPCB permissible limit. The detailed report is attached as Annexure-2.<br><br>Complied.</td></tr>
</table>

| Sr. No | Conditions | Compliance Status |
|---|---|---|
| ii | New Standards for pesticides unit, as proposed by the CPCB under the E (P) A, 1986 shall be followed by the Unit. | We are following the new norms prescribed for pesticide sector. GPCB has already included new norms in CC&A as mentioned in sl. No. (i).<br><br>**Complied.** |
| iii | Stacks of 30.5 m will be provided with the Boilers and 15.5 m with D.G. Sets for dispersion of emissions | We have provided all stack heights of 30.5 meter for Boiler and 15.5 meter for the D.G. Set as per CPCB guideline.<br><br>**Complied.** |
| Iv | Water /Alkali Two stage Scrubber systems, Mist Eliminator with Koch filter and Wet Scrubber with Mist Eliminator shall be installed for the boilers Thermic Fluid heaters, D.G. Sets and process stacks from pesticides (tech), pesticide intermediates and AlP, ZnP plant. The scrubbed water shall be sent to ETP for further treatment. | We are using natural gas as a fuel in Boilers. Mist eliminator & Demister are provided along with water scrubber in AlP and ZnP plant. Thermic Fluid Heaters are natural gas based only. DG Sets are only for emergency power in case of power failure. The scrubbed water generated from each process scrubber is being sent to ETP for further treatment. **Complied.** |

| | | |
|---|---|---|
| v | Regular monitoring of emissions from the stack shall be carried out for HC and VOC, besides the criteria pollutant. Levels of HC and VOC shall also be monitored in the ambient air at various probable locations in and around the plant. | Nitrogen blanketing is used for certain material storages. Breather valves are provided for solvent storages wherever necessary. Closed handling system and Seal-less pumps/Mechanical seal are provided for hazardous/toxic chemical handling such as bromine, PCL3, POCL3, Phenol. Solvent traps/ Condensers are provided. Chilled Brine system is provided for VOC emission control. VOC monitoring is being carried out through third party (ENPRO Envirotech and Engineers Pvt Ltd) and **result is attached herewith as Annexure-3.**<br><br>We do process stack & ambient air monitoring through our lab and through third party (ENPRO Envirotech and Engineers Pvt Ltd). Summarized monitoring data of ENPRO Envirotech and Engineers Pvt Ltd is given below: |

| *Parameter* | *Average Monitoring results (Oct 2016 to Mar 2017)* | *GPCB Permissible Limit* |
|---|---|---|
| ***Flue Gas Stack Emissions- Fuel as Natural Gas*** | | |
| ***Stack attached to Boiler 1- 10 TPH*** | | |
| PM | 16-130 mg/nm3 | 150 |
| SO2 | 45.3-52.3 ppm | 100 |
| Nox | 4.3-14.1 ppm | 50 |
| ***Stack attached to Thermic fluid heater-Propanil plant*** | | |
| PM | BDL mg/nm3 | 150 |
| SO2 | BDL ppm | 100 |
| Nox | 8.8-12.3 ppm | 50 |
| ***Stack attached to Boiler 2- 8 TPH*** | | |
| PM | 28-121 mg/nm3 | 150 |
| SO2 | BDL-55.4 ppm | 100 |
| Nox | 3.1-17.2 ppm | 50 |
| ***Stack attached to DG Set-1250 KVA*** | | |
| PM | 82 mg/nm3 | 150 |
| SO2 | 33.4 ppm | 100 |
| Nox | 21.9 ppm | 50 |
| ***Process Stack Emission*** | | |
| ***Stack attached to Mist Eliminator & Water Scrubber- ALP plant firing chamber*** | | |
| PM | 2.9-5.6 mg/nm3 | 20 |
| P2O5 as H3PO4 | 2.64-3.45 mg/nm3 | 5 |
| ***Stack attached to Mist Eliminator- ZnP plant Reactor*** | | |
| PM | 9.6-13.5 mg/nm3 | 20 |
| P2O5 as H3PO4 | 1.86-3.04 mg/nm3 | 5 |
| ***Stack attached to Lambda Cyhalothrin Plant- Alkali Scrubber*** | | |
| HCl | 4.9 mg/nm3 | 20 |
| SO2 | 12.4 mg/nm3 | 40 |

<table>
<tr><th>Sr. No</th><th>Conditions</th><th>Compliance Status</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td colspan="3">Stack attached to Metribuzine Plant- Water + Caustic Scrubber</td></tr>
<tr><td>HBR</td><td>2.1-3.8 mg/nm3</td><td>5</td></tr>
</table>
<table>
<tr><th>PARAMETERS</th><th>Avg Monitoring Result (Oct 2016 to Mar 2017)</th><th>GPCB Permissible Limit (µg/m3)</th></tr>
<tr><td>PM10</td><td>71-83 µg/m3</td><td>100</td></tr>
<tr><td>PM2.5</td><td>27-41 µg/m3</td><td>60</td></tr>
<tr><td>SO2</td><td>19.8-32.6 µg/m3</td><td>80</td></tr>
<tr><td>NOx</td><td>30.4-43.2 µg/m3</td><td>80</td></tr>
<tr><td>CL2</td><td>BDL</td><td>100</td></tr>
<tr><td>HCL</td><td>65.3-85.3 µg/m3</td><td>200</td></tr>
<tr><td>PCL3</td><td>BDL</td><td>100</td></tr>
<tr><td>P2O5</td><td>BDL</td><td>30</td></tr>
<tr><td>Br2</td><td>BDL</td><td>20</td></tr>
<tr><td>HBR</td><td>BDL</td><td>300</td></tr>
</table>
All parameters are well within GPCB permissible limit. The detailed report is attached as Annexure-2.<br><br>Complied.</td></tr>
<tr><td>vi</td><td>The locations of ambient air quality monitoring stations shall be reviewed in consultation with the State Pollution Control Board (SPCB) and additional stations shall be installed, if required in the downwind direction as well as where maximum ground level concentration are anticipated.</td><td>We have installed three Ambient Air Monitoring stations as per SPCB guideline and are in operation.<br><br>Complied.</td></tr>
<tr><td>vii</td><td>FO as fuel in boilers shall be replaced with natural gas as early as possible.</td><td>We are using only natural gas as fuel in boiler. FO is being used only in an emergency.<br><br>Complied.</td></tr>
<tr><td>viii</td><td>Use of toxic solvents like Methylene Chloride (M.C.) etc. shall be minimized to the extent possible. No Benzene shall be used as solvent and no odorous compounds/gas like Mercaptans or Hydrogen Sulfide shall be used or formed in any of reactions at the site.</td><td>We are not using/generated Methylene Chloride OR Benzene or Mercaptans at the site.<br><br>Complied</td></tr>
<tr><td>ix</td><td>Bioassay test and toxicity index shall be carried out regularly.</td><td>We do Bioassay and toxicity test through our Internal lab as well as through external party (ENPRO Envirotech and Engineers Pvt Ltd). As per third party result, average 90 to 92 % fish survival ratio is obtained by keeping fish for 96 hrs in 100% treated effluent, while Tf is achieved as 1.<br>Complied.</td></tr>
</table>

| Sr. No | Conditions | Compliance Status |
|---|---|---|
| x | All the storage tanks will be under negative pressure to avoid any leakages. Breathers, N2 blanketing and condensers will be provided for all the storage tanks. Closed handling systems for chemicals and solvents will be provided. Magnetic seals will be provided for pumps/agitators for reactors for reduction of fugitive emissions.<br><br>Chilled Brine based condensers shall be used to prevent VOC emissions. Solvent traps shall be installed wherever necessary. | Nitrogen blanketing is used for certain material storages. Breather valves are provided for solvent storages wherever necessary. Closed handling system and Seal-less pumps/Mechanical seal are provided for hazardous/toxic chemical handling such as bromine, PCL3, POCL3, Phenol. Solvent traps/ Condensers are provided. Chilled Brine system is provided for VOC emission control. VOC monitoring is being carried out through third party (ENPRO Envirotech and Engineers Pvt Ltd) and **result is attached herewith as Annexure-3.**<br><br>**Complied.** |
| xi | All venting equipment shall have vapors recovery system. All the pumps and other equipment's where there is a likelihood of HC leakages shall be provided with Leak Detection and Repair (LDAR) system and LEL indicators and Hydrocarbon detectors. Provision for immediate isolation of such equipment, in case of a leakage will also be made. The company shall provide a well-defined Leak Detection and Repair (LDAR) programme for quantification and control of fugitive emissions. The detectors sensitivity will be in ppm levels. | All venting of equipment are connected to condensors/ process Scrubbers to scrub excess vapour.<br><br>LDAR (Leak Detection And Repairs) system is being followed to reduce VOC / HC emission. We also do third party (ENPRO Envirotech and Engineers Pvt Ltd) VOC/ HC monitoring and report is attached herewith. We also monitor LEL through LEL meter. In addition, on line sensors are provided with alarm system for hazardous chemicals like Cl2, MeBR, HCL, SO2, NOx, phosphine etc.<br><br>Usage of seal less pumps for toxic chemicals.<br><br>Mechanical seals for certain reactors.<br><br>Regular inspections are carried out with reference to plant operations like Pumps, Valves, Pipes etc, as per maintenance software (SAP).<br><br>**Complied.** |
| xii | Spent solvents shall be recovered as far as possible & solvent recovery shall be further increased from the present 95% to at least 98 percent. Solvent vapors emitted during purification process from purification tanks as fugitive emissions shall be reduced as far as possible. | Solvent recovery is above 96% from spent solvent and will be further improved. For example, Hexane Recovery in Cypermetrin above **96.7%;**<br>Butyl Acetate recovery in Penmedipham above **96.9%;** Toluene recovery in safner above **96.7**%.<br><br>With additional chilled water / brine in secondary condenser, the solvent vapour recovery is increasing and fugitive emissions are reduced. To reduce fugitive emissions, scrubbers are also provided through condenser.<br><br>**Complied.** |
| xiii | Phosphorous shall be stored under water to prevent fuming. | We have kept practicing to store phosphorous under water only.<br>**Complied.** |
| xiv | Phosphine monitors in Aluminum Phosphide plant shall be installed. Portable monitoring instruments for other gases like Chlorine and Ammonia shall be provided. | We have already installed Phosphine & Chlorine monitors in ALP & MPBAD Plants respectively.<br>Portable VOC meter is also used for Chlorine & Ammonia emission.<br>**Complied.** |

| Sr. No | Conditions | Compliance Status |
|---|---|---|
| xv | Fugitive emissions in the work zone environment, product, raw materials storage area shall be regularly monitored. The emissions shall conform to the limits imposed by the State Pollution Control Boards/Central Pollution Control Board. | Fugitive emission is controlled by using seal-less pumps for toxic chemicals, flange-guards, mechanical seals for pumps and reactors etc. VOC monitoring is being carried out through third party (ENPRO Envirotech and Engineers Pvt Ltd) and **result is attached herewith as Annexure-3.**<br>However, there is no such standards are provided for fugitive emissions by SPCB/ CPCB.<br>**Complied.** |

<table>
<tr><th>Sr. No</th><th>Conditions</th><th>Compliance Status</th></tr>
<tr><td>xvi</td><td>No ground water will be used for the project. The waste water generation from the Process / Wash, Cooling Tower / Boiler water Blow down and Domestic shall not exceed 2,398 KLD which will be treated in modified and upgraded ETP of the company.<br><br>After the expansion, high TDS low COD effluent will be segregated and sent to MEE and High COD low- TDS effluent will be sent to incinerator of BEIL.<br><br>Cyanide bearing effluent will be detoxified and then sent to ETP after checking cyanide and pesticide levels.<br><br>Only the normal effluent will be sent to company’s ETP for further treatment to achieve GPCB norms. The treated effluent will be disposed off into CETP through GIDC, Vapi drainage system.</td><td>We are not using ground water and the entire water requirement is met by GIDC water supply only. Our water consumption is well within the limit prescribed by GPCB. Water cess return is also being submitted regularly. Avg water consumption is @ 623.27 KLD against GPCB permissible limit of 3815.23 KLD for period Oct 2016 to Mar 2017.<br><br>Average effluent discharge @ 385.43 KLD against GPCB permissible limit of 2405.94 KLD for period Oct 2016 to Mar 2017. All effluent streams are being treated in ETP. The CETP Membership Certificates is attached as Annexure-5. The summarized third party (ENPRO Envirotech and Engineers Pvt Ltd) data is a s follows (Oct 2016 to March 2017):<br><br>
<table>
<tr><th>Sr No</th><th>Parameters</th><th>GPCB Permissible Limit</th><th>CETP Permissible Limit</th><th>Average Result</th></tr>
<tr><td>1</td><td>pH</td><td>6.5-8.5</td><td>6.5-8.5</td><td>6.95</td></tr>
<tr><td>2</td><td>COD</td><td>250 mg/l</td><td>1000 mg/l</td><td>131.33</td></tr>
<tr><td>3</td><td>TSS</td><td>100 mg/l</td><td>300 mg/l</td><td>75.33</td></tr>
<tr><td>4</td><td>Amm. N2</td><td>50 mg/l</td><td>50 mg/l</td><td>9.22</td></tr>
</table>
The effluent with high TDS is being treated in MEE and High COD with higher calorific value effluent is sent to BEIL for incineration.<br>Avg. TDS data for MEE inlet- 250000 mg/l.<br><br>Cyanide carrying effluent is detoxified with sodium hypo chloride and sent to ETP for further treatment after analyzing cyanide in particular effluent stream.<br><br>The treated effluent is sent to CETP Vapi for further treatment and disposal through underground drainage system.<br>All parameters are well within GPCB/CETP permissible limit.<br>Complied.</td></tr>
</table>

| Sr. No | Conditions | Compliance Status |
|---|---|---|
| xvii | Hazardous and toxic waste generated during process like distillation residue, spent carbon, spent mixture solvents, process organic residue shall be segregated and sent for treatment and disposal. Incinerable waste shall be incinerated in a common incineration facility or otherwise these may be incinerated in a properly designed in-house incinerator with energy recovery facility. The incinerator shall meet the CPCB standards and guidelines.<br>Hazardous wastes temporary storage shall be properly maintained and stock shall be minimum. Hazardous Waste containers shall be properly labeled. | We do not have any in-house incinerator in the unit. We are members of the Common Incineration Facility operated by BEIL, Ankleshwar and all types of incineration waste is being sent to BEIL for incineration regularly. Online manifest system is adopted for sending the waste to BEIL along with tracking system.<br><br>We do not have any hazardous waste storage area and all hazardous waste is being sent to BEIL for landfilling & incineration and minimum stock is kept at the site.<br><br>**BEIL Membership certificate is attached as Annexure-4.**<br><br>**Complied.** |
| xviii | Emissions from the incinerator shall be with in the prescribed norms for the incinerators. Monitoring Protocol as prescribed in these standards shall be followed. | **Not Applicable** as we do not have any captive incinerator. All incineration waste is being sent to BEIL for incineration. |
| xix | The company shall undertake following Waste Minimization measures.<br>• Metering and control of quantities of active ingredients to minimize waste.<br>• Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.<br>• Use of automated filling to minimize spillage.<br>• Use of Close Feed system into batch reactors.<br>• Venting equipment through vapor recovery system.<br>• Use of high pressure hoses for equipment clearing to reduce wastewater generation. | Hazardous waste is being monitored on weekly basis and report is being sent to top management. In addition to this, we have dedicated departments such as Green Cell, MaxPro, Maxpro+ who are working on to reduce waste generation at source.<br>we are generating few by-products and consume as a raw material within a plant or at other unit wherever applicable.<br>We have also adopted automated system for filling and packing. Also, closed loop system is used in reactors to minimize wastage.<br><br>All venting of equipment are connected to condensors/ process Scrubbers to scrub excess vapour.<br><br>We are using high pressure hose system for equipment cleaning.<br><br>**Complied.** |
| xx | The project authorities shall strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in 2000 for handling of hazardous chemicals. Necessary approvals from Chief Controller of Explosives must be obtained before commissioning of the expansion project. Requisite On-site and Off-site Disaster Management Plans will be prepared and implemented. Regular mock drills shall be carried out for both On-site and Off-Site plans. | We have got an approval from Chief Controller of Explosives as per the requirements. On Site Emergency Plan is updated and mock drills are conducted regularly on quarterly basis.<br><br>We have submitted required data for off site emergency plan which is coordinated by District authorities.<br>**Complied.** |
| xxi | All Transportation of Hazardous Chemicals shall be as per the MVA, 1989. As submitted by the unit to the Ministry, transportation of Hazardous Chemicals shall be switched over to the railways. | The discussion in under progress.<br><br>**Complied.** |
| xxii | The company shall develop rain water harvesting structures to harvest the run off water for recharge of ground water. | We are collecting the rain water from Admin building & canteen area and utilized for gardening/nearby cooling tower. We do not recharge ground water as per local restriction.<br>**Complied.** |

| Sr. No | Conditions | Compliance Status |
|---|---|---|
| xxiii | Minimum 25% of the total area shall be developed as green belt as per the CPCB guidelines. | Our total greenbelt area is 5.66 acre (approx.. 33 %) against total available land area of 17.20 acre. In addition to this, we have also earmarked 5 Acres of Land for various plantations including teakwood trees at our nearby land on Survey no.39/1 at Village Nahuli.<br>**Complied.** |
| xxiv | Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act. | The company is having full time medical doctor and also Occupational Health & Safety. Pre-employment and routine medical examinations are being carried out. We are also doing full body medical checkup by external expert agency once in two years. All medical records are being maintained. **Sample of medical report is attached as Annexure-6.**<br>**Complied.** |
| xxv | Training shall be imparted to all employees on safety and health aspects of chemicals handling. As informed to the Ministry, OHSAS 18001 shall be continued. 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. | Pre-employment and routine medical examinations are conducted. Training is imparted to all employees. There is Safety Talk every day.<br>**Complied.** |
| xxvi | Usage of PPE's by all employees/ workers shall be ensured. | Proper PPE's are given to all employees and workers.<br>**Complied.** |
| xxvii | The company shall strictly follow all the recommendations mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP). | All points are implemented. Details are given as **Annexure-9.**<br>**Complied.** |
| xxviii | The Company shall harvest surface as well as rainwater from the rooftops of the buildings proposed in the expansion project and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water. | We are collecting the rain water from Admin building & canteen area and utilized for gardening/nearby cooling tower. We do not recharge ground water as per local restriction.<br>**Complied.** |

| Sr. No | Conditions | Compliance Status |
|---|---|---|
| xxix | All the recommendations made by the consultants in respect of environmental management and risk mitigation measures relating to the project shall be implemented. | All the recommendations with respect to Environment Management Plan and Risk Assessment have been implemented.<br><br>Environmental Cell / Green cell– in operation<br>Water Environment – segregation, proper treatment and disposal.<br><br>Air Environment – air pollution control systems installed and operated.<br><br>Noise Environment – monitoring being done and within limits.<br><br>Green belt development – developed green belt and further area being developed.<br><br>Health and Safety – implemented OHSAS 18001, Risk Mitigation measures are implemented.<br><br>On Site Emergency Plan updated – mock drills are conducted regularly.<br>**Complied.** |
| xxx | The company will undertake all relevant measures, as indicated during the Public Hearing for improving the Socio-economic conditions of the surrounding area. CSR activities will be undertaken by involving local villages and administration. | Public hearing was not conducted for this particular project as per Notification of 2006. However, CSR Activities are undertaken by the Company and **list of CSR activities is attached as Annexure-7.** |
| xxxi | The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment. The eco-development plan should be submitted to the SPCB within three months of receipt of this letter for approval. | Various eco-development activities are undertaken. Training programs on cleaner production was organized at our Company along with GPCB / GCPC. The Company has taken various CSR activities in Vapi / surrounding area report is attached as Annexure-<br>One of the major CSR activities taken up by the UPL Group is setting up and operation of an Engineering College – Shroff S R Rotary Institute of Chemical Technology – approximately 15 kms from the Ankleshwar. In addition to this, the company has taken various initiatives such as,<br><br>• Supporting the common effluent treatment plant.<br>• Supporting the local notified industrial estate in municipal solid waste collection and treatment (Supported by giving technology for kitchen waste treatment).<br>• Creating Environmental awareness in local community including celebration of Energy Conservation Week & National Safety Week.<br>• Supporting Vapi Industries Association in organizing environmental activities.<br><br>**Complied.** |
| **B. GENERAL CONDITIONS:** | | |

| Sr. No | Conditions | Compliance Status |
|---|---|---|
| i | The project authorities shall strictly adhere to the stipulations made by the State Pollution Control Board. | We are complying all conditions of CC&A given by GPCB. **Please find valid CC&A copy as Annexure-1 for your ready reference.**<br>**Complied.** |
| ii | No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. 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. | The Unit has not done any modification OR expansion without getting prior approval from the Ministry. Valid EC/NOC/CC&A received from the Government Authorities for any expansion OR modification.<br><br>**Complied.** |

<table>
<tr><th>Sr. No</th><th>Conditions</th><th>Compliance Status</th></tr>
<tr><td>iii</td><td>At no time, the emissions shall exceed the prescribed limits. In the event of failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.</td><td>We do internal monitoring through our lab as well as through third party (ENPRO Envirotech and Engineers Pvt Ltd) once in a month and Summarized monitoring data is given below:
<table>
<tr><th>Parameter</th><th>Average Monitoring results (Oct 2016 to Mar 2017)</th><th>GPCB Permissible Limit</th></tr>
<tr><td colspan="3">Flue Gas Stack Emissions- Fuel as Natural Gas</td></tr>
<tr><td colspan="3">Stack attached to Boiler 1- 10 TPH</td></tr>
<tr><td>PM</td><td>16-130 mg/nm3</td><td>150</td></tr>
<tr><td>SO2</td><td>45.3-52.3 ppm</td><td>100</td></tr>
<tr><td>Nox</td><td>4.3-14.1 ppm</td><td>50</td></tr>
<tr><td colspan="3">Stack attached to Thermic fluid heater-Propanil plant</td></tr>
<tr><td>PM</td><td>BDL mg/nm3</td><td>150</td></tr>
<tr><td>SO2</td><td>BDL ppm</td><td>100</td></tr>
<tr><td>Nox</td><td>8.8-12.3 ppm</td><td>50</td></tr>
<tr><td colspan="3">Stack attached to Boiler 2- 8 TPH</td></tr>
<tr><td>PM</td><td>28-121 mg/nm3</td><td>150</td></tr>
<tr><td>SO2</td><td>BDL-55.4 ppm</td><td>100</td></tr>
<tr><td>Nox</td><td>3.1-17.2 ppm</td><td>50</td></tr>
<tr><td colspan="3">Stack attached to DG Set-1250 KVA</td></tr>
<tr><td>PM</td><td>82 mg/nm3</td><td>150</td></tr>
<tr><td>SO2</td><td>33.4 ppm</td><td>100</td></tr>
<tr><td>Nox</td><td>21.9 ppm</td><td>50</td></tr>
<tr><td colspan="3">Process Stack Emission</td></tr>
<tr><td colspan="3">Stack attached to Mist Eliminator & Water Scrubber- ALP plant firing chamber</td></tr>
<tr><td>PM</td><td>2.9-5.6 mg/nm3</td><td>20</td></tr>
<tr><td>P2O5 as H3PO4</td><td>2.64-3.45 mg/nm3</td><td>5</td></tr>
<tr><td colspan="3">Stack attached to Mist Eliminator- ZnP plant Reactor</td></tr>
<tr><td>PM</td><td>9.6-13.5 mg/nm3</td><td>20</td></tr>
<tr><td>P2O5 as H3PO4</td><td>1.86-3.04 mg/nm3</td><td>5</td></tr>
<tr><td colspan="3">Stack attached to Lambda Cyhalothrin Plant- Alkali Scrubber</td></tr>
<tr><td>HCl</td><td>4.9 mg/nm3</td><td>20</td></tr>
<tr><td>SO2</td><td>12.4 mg/nm3</td><td>40</td></tr>
<tr><td colspan="3">Stack attached to Metribuzine Plant- Water + Caustic Scrubber</td></tr>
<tr><td>HBR</td><td>2.1-3.8 mg/nm3</td><td>5</td></tr>
</table>
All parameters are well within GPCB permissible limit. The detailed report is attached as Annexure-2.<br>Complied.</td></tr>
</table>

| Sr. No | Conditions | Compliance Status |
|---|---|---|
| iv | The project authorities shall strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000. Authorization from the SPCB shall be obtained for collection, treatment, storage, and disposal of hazardous wastes. | We are complying all rules and regulations as per MSIHC Rules and Hazardous waste (Management, Handling & transboundary Movement) rule 2008. We have obtained Authorization from SPCB **(Please refer Annexure-1)**.<br>**Complied.** |
| 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). | Noise monitoring is being done once in a month through third party (ENPRO Envirotech and Engineers Pvt Ltd). Ear muffs & ear plugs are provided to the person working in high noise area like air compressor, blower etc. Acoustic enclosures are also provided. Noise parameter range (Oct 2016 to Mar 2017) is as follows:<br><br>Range: 57.8 to 74.3 dB (GPCB Permissible limit- 75 dB)<br>**The detailed report is attached as Annexure-2.**<br><br>**Complied.** |
| | | |
| vi | The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. | All the recommendations with respect to Environment Management Plan and Risk Assessment have been implemented.<br><br>Environmental Cell – in operation.<br><br>Water Environment – segregation, proper treatment and disposal.<br><br>Air Environment – air pollution control systems installed and operated.<br><br>Noise Environment – monitoring being done and within limits.<br><br>Green belt development – developed green belt and further area being developed.<br><br>Health and Safety – implemented OHSAS 18001, Risk Mitigation measures are implemented.<br><br>On Site Emergency Plan updated – mock drills are conducted regularly.<br>**Complied.** |

| Sr. No | Conditions | Compliance Status |
|---|---|---|
| vii | A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions. | We have separate Environmental Management Cell. Additionally, Company have Green Cell working exclusively on improving in environmental performance by converting waste streams into valuable products, improving ETP performance etc.<br><br>Water, Stack Monitoring, Bio Assay Test, $T_f$ Factor Test, Ambient Air Monitoring, VOC monitoring, Solid Waste Analysis, Noise Level Monitoring are carried out in our full-fledged internal laboratory. Also, Environmental Audit is being carried out regularly.<br>**Complied.** |
| viii | The project authorities shall earmark separate funds of Rs. 04.00 Crores to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose. | The Company has spent **INR 21.48 crores** for environmental protection measures along with the projects implemented. The revenue expenditure for environmental protection measures is included in our budget and sufficient amount is available. **The detail of expenditure is given separately.**<br>**Complied.** |
| ix | The implementation of the project vis-à-vis environmental action plans shall be monitored by the concerned Regional Office of the Ministry/SPCB / CPCB. A six monthly compliance status report shall be submitted to monitoring agencies. | We are submitting the half yearly compliance report in October and April every year to the Ministry/SPCB/CPCB.<br>**Complied.** |
| x | 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://envfor.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. | Advertisement was given Gujarati & English Newspaper and details submitted to GPCB and MoEF.<br><br>**Complied.** |

<table>
<tr><th>Sr. No</th><th>Conditions</th><th>Compliance Status</th></tr>
<tr><td>xi</td><td>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.</td><td>We are giving details of the projects implemented along with the half yearly report. We are giving below the details of the projects implemented.<br><br>
<table>
<tr><th>Sr No</th><th>Name of Product</th><th>Date of commencement of production</th></tr>
<tr><td>1</td><td>Aluminium Phosphide (Fumigant)</td><td>1974</td></tr>
<tr><td>2</td><td>Zinc Phosphide ( Rodenticide)</td><td>1975</td></tr>
<tr><td>3</td><td>Cypermethrin (Insecticide)</td><td>1984</td></tr>
<tr><td>4</td><td>Permethrin (Insecticide)</td><td>2000</td></tr>
<tr><td>5</td><td>Desmedipham</td><td>2008</td></tr>
<tr><td>6</td><td>Penmedipham</td><td>2008</td></tr>
<tr><td>7</td><td>Biferthrin</td><td>2008</td></tr>
<tr><td>8</td><td>Clodiniofop (UPH – 203)</td><td>2008</td></tr>
<tr><td>9</td><td>Safner (UPH – 203 S)</td><td>2008</td></tr>
<tr><td>10</td><td>Thiomathaxam (STAR)</td><td>2008</td></tr>
<tr><td>11</td><td>Magnesium Phosphide (Fumigant)</td><td>2008</td></tr>
<tr><td>12</td><td>Red Phosphorous</td><td>1969</td></tr>
<tr><td>13</td><td>Pesticide Formulation Product</td><td>1996</td></tr>
<tr><td>14</td><td>Dichloro Vimyl Chloride(DVACL)</td><td>1996</td></tr>
<tr><td>15</td><td>Metaphenoxy Benzaldehyde (MPBAD)</td><td>1984</td></tr>
<tr><td>16</td><td>ASAM</td><td>2008</td></tr>
<tr><td>17</td><td>Hydrazide</td><td>2008</td></tr>
<tr><td>18</td><td>Propanil</td><td>2011</td></tr>
<tr><td>19</td><td>Imidachloprid</td><td>2012</td></tr>
<tr><td>20</td><td>Metribuzin</td><td>2012</td></tr>
<tr><td>21</td><td>Alpha Cypermethrin</td><td>2011</td></tr>
<tr><td>22</td><td>Metamitron</td><td>2012</td></tr>
<tr><td>23</td><td>Labda Cyhalothrine</td><td>2012</td></tr>
<tr><td>24</td><td>Denatonium Benzoate</td><td>2014</td></tr>
</table>
<br>Complied.</td></tr>
<tr><td>6</td><td>The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.</td><td>Noted.</td></tr>
<tr><td>7</td><td>The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.</td><td>Noted.</td></tr>
<tr><td>8</td><td>The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 Hazardous Wastes (Management and Handling) Rules, 2003 and the Public Liability Insurance Act, 1991 along with their amendments and rules.</td><td>Noted.</td></tr>
</table>

# Production Details:

| Sr No | Product Name | Permissible Limit MT/Month | Oct 16 | Nov 16 | Dec 16 | Jan 17 | Feb 17 | Mar 17 | Total (MT) | AVG per Month (MT) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Aluminium Phosphide | 200 | 198.19 | 196.19 | 198.19 | 175.10 | 192.05 | 199.51 | 1159.2 | 193.2 |
| 2 | Zinc Phosphide | 40 | 39.00 | 38.00 | 37.00 | 39.00 | 38.00 | 39.00 | 230.0 | 38.3 |
| 3 | Cypermethrin | 330 | 1.70 | | 1.00 | | | | 2.7 | 0.45 |
| | Alpha Cypermethrin OR | 30 | No Production | | | | | | | |
| 4 | Beta Cypermethrin OR | | | | | | | | | |
| | Imidaclopride Tech. | | | | | 3.00 | | | 3.0 | 0.5 |
| 5 | Permerthrin | 100 | 49.50 | 36.00 | | 59.00 | | 16.40 | 160.9 | 26.82 |
| | Desmedipham (DMP) OR | 90 | No Production | | | | | | | |
| 6 | Phenmedipham (PMP) OR | | 9.06 | 1.61 | 63.18 | 51.40 | | | 125.2 | 20.87 |
| | Metamitrom OR | | No Production | | | | | | | |
| | Metribuzin | | 80.01 | 86.85 | | | 22.00 | 76.15 | 265.0 | 44.17 |
| | Bifenthrin OR | 32 | 0.48 | | | | | | 0.5 | 0.08 |
| 7 | Clodinofop propargyl (UPH-203) OR | | 25.01 | 29.50 | 31.61 | 30.57 | 30.02 | 31.00 | 177.7 | 29.6 |
| | Thiomethaxam (STAR) OR | | No Production | | | | | | | |
| | Lambda Cyhalotrin | | 6.12 | 1.78 | | | | | 7.9 | 1.32 |
| 8 | Safner (UPH-203 S) | 5 | 4.76 | 4.50 | 4.50 | 4.50 | 4.00 | 4.50 | 26.8 | 4.5 |
| 9 | Magnesium Phosphide | 8 | | 2.19 | | | 3.29 | 5.95 | 11.4 | 1.9 |
| 10 | ASAM | 2 | No Production | | | | | | | |
| 11 | propanil | 108 | 106.61 | 107.20 | 106.40 | 107.00 | 106.45 | 107.00 | 640.7 | 106.8 |
| 12 | Pesticide Formulation Product | 300 | No Production | | | | | | | |
| 13 | Dichloro vinyl Chloride (DVACL) | 300 | No Production | | | | | | | |
| 14 | Metaphenoxy Benzaldehyde (MPBAD) | 275 | No Production | | | | | | | |
| 15 | Hydrazide | 20 | No Production | | | | | | | |
| 16 | Red Phosphorus | 80 | 47.80 | 46.00 | 54.90 | 45.11 | 59.41 | 46.70 | 299.9 | 50.0 |
| 17 | Denatonium Benzoate | 3 | 1.00 | 1.00 | 1.00 | 3.00 | 2.00 | 3.00 | 11.0 | 1.8 |

# Water & Waste Water Details:

| MONTH | Total Consumption KL | Total Effluent Generation in KL |
|---|---|---|
| Oct-16 | 24973 | 14552 |
| Nov-16 | 19410 | 12741 |
| Dec-16 | 18712 | 12186 |

| | | |
|---|---|---|
| Jan-17 | 14213 | 9344 |
| Feb-17 | 15403 | 9232 |
| Mar-17 | 19479 | 11324 |
| **Total** | **112190** | **69379** |
| Avg. per Day | 623.28 | 385.44 |

## Hazardous Waste Details:

| Landfilling Waste (MT) | | | | |
|---|---|---|---|---|
| **Month** | **Opening Balance** | **Generation** | **Disposed to BEIL** | **Closing Stock** |
| Oct-16 | 7.05 | 364.71 | 361.48 | 10.28 |
| Nov-16 | 10.28 | 348.39 | 355.00 | 3.67 |
| Dec-16 | 3.67 | 294.51 | 287.77 | 10.41 |
| Jan-17 | 10.41 | 181.64 | 177.98 | 14.07 |
| Feb-17 | 14.07 | 204.45 | 209.10 | 9.41 |
| Mar-17 | 9.41 | 246.40 | 240.41 | 15.40 |
| **Total** | | **1640.08** | **1631.72** | |
| AVG. per Month | | | 271.953 | |

| Incineration Waste (MT) | | | | |
|---|---|---|---|---|
| **Month** | **Opening Balance** | **Generation** | **Disposed to BEIL** | **Closing Stock** |
| Oct-16 | 4.324 | 23.706 | 26.03 | 2 |
| Nov-16 | 2 | 30.2 | 28.62 | 3.58 |
| Dec-16 | 3.58 | 10.5 | 11.66 | 2.42 |
| Jan-17 | 2.42 | 25.155 | 25.29 | 2.285 |
| Feb-17 | 2.285 | 25.745 | 25.29 | 2.74 |
| Mar-17 | 2.74 | 35.245 | 27.44 | 10.545 |
| **Total** | | **150.55** | **144.33** | |
| AVG. per Month | | | 24.06 | |

## Summary of Ambient Air Quality Monitoring:

| **PARAMETERS** | **Avg Monitoring Result (Oct 2016 to Mar 2017)** | **GPCB Permissible Limit (µg/m3)** |
|---|---|---|
| $PM_{10}$ | 71-83 µg/m3 | 100 |
| $PM_{2.5}$ | 27-41 µg/m3 | 60 |
| $SO_2$ | 19.8-32.6 µg/m3 | 80 |
| $NO_x$ | 30.4-43.2 µg/m3 | 80 |

| | | |
|---|---|---|
| CL2 | BDL | 100 |
| HCL | 65.3-85.3 µg/m3 | 200 |
| PCL3 | BDL | 100 |
| P2O5 | BDL | 30 |
| Br2 | BDL | 20 |
| HBR | BDL | 300 |

## Summary of Flue Gas & Process Stack Monitoring:

| *Parameter* | *Average Monitoring results (Oct 2016 to Mar 2017)* | *GPCB Permissible Limit* |
|---|---|---|
| ***Flue Gas Stack Emissions- Fuel as Natural Gas*** | | |
| ***Stack attached to Boiler 1- 10 TPH*** | | |
| PM | 16-130 mg/nm3 | 150 |
| SO2 | 45.3-52.3 ppm | 100 |
| Nox | 4.3-14.1 ppm | 50 |
| ***Stack attached to Thermic fluid heater-Propanil plant*** | | |
| PM | BDL mg/nm3 | 150 |
| SO2 | BDL ppm | 100 |
| Nox | 8.8-12.3 ppm | 50 |
| ***Stack attached to Boiler 2- 8 TPH*** | | |
| PM | 28-121 mg/nm3 | 150 |
| SO2 | BDL-55.4 ppm | 100 |
| Nox | 3.1-17.2 ppm | 50 |
| ***Stack attached to DG Set-1250 KVA*** | | |
| PM | 82 mg/nm3 | 150 |
| SO2 | 33.4 ppm | 100 |
| Nox | 21.9 ppm | 50 |
| ***Process Stack Emission*** | | |
| ***Stack attached to Mist Eliminator & Water Scrubber- ALP plant firing chamber*** | | |
| PM | 2.9-5.6 mg/nm3 | 20 |
| P2O5 as H3PO4 | 2.64-3.45 mg/nm3 | 5 |
| ***Stack attached to Mist Eliminator- ZnP plant Reactor*** | | |
| PM | 9.6-13.5 mg/nm3 | 20 |
| P2O5 as H3PO4 | 1.86-3.04 mg/nm3 | 5 |
| ***Stack attached to Lambda Cyhalothrin Plant- Alkali Scrubber*** | | |
| HCl | 4.9 mg/nm3 | 20 |
| SO2 | 12.4 mg/nm3 | 40 |
| ***Stack attached to Metribuzine Plant- Water + Caustic Scrubber*** | | |
| HBR | 2.1-3.8 mg/nm3 | 5 |

# Waste Water Analysis Detail:

| ENPRO Envirotech Pvt Ltd (3rd Party) Effluent Analysis Report (Oct-2016 to Mar-2017) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Oct-16 | Nov-16 | Dec-16 | Jan-17 | Feb-17 | Mar-17 | Avg | Max | Min |
| pH | 6.83 | 7.05 | 6.95 | 6.82 | 7.09 | 6.93 | 6.95 | 7.09 | 6.82 |
| COD (mg/L) | 132 | 176 | 127 | 148 | 107 | 98 | 131.33 | 176 | 98 |
| TSS (mg/L) | 52 | 84 | 92 | 66 | 72 | 86 | 75.33 | 92 | 52 |
| Ammonical Nitrogen (mg/L) | 10.7 | 8.4 | 7.8 | 9.6 | 10.2 | 8.6 | 9.22 | 10.7 | BDL |

# Total Expenditures on EMS:

| Sr No | Plant | Pollution Control Measure | EMS Capital Cost in INR (Crore) | O &M cost in INR (Crore) 2013-14 (5%) | O &M cost in INR (Crore) 2014-15 (5.5%) | O &M cost in INR (Crore) 2015-16 (6%) | O &M cost in INR (Crore) 2016-17 (6.5%) |
|---|---|---|---|---|---|---|---|
| 1 | Pesticide | Pesticide Plant-1 - Permethrin reaction | 0.075 | 0.00375 | 0.004125 | 0.0045 | 0.0049 |
| 2 | MMZ | Pesticide Plant-2 (ASAM) | 0.075 | Not in Operation | Not in Operation | Not in Operation | Not in Operation |
| 3 | ALP | Alp Plant Firing Chamber | 0.35 | 0.0175 | 0.01925 | 0.021 | 0.0228 |
| 4 | MPBAD | MPBAD Plant Reaction Vessel | 0.125 | 0.00625 | 0.006875 | 0.0075 | Not in Operation |
| 5 | DVACL | DVACl plant TCBACl Reactor | 0.125 | 0.00625 | 0.006875 | 0.0075 | Not in Operation |
| 6 | DVACL | DVACl Plant DVACl Reactor | 0.125 | 0.00625 | 0.006875 | 0.0075 | Not in Operation |
| 7 | DVACL | DVACl Plant $PCl_3$ scrubber | 0.075 | 0.00375 | 0.004125 | 0.0045 | Not in Operation |
| 8 | ZNP | ZnP Plant Reactor | 0.075 | 0.00375 | 0.004125 | 0.0045 | 0.0049 |
| 9 | DVACL | DVACl Plant Fugitive Emission scrubber | 0.125 | 0.00625 | 0.006875 | 0.0075 | Not in Operation |
| 10 | Pest | Lambda Cyhalothrin | 0.09 | 0.0045 | 0.00495 | 0.0054 | 0.0059 |
| 11 | UPH | Metribuzine | 0.075 | 0.00375 | 0.004125 | 0.0045 | 0.0049 |
| 12 | MEE | - | 4.5 | 0.8748 | 0.68 | 0.60 | 0.40 |
| 13 | ATFD | - | 3.0 | | | | |
| | | MEE ATFD Power cost | | 0.33 | 0.55 | 0.76 | 0.15 |
| 14 | ETP | - | 10.5 | 4.50 | 5.26 | 4.44 | 4.22 |
| | | ETP power cost | NA | 0.97 | 0.97 | 0.92 | 0.66 |
| 15 | CFB | Scrubber | 2.0 | NA | NA | NA | Not in Operation |
| 16 | ETP | TOC/TSS/Flow/pH meter -Online | 0.17 | 0.0085 | 0.00935 | 0.0102 | 0.0111 |