

F. No. J-11011/215/2010-IA II (I)  
Government of India  
Ministry of Environment and Forests  
(I.A. Division)

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Dated 1<sup>st</sup> November, 2011

To,

Shri Vijay G Joshi (Group General Manager)  
M/s Mangalore Refinery and Petroleum Ltd (Phase -3),  
Post Kuthethoor, Via Katipalla,  
Mangalore – 575030, Karnataka.

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**Subject: Expansion by adding Polypropylene Manufacturing Unit (440000 TPA) at Existing MRPL Refinery Complex, Post Kuthethoor, Tehsil Mangalore, District Dakshina Kannada, Karnataka by M/s Mangalore Refinery and Petroleum Ltd (Phase-3)– Environmental Clearance reg.**

**Ref. : Your letter no. L/MoEF/Phase-III/038 dated 4<sup>th</sup> May, 2011.**

Sir

Kindly refer to your letter dated 4<sup>th</sup> May, 2011 alongwith Form-1, Prefeasibility Report, EIA/EMP report and subsequent communications vide your letters dated 20<sup>th</sup> June, 2011, 26<sup>th</sup> July, 2011, 8<sup>th</sup> August, 2011 and 18<sup>th</sup> August, 2011 regarding above mentioned subject.

2.0 The Ministry of Environment & Forests has examined your application. It is noted that proposal is for expansion by adding Polypropylene Manufacturing Unit (440000 TPA) at existing MRPL Refinery Complex, Post Kuthethoor, Tehsil Mangalore, District Dakshina Kannada, Karnataka. Arabian sea is located at 6 Km. Terrain of the project site is undulated. Total project cost is Rs. 1803.38 Crores. Total project area is 40 acres and available within existing refinery complex of 1786 acre. No additional land is required. No reserve forests/ wildlife sanctuaries/ archeological monument except the mangroves (Guru estuary and Pilkula Nisargadhama near Mudushedde) are located within 10 Km. The following facilities will be installed:

1. A single train polypropylene plant of 440,000 TPA.
2. CPP (Gas Turbine Generator; 37 MW) and Heat Recovery Steam Generator (HRSG) system with auxiliary firing to produce 85 TPH steam of VHP/SHP.
3. Separate cooling tower for cooling water system.
4. Nitrogen plant of 750 Nm<sup>3</sup>/h capacity.

3.0 VOCs together with inert will be removed by vacuum degassing system and sent for flaring. Polypropylene powder particles will be removed / dedusted through elutriator cyclone/multi stage cyclones. Ultra low sulphur fuel gas will be used in the CPP. Stack of adequate height will be provided to gas based CPP. Low NOx burner will be installed for

reduction of NOx emissions. Total fresh water requirement will be 1.48 MGD. Wastewater generation from the proposed propylene unit will be 37 m<sup>3</sup>/hr and treated in wastewater treatment plant (WWTP-3). Treated wastewater will be reused as cooling tower make up. Domestic sewage will be treated in sewage treatment plant (STP). Polypropylene spent catalyst will be sent to the authorized recycler. Oily sludge will be disposed by bio-remediation process.

4.0 The proposal was considered by the Expert Appraisal Committee (Industry-2) in its 14<sup>th</sup>, 18<sup>th</sup>, 24<sup>th</sup> & 26<sup>th</sup> meetings held during 16<sup>th</sup>-17<sup>th</sup> September, 2010, 20<sup>th</sup>-21<sup>st</sup> January, 2011, 22<sup>nd</sup>-23<sup>rd</sup> June, 2011 and 17<sup>th</sup>-18<sup>th</sup> August, 2011 respectively.

5.0 All Petro-chemical complexes are listed at S.N. 5(c) under category 'A' and appraised at Central level.

6.0 Public hearing/public consultation was exempted as per para 7(ii) of the EIA Notification, 2006.

7.0 The Ministry of Environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA Notification dated 14<sup>th</sup> September, 2006 subject to strict compliance of the following specific and general conditions:

**A. SPECIFIC CONDITIONS :**

- i. Environmental clearance is subject to disposal of court case regarding suspected contamination of the groundwater near Athurkodi area of Kuthethoor village.
- ii. All the specific conditions and general conditions specified in the earlier environmental clearance letters accorded vide Ministry's letter no. 11011/6/89-IA-II dated 1<sup>st</sup> February, 1991, J-11011/1/96-IA-II dated 5<sup>th</sup> August, 1996, J-21-383/2007-IA-II dated 3<sup>rd</sup> April, 2008 and J-11011/8/2009-IA-II dated 23<sup>rd</sup> December, 2009 shall be implemented.
- iii. M/s Mangalore Refinery and Petrochemical Limited shall comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18<sup>th</sup> March 2008.
- iv. The process emissions (particulate matter, SO<sub>2</sub>, NOx, HC, CO, VOCs and Benzene) from various units shall conform to all standards prescribed by the CPCB/Karnataka State Pollution Control Board (KSPCB) from time to time. At no time, the emission levels shall go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency. Stack emissions shall be monitored regularly.
- v. As proposed, polypropylene powder particles shall be removed/dedusted through elutriator cyclone/multi stage cyclones. The VOCs shall be removed by vacuum degassing system and then gas will be sent to flare. Stack of adequate height shall be provided to gas based CPP.

- vi. Sulphur recovery unit shall be installed to recover Sulphur with minimum 99.5 % efficiency. Steps must be taken by MRPL to reduce the SO<sub>2</sub> emissions from the refinery and action plan shall be submitted to the Ministry and its Regional Office at Bangalore.
- vii. As proposed, ultra low sulphur fuel gas shall be used as fuel for proposed gas based captive power plant. Fuel for the project shall be low sulfur fuel with less than 0.1 % S.
- viii. As proposed, De-NOx technology shall be installed for major NOx emission sources for reducing the overall NOx emissions from the refinery Complex. Low Nox burner shall be installed to control NOx emissions.
- ix. Ambient air quality data shall be collected as per NAAQES standards notified by the Ministry vide G.S.R. No. 826(E) dated 16<sup>th</sup> September, 2009.
- x. Continuous ambient air quality monitoring stations for PM<sub>10</sub>/PM<sub>2.5</sub>, SO<sub>2</sub>, NOx, H<sub>2</sub>S, Mercaptan, NMHC, Ozone, Nickel shall be set up in the refinery complex in consultation with CPCB/KSPCB. Proper calibration of the monitoring instruments shall be done time to time. Data of stack monitoring and ambient air shall be displayed on web as well as outside the premises at prominent place for public viewing. The company shall upload the results of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MOEF, the respective Zonal office of CPCB and KSPCB.
- xi. Steps shall be taken to minimise fugitive emissions. Monitoring of fugitive emissions shall be carried out as per guidelines of CPCB by fugitive emissions detector and report shall be submitted to the Ministry' Regional Office at Bangalore. Fugitive emissions of BTX and VOCs from product storage tank yards shall be regularly monitored. Sensor for monitoring HC (BTX) and VOCs shall be installed at strategic locations.
- xii. For further control of fugitive emissions, following steps shall be followed :
  - a. Closed handling system shall be provided for chemicals.
  - b. Reflux condenser shall be provided over reactor.
  - c. System of leak detection and repair of pump/pipeline based on preventive maintenance.
  - d. The acids shall be taken from storage tanks to reactors through closed pipeline. Storage tanks shall be vented through trap receiver and condenser operated on chilled water.
  - e. Cathodic protection shall be provided to the underground solvent storage tanks.
- xiii. Continuous detection equipment for polypropylene powder particles shall be installed at strategic locations.
- xiv. Fugitive emissions due to polypropylene powder particles and VOCs in the work zone and ambient air shall be controlled as per National/International norms.
- xv. Leak Detection and Repair Programme shall be prepared and implemented.
- xvi. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. ✓

- xvii. Total water requirement from Netravali River shall not exceed 1.48 MGD and prior permission shall be obtained from the concerned authority.
- xviii. As proposed, effluent generation from the proposed propylene unit shall not exceed 37 m<sup>3</sup>/hr and treated in wastewater treatment plant (WWTP-3) comprising primary treatment, secondary treatment, contaminated rain water treatment facility and tertiary treatment. Treated wastewater shall be reused as cooling tower make up. Domestic sewage shall be treated in sewage treatment plant (STP). No effluent shall be discharged outside the factory premises and 'Zero' discharge concept shall be adopted. Treated effluent quality shall be monitored regularly and conform to the norms prescribed by the CPCB/KSPCB from time to time.
- xix. Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.
- xx. The company shall obtain Authorization for collection, storage and disposal of hazardous waste under the Hazardous Waste (Management, Handling and Trans-Boundary Movement) Rules, 2008 and amended as on-date for management of Hazardous wastes and prior permission from KSPCB shall be obtained for disposal of solid / hazardous waste in the TSDF. Measures shall be taken for fire fighting facilities in case of emergency.
- xxi. Spent catalyst shall be disposed through CPCB registered recyclers.
- xxii. If the oily sludge is disposed by bio-remediation process then proper care shall be taken to control water pollution by preventing from rain, ground water pollution by putting proper lining as per CPCB guidelines.
- xxiii. Proper oil spillage management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.
- xxiv. The company shall strictly follow all the recommendation mentioned in the charter on Corporate Responsibility for Environmental Protection (CREP) for the oil refineries.
- xxv. All the OISD standards shall be followed.
- xxvi. The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All Transportation of Hazardous Chemicals shall be *as per* the Motor Vehicle Act (MVA), 1989.
- xxvii. The company shall undertake following waste minimization measures :-
  - 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 vapour recovery system.

- f. Use of high pressure hoses for equipment clearing to reduce wastewater generation.
- xxviii. Green belt shall be developed in 33% of the total land as per the CPCB guidelines to mitigate the effect of fugitive emissions.
- xxix. Occupational health surveillance programme shall be undertaken as regular exercise for all the employees. The first aid facilities in the occupational health centre shall be strengthened and the regular medical test records of each employee shall be maintained separately.
- xxx. Company shall prepare project specific environmental manual and a copy shall be made available at the project site for the compliance.
- xxxi. All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.
- xxxii. Company shall adopt Corporate Environment Policy as per the Ministry's O.M. No. J-11013/41/2006-IA.II(I) dated 26<sup>th</sup> April, 2011 and implemented.
- xxxiii. MRPL shall carry out a project "Evaluation of SO<sub>2</sub> prediction due to MRPL refinery and comparison with the ambient air quality data".
- xxxiv. Provision shall be made for the housing for the construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile sewage treatment plant, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structure to be removed after the completion of the project. All the construction wastes shall be managed so that there is no impact on the surrounding environment.

**B. GENERAL CONDITIONS:**

- i. The project authorities shall strictly adhere to the stipulations made by the Karnataka State Pollution Control Board (KSPCB).
- 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.
- iii. The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- iv. 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).

- v. The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.
- vi. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
- vii. The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented.
- viii. The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.
- ix. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
- x. A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- xi. The company shall earmark sufficient funds towards capital cost and recurring cost per annum 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 earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.
- xii. A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parisad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.
- xiii. The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and KSPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.
- xiv. The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of ✓

environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.

- xv. 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.
- xvi. 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.

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

9.0 The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

10.0 The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management and Handling) Rules, 2003 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules.

  
(Dr. P. B. Rastogi)  
Director

Copy to:

1. The Secretary, Department of Environment & Ecology, Govt. of Karnataka, Room No. 708, Gate 2, Multi Storied Building, Dr. Ambedkar Veedhi, Bangalore - 560 001 [secyenv-fee@karnataka.gov.in](mailto:secyenv-fee@karnataka.gov.in)
2. The Chief Conservator of Forests, Regional Office (Southern Zone, Bangalore) Kendriya Sadan, 4th Floor, E&F Wing, II Block Koramangala, Bangalore-560034.
3. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Chairman, Karnataka State Pollution Control Board, #49, Parisara Bhavana, Church Street, Bangalore-01 (Karnataka).
5. Adviser, IA II(I), Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi.
6. Monitoring Cell, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi.
7. Guard File/Monitoring File/Record File.

  
(Dr. P. B. Rastogi)  
Director