

**COMPLIANCE STATUS ON THE CONDITIONS OF ENVIRONMENTAL
CLEARANCE FOR THE WAX PROJECT OBTAINED VIDES LETTER NO.
J-110011/113/2009-IA II (I) dated 5th Sep,12 FROM
MOEF, NEW DELHI**

A. SPECIFIC CONDITIONS:

- i Compliance to all the environmental conditions stipulated in the environmental clearance letter nos. J011011/16/90-1A.II dated 31st May, 1991, J011011/92/2003-1A.II (I) dated 13th February, 2004, J011011/203/2003-IA. II (I) dated 22nd March, 2004, J011011/272/2008-IA. II (I) dated 10nd November, 2008 shall be satisfactorily implemented and monitoring reports submitted to the Ministry's Regional Office at Shillong.

- *Complied. Half yearly compliance report of all ECs regularly being sent to RO Shillong.*

- ii. M/s Numaligarh Refinery Limited shall comply with new standards/norms for oil Refinery Industry and petrochemical industry notified under the Environment (protection)-Rules 1986.

-*The same is being complied as per the requirement.*

- iii. Environmental clearance is subject to their obtaining prior clearance from wildlife angle due to nearby location of Kaziranga National Park (KNP) and clearance from the Standing Committee of the National Board for Wildlife as applicable.

- *The matter has been discussed with Chief Wildlife Warden of Assam and Director, Kaziranga National Park. As the proposed project has been constructed within the existing refinery premises, it does not require any additional land. As such, the requirement of approval from wild life is not envisaged.*

- iv. No heavy equipments shall be routed through Kaziranga National Park, for which only the route identified earlier shall be used.

-*Complied.*

- v. Adequate stack height shall be provided to fuel gas fired heaters as per CPCB/Assam pollution Control Board (APCB) guidelines to disperse waste heat into atmosphere. Low NOx burners shall be installed with on-line analyzers. Low sulfur fuels shall be used in boiler.

-*All the stacks are provided with adequate stack heights (min. 60 & 77 meters against the requirement of 30 meters). Low NOX burners are installed in all the stacks. Online SOx ,NOx, CO,SPM analysers are installed in all the stacks. NRL is using low sulfur fuels in the boilers.*

- vi. Continuous on-lines stack monitoring equipment shall be installed for the measurement of particulate matter, VOCs, SO₂, NO_x, non-methanated Hydrocarbons (Benzene, Xylene and Toluene).

- PM analysers installed in all the stacks. For continuous monitoring of VOCs, Non-methanated hydrocarbon (Benzene, Xylene and Toluene) , online analysers are available with the existing CAAQMS.

- vii. Fugitive emissions from HVGO, MVGO and MIBK shall be recovered and controlled. Fugitive emission in the work environment from product raw material storage area etc. shall be regularly monitored. The emissions shall conform to the limits imposed by Assam Pollution Control Board.

-Fugitive emission survey for HVGO and MVGO is being carried out with the help of GMI Gaskoseeker as a part of monitoring and control of fugitive emission. The GMI survey has been carried in all gas/vapour valves, light liquid valves, hydrogen valves, light liquid pump seals, hydrocarbon compressor seals, hydrogen compressor seals, safety relief valves, flanges, connections, open-ended lines, drains, tankages, furnaces etc. In case of any leak observed, the same is attended immediately in line with the requirement.

- viii. The process emissions [SO₂, NO_x, HC (Methane& Non-methane)] VOCs and Benzene from various units shall conform to the standards prescribed under the Environment Protection Act. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control systems 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.

- Complied.

- ix. Ambient air quality monitoring stations [SPM, SO₂, NO_x, H₂S, mercaptan, non-methane-HC, and Benzene shall be set up in the complex in consultation with Assam Pollution Control Board, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCS. Ambient air quality shall also be carried in one location at Kazirang National Park for SO₂, NO_x, SPM, CO and HC.

-As an action of compliance, five (5) nos. of ambient air quality monitoring stations have been set up at the following locations:

- SS 1 : Inside the refinery (Near WT No.5).
SS 2 : At the Eco-Park in NRL Township.
SS 3 : At the Raw Water Intake.
SS 4 : Near the NH-39 bypass.
SS 5 : Near the Kaziranga Wildlife Sanctuary at Agartoli.

-Ambient Air Quality monitoring at the above locations is being carried out in line with NAAQS-2009 in totality. The Ambient Air Quality Monitoring

reports are regularly submitted to the PCBA HQ Guwahati, PCBA Regional Office, Golaghat and CPCB Regional Office, Shillong in every month.

- Further, continuous ambient air quality data and online stack analyser data have been made accessible to CPCB from NRL's company's website since Sept'11.

- NRL has installed one Continuous Ambient Air Monitoring System inside the refinery premises and realtime emission data has been transmitted to CPCB server on continuous basis.

-Further, action initiated to install one additional continuous Ambient Air Monitoring System inside the refinery premises as recommended by MoEFCC based on occurrence of maximum ground level concentration and down-wind direction of wind. To be installed by Mar'19.

Ambient air quality for the period Oct'18 to Mar'19 is enclosed as Annexure-IV.

- x. Ambient air quality data shall be collected as per NAAQMSs standard notified by the Ministry on 16th September, 2009 and trend analysis w.r.t past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.

-Being practiced.

- xi. Monitoring of fugitive emission shall be carried out as per the guidelines of CPCB by fugitive emission detectors and reports shall be submitted to the Ministry's regional office at Shillong. For control of fugitive emissions all unsaturated hydrocarbon will be routed to the flare system and the flares system shall be designed for smoke less burning.

*The same has been noted. Regular monitoring of fugitive emission has been carried out using GMI. The GMI survey has been carried on all gas/vapour valves, light liquid valves, hydrogen valves, light liquid pump seals, hydrocarbon compressor seals, hydrogen compressor seals, safety relief valves, flanges, connections, open-ended lines, drains, tankages, and furnaces etc. as per the guidelines. In case of any leak observed, the same is attended immediately in line with the requirement. **Fugitive emission data for July'18 & Oct'18 for MSP, Sept'18 for HCU, Aug'18 for wax submitted to RO MOEF on 28.11.18 with action taken report of letter No. RO-NE/E/IA/AS/OR/3,9,10,17,25,26,33/868/869, Dated. 29th August'18.***

- xii. A proper Leak Detection and Repair (LDAR) Program shall be prepared and implemented. Focus shall be given for prevention of fugitive emissions for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to.

- Presently being practiced in line with MoEF notification, 2008.

- xiii. Methyl Iso Butyl Ketone (MIBK) solvent should be handled as per the standard procedure and guidelines issued time to time. MIBK solvents should be stored in cool and dry place, recovered from process through solvent recovery unit and reused in the system.

- The system is designed to strictly follow standard procedure & statutory guidelines for handling & storage of MIBK solvent, and is adequate. Also a highly efficient solvent recovery unit has been implemented to recover and re-use MIBK solvent from foots oil & wax.

- xiv. Total fresh water requirement from River Dhansiri for the proposed unit shall not exceed 60 m³/hr. and prior permission shall be obtained from the competent authority. The industrial effluent generation shall not exceed 5 m³/hr. The industrial effluents shall be treated in the ETP and the treated effluent shall meet the prescribed standards. Treated effluents shall be recycled/reused within the factory premises. Domestic sewages shall be treated in sewage treatment plant (STP).

-Scheme for reuse of storm water as cooling tower/FW makeup implemented. Treated effluent is fully recycled .

- xv. No effluent shall be discharged outside the factory premises and Zero Water Concept shall be adopted.

-Total recycle of treated effluent has been ensured. Since October, 2006 no effluent from refinery has been discharged outside the refinery and since April, 2007 township effluent also routed to the refinery, so no effluent from refinery & township is discharged outside and the total effluent is recycled within the Refinery.

Treated effluent quality for the period Oct'18 to Mar'19 is enclosed as annexure-V.

- xvi. Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.

Oil catchers/oil traps are installed in various locations in the storm water channel to avoid any oil carry over to the open channel. Insignificant quantities of emulsified oil generated if any has been recovered and reused with the help of MOSRU (Mobile Oil Spill Recovery Unit). Six new oil catcher has been installed.

- xvii. Methyl-Iso-Butyl Ketone (MIBK) shall not be allowed to mix with the effluents as well as with storm water and ground water.

Due consideration has been taken in the unit design to avoid MIBK carryover along with effluent and avoid ground water Contamination.

Moreover, a dedicated MIBK close blow-down facility along with recovery system has been incorporated to avoid intermixing of MIBK with other streams.

- xviii. Oily sludge shall be disposed off into coker. Annual oily sludge generation and shall be submitted to the Ministry's Regional Office and CPCB.

- NRL produces Anode grade coke which is further processed in Coke Calcination Unit (CCU) to get high value Calcined Petroleum coke (CPC). Trial run for processing of sludge in Delayed Coker Unit (DCU) was carried out on an experimental basis. However, the process led to the deterioration of the CPC quality to a great extent and the experiment had to be called off. Instead, NRL follows a robust sludge handling process for disposal wherein oily sludge is suitably disposed in bioremediation or is being sold to CPCB authorized recyclers.

To waive this condition NRL submitted one application to MoEF, Delhi on 29.01.19.

The annual report of waste disposal (2017-18) submitted to RO MOEF on 28.11.18 with action taken report of letter No. RO-NE/E/IA/AS/OR/3,9,10,17,25,26,33/868/869, Dated. 29th August'18

- xix. The Company should strictly comply with the rules and guidelines under Manufacture, and import of Hazardous storage chemical Rules, 1989 as amended in october,1994 and January, 2000. Hazardous waste should be disposed of as per Hazardous Waste (Management, Handling and Transboundary Movement) Rules 2008 and amended time to time.

- The rules and regulations under the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and as amended in 2000 are adhered to.

-Approvals from Chief Inspectorate of Factories, Chief Controller of Explosives etc as applicable for the Numaligarh Refinery have been obtained.

- xx. The membership of common TSDF should be obtained for the disposal of hazardous waste. Otherwise, secured land fill should be created at the site as per the guidelines of CPCB and obtain authorization from the SPCB. Copy of authorization or membership of TSDF should be submitted to Ministry's Regional office at Shillong.

NRL has constructed a Secured Landfill Facility as recommended by NEERI in 2004 for a safe and systematic disposal of hazardous materials and authorization is accorded from the concerned authorities and renewed as per the requirement. NRL has installed another SLF of capacity 6000 m³ as per CPCB recommendation.

- xxi. Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products of and ensure regular monitoring.

- *Complied. Proper oil spill prevention management in place. Alternately, a MOSROU is used in case of emergency situation if any. Nos. of Oil catchers and Hay filters installed in various locations. Oil adsorbent boom is also placed in many locations. Further, OWS & CRWS systems are very effectively constructed to divert the spilled material to ETP for further treatment.*
- xxii. The company shall strictly follow all the recommendation mentioned in the charter of Corporate Responsibility for Environmental Protection (CREP).
 - The same is being complied.*
- xxiii. The company shall take necessary measures to prevent fire hazards containing oil spill and soil remediation as needed. At place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during flaring.
 - *Knockout drums are installed in the flare system.*
- xxiv. To prevent fire and explosion at oil and gas facility, potential ignition sources shall be minimum and kept to a adequate separation distance between potential ignition sources and flammable material shall be in place.
 - Complied.*
- xxv. Green belt shall be developed at least in 33% of the total plant area in and around the plant premises to mitigate the effects of fugitive emissions all around the plant as per CPCB guidelines in consultation with DFO. Thick greenbelt with suitable plant species shall be developed around units. Selection of plant species as per the CPCB guidelines.

- Initially, as per Environmental Clearance granted for the Numaligarh Refinery Project, Ministry of Environment & Forest had stipulated a 500 mtrs wide green belt all around the refinery based on the EIA of Numaligarh Refinery carried out by NEERI.

On request from Numaligarh Refinery, the width of the Green Belt was later reduced from the suggested width of 500 mtrs to 100 mtrs because of the reason that almost all the surrounding areas are having tea garden with shade trees (Sirish trees). A wide natural green belt already existed all around the refinery.

Accordingly, a Green Belt covering a total area of around 60 hectares of land and around 100 mtrs width around the refinery and around 25 mtrs width around the NRMT has been developed as per the Green Belt Development Plan. (The Green Belt Development Plan has been submitted to MoEF along with the Half Yearly Report to MOEF on the 15th October, 2001).

Massive Plantation has been carried out in the Green Belt so that it can provide a natural barrier for attenuation of noise and air pollution. No. of local variety have been planted including some fruit bearing samplings in & all around Green Belt. Again it has been planned to increase the density by planting more saplings in the Green Belt in the days ahead.

- xxvi. Company shall prepare project specific environmental manual and a copy should be made available at the project site for the compliance.

-Complied.

- xxvii. All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.

-Complied.

- xxviii. All the issues raised and committed made during the public hearing/consultation meeting held on 14th July, 2011 shall be satisfactorily implemented. Accordingly, provision of budget to be kept.

-Complied.

- xxix. Company shall adopt Corporate Environment policy as per the Ministry's O .M. No. J- 11013/41/2006-IA(1) dated 26th April, 2011 and implemented.

- NRL has already adopted a Env. policy as per the requirement of Environment Management ISO 14001.

- xxx. Provision shall be made for the housing of construction labour within the site with infrastructure and all necessary facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

-Complied.

B. GENERAL CONDITIONS:

- i. The project authorities must strictly adhere to the stipulations made by the State pollution Control Board (SPCB) State Government and any other statutory authority.

- The stipulations made by the Pollution Control Board of Assam and the State Government are strictly adhered to.

- ii. No further expansion or modification in the project shall be carried out without prior approval from the Ministry of Environment & 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 environment protection measures required if any.

- Any expansion or modernization in the plant will be taken up only with prior approval of the Ministry of Environment & Forests.

- iii. The project authorities to strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 2008 as amended subsequently. Prior approvals from Chief Inspector of Factories Chief Controller of Explosives Fire Safety Inspector must be obtained wherever applicable.

- The rules and regulations under the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and as amended in 2000 are adhered to.

Approvals from Chief Inspectorate of Factories, Chief Controller of Explosives etc as applicable for the Numaligarh Refinery have been obtained.

- 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 PAR ules,1 989v iz.75 dBA(day time) and 70 dBA(nighttime).

- The major sources of noise generation in the proposed project are the pumps and the blowers. Strong foundations provided to mitigate the noise generation further. The equipment being monitored regularly at a distance of 01 mtr from the source and corrective measure being taken to maintain the noise level below 85 dBA. The ambient noise levels all around the refinery is being monitored regularly so as to maintain within the standards, prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).

- v. A separate Environmental Management Cell equipped with full fledged laboratory facilities must be setup to carry out the environmental management on monitoring functions.

- A fully functional, dedicated environment management cell manned by qualified engineers/officers and headed by Chief General Manager (Technical) has been continuously working for constant improvement, monitoring, safe guarding and reporting of environmental activities of the refinery. Also, a multidisciplinary Apex-level Committee on Environment which includes senior level officers from various departments as members under the chairmanship of Director (Technical) constantly guides the Environment Cell regarding all the environmental issues in the refinery. The Apex Committee that convenes quarterly

discusses the unresolved issues if any, regarding the environment and monitors the regular environmental activities.

- vi. Adequate funds shall be earmarked towards capital cost and recurring cost/ annum for environment pollution control measures and shall be used 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 purposes.

- Adequate funds have been provided for implementing the conditions stipulated by MoEF and the State Govt. and not diverted for any other purpose.

- vii. The Regional office of this Ministry/Central Pollution Control Board//State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretations shall be submitted to them regularly.

- Six monthly compliance report is being sent to the Regional Office of this Ministry/Central Pollution Control Board/State Pollution Control Board as per the requirement.

- viii. A copy of clearance letter shall be sent by the proponent to concerned Panchayat/ Zila Parishad/ Municipal Corporation/ Urban Local Body and the local NGO if any, from whom suggestion/representation if, any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.

- Copy of the clearance letter sent to concerned Panchayat/ Zila Parishad/ Circle Office.

- ix. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely SPM, RSPM, SO₂, NO_x, HC (Methane & Non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.

-Complied.

- x. The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF, the respective Zonal Office of CPCB and the

SPCB. The Regional office of this Ministry/ CPCB/ SPCB shall monitor the stipulated conditions.

-The same is being complied.

The same is being displayed in the company's website also.

- xi. The environmental statement for each financial year ending 31st March, in form-IV as is mandated to be submitted by the project proponent to the concerned state pollution control board as prescribed under the Environment (Protection) Rules 1986 as amended subsequently shall also be put in the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional offices of the MoEF by e-mail.

*-The same is being complied. Environmental Statement for each financial year ending 31st March, in form-IV is being sent to SPCB every year as per the requirements. **The environmental statement for financial year, 2017-18 submitted on 28.11.18 with action taken report of letter No. RO-NE/E/IA/AS/OR/3,9,10,17,25,26,33/868/869, Dated. 29th August'18.***

- xii. The Project Proponent shall inform the public that the project has been accorded environmental clearance by Ministry and copies of the clearance letter are available with the SPCB and may also be seen at website of the Ministry of Environment & Forests at [http:// envfor.nic.in](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 locally concerned and a copy of the same shall be forwarded to the Regional Office.

- The same has been complied. Advertisement regarding the environmental clearance was published in two local newspapers namely, The Assam Tribune (in English) dated 13.09.2012 and The Amar Axom (Assamese) dated 12.09.2012. Copies of both advertisements were forwarded to the MoEF Regional Office, Shillong.

- xiii. 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 commencing the land development work.

-Complied.

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

-The same has been noted.

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

-The same has been noted.

10. The above conditions will be enforced inter-alia under the provisions of Water (Prevention & Control of pollution) Act 1974, Air (Prevention & control of Pollution) Act' 1981' the Environment (Protection) Act 1986, Hazardous Waste (Management Handling and Transboundary Movement) Rules 2008 and the Public Liability Insurance Act 1991 alongwith their amendments and rules.

-The same has been noted.