



IndianOil

Barauni Refinery

Status as on 30.09.2020

**Subject: STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS (6.0 MMTPA EXPANSION OF BARAUNI REFINERY)**

**Ref: Ministry's clearance letter no J-1101/23/98-IA II (I) dated 08.03.1999**

**(A) Specific conditions**

SN	ITEM	STATUS
1.	The gaseous emissions from the process stacks must conform to the standards prescribed under the EPA rules and/ or state pollution control board. At no time, the emission level should go beyond the prescribed standards. Specially, the total SO <sub>2</sub> emissions must not go beyond 1080 kg/hr as confirmed by the company. In the event of failure of any pollution control system adopted by the units, the respective unit must be put out of operation immediately and should not be restarted until control measures are rectified to achieve desired efficiency.	<ul style="list-style-type: none"><li>• Process emissions at Barauni Refinery conform to the standards prescribed under the EPA rules</li><li>• Total SO<sub>2</sub> emissions from existing units at Barauni Refinery are less than the stipulated limit of 815 kg/hr as per latest EC.</li><li>• <b>Complied.</b></li></ul>
2.	In consultation with SPCB, the project authority must set up sufficient number of air quality monitoring stations to monitor SPM, SO <sub>2</sub> , NO <sub>x</sub> , CO & NH <sub>3</sub> . Stack emissions should be monitored regularly. Data on stack emission and ambient air quality including work zone should be submitted to the ministry (Regional Office, Bhubaneshwar) once in six months and SPCB once in three months along with statistical analysis.	<ul style="list-style-type: none"><li>• Eight manual (four in Refinery, one in township and three in periphery villages) air quality monitoring stations have been set up. Ambient air quality is checked twice in a week.</li><li>• Three continuous online monitoring stations provided for ambient air quality monitoring covering 8 parameters viz PM 10, PM 2.5, SO<sub>2</sub>, NO<sub>x</sub>, CO, NH<sub>3</sub>, Benzene and Ozone. The stations are also directly connected online with servers at CPCB and Bihar State Pollution Control Board (BSPCB).</li><li>• The results are furnished to the BSPCB and the MoEF&amp;CC (Regional office, Ranchi) at regular intervals as prescribed.</li><li>• Continuous on-line stack analyzers for monitoring of SO<sub>2</sub>, NO<sub>x</sub>, CO &amp; PM have been installed and connected to CPCB server for 20 nos. of stacks.</li><li>• For stacks of CRU, New Prime-G, NHT-CCR by Mar 2021.</li><li>• Process emissions from all units are sampled once in two months except Sulfur Recovery Unit (which is monitored monthly basis) and results on stack emission, and work zone monitoring data are furnished to the BSPCB and MoEF&amp;CC (Regional</li></ul>

		Office, Ranchi).
3.	Adequate effluent treatment facilities (primary, secondary & tertiary) should be provided so that liquid effluents conform to the standards prescribed under EPA rules/SPCB before discharging into river Ganga. The outfall point in the river must be approved by Bihar Pollution Control Board.	<ul style="list-style-type: none"> <li>• Effluent Treatment Plant (ETP) of 1000 m<sup>3</sup>/hr capacity and Biological Treatment Plant (BTP) of 1400 m<sup>3</sup>/hr capacity have been provided for treatment of effluent.</li> <li>• Treated effluent is completely reused in refinery operations, horticulture and eco ponds make up.</li> <li>• No effluent is being discharge to river Ganga since Oct 2013 and the line going to river Ganga has been dismantled.</li> <li>• <b>Complied.</b></li> </ul>
4.	Adequate number of effluent quality monitoring stations must be set up in consultation with SPCB to monitor the water quality parameters as per EPA / SPCB regulations. Monitored data along with analysis should be submitted to this ministry (Regional Office, Bhubaneshwar) once in six months and SPCB once in three months.	<ul style="list-style-type: none"> <li>• Effluent quality monitoring points has been set up in consultation with BSPCB. The results are regularly furnished to the BSPCB and regional office, MoEF&amp;CC, Ranchi.</li> <li>• Online effluent analyzers have been installed at the discharge of treated effluent and connected to CPCB and BSPCB server.</li> <li>• <b>Complied.</b></li> </ul>
5.	The company must identify and implement water conservation and treated effluent recycling / reusing schemes to minimize the raw water consumption and to achieve zero-pollutant discharge to the river Ganga.	<p>To reduce Raw water consumption, treated effluent is re-used as</p> <ul style="list-style-type: none"> <li>• Cooling tower makeup</li> <li>• Fire water make up</li> <li>• Coke cutting water</li> <li>• Make up water for Eco Ponds.</li> <li>• Horticulture of Eco park</li> <li>• No effluent is being discharged to river Ganga.</li> <li>• <b>Complied.</b></li> </ul>
6.	The hazardous solid wastes like spent catalysts must be disposed off in a secured landfill with facility for leachate collection and treating in the ETP.	<ul style="list-style-type: none"> <li>• HDPE lined RCC pit for storage of hazardous solid waste (Oily Sludge) is in place and mechanized skid process by M/S Balmer Lawrie has been deployed for better recovery of oil from oily sludge.</li> <li>• Residual oily sludge is bio-remediated.</li> <li>• Spent catalyst is sold to CPCB/SPCB approved authorized recycler/re-processors in accordance with Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.</li> <li>• <b>Complied.</b></li> </ul>
7.	The proposed storage for LPG shall be of mounded type in order to reduce the risk level. The OISD guidelines must be strictly followed.	<ul style="list-style-type: none"> <li>• 6 nos. of mounded LPG storage bullets as per OISD guidelines for storage of LPG have been provided (commissioned in 2002).</li> <li>• <b>Complied.</b></li> </ul>
8.	In addition to the above stipulations, the company must undertake additional afforestation and Eco-development work in the area. In this regard, the company must augment its tree plantation activities by 25 thousand trees in a phased manner. Further, the company has around 120 acres of borrow-pit area in and adjoining to the plant premises. The company must give an action plan to ecologically develop this area within 3 months.	<ul style="list-style-type: none"> <li>• Spread over an area of 75 acres, Barauni Refinery has developed a beautiful Ecological Park (Eco Park) with sprawling lawns, flowers and ornamental plants, potted plants, diverse habitat of tress and the forest vegetation. The garden has more than 279 plant species under 81 families including some medicinal plants both indigenous and exotic.</li> <li>• More than 111,174 plants planted during the period from 1995 to till now in a phased manner to develop green belt in &amp; around refinery controlled area in consultation with forest department.</li> </ul>

		<ul style="list-style-type: none"> <li>• Plantation in refinery is continuing. However, existing land of refinery is getting saturated with greenery.</li> <li>• Following developmental jobs were undertaken in and around borrow pit area in 2014-15 —             <ol style="list-style-type: none"> <li>a) To prevent inundation of nearby agricultural land / fields of farmers a 1.0M high Bundh of approximately 1.0 KM length was made on southern side (Bihat side) of the borrow pit.</li> <li>b) To minimise mosquito menace in nearby villages floating water hyacinth (JaKumbhi) was removed nearby the newly made Bundh.</li> <li>c) Fogging was undertaken in nearby villages ( Bihat, Mahna, Papraur etc ) to control mosquito spread.</li> <li>d) Later in 2016-17, outlet of borrow pit flowing into Jemra Nalla was blocked to stop flow of borrow pit water to Deona side and other villages as there were complaints of inundation of villages on the banks of Jemra Nalla. Bleaching powder was also provided to representatives of village Panchayats of Devna.</li> </ol> </li> <li>• <b>Complied.</b></li> </ul>
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### **(B) General Conditions**

1.	The project authority must adhere to the stipulations made by Pollution Control Board and state government.	<ul style="list-style-type: none"> <li>• Stipulations being followed.</li> <li>• <b>Complied.</b></li> </ul>
2.	No expansion or modification of the plant should be carried out prior approval of this ministry.	<ul style="list-style-type: none"> <li>• Prior approval of ministry is taken before carrying out any expansion or modification of the plant.</li> <li>• <b>Complied.</b></li> </ul>
3.	A green belt of adequate width and density should be provided all around the plant in consultation with the state forest department. A norm of 2500 plants/ hectare may be followed and minimum of 25% area must be covered by green belt.	<ul style="list-style-type: none"> <li>• Total plot area of the refinery: 887.83 acres.</li> <li>• Green belt area in Refinery: 43.8 acres.</li> <li>• Green belt area in Refinery Township: 82.19 acres.</li> <li>• Total green belt area: 125.99 acres.</li> <li>• Number of trees planted till date since 1995 is 111,174.</li> <li>• There is no further land available for tree plantation in Refinery and township. BR has made an agreement with East Central railway for 89.28 acre land for development of greenbelt. For additional land, discussion is going on with Forest Department of Bihar Govt.</li> </ul>
4.	Handling, manufacturing, storage and transportation of hazardous chemicals should be carried out in accordance with The Manufacture, Storage & Import Of Hazardous Chemicals Rules, 1989, as amended in 1991. On-site and Off-site emergency preparedness plans shall be prepared adequately and permissions from state and central nodal agencies in this regard must be obtained.	<ul style="list-style-type: none"> <li>• Handling &amp; storage of hazardous chemicals are done in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.</li> <li>• Comprehensive Emergency Disaster Management Plans exist in refinery and are updated regularly as per PNGRB guidelines.</li> <li>• Necessary inputs for hazardous of Barauni Refinery have been provided to district authorities for inclusion in Disaster management plan as per MSIC rule.</li> <li>• On-site &amp; Off-site mock drills are conducted quarterly and annually respectively. The Off-site drill is</li> </ul>

		<p>conducted with involvement of District Authority.</p> <ul style="list-style-type: none"> <li>• <b>Complied.</b></li> </ul>
5.	<p>Hazardous wastes, if any, must be handled and disposed as per Hazardous Waste (Management And Handling) Rules, 1989. Authorization from State Pollution Control Board in this regard must be obtained.</p>	<ul style="list-style-type: none"> <li>• Authorization taken from Bihar State Pollution Control Board for handing of hazardous wastes. Authorization is valid till 06.01.2024.</li> <li>• Handling &amp; storage of hazardous wastes done in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.</li> <li>• <b>Complied.</b></li> </ul>
6.	<p>Proper housekeeping and adequate occupational health programme must be taken up.</p>	<ul style="list-style-type: none"> <li>• A full fledged Occupational Health centre is established in the Refinery Hospital. Regular Occupational health monitoring of employees is carried out as per the program.</li> <li>• <b>Complied</b></li> </ul>
7.	<p>Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. should be ensured for construction workers during the construction phase so as to avoid felling of trees and pollution of water and the surroundings.</p>	<ul style="list-style-type: none"> <li>• <b>Complied</b></li> </ul>
8.	<p>Occupational health surveillance of the workers should be done on a regular basis and records maintained.</p>	<ul style="list-style-type: none"> <li>• A full fledged Occupational Health centre is established in the Refinery Hospital. Regular Occupational health monitoring of employees is carried out regularly as per the program.</li> <li>• Occupational health surveillance records are maintained by the refinery hospital as per the Bihar Factory Act.</li> <li>• <b>Complied.</b></li> </ul>
9.	<p>The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA and Risk Analysis report.</p>	<ul style="list-style-type: none"> <li>• Environment protection measures suggested in the EIA/ EMP risk assessment report have been implemented</li> <li>• <b>Complied</b></li> </ul>
10.	<p>The project proponent should have a scheme for social upliftment in the surrounding villages with reference to contribution in road construction, education of children, festivals, health centres, sanitation facilities, drinking water supply, community awareness and employment to local people whenever and wherever possible both for technical and non-technical jobs.</p>	<p>Social upliftment activities under CSR are carried out on regular basis in the villages near the refinery. The major works undertaken are:</p> <ul style="list-style-type: none"> <li>❖ Installation of hand pumps for drinking water.</li> <li>❖ Repair &amp; construction of road.</li> <li>❖ Health Camps.</li> <li>❖ Facilitation and renovation of school building and library etc.</li> <li>❖ Women's Education and empowerment.</li> <li>❖ Scholarship programs</li> <li>• <b>Complied.</b></li> </ul>
11.	<p>A separate environmental management cell with full fledged laboratory facilities to carry out various management and monitoring functions should be set up under the control of senior executive.</p>	<ul style="list-style-type: none"> <li>• A separate Environment Management Cell with well equipped dedicated pollution control laboratory exists at Barauni Refinery.</li> <li>• <b>Complied.</b></li> </ul>
12.	<p>The funds earmarked for the environmental protection measures should not be directed for any other purpose and year-wise expenditure should be reported to this</p>	<ul style="list-style-type: none"> <li>• All facilities envisaged for environmental protection and monitoring have been provided in Barauni refinery expansion project.</li> <li>• In addition to one time investment in facilities for</li> </ul>

	ministry and SPCB.	<p>combating pollution, separate funds are allocated and utilized for specific activities such as bio-remediation of sludge, environment monitoring and studies related to environment etc.</p> <ul style="list-style-type: none"> <li>• <b>Complied.</b></li> </ul>
13.	Six monthly status report on the project vis-a-vis implementation of environmental measures should be submitted to the ministry (Regional Office, Bhubaneswar) / CPCB / SPCB).	<ul style="list-style-type: none"> <li>• A six monthly compliance report and monitored data are submitted regularly.</li> <li>• <b>Complied.</b></li> </ul>