



## BARAUNI REFINERY

Date: 23<sup>rd</sup> June, 2017

**Subject: Catalytic Reformer at Barauni Refinery of Indian Oil Corporation Environment clearance.**

**Ref: Ministry's clearance letter no J-11011/10/89-IA dated 25.07.1989**

SN	ITEM	STATUS
1.	The project authority must strictly adhere to stipulations made by the State Government and the State Pollution Control Board.	<ul style="list-style-type: none"><li>• Stipulations being followed.</li><li>• <b>COMPLIED.</b></li></ul>
2.	The project authority will not increase the throughput capacity of the refinery from the existing level.	<ul style="list-style-type: none"><li>• Prior approval of ministry is always taken before carrying out any expansion or modification of the plant.</li><li>• <b>COMPLIED</b></li></ul>
3.	The project authority must submit a rapid EIA report within 6 months and comprehensive EIA report within 18 months to this Ministry for review.	<ul style="list-style-type: none"><li>• <b>COMPLIED.</b></li></ul>
4.	Gaseous emissions of sulphur dioxides, hydrocarbons and oxides of nitrogen should not exceed the standard prescribed by the Central/ State Pollution Control Board. At no time the emission level should be beyond the stipulated standard. In the event of failure of any pollution control system adopted by the unit, the respective unit should be put out of operation immediately and should not be restarted until the control systems are rectified to achieve the desired efficiency.	<ul style="list-style-type: none"><li>• Process emissions at BR conform to the standards prescribed under the EPA rules</li><li>• Total SO<sub>2</sub> emissions from existing units at BR are less than the stipulated limit of 815 kg/hr as per latest EC.</li><li>• <b>COMPLIED.</b></li></ul>
5.	The project authority will recycle the effluent to the maximum extent possible either as process water or for afforestation.	<ul style="list-style-type: none"><li>• Refinery effluent is treated in ETP/STP/TTP and completely reused in refinery operations, horticulture and eco ponds make up.</li><li>• <b>COMPLIED.</b></li></ul>
6.	The entire quantity of liquid effluent coming out of the complex should conform to MINAS both in terms of quantity and quality before discharge into the drainage system. The process plant effluent should be discharged through pipeline/closed channel.	<ul style="list-style-type: none"><li>• No effluent is being discharged out of the complex and reused within the premises through closed system.</li><li>• The treated water quality is within MINAS.</li><li>• <b>COMPLIED.</b></li></ul>

7.	<p>The project authority must set up minimum of four air quality monitoring stations at different locations of the plant and in the nearby areas. The air quality will be monitored as per standard procedure. The monitoring of gaseous emissions should also include oxides of nitrogen and hydrocarbons. All the stacks of the plant must be provided with continuous automatic stack monitoring equipment and stacks emission levels must be recorded and furnished to the State Pollution Control Board once in three months and to this Ministry once in six months.</p>	<ul style="list-style-type: none"> <li>• Ambient air quality is checked twice in a week by MOEF approved agency from five nos. of ambient air quality monitoring stations, four situated in refinery and one at township.</li> <li>• One no. of continuous ambient air quality monitoring station in the refinery was commissioned in 2009 and 02 nos. in Aug-Sept 2016 for continuous monitoring of ambient air in refinery and 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 connected online with CPCB servers.</li> <li>• The results are furnished to the BSPCB and the MoE&amp;F (Regional office, Ranchi) at regular intervals as prescribed.</li> <li>• Process emissions from all units are sampled once in two months except SRU (which is monitored monthly basis) and results on stack emission, and work zone monitoring data are furnished to the BSPCB and MoE&amp;F&amp;CC (Regional Office, Ranchi).</li> </ul> <p><b>COMPLIED.</b></p>
8.	<p>The liquid effluent quality must be assured on daily basis. At least five water quality monitoring stations must be set up in consultation with the State Pollution Control Board. This should include the monitoring of oil content in the river. If the effluent quality exceeds the standard prescribed at any time, the corresponding units of the plant which are contributing to the excessive pollutant loads shall be immediately stopped and operation must not be restated till the quality of effluent discharged from the units are brought down to the required levels.</p>	<ul style="list-style-type: none"> <li>• No effluent is being discharge to river Ganga and the line going to river Ganga has been dismantled in Oct 2013.</li> <li>• Effluent quality monitoring results are regularly furnished to the BSPCB and regional office, MoE&amp;F, Ranchi.</li> <li>• Online effluent analyzers have been installed for treated effluent quality and connected to CPCB server.</li> </ul> <p><b>COMPLIED.</b></p>
9.	<p>The project authority will ensure that the effluent treatment plant will be commissioned and operational within the next three months.</p>	<ul style="list-style-type: none"> <li>• <b>COMPLIED.</b></li> </ul>
10.	<p>The project authority must submit a disaster management plan duly approved by the nodal agency of the State within a period of three months. Disaster management plan should include the worst accident scenario and its probable consequence.</p>	<ul style="list-style-type: none"> <li>• Comprehensive On-site and Off-site Disaster Management Plans exist in the refinery and are updated regularly.</li> <li>• On-site &amp; Off-site mock drills are conducted quarterly and annually respectively. The Off-site drill is conducted with involvement of District Authority.</li> </ul> <p>• <b>COMPLIED.</b></p>
11.	<p>The project authority will start construction only after the approval of Chief Controller of Explosive and a copy of consent letter should be made available to the Ministry.</p>	<ul style="list-style-type: none"> <li>• Prior approval of CCE was taken.</li> </ul> <p>• <b>COMPLIED</b></p>

12.	No change in design of stacks should be made without the prior approval of the State Pollution Control Board. Alternate pollution control system and/or proper design (stacks injection system) of the stacks should be made to minimize hydrocarbon emission due to failure in the flare system in the plant.	<ul style="list-style-type: none"> <li>• No change is done without prior approval of the respective statutory bodies.</li> <li>• <b>COMPLIED</b></li> </ul>
13.	The project authority must provide necessary infrastructure facilities to the construction worker during construction.	<ul style="list-style-type: none"> <li>• <b>COMPLIED</b></li> </ul>
14.	The project authority must take adequate measure to bring down the noise level. The protective measures taken by the project authority should be made available to this Ministry.	<ul style="list-style-type: none"> <li>• Adequate noise control measures are taken.</li> <li>• For personnel working in the proximity of high noise generating equipments, appropriate PPEs are used, and exposure is controlled through job rotation, education and awareness.</li> <li>• Six monthly monitoring report of noise level at different locations of plant are provided to the Ministry.</li> <li>• <b>COMPLIED.</b></li> </ul>
15.	The project authority will assess the impact on ground water contamination by the leachetes and the remedial measures taken by the project authority should be submitted to this Ministry for review. The project authority will also monitor the quality of ground water in the nearby areas and report should be submitted to the State Pollution Control Board once in every three months and to this Ministry once in six months.	<ul style="list-style-type: none"> <li>• The ground water is checked by MOEF certified agency at different locations in Refinery and nearby villages.</li> <li>• The report is submitted to this Ministry in six months.</li> <li>• <b>COMPLIED.</b></li> </ul>
16.	The project authority must set up laboratory facilities in the existing premises for testing and analysing gaseous emissions and water quality.	<ul style="list-style-type: none"> <li>• A full-fledged laboratory is existing in the premises for testing of gaseous emissions and water quality.</li> <li>• <b>COMPLIED.</b></li> </ul>
17.	The project authority must submit a revised green belt details for the plant and township to this Ministry within three months for approval. The green belt should be with a minimum tree density of 1000 trees per acre.	<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 different plant species under 81 families including some medicinal plants both indigenous and exotic.</li> <li>• More than 76,333 plants were planted during the period 00-01 to 15-16 in a phased manner to develop green belt in &amp; around refinery controlled area in consultation with forest department.</li> <li>• 6003 nos. plants were planted in 2016-17.</li> <li>• Plantation in refinery is continuing. However, existing land of refinery is getting saturated with greenery.</li> </ul>

		<b>COMPLIED.</b>
18.	Additional area under the control of the project which is not being used for the plant utilities should be afforested and funds for this purpose should be suitably provided.	<ul style="list-style-type: none"> <li>• Afforestation is done at all places wherever plant utilities are not used.</li> <li>• Plantation in refinery is continuing. However, existing land of refinery is getting saturated with greenery.</li> <li>• <b>COMPLIED</b></li> </ul>
19.	A separate environmental management cell with suitably qualified people to carry out various functions related to environmental management should be set up under the control of a senior technical person who will directly report to the head of the organization.	<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>
20.	The fund provision (capital and recurring expenditure) for the environmental control measure should not be diverted for any other purpose. The implementation schedule for environmental control measure should be strictly followed.	<ul style="list-style-type: none"> <li>• All facilities envisaged for environmental protection and monitoring have been provided in the project fund. The recurring expenditure is funded through refinery revenue budget.</li> <li>• In addition to one time investment in facilities for 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.</li> <li>• <b>COMPLIED.</b></li> </ul>
<b>Further Stipulations</b>		
2.	The Ministry of Environment and forest or any other competent authority may stipulate any further conditions after reviewing the impact assessment report or any other report prepared by the project authority.	<ul style="list-style-type: none"> <li>• Noted.</li> </ul>
3.	The above condition will be enforced, inter-alia, under the water (Prevention and Control of Pollution ) Act, 1974; the Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986.	<ul style="list-style-type: none"> <li>• Noted.</li> </ul>
4.	The Ministry reserves the right to withdraw the clearance as and when necessary in the interest of the environmental protection.	<ul style="list-style-type: none"> <li>• Noted.</li> </ul>