

Environmental Monitoring

Data

IOCL-Barauni Refinery

(Oct'2024 to Mar'2025)

A handwritten signature in blue ink, appearing to read 'Baru' or 'Baru'.

Production details (Oct'2024 to Mar'2025)

All figures in Metric Tonnes

| Total Crude Processed | Quantity |
|--------------------------------|-------------|
| Low sulfur | 28476339.00 |
| High sulfur | 328271.00 |
| Total Crude | 28804610.00 |
| External Inputs | |
| SKO Interface | |
| Ethanol | 33420.00 |
| Contaminated Product | 11100.00 |
| Naphtha Received and Processed | 19600.00 |
| RLNG | 68500.00 |
| Total external input | 132620.00 |

All figures in Metric Tonnes

| Production | Quantity |
|-----------------|-----------|
| LPG | 199900 |
| SRN | 167900 |
| EBMS | 175600 |
| MS (Euro-VI) | 633100 |
| SKO | 45200 |
| JET A-1 (ATF) | 119900 |
| HSD (Euro-VI) | 1494900 |
| LSHSD(Premi um) | 94500 |
| RPC EX COKER-A | 99200 |
| Bitumen VG 40 | 75000 |
| Bitumen VG 30 | 10376.662 |
| SULFUR | 10400 |

Status as on 31.03.2025

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 |
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| 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"> With Ref. No.ROB(A+W)-1474/20/1084 dated 05.04.2022 permission from BSPCB, under Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, available with validity till 04.04.2027. • Complied. |
| 2. | The project authority will not increase the throughput capacity of the refinery from the existing level. | <ul style="list-style-type: none"> Prior approval of ministry is always taken before carrying out any expansion or modification of the plant. • Complied |
| 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"> The EIA report has already been submitted. • Complied. |
| 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"> Process emissions at Barauni Refinery conform to the standards prescribed under the EPA rules. Total SO₂ emissions from existing units at Barauni Refinery are within the stipulated limit of 815 kg/hr as per latest EC. • Complied. |
| 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"> Effluent Treatment Plant (ETP) of 1000 m³/hr capacity and Biological Treatment Plant (BTP) of 1400 m³/hr capacity have been provided for treatment of effluent. Treated effluent is completely reused in refinery operations, horticulture and eco ponds make up. • Complied. |
| 6. | The entire quantity of liquid effluent coming out of the complex should conform to MINAS both in terms of quantity and quality | <ul style="list-style-type: none"> No effluent is being discharged to river Ganga since Oct 2013 and the line going to river Ganga has been dismantled. |

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| | before discharge into the drainage system. The process plant effluent should be discharged through pipeline/closed channel. | <ul style="list-style-type: none"> The treated water quality is within MINAS. Complied. |
| 7. | 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. | <ul style="list-style-type: none"> Eight manual (four in Refinery, one in township, three in periphery villages) air quality monitoring stations have been set up. Ambient air quality is checked twice in a week. Three continuous online air monitoring stations provided for ambient air quality monitoring covering 8 parameters viz PM 10, PM 2.5, SO₂, NO_x, CO, NH₃, Benzene and Ozone. The stations are also directly connected online with servers at CPCB and Bihar State Pollution Control Board (BSPCB). The results are furnished to the BSPCB and the MoEF&CC (Regional office, Ranchi) at regular intervals as prescribed. Continuous on-line stack analyzers for monitoring of SO₂, NO_x, CO & PM have been installed and connected to CPCB server for 24 nos. of stacks. Stack 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&CC (Regional Office, Ranchi). <p>Complied.</p> |
| 8. | 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 restarted till the quality of effluent discharged from the units are brought down to the required levels. | <ul style="list-style-type: none"> Effluent quality monitoring points has been set up in consultation with BSPCB. The results are regularly furnished to the BSPCB and regional office, MoEF&CC, Ranchi. Online effluent analyzers have been installed at the discharge of treated effluent and connected to CPCB and BSPCB server. No effluent is being discharge to river Ganga since Oct 2013 and the line going to river Ganga has been dismantled. <p>Complied.</p> |
| 9. | The project authority will ensure that the effluent treatment plant will be commissioned and operational within the next three months. | <ul style="list-style-type: none"> Effluent Treatment Plant (ETP) of 1000 m³/hr capacity and Biological Treatment Plant (BTP) of 1400 m³/hr capacity have been provided for treatment of effluent. Complied. |
| 10. | 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 | <ul style="list-style-type: none"> Comprehensive On-site and Off-site Disaster Management Plan exist in refinery and updated regularly as per PNGRB guidelines. On-site & Off-site mock drills are conducted quarterly and annually respectively. The Off-site drill is conducted with involvement of District Authority. Complied. |

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| | and its probable consequence. | |
| 11. | 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. | <ul style="list-style-type: none"> The approval of Chief controller of Explosive was taken before construction. • Complied. |
| 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"> No change is done without prior approval of statutory bodies. Low NOx burners are provided in furnaces to minimize hydrocarbon emission in stacks. • Complied |
| 13. | The project authority must provide necessary infrastructure facilities to the construction worker during construction. | <ul style="list-style-type: none"> The project is already under operation. The condition is not applicable at present. However, construction work for BR-9 is going on. The construction workers are from nearby village only. • Complied |
| 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"> Adequate noise control measures have been taken in new facilities in the project. 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 about PPEs compliance. Six monthly monitoring report of noise level at different locations of plant are provided to MoEF&CC • Complied. |
| 15. | The project authority will assess the impact on ground water contamination by the leachates 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"> The ground water is checked by MoEF&CC certified agency at different locations in Refinery and nearby villages. The report is submitted to BSPCB and MoEF&CC. • Complied. |
| 16. | The project authority must set up laboratory facilities in the existing premises for testing and analyzing gaseous emissions and water quality. | <ul style="list-style-type: none"> A fully-fledged laboratory facility is available at Barauni Refinery for testing of gaseous emission and water quality. Moreover, MoEF&CC approved third party monitoring is also done. • Complied. |
| 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 | <ul style="list-style-type: none"> Total plot area of the refinery: 887.83 acres. Green belt area in Refinery: 43.8 acres. Green belt area in Refinery Township: 82.19 acres. |

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| | minimum tree density of 1000 trees per acre. | <ul style="list-style-type: none"> • Total green belt area: 125.99 acres. • Since, there is no further land available for tree plantation in Refinery and township, MoU was signed with DFO, Munger and 180 hectares of green belt has been developed at Munger Forest Division. Total 1, 65,000 no. of tree has been planted. • Total Green belt area has been increased to 65% of the total project area. EC amendment for the same has been carried out. |
| 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"> • Complied • Forestation is done at all places wherever plant utilities are not used. • Additional tree plantation also done in Refinery Township and nearby areas. |
| 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"> • A separate Environment Management Cell with well-equipped dedicated pollution control laboratory exists at Barauni Refinery. • Complied. |
| 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"> • All facilities envisaged for environmental protection and monitoring have been provided in Barauni refinery expansion project. • 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. • Complied. |

Further Stipulations

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| 1. | 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"> • Complied. |
| 2. | 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"> • Complied. |
| 3. | 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"> • Complied. |

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Barauni Refinery

Status as on 31.03.2025

Subject: Augmentation of Crude Processing Capacity of Barauni Refinery from 3.3 to 4.2 MMTPA of IOC.

Ref: Ministry's clearance letter noJ-11011/48/95-IA-II dated 17.05.1996

| SN | Point | Status |
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| 1. | The environmental aspects of the project have been examined by this Ministry and environmental clearance is accorded subject to the compliance of conditions stipulated in the clearance order dated 25th July, 1989 and 2nd Dec, 1994. | <ul style="list-style-type: none"> Compliance of conditions stipulated in the clearance order dated 25thJuly, 1989 is attached in this report. Complied. |
| 2. | Action Plan for effective disposal of oily sludge should be submitted within a period of 3 months. In case of inability to utilise the sludge due to any reason, there will be provision for immediate proper disposal of the sludge by the project authorities in accordance with hazardous Wastes (Management & Handling) Rules, 1989. A compliance report should be submitted quarterly. | <ul style="list-style-type: none"> HDPE lined RCC pit for storage of hazardous solid waste (Oily Sludge) is in place and mechanized skid process by M/S Viraj clean Sea Enterprises Pvt Ltd.has been deployed for better recovery of oil from oily sludge. Residual oily sludge is bio-remediated. Complied. |
| 3. | The project proponent should not increase the through put capacity of Barauni Refinery beyond 4.2 MMTPA without prior approval from this Ministry. | <ul style="list-style-type: none"> Prior approval of ministry is always taken before carrying out any expansion or modification of the plant. Complied |
| 4. | There will be no change in the fuel used without permission from the Ministry. | <ul style="list-style-type: none"> Noted for compliance. |
| 5. | On site and off site Emergency preparedness plans should be obtained. | <ul style="list-style-type: none"> Comprehensive Emergency Disaster Management Plans exist in refinery and are updated regularly as per PNGRB guidelines. Necessary inputs for hazardous chemicals of Barauni Refinery have been provided to district authorities for inclusion in Disaster management plan as per MSIHC rule. On-site & Off-site mock drills are conducted quarterly and annually respectively. The Off-site drill is conducted with involvement of District Authority. Complied. |

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| 6. | Rules for storage, handling and import of hazardous substance should be strictly adhered to. | <ul style="list-style-type: none"> • Handling & storage of hazardous chemicals are done in accordance with the rules. • Complied. |
| 7. | The Ministry reserves the right to alter the conditions or withdraw clearance as and when necessary in the interest of environmental protection. | <ul style="list-style-type: none"> • Noted. |
| 8. | The above conditions will be endorsed inter alia under the Water (Prevention and Control Act, 1974; the Air (Prevention and Control of Pollution) Act, 1981; and the Environmental (Protection) Act, 1986; and the Public Liability Insurance Act, 1991 with their amendments and rules. | <ul style="list-style-type: none"> • Noted. |





IndianOil
Barauni Refinery

Status as on 31.03.2025

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 |
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| 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 ₂ 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"> Process emissions at Barauni Refinery conform to the standards prescribed under the EPA rules Total SO₂ emissions from existing units at Barauni Refinery are within the stipulated limit of 815 kg/hr as per latest EC. Complied. |
| 2. | In consultation with SPCB, the project authority must set up sufficient number of air quality monitoring stations to monitor SPM, SO ₂ , NO _x , CO & NH ₃ . 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"> 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. Three continuous online monitoring stations provided for ambient air quality monitoring covering 8 parameters viz PM 10, PM 2.5, SO₂, NO_x, CO, NH₃, Benzene and Ozone. The stations are also directly connected online with servers at CPCB and Bihar State Pollution Control Board (BSPCB). The results are furnished to the BSPCB and the MoEF&CC (Regional office, Ranchi) at regular intervals as prescribed. Continuous on-line stack analyzers for monitoring of SO₂, NO_x, CO & PM have been installed and connected to CPCB server for 24 nos. of stacks. 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&CC (Regional Office, Ranchi). Complied. |

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| 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"> • Effluent Treatment Plant (ETP) of 1000 m3/hr capacity and Biological Treatment Plant (BTP) of 1400 m3/hr capacity have been provided for treatment of effluent. • Treated effluent is completely reused in refinery operations, horticulture and eco ponds make up. • No effluent is being discharged to river Ganga since Oct 2013 and the line going to river Ganga has been dismantled. • Complied. |
| 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"> • Effluent quality monitoring points has been set up in consultation with BSPCB. The results are regularly furnished to the BSPCB and regional office, MoEF&CC, Ranchi. • Online effluent analyzers have been installed at the discharge of treated effluent and connected to CPCB and BSPCB server. • Complied. |
| 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"> • Cooling tower makeup • Fire water make up • Coke cutting water • Make up water for Eco Ponds. • Horticulture of Eco park • No effluent is being discharged to river Ganga. • Complied. |
| 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"> • HDPE lined RCC pit for storage of hazardous solid waste (Oily Sludge) is in place and mechanized skid process by M/S LMR Pvt Ltd. has been deployed for better recovery of oil from oily sludge. • Residual oily sludge is bio-remediated. • Spent catalyst is sold to CPCB/SPCB approved authorized recycler/re-processers in accordance with Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. • Complied. |
| 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"> • 6 nos. of mounded LPG storage bullets as per OISD guidelines for storage of LPG have been provided (commissioned in 2002). • Complied. |
| 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"> • 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 trees and the forest vegetation. The garden has more than 279 plant species under 81 families including some medicinal plants both indigenous and exotic. • Tree plantation has been done in a phased manner to develop green belt in & around refinery controlled area. • Plantation in refinery is continuing. However, existing land of refinery is getting saturated with greenery. • Since, there is no further land available for tree plantation in Refinery and township hence, an agreement has been done with Forest department on |

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| | <p>agreement has been done with Forest department on 21.10.2021 for 1,65,000 nos. trees plantation in 180 Hectare land. EC amendment for the same has been carried out.</p> <p>Following developmental jobs were undertaken in and around borrow pit area in 2014-15:</p> <ol style="list-style-type: none"> To prevent inundation of nearby agricultural land / fields of farmers, a 1.0M high Bundh has been made around borrow pit. To minimize mosquito menace in nearby villages floating water hyacinth (JalKumbhi) was removed nearby the newly made Bundh. Fogging was undertaken in nearby villages (Bihat, Mahna, Papraur etc.) to control mosquito spread. 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. <p>• Complied.</p> |
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(B) General Conditions

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| 1. | The project authority must adhere to the stipulations made by Pollution Control Board and state government. | <ul style="list-style-type: none"> • Stipulations being followed. • Complied. |
| 2. | No expansion or modification of the plant should be carried out prior approval of this ministry. | <ul style="list-style-type: none"> • Prior approval of ministry is taken before carrying out any expansion or modification of the plant. • Complied. |
| 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"> • Total plot area of the refinery: 887.83 acres. • Green belt area in Refinery: 43.8 acres. • Green belt area in Refinery Township: 82.19 acres. • Total green belt area: 125.99 acres. • Since, there is no further land available for tree plantation in Refinery and township, MoU was signed with DFO, Munger and 180 hectares of green belt has been developed at Munger Forest Division. Total 1, 65,000 no. of tree has been planted. • Total Green belt area has been increased to 65% of the total project area. EC amendment for the same has been carried out. • Complied |
| 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 | <ul style="list-style-type: none"> • Handling & storage of hazardous chemicals are done in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. • Comprehensive Emergency Disaster Management Plans exist in refinery and are updated regularly as per PNGRB guidelines. • Necessary inputs for hazardous of Barauni Refinery have been provided to district authorities for inclusion |

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| | expenditure should be reported to this ministry and SPCB. | <ul style="list-style-type: none"> • 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. • Complied. |
| 13. | Six monthly status reports 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"> • A six monthly compliance report and monitored data are submitted regularly. • Complied. |





IndianOil
Barauni Refinery

Status as on 31.03.2025

Subject: MS / HSD Quality Upgradation / HS Crude Maximization Project EC Clearance Actionable Points

Ref: Ministry's clearance letter noJ-1101/491/2007-IA II (I) dated 18.03.2008

| SN | Point | Status |
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| 1. | The company shall comply with new standards/norms that are being proposed by the CPCB for petrochemical plants and refineries. | <ul style="list-style-type: none"> Major facilities required for meeting treated effluent quality as per revised MoEF&CC standard has been commissioned in Mar-14. With the commissioning of desulphurization facilities (Amine treating unit) for fuel gas from old plants in Oct 2010, Barauni refinery now meets the revised SO₂ emission standards. H₂S content in FG is also within the revised standard. Continuous on-line stack analyzers for monitoring of SO₂, NOx, CO & PM have been installed and connected to CPCB server for 22 nos. of stacks. Double seal has been provided in 23 nos. of floating roof tanks. Please refer Annexure-1 for detailed status and action plan of Barauni refinery for compliance of revised MoEF&CC standards. Complied |
| 2. | The process emissions (SO ₂ , NOx, HC, VOCs and Benzene) from various units shall conform to the standards prescribed by the Bihar State Pollution Control Board 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 unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved. | <ul style="list-style-type: none"> Online analyzers are installed for continuous monitoring of SOx, NOx, CO & PM for 24 stacks. These analyzers are connected directly to CPCB and BSPCB servers for continuous emission monitoring. Process emissions from all units are monitored once in two months except SRU (which is monitored monthly) by M/s Detox Corporation Private Limited and conform to revised MoEF&CC 2008 standards. Total SO₂ emissions from existing units and new facilities at Barauni Refinery are within the stipulated limit of 815 kg/hr as per latest EC. Complied. |

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| | <ul style="list-style-type: none"> Further, in keeping with Indian Oil's motto "People before Profit", Barauni refinery lined up the M/S PDIL in 2009 for establishing the ground water quality and its movement in and around Barauni Refinery to investigate cause of odor problem in Keshawee village. PDIL submitted its report in Feb 2010 and it was concluded that <u>"no ground water from the refinery flows beyond the refinery boundary. Hence, ground water contamination from the refinery beyond boundary can be ruled out. The ground water contamination due to refinery activities in the Keshawee village is not at all possible."</u> Further it was also observed <u>"that the poor sanitation around the hand pumps in Keshawee village around BTP area and the presence of Iron in the tube well water produces synergistic impact on the odour. Similarly, the installation of septic tanks and Khitals are responsible for poor quality w.r.t odour."</u> Presently testing of ground water quality in nearby villages is done quarterly by MoEF&CC approved agency. Reports enclosed. Complied. |
| 8. | <p>The oily sludge shall be subjected to melting pit for oil recovery and the residues shall be bio-remediated. The sludge shall be stored in the HDPE lined pit along with proper leachate collection system.</p> <ul style="list-style-type: none"> HDPE lined RCC pit for storage of hazardous solid waste (Oily Sludge) is in place and mechanized skid process has been deployed for better recovery of oil from oily sludge in place of melting pit. Residual oily sludge is bio-remediated. Complied. |
| 9. | <p>The company shall strictly follow all the recommendation mentioned in the charter on Corporate Responsibility for Environmental Protection (CREP).</p> <ul style="list-style-type: none"> All the recommendations mentioned in the charter on Corporate Responsibility for Environmental Protection (CREP) are strictly followed. Please refer Annexure-2 for detailed status on CREP. Complied. |
| 10. | <p>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.</p> <ul style="list-style-type: none"> Fire protection facilities as required by OISD standards exist in refinery. Area within the units and around having the possibility of oil spillage has been paved. All units, tank farm area and facilities are well connected with a closed underground OWS system to prevent any oil spill. Knockout drums exist in overhead flaring stack to minimize gaseous emissions during flaring. Fire protection facilities as required by OISD standards have been provided in new facilities and all the area within the units' battery limits have been paved. Complied |
| 11. | <p>To prevent fire and explosion at Oil and Gas facility, potential ignition sources should be kept to a minimum and adequate separation distance between potential ignition sources and flammable material shall be in place.</p> <ul style="list-style-type: none"> Distances between various units / equipments including potential ignition sources are as per OISD standards. OISD standards have been followed for the distances between various units / equipments including potential ignition sources in the new facilities. Complied |
| 12. | <p>Occupational health surveillance of worker shall</p> <ul style="list-style-type: none"> A full-fledged Occupational Health centre is established in |

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| | be done on a regular basis and records maintained as per the Factory Act. | the Refinery Hospital. Occupational health monitoring of employees is carried out regularly as per the program. • Occupational health surveillance records are maintained by the refinery hospital as per the Factory Act. • Complied |
| 13. | Greenbelt shall be developed to mitigate the effect of fugitive emission all around the plant in a minimum 30% plant area in consultation with DFO as per CPCB guidelines. | • Total plot area of the refinery: 887.83 acres. • Green belt area in Refinery: 43.8 acres. • Green belt area in Refinery Township: 82.19 acres. • Total green belt area: 125.99 acres. • Since, there is no further land available for tree plantation in Refinery and township hence, an agreement has been done with Forest department on 21.10.2021 for 1,65,000 nos. trees plantation in 180 Hectare land. EC amendment for the same has been carried out. • Complied |
| 14. | Environment protection measures suggested in the EIA/ EMP risk assessment report and during the public hearing meeting shall be implemented. | • Environment protection measures suggested in the EIA/ EMP risk assessment report have been implemented / are being implemented. Public Hearing Points • Rise in Respiratory Ailments <ul style="list-style-type: none"> ○ Survey conducted by panel of doctors/paramedics from Government Hospital delegated by Civil Surgeon. No adverse effects / increase in respiratory ailments observed. • Stunted Growth of Papaya Plant <ul style="list-style-type: none"> ○ Issue referred to Rajendra Agricultural University, Pusa. In response booklet on "Technology for Growing Papayas in Bihar" received. It says, "viral disease is the major limiting factor in Papaya cultivation in all regions of Bihar and attempts are on to select papaya lines showing strong tolerance to viral diseases." • Few hand pump's water have odour in Keshaw Village <ul style="list-style-type: none"> ○ Please refer status of condition no. 7 above. • Water overflow from Borrow Pit inundating fields <ul style="list-style-type: none"> ○ Borrow pit overflow does not occur anymore. • Medical Camps to be increased in surrounding area <ul style="list-style-type: none"> ○ Medical Camps are being conducted regularly. • Complied |
| 15. | The project authorities must strictly adhere to the stipulations made by the concerned State Pollution Control Board (SPCB) and the State Government and any other statutory body. | • Stipulations being followed. Complied |
| 16. | No further expansion or modification in the project shall be carried without prior approval of the Ministry of Environment and Forests. In case | • Prior approval of ministry is always taken before carrying out any expansion or modification of the plant. |



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| | of deviations or alterations in the project proposal from those submitted to the Ministry for clearance, a fresh reference shall be made to the Ministry. | Complied |
| 17. | At no time, the emissions should go beyond the prescribed standards. In the event of failure of any pollution control system, the respective well site should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved. Provision of adequate height of stack attached to DG sets & flare is to be done. | <ul style="list-style-type: none"> • There is no well site at Barauni refinery. • Stacks and flare of adequate height have been provided in Barauni refinery to control emissions. • Complied |
| 18. | Wastewater shall be properly collected and treated so as to conform to the standards prescribed under EP Act & Rules and mentioned in the Consents provided by the relevant SPCB. | <ul style="list-style-type: none"> • Adequate waste water drainage and collection facilities exist in refinery. • Appropriate drainage and collection facilities have been provided in new facilities in the MSQ project and are connected with the existing drainage facilities of refinery. • Oily waste water is treated in ETP/BTP and conforms to the CPCB/SPCB standards. • Complied w.r.t MoEF&CC standards. |
| 19. | The overall noise levels in and around the premises shall be limited within the prescribed standards (75 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time). | <ul style="list-style-type: none"> • The ambient noise levels from existing facilities conform to the standards prescribed under EPA Rules, 1989 / Noise Pollution (Regulation and control) Rules 2000. • 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. • Adequate noise control measures have been taken in new facilities in the project. • No impact has been observed on plant boundary proximity area with the new facilities in the project, and ambient noise levels from new facilities conforms to the standards prescribed under EPA Rules, 1989 / Noise Pollution (Regulation and control) Rules 2000. • Noise level measurements are carried out quarterly by MoEFF&CC certified agency. Reports enclosed. • Complied |
| 20. | The project authorities must 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 etc. Necessary approvals from Chief Controller- of Explosives must be obtained before commission of the expansion project, if required. Requisite On-site and Off-site Disaster Management Plans will be prepared and implemented. | <ul style="list-style-type: none"> • Provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc. are strictly complied in existing facilities of refinery, and same have also been strictly complied in the project. • Necessary approvals from Chief Controller- of Explosives, wherever required have been obtained before commission of the project. • Comprehensive On-site and Off-site Disaster Management Plans exist in refinery and are updated regularly as per PNGRB guidelines. • On-site & Off-site mock drills are conducted quarterly and annually respectively. The Off-site drill is conducted with involvement of District Authority. • Complied |

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| 21. | <p>Disposal of hazardous wastes shall be as per the Hazardous Wastes (Management and Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collections/ treatment/storage disposal of hazardous wastes.</p> | <ul style="list-style-type: none"> Disposal of hazardous wastes is done as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. Authorization taken from Bihar State Pollution Control Board for handing of hazardous wastes. Authorization is valid till 29.08.2027. Complied |
| 22. | <p>The project authorities will provide adequate funds as non-recurring and recurring expenditure 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 should not be diverted for any other purposes.</p> | <ul style="list-style-type: none"> Adequate funds provided to implement the conditions stipulated by MoEF&CC In addition to one-time investment in facilities for combating pollution, separate funds are allocated for specific activities such as bio-remediation of sludge, environment monitoring, and studies related to environment etc. Complied |
| 23. | <p>The company shall develop rain water harvesting structures to harvest the runoff water for recharge of ground water.</p> | <ul style="list-style-type: none"> Rain water harvesting has been implemented at 21 buildings of Barauni Refinery in which water collected from roof top of the refinery is recharged to ground water. Additionally, township surface run-off is routed to three nos. of recharge pits. Complied |
| 24. | <p>The stipulated conditions will be monitored by the concerned Regional Office of this Ministry /Central Pollution Control Board/State Pollution Control Board. A six-monthly compliance report and the monitored data should be submitted to them regularly. It will also be displayed on the Website of the Company.</p> | <ul style="list-style-type: none"> A six-monthly compliance report and the monitored data are submitted regularly. EC Compliance status of various projects is being hosted on https://www.iocl.com/Talktous/SNotices.aspx. Alternatively, one can reach IOCL home page at https://www.iocl.com and thereafter selecting "We're Listening" tab followed by opening "Statutory Notices". Complied |
| 25. | <p>The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in. This should 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 should be forwarded to the concerned Regional office of this Ministry.</p> | <ul style="list-style-type: none"> Information published in Hindustan and Hindustan Times on 27th Mar 2008. Complied |
| 26. | <p>A separate environment management cell with full-fledged laboratory facilities to carry out various management and monitoring functions shall be set up under the control of a Senior</p> | <ul style="list-style-type: none"> BarauniRefinery has a full-fledged environment protection cell and a well-equipped dedicated pollution control laboratory. Complied |



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| 27. | <p>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</p> | <p>Date of financial approval was reported to be 29th April 2008 and the project was capitalized on 31st Dec 2010.</p> <ul style="list-style-type: none"> • Complied |



Annexure-1

**Status and Action Plan for Compliance of Revised Emission and Effluent Standards 2008 at
Barauni Refinery**

Status as on 30.09.2021

Schedule -I: Petroleum Oil Refinery

A. Effluent Discharge

| SN | Standard | BR status and action plan |
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| 1 | Treated Effluent Quality | No effluent is discharged outside refinery. Treated effluent is totally reused and its quality is maintained as per MINAS. Reports attached separately. Complied |

B. Emissions

| SN | Standard | BR status and action plan |
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| 2 | H ₂ S in Fuel Gas | H ₂ S in Fuel Gas is within limits as required under revised standards. Complied |
| 3 | SO ₂ Emissions | |
| 4 | NO _x Emissions | These parameters are monitored through online stack analyzers. These analyzers are directly connected to CPCB and BSPCB servers. Emissions are under within limit. Reports attached separately. Complied |
| 5 | CO Emissions | |
| 6 | Particulate Matter (PM) Emissions | Barauni Refinery processes more low Sulphur crude in recent years. Only about 5% high sulfur crude processing takes place. As a result, internal fuel oil quality has been improved w.r.t emission of particulate matter. Further, particulate matter analyzers have been installed in all stacks of refinery and connected to CPCB server since June-16. The online analyzer data available now help us fine tuning fuel firing and optimization of gas mix amongst various furnaces and the controlling the PM parameters within the statutory limit. COMPLIED. |
| 7 | Nickel and Vanadium (Ni+V) Emissions | COMPLIED. |
| 8 | Sulphur Content in Liquid Fuel | COMPLIED. |

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| 9 | Continuous Monitoring System for SO₂ & NO_x emissions | Continuous monitoring is done through online analyzers. These analyzers are directly connected to CPCB and BSPCB servers. Complied |
| 10 | Opacity of Flue Gas ex FCCU Regenerators | >RFCCU was commissioned at Barauni Refinery along with flue gas scrubbing technology supplied by M/s Belco, USA. In the Belco unit, the flue gas is scrubbed with water & diluted caustic solution (<0.5 % concentration by wt.) to remove SOx and particulate matter. PM level in flue gas is less than 30 mg/Nm ³ . High volume of condensed water vapor generated during water scrubbing of flue gas escapes through the BELCO stack as whitish plume. Opacity meter under such condition is not considered relevant as it will not be effective due to high moisture content in flue gas. > Further, PM analyzers have been installed in RFCCU stack through which particulate matter ex- RFCCU stack is monitored, which is closely akin to monitoring of opacity in flue gas. Therefore, opacity meter installation at RFCCU is not planned. > Complied . |
| 11 | Sulphur Recovery from SRU | SRU at Barauni refinery meets the revised standard. COMPLIED . |
| 12 | H₂S emissions from SRU | SRU at Barauni refinery meets the revised standard. COMPLIED . |

C. Fugitive Emission

| SN | Standard | BR status and action plan |
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| 13 | Storage tanks with capacity between 4 to 75 m³ and TVP of more than 10 kpa | Not Applicable. |
| 14 | Storage tanks with capacity between 75 to 500 m³ and TVP of 10 to 76 kpa | Not Applicable. |
| 15 | Storage tanks with capacity of more than 500 m³ and TVP of 10 to 76 kpa | Storage tanks of Crude, MS & SRN have TVP of 10 to 76 kpa. All such tanks are IFRT or EFRT. COMPLIED . |

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| 16 | Storage tanks with capacity of more than 500 m3 and TVP of more than 76 kpa | Not Applicable |
| 17 | Provision of secondary seals in floating roof tanks | All such tanks at Barauni Refinery are equipped with double seal. COMPLIED. |
| 18 | Emission control in Rail Tank Wagon/ Road Tank Truck loading for Gasoline and naphtha for VOC reduction | Barauni Refinery complies most of the revised standards for petroleum refineries as notified in Gazette of India on 18th March'08 except vapor recovery system in tank wagon/tank truck. For VOC reduction of 99.5% and emission control to 5 gm/m3 in case of Gasoline and Naphtha loading, VOC recovery system at Loading Gantry would be required. Existing gantry at Barauni refinery does not have adequate space for laying a bigger dia header all along the gantry and other equipment for vapor recovery system. It will also require the shutdown of product loading gantry for 3-4 months to install this facility. Outage of gantry for such a long period cannot be allowable in view of the chances of market dry out of the major petroleum products. |
| 19 | Equipment's leak and LDAR programme | COMPLIED. |

D. Emission Standards for VOC from Wastewater Collection and Treatment

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| 20 | VOC Collection & Treatment System | VOC treatment system as a part of ETP modernization project has been installed and commissioned. COMPLIED. |
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Schedule -VI, Part C: Petroleum Oil Refinery

| SN | Standard | BR status and action plan |
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| 21 | Quantum limit for discharge of total effluent | No effluent is discharged outside refinery. Treated effluent is totally reused. |
| 22 | Limit of quantity of effluent discharged | |



Status as on 31.03.2025

Subject: Status of Environmental Clearance Conditions for MS quality up-gradation and HSD quality up-gradation in Barauni Refinery

Ref: Ministry's clearance letter no J-11011/15/2015 - IA II (I) dated 06.03.2017.

| SN | Point | Status |
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| A | Specific Conditions | |
| i. | M/s IOCL shall comply with standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18 th March, 2008. | <ul style="list-style-type: none">• Please refer Annexure-1 for detailed status for compliance of standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18th March, 2008.• Complied. |
| ii. | Continuous on-line stack monitoring for SO ₂ , NOx and CO of all the sacks shall be carried out. | <ul style="list-style-type: none">• Continuous on-line stack analyzers for monitoring of SO₂, NOx, CO & PM have been installed and connected to CPCB server for 24 nos. of stacks.• Complied. |
| iii. | The process emissions {SO ₂ , NOx, HC (Methane & Non-methane)}, VOCs and Benzene from various units shall conform to the standards prescribed under the Environment (Protection) Act, 1986. 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 unit shall be immediately put out of operation and shall not be restarted until the desired efficiency of the pollution control device has been achieved. | <ul style="list-style-type: none">• SO₂, NOx, CO & PM are monitored with online SO₂, NOx, CO and PM analyzers.• Process emissions from all units are monitored once in two months except SRU (which is monitored monthly) by MoEF&CC approved external agency M/s Detox Corporation Private Limited. Reports enclosed.• Total SO₂ emissions from existing units are less than the stipulated limit of 815 kg/hr.• Complied. |
| iv. | Leak Detection and Repair programme shall be prepared and implemented to control HC/VOC emissions. Focus shall be given to prevent fugitive emissions | <ul style="list-style-type: none">• Leak detection and repair programme is already in place at Barauni Refinery and same is carried out on quarterly basis.• Preventive maintenance schedule for each unit is in |

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| | <p>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. Fugitive emissions of HC from product storage tank yards etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.</p> | <p>place and same is strictly adhered to.</p> <ul style="list-style-type: none"> Monitoring of fugitive emission from tank farm area is included in Leak Detection and Repair Programme. Report enclosed. Hydrocarbon detectors with alarm system are installed in strategic locations in the various process units, tank farm, and other plausible locations Complied. |
| v. | <p>SO₂ emissions after expansion from the plant shall not exceed 815 kg/hr and further efforts shall be made for reduction of SO₂ load through use of low sulphur fuel. Sulphur recovery units shall be installed for control of H₂S emissions. The overall sulphur recovery efficiency of Sulphur recovery unit with tail gas treating shall not be less than 99.9%.</p> | <ul style="list-style-type: none"> Total SO₂ emission from existing units at BR is less than the stipulated limit of 815 kg/hr. SRU (Sulphur Recovery Unit) unit (without tail gas treating) consisting of 2 chains of capacity 40 MT/day of Sulphur production each is installed at Barauni Refinery. As per norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18th March, 2008, existing SRU installed in the refinery should have 98.7% sulphur recovery and Barauni Refinery complies this standard. New SRU envisaged in upcoming project (capacity expansion) will be installed with overall sulphur recovery efficiency of min 99.9%. Complied. |
| vi. | <p>As proposed, record of sulphur balance shall be maintained at the Refinery as part of the environmental data on regular basis. The basic component of sulphur balance include sulphur input through feed (sulphur content in crude oil), sulphur output from Refinery through products, byproduct (elemental sulphur), atmospheric emissions etc.</p> | <ul style="list-style-type: none"> Sulphur balance record is being maintained as a part of Environmental data. Complied. |
| vii. | <p>Flare gas recovery system shall be installed.</p> | <ul style="list-style-type: none"> Flare gas recovery system is installed and operational in the refinery. Complied. |

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| viii. | <p>Ambient air quality monitoring stations, [PM10, PM2.5, SO₂, NO_x, H₂S, mercaptan, non-methane-HC and Benzene] shall be set up in the complex in consultation with State Pollution Control Board, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be deiced based on modeling exercise to represent short term GLCs.</p> | <ul style="list-style-type: none"> 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 as per revised MoEF&CC standards 2009. Report enclosed. Three continuous online monitoring stations provided for ambient air quality monitoring covering 8 parameters viz PM 10, PM 2.5, SO₂, NO_x, CO, NH₃, Benzene and Ozone. The stations are also directly connected online with servers at CPCB and Bihar State Pollution Control Board (BSPCB). <p>• Complied.</p> |
| ix. | <p>The total water requirement from artesian wells after expansion of proposed project shall not exceed 651m³/hr and prior permission shall be obtained from the competent authority.</p> | <ul style="list-style-type: none"> Fresh water consumption during Oct-2024 to Mar-2025 was 648 m³/hr which is within limit of 651 m³/hr. Barauni Refinery has received NOC from CGWA on 19.06.2018 with validity till 04.06.2020. Again, renewal of NOC received with validity till 04.06.2026. <p>• Complied.</p> |
| x. | <p>As proposed, Industrial effluent generation shall not exceed 497 m³/hr after proposed expansion and treated in the integrated effluent treatment plant. The plant shall be based on Zero Liquid Discharge and as proposed RO to be installed within the plant. Treated effluent shall be recycled/reused within the factory premises. Domestic sewage shall be treated in sewage treatment plant (STP).</p> | <ul style="list-style-type: none"> Industrial effluent generation for 2024-25 is 492.38 m³/hr which is within the allowable limit of 497 m³/hr and is treated in the effluent treatment plant of the refinery. Industrial effluent generation post project shall be maintained within 497 m³/hr. Zero liquid discharge is being maintained at Barauni Refinery except during heavy rainfall, when excess surface run off may have to be allowed to flow into Refinery owned pit (Burrow Pit) adjacent to refinery premise in the West. Treated effluent is being reused for following purpose in the refinery: <ul style="list-style-type: none"> ○ Cooling Tower makeup water ○ Fire water make up ○ Coke cutting water ○ Make up water for Eco Ponds ○ Horticulture in Eco park Domestic sewage is treated in biological treatment plant of the refinery. <p>• Complied.</p> |



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| xi. | <p>Automatic mechanical Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.</p> | <ul style="list-style-type: none"> • Oil catchers have been constructed at following strategic locations of the refinery: <ul style="list-style-type: none"> ○ West of AVU-III ○ West of RFCCU ○ South of DHDT ○ East of Coker A ○ North of Coker A ○ North west corner of Stores ○ Final drain going to Burrow Pit. • Oil containment booms have also been installed at 3 nos of strategic locations in the refinery. • Oil collected/trapped by oil catcher and oil containment booms are transferred to ETP mechanically through gully suckers. • Complied. |
| xii. | <p>The oily sludge shall be subjected to melting pit for oil recovery and the residue shall be bio-remediated. The sludge shall be stored in HDPE lined pit with proper leachate collection system.</p> | <ul style="list-style-type: none"> • RCC pit for storage of Oily Sludge is in place and mechanized skid process has been deployed for better recovery of oil from oily sludge in place of melting pit. Presently M/S Viraj clean Sea Enterprises Pvt Ltd. is engaged for this job. • Residual oily sludge is bio-remediated in confined space bioremediation reactor (CBR). • Complied. |
| xiii. | <p>At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment (ESR) based on Public Hearing issues and item wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Ranchi.</p> | <ul style="list-style-type: none"> • Detailed ESR plan attached as Annexure-2. • Complied. |
| xiv. | <p>Green belt should be developed in 33% of the plot area to mitigate the effect of fugitive emission all around the plant in consultation with DFO as per CPCB guidelines. Thick green belt around factory premises should be ensured.</p> | <ul style="list-style-type: none"> • Total plot area of the refinery: 887.83 acres. • Green belt area in Refinery: 43.8 acres. • Green belt area in Refinery Township: 82.19 acres. • Total green belt area: 125.99 acres. • Since, there is no further land available for tree plantation in Refinery and township, MoU was signed with DFO, Munger and 180 hectares of green belt has been developed at Munger Forest Division. Total 1,65,000 no. of tree has been planted. • Total Green belt area has been increased to 65% of |

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| | | <p>the total project area. EC amendment for the same has been carried out.</p> <p>Complied</p> |
| 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. | <ul style="list-style-type: none"> • Stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority are being followed. • 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. | <ul style="list-style-type: none"> • Prior approval of ministry would be taken before carrying out any expansion or modification of the plant if required. • Complied. |
| 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. | <ul style="list-style-type: none"> • 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 as per revised MoEF&CC standards 2009. Report enclosed. • Three continuous online monitoring stations provided for ambient air quality monitoring covering 8 parameters viz PM 10, PM 2.5, SO₂, NO_x, CO, NH₃, Benzene and Ozone. The stations are also directly connected online with servers at CPCB and Bihar State Pollution Control Board (BSPCB). • Complied. |
| iv. | The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed. | <ul style="list-style-type: none"> • Ambient air quality is checked twice in a week in eight manual ambient air quality monitoring stations as per the National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009. • 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 | <ul style="list-style-type: none"> • The ambient noise levels from existing facilities conform to the standards prescribed under standards prescribed under Environment (Protection) Act, 1986 Rules. |

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| | <p>of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules viz. 75 dBA (day time) and 70 dBA (night time).</p> | <ul style="list-style-type: none"> 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. Adequate noise control measures also taken in new facilities in the project. Noise monitoring is done quarterly by external agency. Report enclosed. Complied. |
| vi. | <p>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.</p> | <ul style="list-style-type: none"> Rain water harvesting has been implemented at 21 buildings of Barauni Refinery and township in which water collected from roof top of various buildings is recharged to ground water. Additionally, whole surface run-off of township is also diverted to 3 nos. of recharge pits. Storm water drain of the refinery has been routed to ETP and storm water is being reused in refinery operation after treatment along with ETP water except during heavy rainfall, when excess surface run off may have to be allowed to flow into Refinery owned pit (Burrow Pit) adjacent to refinery premise in the West. Complied. |
| vii. | <p>Training shall be imparted to all employees on Safety and health aspects of chemical handling. Pre- employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemical shall be imparted.</p> | <ul style="list-style-type: none"> Training is continuously imparted to all employees on chemical handling. Pre – employment medical examination of all employees are carried out before joining the organization. Routine periodical medical examination as per statutory requirement is carried out on regular basis. Complied. |
| viii. | <p>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.</p> | <ul style="list-style-type: none"> Presently Environmental Monitoring of all required parameters in Refinery is carried out periodically. The existing practice shall be extended for the proposed project as per EIA/EMP report. Recommendations of Quantitative Risk Analysis are being implemented along with project execution. |

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| ix. | 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. | <ul style="list-style-type: none"> Being done based on the drawn-up schedule as part of CSR. CSR plan is finalized in consultation with mukhiyas of surrounding villages. • Complied |
| x. | The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment. | <ul style="list-style-type: none"> Being done based on the drawn-up schedule as part of CSR. • Complied |
| xi. | A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions. | <ul style="list-style-type: none"> BR has a full-fledged environment protection cell and a well-equipped dedicated pollution control laboratory established back in 1975. • Complied |
| xii. | The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds to earmark for environment management/pollution control measures shall not be diverted for any other purpose. | <ul style="list-style-type: none"> In addition to one-time investment in facilities for combating pollution, separate funds are allocated for specific activities such as environment monitoring, operation and maintenance of effluent treatment plant, oil recovery from oily sludge through mechanized skid process and studies related to environment etc. • Being complied. |
| xiii. | A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, ZilaParisad / Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. | <ul style="list-style-type: none"> The instant project being environment project was exempted from public hearing. Further, no suggestions were received from Panchayat, ZilaParisad / Municipal Corporation, Urban local Body and the local NGO while processing the proposal. Nevertheless, copy of clearance has been sent to District Magistrate, Begusaraiand Municipal Commissioner, Begusarai Nagar Nigam vide letter dated 22.02.2020. Attached as Annexure-3. • Complied |
| xiv. | 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&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environmental | <ul style="list-style-type: none"> A six-monthly compliance report and the monitored data are submitted regularly. EC Compliance status of various projects is being hosted on https://www.iocl.com/Talktous/SNotices.aspx. Alternatively, one can reach IOCL home page at https://www.iocl.com and thereafter selecting "We're Listening" tab followed by opening |

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| | Clearance and six-monthly compliance status reports shall be posted on the website of the company. | "Statutory Notices". • Complied |
| xv. | The environmental statement for each financial year ending 31 st March in Form-V as its 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&CC by e-mail. | • Environment Statement for each financial year is submitted to Bihar State Pollution Control Board. Same is sent to Regional Office of MoEF&CC. • Complied |
| xvi. | 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://moef.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. | • The information regarding accord of Environment clearance for the subject project has been advertised in two local newspapers. Copy enclosed as Annexure-4. • Complied. |
| xvii. | 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. | • The date of final approval of the project is 13.02.2015 and date of commencement is March 2017. • Complied. |

Note- Ambient air monitoring, stack monitoring and noise monitoring reports are attached separately



Status and Action Plan for Compliance of Revised Emission and Effluent Standards 2008 at Barauni Refinery

Schedule -I: Petroleum Oil Refinery

A. Effluent Discharge

| SN | Standard | BR status and action plan |
|----|--------------------------|--|
| 1 | Treated Effluent Quality | No effluent is discharged outside refinery. Treated effluent is totally reused and its quality is maintained as per MINAS. Reports attached separately. Complied |

B. Emissions

| SN | Standard | BR status and action plan |
|----|------------------------------|---|
| 2 | H ₂ S in Fuel Gas | H ₂ S in Fuel Gas is within limits as required under revised standards. Complied |
| 3 | SO ₂ Emissions | |
| 4 | NO _x Emissions | These parameters are monitored through online stack analyzers. These analyzers are directly connected to CPCB and BSPCB servers. Emissions are under within limit. Reports attached separately. Complied |
| 5 | CO Emissions | |

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|----|---|---|
| 6 | Particulate Matter (PM) Emissions | Barauni Refinery processes lower sulphur cruder in recent years. Only about 5% high sulfur crude processing takes place. As a result, internal fuel oil quality has been improved w.r.t emission of particulate matter. Further, particulate matter analyzers have been installed in all stacks of refinery and connected to CPCB server since June-16. The online analyzer data available now help us fine tuning fuel firing and optimization of gas mix amongst various furnaces and the controlling the PM parameters within the statutory limit. COMPLIED. |
| 7 | Nickel and Vanadium (Ni+V) Emissions | COMPLIED. |
| 8 | Sulphur Content in Liquid Fuel | COMPLIED. |
| 9 | Continuous Monitoring System for SO₂ & NO_x emissions | Continuous monitoring is done through online analyzers. These analyzers are directly connected to CPCB and BSPCB servers. Complied |
| 10 | Opacity of Flue Gas ex FCCU Regenerators | RFCCU was commissioned at Barauni Refinery along with flue gas scrubbing technology supplied by M/s Belco, USA. In the Belco unit, the flue gas is scrubbed with water & diluted caustic solution (<0.5 % concentration by wt.) to remove SOx and particulate matter. PM level in flue gas is less than 30 mg/Nm ³ . High volume of condensed water vapor generated during water scrubbing of flue gas escapes through the BELCO stack as whitish plume. Opacity meter under such condition is not considered relevant as it will not be effective due to high moisture content in flue gas. Further, PM analyzers have been installed in RFCCU stack through which particulate matter ex- RFCCU stack is monitored, which is closely akin to monitoring of opacity in flue gas. Therefore, opacity meter installation at RFCCU is not planned. Complied. |
| 11 | Sulphur Recovery from SRU | SRU at Barauni refinery meets the revised standard. COMPLIED. |
| 12 | H₂S emissions from SRU | SRU at Barauni refinery meets the revised standard. COMPLIED. |

C. Fugitive Emission

✓

| SN | Standard | BR status and action plan |
|----|--|--|
| 13 | Storage tanks with capacity between 4 to 75 m3 and TVP of more than 10 kpa | Not Applicable. |
| 14 | Storage tanks with capacity between 75 to 500 m3 and TVP of 10 to 76 kpa | Not Applicable. |
| 15 | Storage tanks with capacity of more than 500 m3 and TVP of 10 to 76 kpa | Storage tanks of Crude, MS & SRN have TVP of 10 to 76 kpa. All such tanks are IFRT or EFRT. COMPLIED. |
| 16 | Storage tanks with capacity of more than 500 m3 and TVP of more than 76 kpa | Not Applicable |
| 17 | Provision of secondary seals in floating roof tanks | All such tanks at Barauni Refinery are equipped with double seal. COMPLIED. |

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|----|--|--|
| 18 | Emission control in Rail Tank Wagon/ Road Tank Truck loading for Gasoline and naphtha for VOC reduction | Barauni Refinery complies most of the revised standards for petroleum refineries as notified in Gazette of India on 18th March'08 except vapor recovery system in tank wagon/tank truck. For VOC reduction of 99.5% and emission control to 5 gm/m ³ in case of Gasoline and Naphtha loading, VOC recovery system at Loading Gantry would be required. Existing gantry at Barauni refinery does not have adequate space for laying a bigger dia header all along the gantry and other equipments for vapour recovery system. It will also require the shutdown of product loading gantry for 3-4 months to install this facility. Outage of gantry for such a long period cannot be allowable in view of the chances of market dry out of the major petroleum products. |
| 19 | Equipments leak and LDAR programme | COMPLIED. |

D. Emission Standards for VOC from Wastewater Collection and Treatment

| | | |
|----|--|--|
| 20 | VOC Collection & Treatment System | VOC treatment system as a part of ETP modernization project has been installed and commissioned. COMPLIED. |
|----|--|--|

Schedule -VI, Part C: Petroleum Oil Refinery

| SN | Standard | BR status and action plan |
|----|--|---|
| 21 | Quantum limit for discharge of total effluent | No effluent is discharged outside refinery. Treated effluent is totally reused. |
| 22 | Limit of quantity of effluent discharged | |



रिफाइनरीज प्रभाग
Refineries Division

इंडियन ऑयल कॉर्पोरेशन लिमिटेड
बरानी रिफाइनरी, डाकघर : बरानी ऑयल रिफाइनरी,
जिला : बेगुसराई, बिहार - 851 114

Indian Oil Corporation Limited
Barauni Refinery, P.O. : Barauni Oil Refinery.

Dist. : Begusarai, Bihar - 851 114

वेबसाईट : www.iocl.com

ई-मेल : barauinirefinery@indianoil.in

दूसरा : 06243-240159 / 240110

फैक्स : 06243-240150 / 240278

ISO : 9001, 14001 & OHSAS : 18001 Certified Refinery



Ref.No.: TS/HSE/2020/02/1146.

Date : 22.02.2020

To,

District Magistrate,
Begusarai, Bihar

Sub: Copy of EC received by IOCL, Barauni Refinery for record

Dear Sir,

A copy of Environmental Clearance from MoEF&CC, received by IOCL, Barauni Refinery via F. No. J-11011/15/2015-IA-II (I), for the project for MS quality up-gradation & HSD quality up-gradation in Barauni Refinery at District – Begusarai, Bihar by M/s IOCL, is attached for your kind perusal and record.

Thanking you,

Yours faithfully,


(S K Bhanu)
DEPUTY GENERAL MANAGER (HSE)

Encl: As above.

10/2/20
99/2/20

Barauni Refinery - 7th Anniversary with nation

पंजीकृत कार्यालय : गो-9, अली यावर जंग मार्ग, बांद्रा (पूर्व), मुम्बई-400 051, महाराष्ट्र (भारत)
Regd. Office : 6-9, Ali Yavar Jung Marg, Bandra (East), Mumbai-400 051, Maharashtra (India)
CIN - L 23201 MH 1959 GOI 011388





रिफाइनरीज प्रभाग
Refineries Division

इंडियन ऑयल कॉर्पोरेशन लिमिटेड
बरोनी रिफाइनरी, बाकार : बरोनी ऑयल रिफाइनरी,
पिलां : बेगुसराय, बिहार - 851 114

Indian Oil Corporation Limited
Barauni Refinery, P.O. : Barauni Oil Refinery,
Distt. : Begusarai, Bihar - 851 114
वेबसाइट : www.iocl.com
ई-मेल : baraunirefinery@indianoil.in
फ़ोन : 06243-240159 / 240110
फ़ैक्स : 06243-240150 / 240278
(ISO : 9001, 14001 & OHSAS : 18001) Certified Refinery

Ref.No.: TS/HSE/2020/02/IOCL

Date : 22.02.2020

To,

Municipal Commissioner,
Begusarai Nagar Nigam
Begusarai, Bihar

Sub: Copy of EC received by IOCL, Barauni Refinery for record

Dear Sir,

A copy of Environmental Clearance from MoEF&CC, received by IOCL, Barauni Refinery via F. No. J-11011/15/2015-IA-II (I), for the project for MS quality up-gradation & HSD quality up-gradation in Barauni Refinery at District – Begusarai, Bihar by M/s IOCL, is attached for your kind perusal and record.

Thanking you,

Yours faithfully,

(S K Bhanu)

DEPUTY GENERAL MANAGER (HSE)

Encl: As above.

Barauni Refinery - *In harmony with nature*
पंचीकृत कार्यालय : जी-9, अली यादव जग मार्ग, बांद्रा (पूर्व), मुम्बई-400 051, महाराष्ट्र (भारत)
Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai-400 051, Maharashtra (India)
CIN - L 23201 MH 1959 GOI 011388

Copy of advertisement regarding receipt of Environment Clearance in two local newspapers

HINDU TIMES, PATNA
01 WEDNESDAY, MAY 17, 2017

Triple talaq a matter of faith for 1,400 yrs: Sibal

IN COURT Likens divorce law to belief about Ram's birthplace

Shadra Sinha
shadra@hinduatimes.com

NEW DELHI: The All India Muslim Personal Law Board (AIMPLB) on Tuesday defended triple talaq in the Supreme Court, saying it was being practised for 1,400 years and was a matter of faith just like Ram Lalla's birthplace.

The board brought up the long-pending dispute over building a temple to Lord Ram in Ayodhya, which Hindus believe is his birth place, before a five-judge constitutional bench which is hearing petitions demanding scrapping of the controversial divorce practice.

Several Muslim women have told the court the custom was biased and against gender justice.

"Triple talaq is not a question of equity and good conscience but of faith. Can't bring constitutional morality into it," board's lawyer and senior Congress leader Kapil Sibal said.

He also said while Hindu laws protected all customs in Muslim law they say customs violate Constitution.

In a Hindu majority state, Muslims, who were a minority, should be protected.

Several Muslim women have told the court the custom was biased and against gender justice. The Centre backs the petitioners, saying the practice was unconstitutional and against equality.

Kapil Sibal

SHARIA WAS PERSONAL LAW AND NOT SUBJECT TO FUNDAMENTAL RIGHTS, SIBAL SAID ABOUT THE ISLAMIC LEGAL AND MORAL CODE

Triple talaq is the lone controversial way Sunni Muslim men in India can get a divorce. It allows a man to end a marriage by uttering the word talaq thrice in quick succession.

Attorney general Mukul Rohatgi said it wasn't the court's job to interpret the Quran and it should consider the constitutional validity of triple talaq and not restrict itself to examining whether the custom was fundamental to practicing the faith.

If the government brings in a new law it could mean the start of a process to overhaul Muslim personal laws in India that are now guided by a 1937 Sharia code. India has separate sets of personal laws for each religion governing marriage, divorce, succession, adoption and maintenance.

The country's top law officer disagreed with the court that the government should first address what triple talaq was "essential to religion or not", saying the it was not an ecclesiastical court.

With agency inputs

page 1

I-T raids

Yadav is the deputy chief minister of Bihar.

Union minister Ravi Shankar Prasad has alleged that these transactions were a case of 'quid pro quo' as they stated to the period when Lalu Prasad was the railway minister, and dared Bihar chief minister Nitish Kumar to take action against him. He had claimed one such land deal involving Lalu and his family members was in Bihar in Delhi.

Nitish

set back to the powerful regional satrap who was disqualified from Parliament and banned from contesting elections after he was convicted of corruption in 2013 in one of the biggest scams in Bihar.

However, shortly after Lalu's tweet, RJD spokesperson Manoj Jha appeared to have launched a damage control exercise, saying the reference to "new alliance partners" was an allusion to how the BJP had picked up the income-tax department and CBI as its partners to harass political

when he broke his silence over the alleged acquisition of assets worth Rs 1,000 crore by RJD chief Lalu Prasad and his family, through shell companies at throwaway prices.

The matter related to the company affairs department and the Centre was competent to initiate action, if there was documentary evidence to warrant an inquiry, he had said in the presence of Prasad's son and deputy CM Krishan Prasad Yadav after the conclusion of his weekly Lok

maintenance for five years.

The six districts are Valmiki, Muzaffarpur, Sitamarhi, Sheohar, East Champaran and West Champaran.

Jauhar said the company had almost completed its task. "Work on only six roads remains to be completed. Under the prevailing law and order condition, it will be difficult for us to continue our work," he said. Meanwhile, an NHPC official said the two engineers had some dispute with a local contractor over payment against the work done.

page 2

Housing

try, cabinet secretariat, Brijesh Mehrotra said there was a shortage of about 1.87 crore houses for economically weaker sections in the country.

Under the policy, state agencies engaged in construction of houses and development of plots,

including BSHB, urban local bodies, and planning authorities, would have to allocate 50% of the plots and houses for EWS and LIG sections in all projects involving 4000 square metres of land and more.

"Of the total allocation, 50% will be earmarked for EWS and

page 3

IndianOil

CIN - L 23201 MH 1859 GCH 011388
Refineries Division - Barauni Refinery

PUBLIC NOTICE

It is to bring to kind notice of all concerned that Barauni Refinery has received Environment Clearance for MS Quality Upgradation & HSD Quality Upgradation Project vide Ministry's clearance letter no. J-11011/16/2015 - IA II (i) dated 06.03.2017. The copy of the Environment Clearance letter is available with Bihar State Pollution Control Board and may also be seen at website of the Ministry at <http://moef.nic.in>.

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IndianOil

Barauni Refinery

Status as on 31.03.2025

Subject: Status of Environmental Clearance Conditions for Expansion of Barauni Refinery from 6 MMTPA to 9 MMTPA along with polymer units by M/s Indian Oil Corporation Limited at Barauni, District Begusarai (Bihar)- Environmental Clearance - reg.

Ref: Ministry's clearance letter no J-11011/15/2015 - IA-II (I) dated 15.02.2019 and 04.06.2020

| SN | Point | Status |
|----|---|---|
| 11 | Terms and Conditions | |
| a) | Third party assessment for the environmental damage, if any, and differential impacts on environmental parameters due to excess crude processing (during the periods 2009-10, 2010-11, 2012-13, 2013-14, 2015-16, & 2016-17) shall be carried out by NEERI or by any other agency of repute, in a fixed time frame and the report shall be submitted to the ministry. | <ul style="list-style-type: none"> Study has been completed by M/s NEERI Nagpur in Jan 2020 and report submitted to MoEF&CC on 30.01.2020. As per report no adverse impact of excess crude processing is observed and same has been accepted by MoEF&CC (Ref: Minutes of the 17th meeting of the Expert Appraisal Committee (Industry-2 sector) held during 25-27 February, 2020, Agenda 17.15) Complied |
| b) | Necessary permission as mandated under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, as applicable from time to time, shall be obtained from the State Pollution Control Board as required. | <ul style="list-style-type: none"> With Ref. No.ROB(A+W)-1474/20/1084 dated 05.04.2022 permission from BSPCB, under Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, available with validity till 04.04.2027. Complied |
| c) | As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises. | <ul style="list-style-type: none"> Presently no effluents discharged outside refinery. Complied |
| d) | Necessary authorization required under the Hazardous and Other Wastes | <ul style="list-style-type: none"> Authorization from BSPCB available with validity till 29.08.2027. |

| | | |
|----|--|--|
| | (Management and Trans-Boundary Movement) Rules, 2016 and Solid Waste Management Rules, 2016 shall be obtained and the provisions contained in the Rules shall be strictly adhered to. | <ul style="list-style-type: none"> • Complied |
| e) | To control source and the fugitive emissions, suitable pollution control devices shall be installed with different stacks to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stacks of adequate height as per CPCB/SPCB guidelines. | <ul style="list-style-type: none"> • BELCO scrubber is installed in RFCCU for effluent scrubbing as a pollution control device. • Gaseous emission is dispersed through stacks of adequate height as per CPCB/SPCB guidelines for existing stacks and will be implemented in new units as well. <ul style="list-style-type: none"> • Complied |
| f) | The National Emission Standards for the Petroleum Oil Refinery issued by the Ministry vide G.S.R.186(E) dated 18 th March, 2008, as amended from time to time, shall be followed. | <ul style="list-style-type: none"> • Please refer Annexure-1 for detailed status for compliance of standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18th March, 2008. <ul style="list-style-type: none"> • Complied |
| g) | The National Emission Standards for Petrochemical (Basic & Intermediates) issued by the Ministry vide G.S.R.820 (E) dated 9 th November, 2012, as amended from time to time, shall be followed. | <ul style="list-style-type: none"> • Petrochemical units have not been constructed and compliance will be updated to include new units. <ul style="list-style-type: none"> • Complied |
| h) | Total fresh water requirement shall not exceed 24000 cum/day to be met from ground water through artesian wells. Necessary prior permission in this regard shall be obtained from the concerned regulatory authority. | <ul style="list-style-type: none"> • Presently, Barauni Refinery has necessary authorization from CGWA for 15624 m3/day. During, Oct 24 to Mar 25 average fresh water consumption was 15552 m3/day. • Prior permission will be taken from CGWA for enhancement of this limit to 24000 m3/day before project completion. <ul style="list-style-type: none"> • Complied |
| i) | Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond. | <ul style="list-style-type: none"> • A separate storm water channel is there in the refinery which is reused for refinery operation post treatment. <ul style="list-style-type: none"> • Complied |
| j) | Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and solvent transfer to be done through pumps. | <ul style="list-style-type: none"> • Hazardous chemicals have been stored in tanks, tank farm, drums etc. All class A petroleum storage tanks has been provided with Rim Seal Fire protection system. <ul style="list-style-type: none"> • Complied |

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| k) | Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed of to the TSDF. The ash from boiler shall be sold to brick manufacturers/cement industry. | <ul style="list-style-type: none"> Spent catalyst generated in RFCC unit is sent to cement industry for re-processing/co-processing. Pet coke is sold to authorized user. No ash is generated at Barauni Refinery. Complied |
| l) | 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. | <ul style="list-style-type: none"> Compliance is already being done and will be expanded to include new units. Complied |
| m) | Regular monitoring of Volatile Organic Compounds shall be carried out at vulnerable points. | <ul style="list-style-type: none"> Monitoring of Volatile Organic Compounds is being done quarterly and will be increased to include new units. Complied |
| n) | Oily sludge shall be collected for oil recovery and the residue shall be bio-remediated. | <ul style="list-style-type: none"> Oily sludge is collected in 4 nos. Pits for oil recovery. Residual oily sludge is bio-remediated in Confined Space Bioreactor (CBR). Complied |
| o) | Comprehensive water audit to be conducted on annual basis and report to the concerned Regional office of the Ministry. Outcome from the report to be implemented for conservation scheme. | <ul style="list-style-type: none"> Water study for entire refinery has been carried out by FICCI and final report submitted in Oct'2022. Phase wise implementation of recommendations is being undertaken. Complied |
| p) | Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises. | <ul style="list-style-type: none"> Oil catchers have been constructed at 7 strategic locations of the refinery Oil containment booms have also been installed at 3 nos of strategic locations in the refinery. Oil collected/trapped by oil catcher and oil containment booms are transferred to ETP mechanically through gully suckers. The same facility will also be provided in the new units. Complied |
| q) | The company shall undertake waste minimization measures as below: - |  |

| | | |
|----|--|--|
| | <p>(i) Metering and control quantities of active ingredients to minimize waste.</p> <p>(ii) Reuse of by-products from the process as raw materials or as raw substitutes in other processes.</p> <p>(iii) Use of automated filling to minimize spillage.</p> <p>(iv) Use of Close Feed system into batch reactors.</p> <p>(v) Venting equipment through vapour recovery system.</p> <p>(vi) Use of high-pressure hoses for equipment clearing to reduce wastewater generation.</p> | <p>All critical/important process lines have flow meters installed.</p> <p>All excess/byproduct gases generated are used as fuel gas. Any oil drained is routed to ETP for recovery and is reprocessed in AVUs/Coker.</p> <p>In OM&S Gantry, automated filling is done with process interlocks in place to avoid spillage.</p> <p>Batch reactors process occurs only in Coker unit. In this unit closed and automated feed system is in place.</p> <p>ETP has a VOC recovery system. Recovered vapour is passed through activated charcoal bed before venting.</p> <p>High pressure (hydrojet) is used to clean vessels, exchangers & pipelines when required.</p> <ul style="list-style-type: none"> • Complied |
| r) | The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department. | <ul style="list-style-type: none"> • Total plot area of the refinery: 887.83 acres. • Green belt area in Refinery: 43.8 acres. • Green belt area in Refinery Township: 82.19 acres. • Total green belt area: 125.99 acres. • Since, there is no further land available for tree plantation in Refinery and township hence, an agreement has been done with Forest department on 21.10.2021 for 1,65,000 nos. trees plantation in 180 Hectare land. EC amendment for the same has been carried out. <ul style="list-style-type: none"> • Complied |
| s) | All the commitments made to the public during hearing/consultation shall be satisfactorily implemented. | <ul style="list-style-type: none"> • All the recommendations of public hearing have been complied. • Complied |
| t) | At least 0.25% of the total project cost shall be allocated for Corporate Environment Responsibility (CER) and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office. | <ul style="list-style-type: none"> • Detailed ESR plan attached as Annexure-2. • Being complied |
| u) | For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be | <ul style="list-style-type: none"> • DG set is not used during normal refinery operation. It is used only in case of complete power failure; hence monitoring data is not available. Stack monitoring will be done whenever DG set will be in |

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| | provided to DG set for controlling the noise pollution. | line. <ul style="list-style-type: none"> • Stack height modification job completed. Acoustic enclosure job completed. • Complied. |
| v) | The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms. | <ul style="list-style-type: none"> • Noted for compliance. • Fire station has been established in the refinery for protection of possible fire hazards. |
| w) | Continuous online (24X7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises. | <ul style="list-style-type: none"> • 24 nos. of existing stacks are installed with online analyzers connected to the servers. • All upcoming new stacks will also be provided with online analyzers. • Web camera with night vision is installed in the channel/drain to Burrow pit. • For continuous monitoring of effluent, online analyzer has been installed. • For flow meter, installation job is completed. • Complied. |
| x) | Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act. | <ul style="list-style-type: none"> • Pre – employment medical examination of all employees are carried out before joining the organization. Routine periodical medical examination as per statutory requirement is carried out on regular basis. • Complied |
| y) | Process safety and risk assessment studies shall be carried out using advanced models and the mitigating measures shall be undertaken accordingly. | <ul style="list-style-type: none"> • For process safety and risk assessment, studies like HAZOP, QRA are carried out mandatorily before commissioning of any new process unit. Liquidation of recommendations of these studies is done in time bound manner. • Complied |
| 11.1 | Generic Conditions | |
| i. | The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and/or any other statutory authority. | <ul style="list-style-type: none"> • Stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority are being followed. • Complied. |



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| ii. | <p>No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change. In case of deviations or alterations in the project proposal from those submitted to the 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.</p> | <ul style="list-style-type: none"> • Noted for compliance. • Prior approval of ministry would be taken before carrying out any expansion or modification of the plant if required. |
| iii. | <p>The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB), ensuring that at least one stations each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.</p> | <ul style="list-style-type: none"> • Five nos. of offline ambient air quality monitoring stations (four in refinery and one in township) and three nos. of continuous ambient air quality monitoring station has been provided at strategic locations at Barauni Refinery for monitoring of ambient air quality. • 03 Nos of additional ambient air monitoring stations installed in periphery villages of Refinery. • Ambient air quality is checked twice in a week in five nos. of offline ambient air quality monitoring stations as per MoEF&CC standards 2009. Report enclosed. • Complied. |
| iv. | <p>The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.</p> | <ul style="list-style-type: none"> • Ambient air quality is checked twice in a week in five nos. of offline ambient air quality monitoring stations as per the National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009. • Complied. |
| v. | <p>The overall noise level 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 the Environment (Protection) Act, 1986.</p> | <ul style="list-style-type: none"> • The ambient noise levels from existing facilities conform to the standards prescribed under standards prescribed under Environment (Protection) Act, 1986 Rules. Reports enclosed. • 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. • Adequate noise control measures shall be taken in new facilities in the project. |



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| vi. | <p>The company shall harvest rainwater from the roof tops of the buildings to recharge ground water and to utilize the same for different industrial operations within the plant.</p> | <ul style="list-style-type: none"> • Rain water harvesting has been implemented at 21 buildings of Barauni Refinery and township in which water collected from roof top of various buildings is recharged to ground water. Total surface run-off of township is also being used for ground water recharge. • Storm water drain of the refinery has been routed to ETP and storm water is being reused in refinery operation after treatment along with ETP water except during heavy rainfall, when excess surface run off may have to be allowed to flow into Refinery owned pit (Burrow Pit) adjacent to refinery premise in the West. • In future rainwater harvesting for rooftops of building will be done as per requirement. |
| vii. | <p>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.</p> | <ul style="list-style-type: none"> • Training is continuously imparted to all employees on chemical handling. • Pre – employment medical examination of all employees are carried out before joining the organization. • Routine periodical medical examination as per statutory requirement is carried out on regular basis. • The same will be done in future also. |
| viii. | <p>The company shall comply with all 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 shall be implemented.</p> | <ul style="list-style-type: none"> • Presently Environmental Monitoring of all required parameters in Refinery is carried out periodically. The existing practice shall be extended for the proposed project as per EIA/EMP report. |
| ix. | <p>The company shall undertake all measures for improving socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villagers, administrations and other stakeholders. Also, eco-developmental measures shall be undertaken for overall improvement of the environment.</p> | <ul style="list-style-type: none"> • Being done based on the drawn-up schedule as part of CSR. CSR plan is finalized in consultation with mukhiyas of surrounding villages. • Being complied. |



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| x. | A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environment Management and Monitoring functions. | <ul style="list-style-type: none"> BR has a full-fledged environment protection cell and a well-equipped dedicated pollution control laboratory. Complied |
| 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, Forest and Climate Changes 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. | <ul style="list-style-type: none"> In addition to one-time investment in facilities for combating pollution, separate funds are allocated for specific activities such as environment monitoring, operation and maintenance of effluent treatment plant, oil recovery from oily sludge through mechanized skid process and studies related to environment etc. Complied. |
| xii. | A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parishad/ Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. | <ul style="list-style-type: none"> A copy of the clearance letter has been submitted to concerned Panchayat, Zila Parishad. Enclosed as Annexure-3. Complied |
| 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&CC, the respective zonal office of CPCB and SPCB. A copy of Environmental Clearance and six-monthly compliance status report shall be posted on the website of the company. | <ul style="list-style-type: none"> A six-monthly compliance report and the monitored data are submitted regularly. Will be done for this EC as well. EC Compliance status of various projects is being hosted on https://www.iocl.com/Talktous/SNotices.aspx. Alternatively, one can reach IOCL home page at https://www.iocl.com and thereafter selecting "We're Listening" tab followed by opening "Statutory Notices". Complied |
| xiv. | The environmental statement for each financial year ending 31 st 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 | <ul style="list-style-type: none"> Environment Statement for each financial year is submitted to Bihar State Pollution Control Board and MoEF&CC. Same is also sent to Regional Office of MoEF&CC by e-mail and hosted at the website https://www.iocl.com/Talktous/SNotices.aspx. Complied |



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| | shall also be sent to the respective Regional offices of MoEF&CC by e-mail. | |
| xv. | <p>The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and the copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://moef.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.</p> | <ul style="list-style-type: none"> • The information regarding accord of Environment clearance for the subject project has been advertised in two local newspapers. Copy enclosed as Annexure-4. • Complied. |



| Status and Action Plan for Compliance of Revised Emission and Effluent Standards 2008 at Barauni Refinery | | |
|--|--|---|
| Schedule -I: Petroleum Oil Refinery | | |
| A. Effluent Discharge | | |
| SN | Standard | BR status and action plan |
| 1 | Treated Effluent Quality | No effluent is discharged outside refinery. Treated effluent is totally reused and its quality is maintained as per MINAS. Reports attached separately. Complied |
| B. Emissions | | |
| SN | Standard | BR status and action plan |
| 2 | H₂S in Fuel Gas | H ₂ S in Fuel Gas is within limits as required under revised standards. Complied |
| 3 | SO₂ Emissions | These parameters are monitored through online stack analyzers. These analyzers are directly connected to CPCB and BSPCB servers. Emissions are under within limit. Reports attached separately. Complied |
| 4 | NO_x Emissions | |
| 5 | CO Emissions | |
| 6 | Particulate Matter (PM) Emissions | Barauni Refinery processes more low Sulphur crude in recent years. Only about 5% high sulfur crude processing takes place. As a result, internal fuel oil quality has been improved w.r.t emission of particulate matter. Further, particulate matter analyzers have been installed in all stacks of refinery and connected to CPCB server since June-16. The online analyzer data available now help us fine tuning fuel firing and optimization of gas mix amongst various furnaces and the controlling the PM parameters within the statutory limit. COMPLIED. |
| 7 | Nickel and Vanadium (Ni+V) Emissions | COMPLIED. |
| 8 | Sulphur Content in Liquid Fuel | COMPLIED. |
| 9 | Continuous Monitoring System for SO₂& NO_x emissions | Continuous monitoring is done through online analyzers. These analyzers are directly connected to CPCB and BSPCB servers. Complied |

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|----|---|--|
| 10 | Opacity of Flue Gas ex FCCU Regenerators | >RFCCU was commissioned at Barauni Refinery along with flue gas scrubbing technology supplied by M/s Belco, USA. In the Belco unit, the flue gas is scrubbed with water & diluted caustic solution (<0.5 % concentration by wt.) to remove SOx and particulate matter. PM level in flue gas is less than 30 mg/Nm3. High volume of condensed water vapor generated during water scrubbing of flue gas escapes through the BELCO stack as whitish plume. Opacity meter under such condition is not considered relevant as it will not be effective due to high moisture content in flue gas. > Further, PM analyzers have been installed in RFCCU stack through which particulate matter ex- RFCCU stack is monitored, which is closely akin to monitoring of opacity in flue gas. Therefore, opacity meter installation at RFCCU is not planned. > Complied . |
| 11 | Sulphur Recovery from SRU | SRU at Barauni refinery meets the revised standard. COMPLIED. |
| 12 | H₂S emissions from SRU | SRU at Barauni refinery meets the revised standard. COMPLIED. |

C. Fugitive Emission

| SN | Standard | BR status and action plan |
|----|---|---|
| 13 | Storage tanks with capacity between 4 to 75 m³ and TVP of more than 10 kpa | Not Applicable. |
| 14 | Storage tanks with capacity between 75 to 500 m³ and TVP of 10 to 76 kpa | Not Applicable. |
| 15 | Storage tanks with capacity of more than 500 m³ and TVP of 10 to 76 kpa | Storage tanks of Crude, MS & SRN have TVP of 10 to 76 kpa. All such tanks are IFRT or EFRT. COMPLIED. |
| 16 | Storage tanks with capacity of more than 500 m³ and TVP of more than 76 kpa | Not Applicable |
| 17 | Provision of secondary seals in floating roof tanks | All such tanks at Barauni Refinery are equipped with double seal. COMPLIED. |

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|----|--|--|
| 18 | Emission control in Rail Tank Wagon/ Road Tank Truck loading for Gasoline and naphtha for VOC reduction | Barauni Refinery complies most of the revised standards for petroleum refineries as notified in Gazette of India on 18th March'08 except vapor recovery system in tank wagon/tank truck. For VOC reduction of 99.5% and emission control to 5 gm/m ³ in case of Gasoline and Naphtha loading, VOC recovery system at Loading Gantry would be required. Existing gantry at Barauni refinery does not have adequate space for laying a bigger dia header all along the gantry and other equipments for vapour recovery system. It will also require the shutdown of product loading gantry for 3-4 months to install this facility. Outage of gantry for such a long period cannot be allowable in view of the chances of market dry out of the major petroleum products. |
| 19 | Equipments leak and LDAR programme | COMPLIED. |

D. Emission Standards for VOC from Wastewater Collection and Treatment

| | | |
|----|--|--|
| 20 | VOC Collection & Treatment System | VOC treatment system as a part of ETP modernization project has been installed and COMPLIED. |
|----|--|--|

Schedule -VI, Part C: Petroleum Oil Refinery

| SN | Standard | BR status and action plan |
|----|--|---|
| 21 | Quantum limit for discharge of total effluent | No effluent is discharged outside refinery. Treated effluent is totally reused. |
| 22 | Limit of quantity of effluent discharged | |



F. No.J-11011/15/2015-IA-II (I)

Government of India

Ministry of Environment, Forest and Climate Change
(IA Division)

Indira Paryavaran Bhawan

Jor Bagh Road, N Delhi - 3

Dated: 15th February, 2019

To,

M/s Indian Oil Corporation Limited,
Barauni Refinery,
District Begusarai (Bihar)**Sub: Expansion of Barauni Refinery from 6 MMTPA to 9 MMTPA along with polymer units by M/s Indian Oil Corporation Limited at Barauni, District Begusarai (Bihar) - Environmental Clearance - reg.****Ref: Online Proposal No.IA/BR/IND2/28027/2015 dated 2nd February, 2019.**

Sir,

This has reference to your online proposal No.IA/BR/IND2/28027/2015 dated 2nd February, 2019 along with the EIA/EMP report containing public hearing proceedings for the above mentioned project.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal for environmental clearance to the project for expansion of Barauni Refinery from 6 MMTPA to 9 MMTPA along with polymer units by M/s Indian Oil Corporation Limited in a total area of 3592921sqm at Barauni, District Begusarai (Bihar).

3. The details of the existing/proposed products are as under:-

| S. No. | Product/By-product | Existing (TMTPA) | Proposed (TMTPA) | Total (TMTPA) |
|--------------|-------------------------|------------------|------------------|---------------|
| 1 | LPG | 318 | 169.1 | 487.1 |
| 2 | Poly Propylene | 0 | 203 | 203 |
| 3 | Naphtha | 83.4 | 35.3 | 118.7 |
| 4 | MS (BS-VI) | 1351.6 | 372.4 | 1724.0 |
| 5 | Aviation Turbine Fuel | 204.0 | (-)0.8 | 203.2 |
| 6 | Superior Kerosene | 370.0 | 0 | 370.0 |
| 7 | HSD (BS-VI) | 2787.1 | 1833.9 | 4621.0 |
| 8 | Fuel Oil | 46.9 | (-) 45.9 | 1.0 |
| 9 | Bitumen | 74.0 | 0 | 74.0 |
| 10 | Carbon Black Feed Stock | 0 | 0 | 0 |
| 11 | Raw Pet Coke (LS) | 154.0 | (-) 30.0 | 124.0 |
| 12 | Raw Pet Coke (HS) | 0 | 184.0 | 184.0 |
| 13 | Sulfur | 21.7 | 34.3 | 56.0 |
| 14 | Fuel & Loss | 591 | 243.0 | 834 |
| Total | | 6000 | 3000 | 9000 |

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06-06-019

Page 1 of 7

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ग्राम पंचायत राज सचिवालय
महाराष्ट्र श्रेणी

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F. No.J-11011/15/2015-IA-II (I)
Government of India
Ministry of Environment, Forest and Climate Change
(IA Division)

Indira Paryavaran Bhawan
Jor Bagh Road, N Delhi - 3
Dated: 15th February, 2019

To,

M/s Indian Oil Corporation Limited,
Barauni Refinery,
District Begusarai (Bihar)

Sub: Expansion of Barauni Refinery from 6 MMTPA to 9 MMTPA along with polymer units by M/s Indian Oil Corporation Limited at Barauni, District Begusarai (Bihar) - Environmental Clearance - reg.

Ref: Online Proposal No.IA/BR/IND2/28027/2015 dated 2nd February, 2019.

Sir,

This has reference to your online proposal No.IA/BR/IND2/28027/2015 dated 2nd February, 2019 along with the EIA/EMP report containing public hearing proceedings for the above mentioned project.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal for environmental clearance to the project for expansion of Barauni Refinery from 6 MMTPA to 9 MMTPA along with polymer units by M/s Indian Oil Corporation Limited in a total area of 3592921sqm at Barauni, District Begusarai (Bihar).

3. The details of the existing/proposed products are as under:-

| S. No. | Product/By-product | Existing (MMTPA) | Proposed (MMTPA) | Total (MMTPA) |
|--------|-------------------------|------------------|------------------|---------------|
| 1 | LPG | 318 | 169.1 | 487.1 |
| 2 | Poly Propylene | 0 | 203 | 203 |
| 3 | Naphtha | 83.4 | 35.3 | 118.7 |
| 4 | MS (BS-VI) | 1351.6 | 372.4 | 1724.0 |
| 5 | Aviation Turbine Fuel | 204.0 | (-)0.8 | 203.2 |
| 6 | Superior Kerosene | 370.0 | 0 | 370.0 |
| 7 | HSD (BS-VI) | 2787.1 | 1833.9 | 4621.0 |
| 8 | Fuel Oil | 46.9 | (-) 45.9 | 1.0 |
| 9 | Bitumen | 74.0 | 0 | 74.0 |
| 10 | Carbon Black Feed Stock | 0 | 0 | 0 |
| 11 | Raw Pet Coke (LS) | 154.0 | (-) 30.0 | 124.0 |
| 12 | Raw Pet Coke (HS) | 0 | 184.0 | 184.0 |
| 13 | Sulfur | 21.7 | 34.3 | 56.0 |
| 14 | Fuel & Loss | 591 | 243.0 | 834 |
| Total | | 6000 | 3000 | 9000 |

Page 1 of 7

28/2/2019
6/4/2019
सरकार

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राम कर्मचारी, रेफिनारी-बरानी
इंडिया-बेगुसराई

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Annexure-2

Details of CER Projects of Barauni Refinery
Status as on 31.03.2025

| S.N | Activity/ Project details | Approved Amount (Rs in lacs) | Expenditure Amount (Rs in lacs) |
|-----|---|-------------------------------|----------------------------------|
| 1 | Construction of Boundary Wall, Internal Road and provision of street lights in the Burrow Pit area of Barauni Refinery | 1232 | 739.32 |
| 2 | Construction of 04(Four) Nos of classrooms in Middle School Govindpur located in the vicinity of Refinery | 65 | 62.57 |
| 3 | Manure Management Project with Sudha Dairy in Technical Support by National Dairy Development Board (NDDB), Anand | 113 | 112.50 |
| 4 | Construction of 6-Bed Burn Ward in the Sadar Hospital Begusarai | 386 | 77.52 |
| 5 | Provision of Medical Grade Oxygen Cylinders with flow meter and disosable masks & pulse oxymeters for providing treatments to COVID patients by Begusarai District Administration | 10 | 10.39 |
| 6 | Establishment of 01(One) Nos of PSA based Oxygen Generation Unit of capacity 450 M3/Hour with refilling capacity at Barauni Refinery under Corporate Environmental Responsibility | 991 | 819.53 |
| 7 | Establishment of PSA based medical-grade Oxygen Generation Plant at Govt Hospital, Teghra for COVID treatment facilities under CER Initiative of Barauni Refinery | 143 | 82.08 |
| 8 | Setting up of 50-Bed Pediatric Care Unit at Sadar Hospital Begusarai and Hospital | 752 | 390.25 |
| 9 | Provision of 03 (Three) Nos of Ambulances to Sadar Hospital Begusarai under CER initiative of Barauni Refinery | 224 | 177.36 |
| 10 | Installation of electrical poles and street lights on the road from Barauni Refinery Township to Township BMP Gate areas under the CER initiative of Barauni Refinery | 333 | 81.25 |
| 11 | Development of Green Belt outside the Barauni Refinery Township premises along NH-31 | 397 | 252.40 |
| 12 | Construction of Cross Drains in Keshawe Village to provide support to the villagers in order to avoid any water-logging inside the village. | 614 | 514.70 |
| 13 | Development of Gandhi Stadium in Begusarai under the CER initiative of Barauni Refinery' | 240 | 125.81 |
| 14 | Setting up of Smart Classes facilities in Rashtrakavi Ramdhari Singh Dinkar College of Engineering Begusarai under CER initiative of Barauni Refinery | 31 | 30.70 |

| | | | |
|----|---|-------------|----------------|
| 15 | Provision & Installation of Air Conditioners in different healthcare facilities (Sub-Divisional Hospital, PHC & CHC) in Begusarai District under the CER initiative of Barauni Refinery | 13 | 7.44 |
| 16 | Provision of Taekowandoo infrastructure in Begusarai | 19 | 16.65 |
| 17 | Installation of 02(Two) Nos of High Mast Light at Jhamatia Ganga Ghat in Begusarai under the Corporate Environment Responsibility (CER) initiative of Barauni Refinery | 27 | 7.56 |
| | Total Expenditure till date | 5590 | 3508.07 |

Note: Projects as identified above are tentative only and subjected to change based on the approval from District Administration as per CER policy in due course of time.



CSR Project details for the FY2024-25

| SI No. | Name of Project | Expenditure (Rs Lacs) (01.04.2024 to 31.03.2025) |
|---------------|---|---|
| 1 | Installation & setting up of 125 Nos of Solar High Mast Lights in Jale in Darbhanga District of Bihar | 112.66 |
| 2 | TruNAT machines in 4 Nos of TB Centres in Begusarai District | 58.24 |
| 3 | Installation & setting up of 125 Nos of Solar High Mast Lights in Korha in Katihar | 112.64 |
| 4 | Installation for 07 Nos of RO Plants in Khagaria District | 22.51 |
| 5 | Gyanodaya Scholarship Scheme | 39.36 |
| 6 | Barauni Refinery Shri Krishna Singh Chhatravitti Yojana | 39.75 |
| 7 | Barauni Refinery Dinkar Uchch Shiksha Sahayata Yojana | 17.00 |
| 8 | Construction of pay and use Sulabh Toilet at Sitamarhi | 200.14 |
| 9 | Organizing Health camps in 20 Villages | 26.75 |
| 10 | Food basket for TB Patients under PMTBMB | 33.12 |
| 11 | Promoting Menstrual Hygiene and Sanitary Napkins in in targeted locations of Begusarai district. | 37.09 |
| 12 | Proposal for the Installation of 15 Health ATM Kiosk Digital Machines under CSR for TB Patient Care in Begusarai. | 61.95 |
| 13 | PM intern Yojana | 0.08 |
| 14 | Installation of Blood Separator Machine in Sadar Hospital under CSR in Begusarai | 30.50 |
| 15 | Installation of Anaesthesia Workstation in Sadar Hospital under CSR in Begusarai | 50.40 |
| 16 | Installation of 03 Ultrasound machines in Sadar Hospital under CSR in Begusarai | 63.00 |
| | Total Expenditure | 905.21 |



Annexure-3



रेफिनेजरी भाग
Refineries Division

इंडियन ऑयल कॉर्पोरेशन लिमिटेड
इंडियन ऑयल कॉर्पोरेशन लिमिटेड
भारत राष्ट्रीय नियंत्रित उपकरण वित्तीय संस्था
वाराणसी, बिहार - 813001

Indian Oil Corporation Limited

Barauni Refinery P.O. - Barauni (Bihar)

Dist. - Begusarai, Bihar - 851 112

Latitude - 24° 45' 00" N

Longitude - 85° 24' 00" E

Phone - 06243 240159/240160

Fax - 06243 240159/240216

SG - 9001, 14001 & OHSAS - 18001 Certified Refinery



Ref. No.: TS/HSE/2020/02/ 1195

Date : 12.02.2020

To,
Municipal Commissioner
Begusarai Nagar Nigam
Begusarai, Bihar

Sub: Copy of EC received by IOCL, Barauni Refinery for record

Dear Sir,

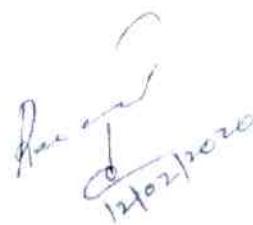
A copy of Environmental Clearance from MoEF&CC, received by IOCL, Barauni Refinery via F. No. J-11011/15/2015-IA-II (I), for the project for **Expansion of Barauni Refinery from 6 MMTPA to 9 MMTPA along with polymer units** is attached for your kind perusal and record.

Thanking you.

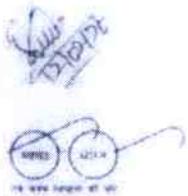
Yours faithfully,


(M A Choudary)
GENERAL MANAGER (TS & HSE)

Encl. As above


12/02/2020





रिकाउनरीजन प्रभाग
Petroleum Division

इंडियन ऑयल कॉर्पोरेशन लिमिटेड
बराणी रिफार्नरी बाराणी, बाराणी, बिहार, 801 101
फोन: ०६२४३ २४३१५६, ०६२४३ २४३१५७

Indian Oil Corporation Limited
Barauni Refinery P.O. - Barauni, Bihar - 801 101
State - Begusarai, Bihar, 801 101
Website - www.iocl.co.in
E-mail - iocl.united@iocl.co.in
(06243) 240159 / 240171
Fax - (06243) 243150 / 243178
SC - 9001, 140016 & 24546, ISO - Ahmedabad

Ref.No.: TS/HSE/2020/02/ 1141

Date : 12.02.2020

To,
Shri Arvind Kumar Verma, IAS
District Magistrate-cum-Collector
Begusarai, Bihar

Sub: Copy of EC received by IOCL, Barauni Refinery for record

Dear Sir

A copy of Environmental Clearance from MoEF&CC, received by IOCL, Barauni Refinery via F. No. J-11011/15/2015-IA-II (I), for the project for **Expansion of Barauni Refinery from 6 MMTPA to 9 MMTPA along with polymer units** is attached for your kind perusal and record.

Thanking you.

Yours faithfully,


(M A Choudary)
GENERAL MANAGER (TS & HSE)

Encl: As above



Annexure-4

Copy of advertisement regarding receipt of Environment Clearance in two local newspapers

Hindustan Times Page no.6 Patna Edition dated 20.02.2019

Former CM JAGANNATH MISHRA IS ALSO OCCUPYING 41 KRANTI MARG RESIDENCE.

THE HC ALSO STRUCK DOWN THE RESOLUTION OF BIHAR'S BUILDING CONSTRUCTION DEPARTMENT AS IT ALSO SUFFERED

.co.in

Act 2002, the Authorized Officer is per details given below against payment of Security Interest & remittance in respect of Lien Credit recovery of the secured debts due to the recaut. as recoveries if any.

Authorised Officer PNB,
Sundarnar,

| Reserve Price Carried Money (EMD) | Date and Time of Auction |
|--|--|
| ₹ 30,70,000/- ₹ 3,07,000/- ₹ 10,000/- | 27.03.2019 11.00 a.m. to 03.00 p.m. |
| ₹ 2,16,80,000/- ₹ 21,60,000/- ₹ 10,000/- | 27.03.2019 11.00 a.m. to 03.00 p.m. |
| ₹ 2,80,80,000/- ₹ 28,00,000/- ₹ 10,000/- | 27.03.2019 11.00 a.m. to 03.00 p.m. |

that such an important visit as that of the Saudi crown prince?" the prime minister asked.

"We have been fighting against terrorism for the past 15 years. How will Pakistan benefit from such incidents?"

"Which law in the world allows everyone to become a judge and jury?" Questioning whether India "wants to resolve the issue through military", Khan said, "This has never been a successful measure."

hibit the use of funds and spaces for holding activities by the banned Students Islamic Movement of India (SIMI), allegedly involved in a number of terrorist activities in the country.

In a notification, the Union home ministry said the ban imposed on SIMI was extended for five more years under the Unlawful Activities (Prevention) Act, 1967 on January 31.

"Now, therefore, in exercise of the powers conferred by section

shall be exercised also by state governments and Union territory administrations in relation to the above said unlawful association, it is said.

Section 7 is related to powers to prohibit the use of funds of an unlawful association and section 8 specifies the powers to ban the use of locations by an unlawful organisation.

The ministry said if SIMI's unlawful activities were not curbed immediately, it would

disrupt the functioning of governments and inciting secessionist ideas. It listed 51 cases in which SIMI members were "involved".

The ministry said the outfit has been polluting the minds of people by creating communal disharmony, undertaking activities prejudicial to the integrity and security of India.

The Centre is also of the opinion that it is necessary to declare SIMI an unlawful association with immediate effect because of its activities, it said.

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TENDER

Punjab National Bank invites e-tb following Work:

CIVIL, FURNISHING, MODUL WORK, LIGHT FITTINGS & F BOKARO, SECTOR - 4, B.S.CN
Work is Rs. 52.60 lac, EMD: R Tender download is from 19.0. downloading tender documen submission is 11.03.2019 till encrytion and bid submissio 12.03.2019 till 1400 hrs.

For details, visit our website pnbindia.biz. Any corrigendum/clarification shall be released only at our and <https://pnbindia.biz>. Date: 18.02.2019 Place: Bokaro

BOI

Bank of India **BOI**

Relationship Beyond Banking

SARFAESI Act, 201

Whereas, The undersigned being the act Securitisation and Reconstruction of Financial Act, 2002 and in exercise of powers conferred

function of the Central Government, in exercise of the powers conferred

under section 10(1) of the Sarfaesi Act, 2002,

hereby issues a notice in writing to the concerned

Bank of India, Bokaro, Jharkhand, in the

State of Jharkhand, for the

purpose of recovery of secured debts

under the Sarfaesi Act, 2002.

Whereas, The undersigned being the act

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Act, 2002 and in exercise of powers conferred

function of the Central Government, in exercise of the powers conferred

under section 10(1) of the Sarfaesi Act, 2002,

hereby issues a notice in writing to

Hindustan (hindi) dated 20.02.2019

Raw

| DETOX CORPORATION PVT.LTD.- LAB DIVISION Analysis Results For the Month of February- 2025 | | | |
|--|---------------------|-----------------------------------|----------------------|
| Company Name | | IOCL-Barauni Refinery | |
| Sample Type | | IFO SAMPLE ANALYSIS REPORT | |
| Sampling Date: | | 08.02.2025 | |
| Location: | | Crude Oil Tank | |
| Sr. No | Parameters | Unit | Concentration |
| 1 | Sulphur Content | %wt | 0.72 |
| 2 | Nickel | ppm | 0.28 |
| 3 | Vanadium | ppm | 0.25 |
| Report are meant for your guidance and should not be used for Advertisement , Evidence or Litigation | | | |
| Analysed By: | Approved By: | | |
| | | | |

.....END.....

DETOX CORPORATION PVT.LTD. - LAB DIVISION
Analysis Results for the Month of February 2025

| Company Name | | | IOCL-Barauni Refinery | | | |
|------------------|--|------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Sample Type | | | Water | Water | Water | Water |
| Sample Quantity | | | 10 L | 10 L | 10 L | 10 L |
| Date of Sampling | | | 06.02.2025 | 06.02.2025 | 13.02.2025 | 13.02.2025 |
| Analysis Period | | | 10.02.2025 to 17.02.2025 | 10.02.2025 to 17.02.2025 | 17.02.2025 to 24.02.2025 | 17.02.2025 to 24.02.2025 |
| SL. No. | PARAMETER | UNIT | Location | | | |
| | | | Borrow pit down Stream | Borrow pit Up Stream | Borrow pit down Stream | Borrow pit up Stream |
| 1 | Temperature | °C | 25.5 | 25.3 | 25.5 | 25.4 |
| 2 | Colour | Hazen | BDL(<5.00) | BDL(<5.00) | BDL(<5.00) | BDL(<5.00) |
| 3 | Odour | - | Disagreeable | Disagreeable | Disagreeable | Disagreeable |
| 4 | Taste | - | - | - | - | - |
| 5 | pH | - | 7.48 | 7.01 | 7.15 | 7.10 |
| 6 | Turbidity | NTU | 1.40 | 1.38 | 1.50 | 1.42 |
| 7 | Conductivity | µs/cm | 1560.0 | 1480.0 | 1420.0 | 1380.0 |
| 8 | Total Hardness (as CaCO ₃) | mg/L | 540.0 | 490.0 | 520.0 | 500.0 |
| 9 | Calcium Hardness (as CaCO ₃) | mg/L | 346.0 | 342.0 | 352.0 | 290.0 |
| 10 | Magnesium Hardness (as CaCO ₃) | mg/L | 194.0 | 148.0 | 168.0 | 210.0 |
| 11 | M-Alkalinity (as CaCO ₃) | mg/L | 296.0 | 287.0 | 334.0 | 298.0 |
| 12 | BOD (3 days at 27°C) | mg/L | 10.0 | 8.0 | 10.0 | 8.0 |
| 13 | COD | mg/L | 30.0 | 20.0 | 30.0 | 10.0 |
| 14 | Ammonical Nitrogen (as NH ₃ -N) | mg/L | 5.6 | 5.2 | 6.0 | 4.8 |
| 15 | Total Kjeldahl Nitrogen TKN (as NH ₃ -N) | mg/L | 5.60 | 5.20 | 6.00 | 4.80 |
| 16 | Sulphides (as S) | mg/L | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) |
| 17 | Sodium (as Na) | mg/L | 36.00 | 32.00 | 38.00 | 30.00 |
| 18 | Potassium (as K) | mg/L | 3.8 | 3.6 | 5.1 | 4.6 |
| 19 | Total Dissolved Solids (TDS) | mg/L | 950.0 | 880.0 | 860.0 | 850.0 |
| 20 | Total Suspended Solids (TSS) | mg/L | BDL(<4.0) | BDL(<4.0) | BDL(<4.0) | BDL(<4.0) |
| 21 | Oil and Grease | mg/L | BDL(<4.0) | BDL(<4.0) | BDL(<4.0) | BDL(<4.0) |
| 22 | Dissolved Oxygen | mg/L | 5.80 | 5.60 | 5.40 | 5.20 |
| 23 | Chloride (as Cl ⁻) | mg/L | 132.0 | 130.0 | 128.0 | 120.0 |
| 24 | Nitrate (as NO ₃ ⁻) | mg/L | 3.90 | 3.50 | 3.80 | 3.72 |
| 25 | Sulphate (as SO ₄ ²⁻) | mg/L | 110.00 | 112.00 | 126.00 | 100.00 |
| 26 | Total Silica (as SiO ₂) | mg/L | 3.90 | 3.50 | 4.50 | 3.90 |
| 27 | Phosphate (as PO ₄ ³⁻) | mg/L | 4.78 | 4.62 | 5.70 | 4.40 |
| 28 | Fluoride (as F ⁻) | mg/L | 0.15 | 0.12 | 0.16 | 0.14 |
| 29 | Iron (as Fe) | mg/L | BDL(<0.01) | BDL(<0.01) | BDL(<0.01) | BDL(<0.01) |
| 30 | Lead (as Pb) | mg/L | BDL(<0.006) | BDL(<0.006) | BDL(<0.006) | BDL(<0.006) |
| 31 | Phenolic compounds (as C ₆ H ₅ OH) | mg/L | BDL(<0.001) | BDL(<0.001) | BDL(<0.001) | BDL(<0.001) |
| 32 | Nickel (as Ni) | mg/L | BDL(<0.008) | BDL(<0.008) | BDL(<0.008) | BDL(<0.008) |
| 33 | Arsenic (as As) | mg/L | BDL(<0.003) | BDL(<0.003) | BDL(<0.003) | BDL(<0.003) |
| 34 | Zinc (as Zn) | mg/L | BDL(<0.021) | BDL(<0.021) | BDL(<0.021) | BDL(<0.021) |
| 35 | Mercury (as Hg) | mg/L | BDL(<0.001) | BDL(<0.001) | BDL(<0.001) | BDL(<0.001) |
| 36 | Cadmium (as Cd) | mg/L | BDL(<0.003) | BDL(<0.003) | BDL(<0.003) | BDL(<0.003) |
| 37 | Selenium (as Se) | mg/L | BDL(<0.004) | BDL(<0.004) | BDL(<0.004) | BDL(<0.004) |
| 38 | Cyanide (as CN ⁻) | mg/L | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) |
| 39 | Hexavalent Chromium (as Cr ⁶⁺) | mg/L | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) |
| 40 | Total Chromium (as Cr) | mg/L | BDL(<0.008) | BDL(<0.008) | BDL(<0.008) | BDL(<0.008) |
| 41 | Copper (as Cu) | mg/L | BDL(<0.004) | BDL(<0.004) | BDL(<0.004) | BDL(<0.004) |
| 42 | Vanadium (as V) | mg/L | BDL(<0.09) | BDL(<0.09) | BDL(<0.09) | BDL(<0.09) |
| 43 | Phosphorous (as P) | mg/L | 0.22 | 0.14 | 0.42 | 0.36 |
| 44 | Benzene | mg/L | ND | ND | ND | ND |
| 45 | Benzo(a)pyrene | mg/L | ND | ND | ND | ND |
| 46 | Aluminium as Al | mg/L | BDL(<0.007) | BDL(<0.007) | BDL(<0.007) | BDL(<0.007) |
| 47 | Free Residual Chlorine as FRC | mg/L | BDL(<0.1) | BDL(<0.1) | BDL(<0.1) | BDL(<0.1) |
| 48 | Manganese as (Mn) | mg/L | BDL(<0.01) | BDL(<0.01) | BDL(<0.01) | BDL(<0.01) |
| 49 | Pesticides | µg/L | ND | ND | ND | ND |
| 50 | Polychlorinated Biphenyls | mg/L | ND | ND | ND | ND |
| 51 | PAH | mg/L | ND | ND | ND | ND |
| 52 | Tri-halomethanes | mg/L | ND | ND | ND | ND |
| 53 | Total coliform | MPN/100 ml | Absent | Absent | Absent | Absent |
| 54 | E. Coli | MPN/100 ml | Absent | Absent | Absent | Absent |

BQL = Below Quantification Limit

Analysed By:

Approved By:

END

DETOX CORPORATION PVT. LTD. - LAB DIVISION
Analysis Results for the Month of February 2025

| Company Name | | | IOCL-Barauni Refinery | | | |
|------------------|--|------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Sample Type | | | Water | Water | Water | Water |
| Sample Quantity | | | 10 L | 10 L | 10 L | 10 L |
| Date of Sampling | | | 19.02.2025 | 19.02.2025 | 26.02.2025 | 26.02.2025 |
| Analysis Period | | | 22.02.2025 to 01.03.2025 | 22.02.2025 to 01.03.2025 | 03.03.2025 to 10.03.2025 | 03.03.2025 to 10.03.2025 |
| SL. No. | PARAMETER | UNIT | Location | | | |
| | | | Borrow pit down Stream | Borrow pit Up Stream | Borrow pit down Stream | Borrow pit up Stream |
| 1 | Temperature | °C | 25.4 | 25.2 | 25.6 | 25.5 |
| 2 | Colour | Hazen | BDL(<5.00) | BDL(<5.00) | BDL(<5.00) | BDL(<5.00) |
| 3 | Odour | - | Disagreeable | Disagreeable | Disagreeable | Disagreeable |
| 4 | Taste | - | - | - | - | - |
| 5 | pH | - | 7.52 | 6.98 | 7.10 | 7.06 |
| 6 | Turbidity | NTU | 1.50 | 1.40 | 1.60 | 1.50 |
| 7 | Conductivity | µs/cm | 1520.0 | 1460.0 | 1400.0 | 1350.0 |
| 8 | Total Hardness (as CaCO ₃) | mg/L | 530.0 | 494.0 | 510.0 | 480.0 |
| 9 | Calcium Hardness (as CaCO ₃) | mg/L | 340.0 | 338.0 | 348.0 | 282.0 |
| 10 | Magnesium Hardness (as CaCO ₃) | mg/L | 190.0 | 156.0 | 162.0 | 198.0 |
| 11 | M-Alkalinity (as CaCO ₃) | mg/L | 290.0 | 280.0 | 330.0 | 296.0 |
| 12 | BOD (3 days at 27°C) | mg/L | 8.0 | 6.0 | 8.0 | 6.0 |
| 13 | COD | mg/L | 20.0 | 10.0 | 20.0 | 10.0 |
| 14 | Ammonical Nitrogen (as NH ₃ -N) | mg/L | 5.0 | 4.8 | 5.9 | 4.2 |
| 15 | Total Kjeldahl Nitrogen TKN (as NH ₃ -N) | mg/L | 5.00 | 4.80 | 5.90 | 4.20 |
| 16 | Sulphides (as S) | mg/L | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) |
| 17 | Sodium (as Na) | mg/L | 32.00 | 28.00 | 31.00 | 29.00 |
| 18 | Potassium (as K) | mg/L | 3.6 | 3.2 | 4.8 | 4.2 |
| 19 | Total Dissolved Solids (TDS) | mg/L | 912.0 | 876.0 | 840.0 | 810.0 |
| 20 | Total Suspended Solids (TSS) | mg/L | BDL(<4.0) | BDL(<4.0) | BDL(<4.0) | BDL(<4.0) |
| 21 | Oil and Grease | mg/L | BDL(<4.0) | BDL(<4.0) | BDL(<4.0) | BDL(<4.0) |
| 22 | Dissolved Oxygen | mg/L | 5.60 | 5.20 | 5.20 | 5.00 |
| 23 | Chloride (as Cl ⁻) | mg/L | 128.0 | 126.0 | 126.0 | 110.0 |
| 24 | Nitrate (as NO ₃ ⁻) | mg/L | 3.80 | 3.20 | 3.72 | 3.60 |
| 25 | Sulphate (as SO ₄ ²⁻) | mg/L | 100.00 | 108.00 | 120.00 | 96.00 |
| 26 | Total Silica (as SiO ₂) | mg/L | 3.80 | 3.40 | 4.40 | 3.80 |
| 27 | Phosphate (as PO ₄ ³⁻) | mg/L | 4.72 | 4.60 | 5.62 | 4.20 |
| 28 | Fluoride (as F ⁻) | mg/L | 0.10 | 0.11 | 0.15 | 0.12 |
| 29 | Iron (as Fe) | mg/L | BDL(<0.01) | BDL(<0.01) | BDL(<0.01) | BDL(<0.01) |
| 30 | Lead (as Pb) | mg/L | BDL(<0.006) | BDL(<0.006) | BDL(<0.006) | BDL(<0.006) |
| 31 | Phenolic compounds (as C ₆ H ₅ OH) | mg/L | BDL(<0.001) | BDL(<0.001) | BDL(<0.001) | BDL(<0.001) |
| 32 | Nickel (as Ni) | mg/L | BDL(<0.008) | BDL(<0.008) | BDL(<0.008) | BDL(<0.008) |
| 33 | Arsenic (as As) | mg/L | BDL(<0.003) | BDL(<0.003) | BDL(<0.003) | BDL(<0.003) |
| 34 | Zinc (as Zn) | mg/L | BDL(<0.021) | BDL(<0.021) | BDL(<0.021) | BDL(<0.021) |
| 35 | Mercury (as Hg) | mg/L | BDL(<0.001) | BDL(<0.001) | BDL(<0.001) | BDL(<0.001) |
| 36 | Cadmium (as Cd) | mg/L | BDL(<0.003) | BDL(<0.003) | BDL(<0.003) | BDL(<0.003) |
| 37 | Selenium (as Se) | mg/L | BDL(<0.004) | BDL(<0.004) | BDL(<0.004) | BDL(<0.004) |
| 38 | Cyanide (as CN ⁻) | mg/L | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) |
| 39 | Hexavalent Chromium (as Cr ⁶⁺) | mg/L | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) | BDL(<0.03) |
| 40 | Total Chromium (as Cr) | mg/L | BDL(<0.008) | BDL(<0.008) | BDL(<0.008) | BDL(<0.008) |
| 41 | Copper (as Cu) | mg/L | BDL(<0.004) | BDL(<0.004) | BDL(<0.004) | BDL(<0.004) |
| 42 | Vanadium (as V) | mg/L | BDL(<0.09) | BDL(<0.09) | BDL(<0.09) | BDL(<0.09) |
| 43 | Phosphorous (as P) | mg/L | 0.20 | 0.10 | 0.40 | 0.30 |
| 44 | Benzene | mg/L | ND | ND | ND | ND |
| 45 | Benzo(a)pyrene | mg/L | ND | ND | ND | ND |
| 46 | Aluminium as Al | mg/L | BDL(<0.007) | BDL(<0.007) | BDL(<0.007) | BDL(<0.007) |
| 47 | Free Residual Chlorine as FRC | mg/L | BDL(<0.1) | BDL(<0.1) | BDL(<0.1) | BDL(<0.1) |
| 48 | Manganese as (Mn) | mg/L | BDL(<0.01) | BDL(<0.01) | BDL(<0.01) | BDL(<0.01) |
| 49 | Pesticides | µg/L | ND | ND | ND | ND |
| 50 | Polychlorinated Biphenyls | mg/L | ND | ND | ND | ND |
| 51 | PAH | mg/L | ND | ND | ND | ND |
| 52 | Tri-halomethanes | mg/L | ND | ND | ND | ND |
| 53 | Total coliform | MPN/100 ml | Absent | Absent | Absent | Absent |
| 54 | E. Coli | MPN/100 ml | Absent | Absent | Absent | Absent |

BQL = Below Quantification Limit

Analysed By:

Approved By:

END

DETOX CORPORATION PVT LTD - LAB DIVISION

Analysis Results for the Month of February 2025

| Company Name | | IOCL-Barauni Refinery | | |
|------------------|--|--------------------------|--|-------------|
| Sample Type | Water | Water | | |
| Sample Quantity | 10 L | 10 L | | |
| Date of Sampling | 08.02.2025 | 08.02.2025 | | |
| Analysis Period | 10.02.2025 to 18.02.2025 | 10.02.2025 to 18.02.2025 | | |
| SL. No. | PARAMETER | UNIT | Drinking Water: (QC Lab) | Location |
| | | | Drinking Water Township: (Kendriy Vidhavalaya) | |
| 1 | Temperature | °C | 25.6 | 25.6 |
| 2 | Colour | Hazen | BDL(<5.00) | BDL(<5.00) |
| 3 | Odour | - | Agreeable | Agreeable |
| 4 | Taste | - | Agreeable | Agreeable |
| 5 | pH | - | 6.58 | 6.56 |
| 6 | Turbidity | NTU | BDL(<1.0) | BDL(<1.0) |
| 7 | Conductivity | µs/cm | 680.0 | 590.0 |
| 8 | Total Dissolve Solid - TDS | mg/L | 410.0 | 355.0 |
| 9 | Total Suspended Solids (TSS) | mg/L | BDL(<4.0) | BDL(<4.0) |
| 10 | Oil and Grease | mg/L | BDL(<4.0) | BDL(<4.0) |
| 11 | Dissolved Oxygen | mg/L | 5.6 | 4.8 |
| 12 | Total Hardness | mg/L | 180.0 | 170.0 |
| 13 | Calcium Hardness (as CaCO ₃) | mg/L | 110.0 | 90.0 |
| 14 | Magnesium Hardness (as CaCO ₃) | mg/L | 70.0 | 80.0 |
| 15 | M-Alkalinity (as CaCO ₃) | mg/L | 210.0 | 206.0 |
| 16 | COD | mg/L | BDL(<2.0) | BDL(<2.0) |
| 17 | BOD (3 days at 27°C) | mg/L | BDL(<2.0) | BDL(<2.0) |
| 18 | Chloride (as Cl ⁻) | mg/L | 34.0 | 30.6 |
| 19 | Nitrate (as NO ₃) | mg/L | 1.20 | 1.26 |
| 20 | Total Silica (as SiO ₂) | mg/L | 0.18 | 0.16 |
| 21 | Phosphate (as PO ₄ ³⁻) | mg/L | 0.22 | 0.26 |
| 22 | Sulphate (as SO ₄ ²⁻) | mg/L | 11.8 | 10.06 |
| 23 | Sulphides (as S) | mg/L | BDL(<0.03) | BDL(<0.03) |
| 24 | Ammonical Nitrogen (as NH ₃ -N) | mg/L | BDL(<1.0) | BDL(<1.0) |
| 25 | Total Kjeldahl Nitrogen TKN (as NH ₃ -N) | mg/L | BDL(<1.0) | BDL(<1.0) |
| 26 | Fluoride (as F) | mg/L | BDL(<0.05) | BDL(<0.05) |
| 27 | Iron (as Fe) | mg/L | BDL(<0.01) | BDL(<0.01) |
| 28 | Sodium (as Na) | mg/L | 5.10 | 4.2 |
| 29 | Potassium (as K) | mg/L | 2.8 | 2.6 |
| 30 | Manganese (as Mn) | mg/L | BDL(<0.01) | BDL(<0.01) |
| 31 | Lead (as Pb) | mg/L | BDL(<0.006) | BDL(<0.006) |
| 32 | Phenolic compounds (as C ₆ H ₅ OH) | mg/L | BDL(<0.001) | BDL(<0.001) |
| 33 | Nickel (as Ni) | mg/L | BDL(<0.008) | BDL(<0.008) |
| 34 | Arsenic (as As) | mg/L | BDL(<0.003) | BDL(<0.003) |
| 35 | Zinc (as Zn) | mg/L | BDL(<0.021) | BDL(<0.021) |
| 36 | Mercury (as Hg) | mg/L | BDL(<0.001) | BDL(<0.001) |
| 37 | Cadmium (as Cd) | mg/L | BDL(<0.003) | BDL(<0.003) |
| 38 | Selenium (as Se) | mg/L | BDL(<0.004) | BDL(<0.004) |
| 39 | Cyanide (as CN ⁻) | mg/L | BDL(<0.03) | BDL(<0.03) |
| 40 | Hexavalent Chromium (as Cr ⁶⁺) | mg/L | BDL(<0.03) | BDL(<0.03) |
| 41 | Total Chromium (as Cr) | mg/L | BDL(<0.008) | BDL(<0.008) |
| 42 | Copper (as Cu) | mg/L | BDL(<0.004) | BDL(<0.004) |
| 43 | Vanadium (as V) | mg/L | BDL(<0.09) | BDL(<0.09) |
| 44 | Phosphorous (as P) | mg/L | 0.18 | 0.16 |
| 45 | Benzene | mg/L | ND | ND |
| 46 | Benzo(a)pyrene | mg/L | ND | ND |
| 47 | Aluminium (as Al) | mg/L | BDL(<0.007) | BDL(<0.007) |
| 48 | Free Residual Chlorine as FRC | mg/L | BDL(<0.1) | BDL(<0.1) |
| 49 | Pesticides | µg/L | ND | ND |
| 50 | Polychlorinated Biphenyls | mg/L | ND | ND |
| 51 | PAH | mg/L | ND | ND |
| 52 | Tri-halomethanes | mg/L | ND | ND |
| 53 | Total coliform | MPN/100 ml | Absent | Absent |
| 54 | E. Coli | MPN/100 ml | Absent | Absent |

BQL = Below Quantification Limit

Analysed By: Jemis, Chandani, Vipul, Nikhil

Approved By: Sejal Patel

END



GO Green Mechanisms Pvt. Ltd.
Analysis Results For the Month of November-2024

| Parameter | CO ** | | | Ozone * | | | Ozone ** | | | HC | | | Benzene | | | H ₂ S | | | Benzo(a pyrene) | | | Arsenic | | | Nickel | | | Mercaptan | | | | | | | |
|-----------------------------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------|-----------|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-------|
| | RPM | RPM (<2.5) | SO ₂ | NO ₂ | NH ₃ | Pb | CO * | mg/m ³ | ppm | ppm NS | ppm NS | ppm NS | ppm NS | ppm NS | ppm NS | ppm NS | ppm NS | ppm NS | ppm NS | ppm NS | ppm NS | ppm NS | ppm NS | | | | |
| | Unit | µg/m ³ | 1 | 4 | 2 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | | | | | |
| Name of Location | - | - | - | - | - | - | - | - | 1 Hour | S-1 | S-2 | S-3 | Avg. | 1 Hour | S-1 | S-2 | S-3 | Avg. | (ppm) | (µg/m ³) | (ppb) |
| ME OFFIC | 76.5 | 36.3 | 11.4 | 14.5 | 17.3 | 0.3 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 22.3 | 23.5 | 21.9 | 20.7 | 22.1 | BQL | 21.8 | | | | |
| ONTROL | 72.5 | 36.0 | 11.2 | 16.1 | 18.0 | 0.3 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.9 | 23.6 | 23.4 | 21.0 | 23.6 | 22.7 | BQL | 21.6 | | | |
| STATION | 73.6 | 36.0 | 10.9 | 15.3 | 18.1 | 0.2 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 23.0 | 20.9 | 23.0 | 22.3 | 22.1 | BQL | 22.7 | | | |
| BTP | 74.6 | 35.6 | 10.5 | 14.7 | 16.6 | 0.3 | 1.1 | 1.0 | 0.8 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 32.0 | 23.2 | 24.7 | 22.4 | 23.4 | BQL | 20.7 | | | |
| AVERAGE | 74.3 | 36.0 | 11.0 | 15.2 | 17.5 | 0.3 | 0.97 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 25.21 | 22.8 | 22.7 | 22.3 | 22.6 | BQL | 21.7 | | | | |
| BR REFINE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RY TOWNS | 60.2 | 28.1 | 8.8 | 11.1 | 14.7 | 0.1 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 24.1 | 19.1 | 20.0 | 21.9 | 20.3 | BQL | 18.5 | | | | |
| HTP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BIHAT VILLAG | 59.2 | 26.8 | 7.2 | 10.7 | 13.3 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 25.8 | 24.1 | 25.3 | 26.0 | 25.1 | BQL | 14.9 | | | | |
| E BINODP UR VILLAG | 58.4 | 22.0 | 8.0 | 12.0 | 13.3 | 0.1 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 20.0 | 22.0 | 23.1 | 22.7 | 22.6 | BQL | 20.6 | | | | |
| E RACHIA HI VILLAG | 59.7 | 22.1 | 7.5 | 11.4 | 14.0 | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 21.1 | 20.8 | 20.3 | 24.4 | 21.8 | BQL | 17.8 | | | | |
| E IT SIDE OF | 59.37 | 24.73 | 7.88 | 11.31 | 13.81 | 0.11 | 0.26 | 0.27 | 0.26 | 0.26 | 0.27 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 22.76 | 21.51 | 22.18 | 23.72 | 22.47 | BQL | 17.98 | | | | |

BQL

(* * Below Quantification Limit; Avg. - Average; NS- Not Specified

(** Each monitoring day, divided into three shifts of 8 hourly sampling, with each day monitoring commencing from Shift-1, thereby completing the 24-hourly schedule on the subsequent days with Shift-III.

Norms- As per national Ambient Air Quality Standards

Norms- A per national Ambient Air Quality Standards

RPM (<10),SO₂,NO₂,NH₃,CO, Ozone and H₂S has been analysed at site lab

S-1 (Shift-1): 6 A.M. - 14 P.M.

S-2 (Shift-2): 14 P.M. - 22 P.M.

S-3 (Shift-3): 22 A.M. - 6 A.M.

Analysed By

END

Approved By

CD Green Mechanisms Pvt. Ltd.

| Parameter | RPM (<10) | RPM (<2.5) | SO ₂ | NO ₂ | NH ₃ | Pb | CO ** | | Ozone * | Ozone ** | | HC | Benzene | H ₂ S | Benzo(a pyrene) | Arsenic | Nickel | Mercaptan | |
|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------|-------------------|-------------------|-------|---------|------------------|------------------------|-------------------|--------|-----------|------|
| | | | | | | | µg/m ³ | µg/m ³ | | µg/m ³ | µg/m ³ | | | | ng/m ³ | ng/m ³ | 20 | NS | |
| Unit | µg/m ³ | 100 | 60 | 80 | 400 | 1 | 4 | NS | 5 | 1 | 6 | 20 | NS | |
| Norms | 100 | 60 | 80 | 80 | 80 | 400 | | | | | | | | | | | | | |
| Name of Location | - | - | - | - | - | - | | | - | 1 Hour | S-1 | S-2 | S-3 | Avg. | 1 Hour | S-1 | S-2 | S-3 | Avg. |
| TIME OFFICE | 68.9 | 32.6 | 10.3 | 12.3 | 14.2 | 0.3 | 1.1 | 0.9 | 1.1 | 1.0 | 26.4 | 21.3 | 25.3 | 23.4 | 23.3 | BQL | BQL | BQL | BQL |
| ONTROL | 75.3 | 37.2 | 9.5 | 16.2 | 14.6 | 0.3 | 1.1 | 0.9 | 0.7 | 1.0 | 25.9 | 21.3 | 21.3 | 31.4 | 24.7 | BQL | BQL | BQL | BQL |
| STATION | 74.2 | 40.2 | 13.4 | 18.7 | 0.3 | 1.1 | 1.0 | 1.0 | 1.1 | 1.2 | 1.1 | 12.4 | 21.3 | 31.4 | 24.3 | 25.7 | BQL | BQL | BQL |
| BTP | 63.8 | 32.2 | 8.9 | 12.2 | 14.6 | 0.3 | 1.0 | 1.0 | 0.5 | 1.2 | 0.9 | 19.6 | 28.6 | 16.2 | 24.3 | 23.0 | BQL | BQL | BQL |
| AVERAGE | 70.6 | 35.6 | 10.5 | 14.4 | 15.5 | 0.3 | 1.07 | 1.0 | 0.9 | 1.0 | 21.08 | 23.1 | 23.6 | 25.9 | 24.2 | BQL | BQL | BQL | BQL |
| BR REFINE RY | 54.3 | 25.3 | 8.1 | 12.6 | 13.4 | 0.1 | 0.1 | 0.3 | 0.3 | 0.2 | 0.3 | 25.9 | 15.6 | 18.6 | 17.3 | 17.2 | BQL | BQL | BQL |
| TOWNS HIP | | | | | | | | | | | | | | | | | | | |
| BIHAT VILLAG | 52.0 | 24.3 | 6.5 | 10.2 | 13.4 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 24.6 | 22.3 | 31.5 | 22.3 | 25.4 | BQL | BQL | BQL | BQL |
| E BINODP UR VILLAG | | | | | | | | | | | | | | | | | | | |
| E RACHIA HI VILLAG | 56.9 | 17.6 | 5.6 | 9.4 | 14.2 | 0.1 | 0.3 | 0.2 | 0.4 | 0.3 | 19.6 | 17.6 | 24.3 | 24.3 | 22.1 | BQL | BQL | BQL | BQL |
| IT SIDE OF | 56.60 | 23.70 | 6.85 | 10.50 | 13.33 | 0.15 | 0.24 | 0.24 | 0.26 | 0.26 | 23.10 | 20.18 | 24.18 | 21.30 | 21.88 | BQL | BQL | BQL | BQL |
| | | | | | | | | | | | | | | | | | | | |

BQL - Below Quantification Limit; Avg. - Average; NS- Not Specified
 (** Each monitoring day, divided into three shifts of 8 hourly sampling, with each day monitoring commencing from Shift-I, thereby completing the 24-hourly schedule on the subsequent days with Shift-III.

Norms- As per national Ambient Air Quality Standards

RPM (<10),SO₂,NO₂,NH₃,CO, Ozone and H₂S has been analysed at site lab

S-1 (Shift-1) : 5 A.M. - 14 P.M.

S-2 (Shift-2) : 14 P.M. - 22 P.M.

S-3 (Shift-3) : 22 A.M. - 6 A.M.

Analysed By

Approved By

END

Alvin

Analysis Result for the Month of February,2025

| Company Name | | TOCI - Barauni Refinery | | | | | | | | | | | | | |
|---------------------------|----------------|-------------------------|--------------|----------------|--|------------------|--------|-------------------|-------------------------------|---------------------|--------------------|----------|-------|----------|--|
| Sample Type | Stack Emission | Date of Sampling | Stack Height | Stack Diameter | Cross Section area (m ²) at sampling | Temperature (°C) | (°K) | Gas velocity(m/s) | Flow Rate(Nm ³ /s) | CO ₂ (%) | O ₂ (%) | CO (ppm) | CO(%) | HC (ppm) | H ₂ S (mg/Nm ³) |
| Sr.No | Source Name | | | | | | | | | | | | | | |
| 1 | AVU - I | 05.02.2025 | 42 | 2.46 | 4.750506 | 215 | 490 | 10.15 | 29.32 | 5.34 | 10.6 | 15.2 | 0.00 | 13.4 | BQL |
| 2 | AVU - II | 06.02.2025 | 42 | 2.46 | 4.750506 | 210 | 490 | 11.7 | 33.80 | 5.6 | 11.2 | 16.5 | 0.00 | 11.45 | BQL |
| 3 | AVU - III | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | CRU | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 | NSU | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | COKER - A | 11.02.2025 | 41.53 | 3.13 | 7.6905665 | 179 | 485 | 11.2 | 52.92 | 6.1 | 11.54 | 18.2 | 0.00 | 8.15 | BQL |
| 7 | COKER - B | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| TPS Combined Stack | | | | | | | | | | | | | | | |
| 8 | BOILER - I | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8.1 | DUCT - A | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8.2 | DUCT - B | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9 | BOILER - II | 04.02.2025 | 80.00 | 3.20 | 8.04 | 195.00 | 445.00 | 9.50 | 51.15 | 6.35 | 11.15 | 13.75 | 0.00 | 12.30 | BQL |
| 9.1 | DUCT - A | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9.2 | DUCT - B | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | BOILER - III | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.1 | DUCT - A | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.2 | DUCT - B | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 | BOILER - IV | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11.1 | DUCT - A | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11.2 | DUCT - B | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | BOILER - V | 01.02.2025 | 80.00 | 3.20 | 8.04 | 210.00 | 490.00 | 11.50 | 56.23 | 8.80 | 10.26 | 15.30 | 0.00 | 10.30 | BQL |
| 12.1 | DUCT - A | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12.2 | DUCT - B | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| New Units | | | | | | | | | | | | | | | |
| 13 | RFCCU | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | HGU-1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 15 | DHDTU | 07.02.2025 | 50.00 | 2.20 | 3.80 | 197.00 | 742.00 | 9.76 | 14.89 | 6.50 | 8.50 | 19.20 | 0.00 | 8.21 | BQL |
| 16 | GT - I | 12.02.2025 | 60.00 | 3.00 | 7.07 | 194.00 | 469.00 | 9.75 | 43.77 | 6.70 | 12.20 | 19.80 | 0.00 | 10.40 | BQL |
| 17 | GT - II | 12.02.2025 | 60.00 | 3.00 | 7.07 | 195.00 | 452.00 | 9.56 | 44.53 | 5.80 | 11.10 | 20.60 | 0.00 | 8.90 | BQL |
| 18 | SRU | 08.02.2025 | 60.00 | 1.50 | 1.77 | 215.00 | 190.00 | 9.30 | 25.76 | 5.70 | 8.30 | 22.55 | 0.00 | 13.20 | BQL |
| 19 | NHDT | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 20 | PRIME G , 803 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 21 | BOILER-6 | 01.02.2025 | 80.00 | 3.20 | 8.04 | 192.00 | 435.00 | 10.21 | 56.22 | 6.20 | 12.20 | 18.20 | 0.00 | 10.70 | BQL |
| 22 | HGU - 2 | 28.02.2025 | 60.00 | 1.45 | 6.60 | 170.00 | 442.00 | 9.12 | 40.58 | 7.10 | 11.60 | 17.19 | 0.00 | 11.12 | BQL |
| 23 | New PRIME G | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | New NHT/CCR | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 25 | 930 Induct | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Note: PM, SO₂, NO_x, CO₂, O₂, HC and H₂S has been Analysed at Site lab
BQL= Below Quantification Limit

Approved By

END.....

Alex

Detox Corporation Pvt. Ltd.

Analysis Result for the Month of February, 2025

| Company Name | | IOCL-Barauni Refinery | | | | | | | | | | | | | | | |
|---------------------------|---------------|------------------------|--------------------------|-------------|---------------------------------------|--------------------------|---------------------------------------|--------------------------|--------------------------|-------------|--------------------------|-------------------------|-----------------------------|-----------------|-----------------|-----|------|
| Sample Type | | Stack Emission | | | | | | | | | | | | | | | |
| Sr.No | Source Name | Fuel (% of Gas Firing) | PM (mg/Nm ³) | PM (kg/day) | SO ₂ (mg/Nm ³) | SO ₂ (kg/day) | NO _x (mg/Nm ³) | NO _x (kg/day) | CO (mg/Nm ³) | CO (kg/day) | Ni (mg/Nm ³) | V (mg/Nm ³) | Limit (mg/Nm ³) | | | | |
| | | | | | | | | | | | | | PM | SO ₂ | NO _x | CO | Ni+V |
| 1 | AVU - I | 40 | 40.05 | 101.46 | 476.10 | 1206.25 | 192.59 | 487.95 | 17.4 | 44.12 | BQL | BQL | 64 | 1036 | 410 | 180 | 5 |
| 2 | AVU - II | 40 | 38.01 | 111.00 | 482.00 | 1407.68 | 175.11 | 511.41 | 18.9 | 55.20 | BQL | BQL | 64 | 1036 | 410 | 180 | 5 |
| 3 | AVU - III | 60 | - | - | - | - | - | - | - | - | - | - | 46 | 706 | 390 | 170 | 5 |
| 4 | CRU | 85 | - | - | - | - | - | - | - | - | - | - | 23 | 295 | 365 | 157 | 5 |
| 5 | NSU | 85 | - | - | - | - | - | - | - | - | - | - | 23 | 295 | 365 | 157 | 5 |
| 6 | COKER - A | 80 | 22.16 | 101.32 | 62.77 | 287.02 | 98.15 | 448.82 | 20.8 | 95.34 | BQL | BQL | 28 | 377 | 370 | 160 | 5 |
| 7 | COKER - B | 80 | - | - | - | - | - | - | - | - | - | - | 28 | 377 | 370 | 160 | 5 |
| TPS Combined Stack | | | | | | | | | | | | | | | | | |
| 8 | BOILER - I | | | | | | | | | | | | | | | | |
| 8.1 | DUCT - A | 23 | - | - | - | - | - | - | - | - | - | - | 79 | 1317 | 427 | 188 | 5 |
| 8.2 | DUCT - B | 23 | - | - | - | - | - | - | - | - | - | - | 79 | 1317 | 427 | 188 | 5 |
| 9 | BOILER - II | 23 | 35.81 | 158.25 | 456.06 | 2015.43 | 180.21 | 796.42 | 15.8 | 69.61 | BQL | BQL | 79 | 1317 | 427 | 188 | 5 |
| 9.1 | DUCT - A | 23 | - | - | - | - | - | - | - | - | - | - | 79 | 1317 | 427 | 188 | 5 |
| 9.2 | DUCT - B | 23 | - | - | - | - | - | - | - | - | - | - | 79 | 1317 | 427 | 188 | 5 |
| 10 | BOILER - III | | | | | | | | | | | | | | | | |
| 10.1 | DUCT - A | 23 | - | - | - | - | - | - | - | - | - | - | 79 | 1317 | 427 | 188 | 5 |
| 10.2 | DUCT - B | 23 | - | - | - | - | - | - | - | - | - | - | 79 | 1317 | 427 | 188 | 5 |
| 11 | BOILER - IV | | | | | | | | | | | | | | | | |
| 11.1 | DUCT - A | 23 | - | - | - | - | - | - | - | - | - | - | 79 | 1317 | 427 | 188 | 5 |
| 11.2 | DUCT - B | 23 | - | - | - | - | - | - | - | - | - | - | 79 | 1317 | 427 | 188 | 5 |
| 12 | BOILER - V | 23 | 39.14 | 190.18 | 479.43 | 2329.23 | 169.11 | 821.61 | 17.53 | 85.16 | BQL | BQL | 79 | 1317 | 427 | 188 | 5 |
| 12.1 | DUCT - A | 23 | - | - | - | - | - | - | - | - | - | - | 79 | 1317 | 427 | 188 | 5 |
| 12.2 | DUCT - B | 23 | - | - | - | - | - | - | - | - | - | - | 79 | 1317 | 427 | 188 | 5 |
| New Units | | | | | | | | | | | | | | | | | |
| 13 | RFCCU | NA | - | - | - | - | - | - | - | - | - | - | 100 | 1700 | 450 | 400 | 5 |
| 14 | HGU-1 | 75 | - | - | - | - | - | - | - | - | - | - | 48 | 739 | 392 | 171 | 5 |
| 15 | DHDT | 100 | 8.04 | 10.34 | 47.30 | 60.87 | 161.57 | 207.90 | 22.0 | 28.30 | BQL | BQL | 10 | 50 | 350 | 150 | 5 |
| 16 | GT - I | NA | 45.05 | 170.37 | 648.07 | 2450.72 | 196.72 | 743.93 | 22.7 | 85.78 | BQL | BQL | 100 | 1700 | 450 | 200 | 5 |
| 17 | GT - II | NA | 49.10 | 188.92 | 682.93 | 2627.47 | 179.08 | 688.97 | 23.6 | 90.80 | BQL | BQL | 100 | 1700 | 450 | 200 | 5 |
| 18 | SRU | NA | 32.54 | 72.44 | 517.9 | 1152.90 | 134.92 | 300.31 | 25.8 | 57.50 | BQL | BQL | NA | NA | 350 | 150 | NA |
| 19 | NHDT,801 | 100 | - | - | - | - | - | - | - | - | - | - | 5 | 50 | 250 | 100 | 5 |
| 20 | PRIME G , 803 | 100 | - | - | - | - | - | - | - | - | - | - | 5 | 50 | 250 | 100 | 5 |
| 21 | BOILER-6 | 23 | 36.36 | 176.61 | 471.3 | 2289.33 | 171.51 | 833.16 | 20.8 | 101.28 | BQL | BQL | 40 | 665 | 327 | 138 | 5 |
| 22 | HGU -2 | 85 | 13.56 | 47.54 | 116.2 | 407.29 | 186.06 | 652.37 | 19.7 | 69.05 | BQL | BQL | 15 | 235 | 273 | 112 | 5 |
| 23 | New PRIME G | 100 | - | - | - | - | - | - | - | - | - | - | 5 | 50 | 250 | 100 | 5 |
| 24 | New NHT/CCR | 100 | - | - | - | - | - | - | - | - | - | - | 5 | 50 | 250 | 100 | 5 |
| 25 | 930 Indjet | NA | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Note: PM, SO₂, NO_x, CO, CO₂, O₂, HC and H₂S has been Analysed at Site lab

BQL = Below Quantification Limit

Analysed By

Approved By

END.

| IOCL - BARAUNI REFINERY | | | | | | |
|---|------------------------|------------------------------------|-----------------------------|----------------------|---|------------------|
| Detox Corporation Pvt. Ltd. | | | | | | |
| METEOROLOGICAL OBSERVATIONS AT BR COMPLEX | | | | | | |
| LOCATION: TIME OFFICE | | | | | | |
| (RECORDED ON THE DAYS OF AAQM) | | | | | | |
| (MONTH: February, 2025) | | | | | | |
| Date of Monitoring | Temperature (DEG C) | Atmospheric Pressure (mm Hg) | Relative Humidity (%) | Wind Speed (Km/h) | Predominant Wind Direction (FROM) | Rainfall (mm) |
| | MAX | MIN | MAX | MAX | MIN | |
| | | | | | | |
| 03.02.2025 | 32.5 | 20.5 | 754.3 | 750.6 | 65.3 | 58.2 |
| 06.02.2025 | 31.2 | 21.5 | 752.6 | 749.3 | 60.3 | 59.6 |
| 10.02.2025 | 33.3 | 21.6 | 752.6 | 750.3 | 62.3 | 58.6 |
| 13.02.2025 | 32.5 | 22.5 | 753.2 | 751.3 | 65.2 | 60.3 |
| 17.02.2025 | 30.2 | 20.6 | 755.3 | 752.4 | 63.5 | 59.6 |
| 20.02.2025 | 31.2 | 22.5 | 750.2 | 750.2 | 65.3 | 58.4 |
| 24.02.2025 | 33.5 | 21.6 | 755.6 | 751.3 | 64.3 | 56.3 |
| 27.02.2025 | 34.2 | 20.3 | 758.6 | 752.3 | 62.5 | 55.2 |
| | | | | | | 11.2 |
| | | | | | | ESE |
| | | | | | | 0.0 |



Detox Corporation Pvt. Ltd.
Analysis Result for the Month of February-2025
TABLE - 1: Field and DCS Control Room
Company Name:- IDCL Barauni Refinery
Sample Type: Noise

ANNEXURE-6

| S.No | Locations | DAY | | | NIGHT | | | DATE OF MONITORING |
|------|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------|
| | | Min dB(A) | Max dB(A) | Leq dB(A) | Min dB(A) | Max dB(A) | Leq dB(A) | |
| 1 | AVU-I- FIELD CONTROL ROOM | 53.2 | 71.3 | 61.4 | 38.6 | 56.3 | 47.2 | 03.02.2025 |
| 2 | AVU-II- FIELD CONTROL ROOM | 56.2 | 72.4 | 61.8 | 40.3 | 61.2 | 53.2 | 03.02.2025 |
| 3 | AVU-III- FIELD CONTROL ROOM | 60.3 | 71.3 | 63.8 | 42.2 | 63.8 | 56.2 | 03.02.2025 |
| 4 | AVU-I, II/ COKER DDCS CONTROL ROOM | 50.3 | 73.8 | 64.3 | 39.1 | 55.2 | 48.5 | 03.02.2025 |
| 5 | AVU- III/ COKER DDCS CONTROL ROOM | 51.3 | 71.2 | 63.7 | 40.3 | 62.7 | 52.9 | 04.02.2025 |
| 6 | COKER-A FIELD CONTROL ROOM | 46.9 | 67.3 | 57.3 | 37.6 | 63.8 | 57.6 | 04.02.2025 |
| 7 | COKER-B FIELD CONTROL ROOM | 36.5 | 45.6 | 43.8 | 38.2 | 45.6 | 47.3 | 18.02.2025 |
| 8 | CRU FIELD CONTROL ROOM | 50.2 | 62.3 | 63.8 | 38.6 | 61.7 | 49.8 | 04.02.2025 |
| 9 | BXP CONTROL ROOM | 51.3 | 70.3 | 61.8 | 32.4 | 62.8 | 49.2 | 04.02.2025 |
| 10 | RFCCU FIELD CONTROL ROOM | 49.6 | 53.8 | 50.1 | 39.8 | 69.3 | 58.3 | 05.02.2025 |
| 11 | DHDT FIELD CONTROL ROOM | 53.4 | 65.4 | 58.6 | 40.2 | 60.7 | 51.6 | 05.02.2025 |
| 12 | HGU-1 FIELD CONTROL ROOM | 49.1 | 62.8 | 54.6 | 41.2 | 58.3 | 50.1 | 05.02.2025 |
| 13 | HGU-2 FIELD CONTROL ROOM | 37.6 | 48.6 | 42.7 | 39.8 | 58.6 | 52.1 | 05.02.2025 |
| 14 | SRU FIELD CONTROL ROOM | 48.6 | 61.2 | 54.3 | 40.4 | 60.1 | 52.7 | 05.02.2025 |
| 15 | MSQ CONTROL ROOM | 45.3 | 64.2 | 57.2 | 38.9 | 63.7 | 51.3 | 05.02.2025 |
| 16 | OM & S CONTROL ROOM | 48.6 | 68.3 | 59.3 | 42.3 | 57.3 | 52.2 | 07.02.2025 |
| 17 | CRUDE OIL STATION | 42.3 | 71.5 | 63.2 | 45.2 | 68.2 | 51.2 | 07.02.2025 |
| 18 | FINISHED PRODUCT CONTROL ROOM | 53.9 | 69.8 | 59.5 | 41.7 | 60.7 | 52.3 | 07.02.2025 |
| 19 | LPG CONTROL ROOM | 42.6 | 70.2 | 62.7 | 38.6 | 60.8 | 56.8 | 07.02.2025 |
| 20 | ETP FIELD CONTROL ROOM | 52.3 | 69.5 | 62.7 | 42.2 | 62.8 | 52.8 | 11.02.2025 |
| 21 | UTILITY CONTROL ROOM | 46.3 | 68.6 | 63.4 | 41.6 | 61.5 | 55.3 | 08.02.2025 |
| 22 | OLD DM PLANT CONTROL ROOM | 50.1 | 69.5 | 59.4 | 42.3 | 59.6 | 52.3 | 08.02.2025 |
| 23 | TPS-CONTROL ROOM | 48.3 | 71.4 | 64.5 | 38.9 | 62.5 | 51.9 | 06.02.2025 |
| 24 | TPS FIELD CONTROL ROOM | 46.8 | 70.5 | 62.2 | 42.5 | 59.3 | 50.3 | 06.02.2025 |
| 25 | BOILER 6 CONTROL ROOM | 47.2 | 68.9 | 61.5 | 47.2 | 60.3 | 50.1 | 06.02.2025 |
| 26 | RO DM PLANT CONTROL ROOM | 43.7 | 69.0 | 60.4 | 42.6 | 62.7 | 55.3 | 08.02.2025 |
| 27 | BXP DM PLANT CONTROL ROOM | 41.3 | 70.4 | 58.6 | 43.3 | 62.3 | 51.9 | 08.02.2025 |
| 28 | INSIDE THE MECHANICAL WORKSHOP | 43.8 | 68.6 | 61.4 | 36.8 | 63.8 | 56.2 | 08.02.2025 |
| 29 | QUALITY CONTROL LABORATORY | 42.1 | 71.4 | 64.2 | 35.4 | 61.9 | 54.8 | 11.02.2025 |
| 30 | M & I BUILDING | 50.2 | 66.2 | 62.4 | 40.6 | 59.8 | 53.8 | 08.02.2025 |
| 31 | CENTRAL STORES | 43.8 | 61.8 | 64.8 | 38.7 | 56.3 | 48.6 | 08.02.2025 |
| 32 | FIRE STATION | 46.5 | 72.4 | 63.4 | 36.7 | 55.2 | 47.6 | 08.02.2025 |
| 33 | FIRE WATER PUMP HOUSE | 50.3 | 64.2 | 57.2 | 44.6 | 51.8 | 46.6 | 08.02.2025 |
| 34 | INSTRUMENTATION BUILDING | 51.3 | 65.8 | 56.1 | 36.4 | 58.6 | 52.2 | 08.02.2025 |
| 35 | ELECTRICAL PLANNING BUILDING | 41.3 | 67.2 | 57.6 | 35.5 | 61.7 | 51.3 | 08.02.2025 |
| 36 | MSQ CONTROL ROOM | 40.4 | 70.4 | 65.1 | 36.8 | 55.2 | 49.6 | 12.02.2025 |
| 37 | NHT CCR FIELD CONTROL ROOM | 42.3 | 71.5 | 63.4 | 40.3 | 51.3 | 47.6 | 12.02.2025 |
| 38 | NEW PRIMEG+FIELD CONTROL ROOM | 43.5 | 68.9 | 60.1 | 46.5 | 61.7 | 54.6 | 12.02.2025 |

Checked by:

FOR DETOX CORPORATION PVT.LTD

Authorized Signatory:

Sign :

Name: Snehal Gohil

Designation: Assistant Manager

Detox Corporation Pvt. Ltd.
Analysis Result for the Month of February 2025
TABLE - 2: HIGHLY NOISE AREA
Company Name:- IOC, Barauni Refinery
Sample Type: Noise

| S.No. | Locations | DAY | | | NIGHT | | | DATE OF MONITORING |
|-------|--|-----------|-----------|-----------|-----------|-----------|-----------|--------------------|
| | | Min dB(A) | Max dB(A) | Leq dB(A) | Min dB(A) | Max dB(A) | Leq dB(A) | |
| 1 | AVU-I NEAR FURNANCE F-02 | 57.3 | 80.3 | 70.2 | 52.3 | 71.6 | 62.3 | 04.02.2025 |
| 2 | AVU-I NEAR FURNANCE F-03 | 55.6 | 82.6 | 71.2 | 51.6 | 72.3 | 68.2 | 04.02.2025 |
| 3 | AVU-II NEAR FURNANCE F-02 | 58.3 | 84.6 | 75.2 | 49.3 | 72.5 | 67.2 | 04.02.2025 |
| 4 | AVU-II NEAR FURNANCE F-03 | 60.1 | 79.3 | 68.2 | 52.3 | 70.2 | 63.2 | 04.02.2025 |
| 5 | AVU-III NEAR FURNANCE F-01 | 57.3 | 78.6 | 61.3 | 56.2 | 69.2 | 62.3 | 04.02.2025 |
| 6 | AVU-III NEAR FURNANCE F-02 | 60.2 | 80.3 | 73.2 | 52.8 | 65.3 | 61.8 | 04.02.2025 |
| 7 | AVU-III NEAR FURNANCE F-03 | 62.5 | 81.9 | 72.2 | 53.6 | 62.5 | 60.3 | 04.02.2025 |
| 8 | COKER-A PUMP NEAR P-06 A/B | 61.5 | 82.3 | 73.5 | 51.8 | 68.2 | 60.3 | 04.02.2025 |
| 9 | COKER-A NEAR FURNACE | 56.2 | 82.3 | 68.9 | 53.6 | 64.6 | 61.3 | 05.02.2025 |
| 10 | LRU COMPRESSOR 1ST FLOOR PLATFORM | 59.3 | 81.4 | 69.2 | 56.8 | 63.2 | 58.6 | 07.02.2025 |
| 11 | LRU COMPRESSOR GROUND FLOOR | 57.3 | 80.2 | 70.2 | 58.2 | 71.3 | 59.6 | 08.02.2025 |
| 12 | LRU SUCTION KOD BESIDE COMPRESSOR (08-P-013 A/B) | 55.2 | 76.3 | 62.3 | 56.2 | 68.2 | 70.5 | 07.02.2025 |
| 13 | LRU BOTTOM FRACTIONATORS PUMP (07-P-008 A/B) | 61.8 | 85.2 | 74.6 | 51.9 | 61.8 | 64.5 | 07.02.2025 |
| 14 | COKER-B REACTOR FEED PUMP | 43.8 | 46.2 | 41.3 | 32.5 | 39.8 | 36.9 | 18.02.2025 |
| 15 | COKER-B FURNACE GROUND FLOOR | 36.5 | 40.2 | 42.2 | 36.2 | 42.3 | 38.5 | 18.02.2025 |
| 16 | COKER-B FURNACE FIRST FLOOR | 37.5 | 41.3 | 38.9 | 31.2 | 42.3 | 38.2 | 18.02.2025 |
| 17 | COKER-B OLD PUMP | 32.5 | 40.9 | 35.6 | 35.8 | 45.2 | 35.6 | 18.02.2025 |
| 18 | CRU RECYCLE GAS COMPRESSOR | 62.3 | 73.5 | 68.3 | 58.3 | 66.2 | 62.3 | 12.02.2025 |
| 19 | RFCU COMPRESSOR HOUSE | 58.2 | 78.6 | 70.2 | 56.9 | 68.2 | 58.6 | 12.02.2025 |
| 20 | HGU 01 COMPRESSOR HOUSE | 56.3 | 80.2 | 72.3 | 54.9 | 70.3 | 64.2 | 13.02.2025 |
| 21 | DHDT COMPRESSOR HOUSE | 58.2 | 75.6 | 68.9 | 58.6 | 71.2 | 60.2 | 13.02.2025 |
| 22 | BAP AIR COMPRESSOR HOUSE | 61.4 | 76.9 | 67.9 | 60.2 | 62.3 | 60.3 | 13.02.2025 |
| 23 | MSQ COMPRESSOR HOUSE | 57.2 | 77.8 | 70.2 | 55.2 | 68.9 | 52.3 | 12.02.2025 |
| 24 | FIRE PUMP HOUSE Sector-7 | 58.6 | 81.2 | 72.2 | 54.3 | 68.2 | 56.2 | 11.02.2025 |
| 25 | TDS AIR COMPRESSOR- INSIDE | 59.3 | 78.6 | 70.2 | 54.6 | 67.2 | 58.2 | 06.02.2025 |
| 26 | TPS AIR COMPRESSOR- OUTSIDE | 60.4 | 75.6 | 65.2 | 57.6 | 62.8 | 60.3 | 06.02.2025 |
| 27 | TPS NEAR BOILER 1 | 61.7 | 76.9 | 70.1 | 61.3 | 63.9 | 60.2 | 06.02.2025 |
| 28 | GT-1 | 62.2 | 79.6 | 69.3 | 62.2 | 64.9 | 59.3 | 06.02.2025 |
| 29 | GT-2 | 63.5 | 80.3 | 73.2 | 60.2 | 69.2 | 63.2 | 06.02.2025 |
| 30 | MSQ NITROGEN PLANT | 58.6 | 80.2 | 70.3 | 61.7 | 71.5 | 63.5 | 12.02.2025 |
| 31 | OLD NITROGEN PLANT | 55.3 | 81.3 | 69.3 | 65.5 | 70.2 | 64.2 | 12.02.2025 |
| 32 | FLUE GAS RECOVERY COMPRESSOR | 56.3 | 82.2 | 62.3 | 53.8 | 71.5 | 60.2 | 12.02.2025 |
| 33 | RUP PUMP HOUSE | 61.8 | 79.6 | 70.2 | 56.7 | 61.2 | 61.3 | 11.02.2025 |
| 34 | NEW AERATOR AIR BLOWER | 60.8 | 80.3 | 71.3 | 60.2 | 69.2 | 52.6 | 11.02.2025 |
| 35 | OLD AERATOR AIR BLOWER | 57.6 | 77.2 | 68.3 | 58.3 | 63.8 | 56.4 | 11.02.2025 |
| 36 | NEW PRIMEG+COMPRESSOR HOUSE | 66.5 | 82.2 | 69.3 | 53.8 | 69.5 | 54.6 | 12.02.2025 |
| 37 | NHT CCR COMPRESSOR HOUSE | 61.3 | 79.6 | 74.6 | 46.8 | 68.6 | 58.2 | 14.02.2025 |
| 38 | NHT CCR SOUTH- WEST CORNER | 57.2 | 77.6 | 70.3 | 49.5 | 66.3 | 60.2 | 14.02.2025 |
| 39 | NEAR NHT CCR EYE WASH SHOWER NO.79 | 53.8 | 75.2 | 69.8 | 51.3 | 68.4 | 62.7 | 14.02.2025 |
| 40 | NEW PRIMEG+FEED PUMP 904-PM-09 | 56.9 | 79.2 | 71.1 | 52.3 | 67.5 | 62.4 | 14.02.2025 |

Checked by:

FOR DETOX CORPORATION PVT.LTD

Authorized Signature:

Signature:

Name: Svetali Gohil
Designation: Assistant Manager

| Detox Corporation Pvt. Ltd. | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|------|------|-------------------|-------------------|-------|-------|-------|-------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------|
| FALSE | | | | | | | | | | | | | | | | | | | | | | | |
| Paramet | RPM (<10) | RPM (<2.5) | SO ₂ | NO ₂ | NH ₃ | Pb | CO * | CO ** | | | | Ozone * | Ozone ** | | | | HC | Benzene | H ₂ S | Benzo(a)pyrene | Arsenic | Nickel | Mercaptan |
| Unit | µg/m ³ | mg/m ³ | mg/m ³ | | | | µg/m ³ | µg/m ³ | | | | ppm | µg/m ³ | µg/m ³ | ng/m ³ | ng/m ³ | ng/m ³ | ppb |
| Norms | 100 | 60 | 80 | 80 | 400 | 1 | 4 | 2 | | | | 180 | 100 | | | | NS | 5 | NS | 1 | 6 | 20 | NS |
| Name of Location | - | - | - | - | - | - | 1 Hour | S-1 | S-2 | S-3 | Avg. | 1 Hour | S-1 | S-2 | S-3 | Avg. | (ppm) | (µg/m ³) | (µg/m ³) | (ng/m ³) | (ng/m ³) | (ng/m ³) | (ppb) |
| ME OFFICE | 76.6 | 38.4 | 12.5 | 16.8 | 17.6 | 0.3 | 0.8 | 1.1 | 0.9 | 1.1 | 1.0 | 21.6 | 22.4 | 22.3 | 21.5 | 22.1 | BQL | BQL | BQL | BQL | BQL | BQL | 20.5 |
| ONTROL | 66.2 | 31.0 | 11.3 | 16.1 | 17.3 | 0.2 | 1.0 | 0.8 | 1.0 | 0.9 | 0.9 | 22.8 | 23.5 | 23.7 | 24.6 | 23.9 | BQL | BQL | BQL | BQL | BQL | BQL | 22.0 |
| STATION | 75.4 | 35.6 | 11.6 | 16.4 | 20.5 | 0.2 | 1.0 | 1.0 | 0.9 | 1.0 | 1.0 | 25.7 | 23.5 | 23.7 | 23.6 | 23.6 | BQL | BQL | BQL | BQL | BQL | BQL | 22.7 |
| BTP | 77.2 | 36.2 | 11.4 | 14.4 | 17.8 | 0.3 | 1.1 | 1.1 | 0.8 | 1.1 | 1.0 | 19.7 | 22.7 | 25.9 | 22.5 | 23.7 | BQL | BQL | BQL | BQL | BQL | BQL | 19.7 |
| AVERAGE | 73.9 | 35.3 | 11.7 | 15.9 | 18.3 | 0.3 | 0.98 | 1.0 | 0.9 | 1.1 | 1.0 | 22.45 | 23.0 | 23.9 | 23.0 | 23.3 | BQL | BQL | BQL | BQL | BQL | BQL | 21.2 |
| BR REFINE RY TOWNS HIP | 62.4 | 30.2 | 10.6 | 14.7 | 14.2 | 0.1 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 22.9 | 18.4 | 24.0 | 21.4 | 21.3 | BQL | BQL | BQL | BQL | BQL | BQL | 18.6 |
| BIHAT VILLAG E | 63.8 | 31.4 | 11.2 | 11.5 | 13.1 | 0.1 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 25.4 | 24.9 | 25.8 | 28.0 | 26.2 | BQL | BQL | BQL | BQL | BQL | BQL | 17.0 |
| BINODP UR VILLAG E | 60.4 | 27.4 | 8.5 | 13.2 | 14.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 21.0 | 21.8 | 17.9 | 23.4 | 21.0 | BQL | BQL | BQL | BQL | BQL | BQL | 20.2 |
| RACHIA HI VILLAG E | 56.6 | 20.4 | 8.8 | 12.8 | 15.0 | 0.1 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 19.6 | 22.6 | 25.9 | 23.0 | 23.8 | BQL | BQL | BQL | BQL | BQL | BQL | 20.6 |
| ITSIDE OUT | 60.80 | 27.35 | 9.77 | 13.03 | 14.12 | 0.11 | 0.31 | 0.29 | 0.28 | 0.29 | 0.29 | 22.26 | 21.92 | 23.39 | 23.97 | 23.09 | BQL | BQL | BQL | BQL | BQL | BQL | 19.10 |

S-1 (Shift-1) : 6 A.M. - 14 P.M.

S-2 (Shift-2) : 14 P.M. - 22 P.M.

S-3 (Shift-3) : 22 A.M. - 6 A.M.

Analysed By

Approved By

END

Detox Corporation Pvt. Ltd.
Analysis Result for the Month of February -2025
TABLE - 3: BOUNDARY OF THE REFINERY AREA
Company Name:- IOCL Barauni Refinery
Sample Type: Noise

| S.No. | Locations | DAY | | | NIGHT | | | DATE OF MONITORING |
|-------|---|-----------|-----------|-----------|-----------|-----------|-----------|--------------------|
| | | Min dB(A) | Max dB(A) | Leq dB(A) | Min dB(A) | Max dB(A) | Leq dB(A) | |
| 1 | GATE NO.1 | 54.3 | 82.1 | 68.2 | 46.2 | 68.2 | 48.3 | 13.02.2025 |
| 2 | BIO-TREATMENT PLANT GATE | 52.3 | 70.2 | 67.2 | 44.3 | 64.9 | 51.2 | 14.02.2025 |
| 3 | BIO-TREATMENT CONTROL ROOM | 46.2 | 69.2 | 58.6 | 41.8 | 68.2 | 52.2 | 14.02.2025 |
| 4 | OIL INDIA GATE (NEAR GOVINDPUR VILLAGE) | 38.6 | 70.8 | 56.2 | 39.5 | 70.2 | 51.3 | 15.02.2025 |
| 5 | GATE NO.10 | 38.3 | 71.2 | 54.6 | 39.2 | 67.2 | 46.8 | 13.02.2025 |
| 6 | RFCCU SITE CLOSE TO THE BOUNDARY | 41.3 | 81.3 | 56.2 | 41.3 | 59.5 | 47.3 | 13.02.2025 |
| 7 | SRU SITE CLOSE TO THE BOUNDARY INSIDE PLANT | 40.5 | 82.3 | 52.6 | 42.5 | 67.8 | 61.2 | 13.02.2025 |
| 8 | SRU SITE CLOSE TO THE BOUNDARY OUT SIDE PLANT | 43.5 | 69.5 | 58.6 | 46.2 | 68.2 | 62.3 | 13.02.2025 |
| 9 | CISF COLONY | 39.8 | 72.6 | 57.6 | 38.6 | 65.5 | 60.1 | 15.02.2025 |
| 10 | NEAR BORROW PIT | 39.5 | 80.2 | 52.5 | 37.4 | 64.9 | 58.3 | 15.02.2025 |
| 11 | NEAR IOCL PETROL PUMP | 38.1 | 78.2 | 56.8 | 35.6 | 62.2 | 49.8 | 14.02.2025 |

Checked by:

FOR DETOX CORPORATION PVT.LTD

Authorized Signatory:

Sign :

Name: Snehal Gohil
 Designation: Assistant Manager