

रिफाइनरी प्रमाग **Refinerles** Division

REF: IOC/BGR/ENV/IndMax/MoEF&CC/2023-24/01

To The Regional Officer, Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Guwahati, 4th Floor, House fed Building, GS Road, Rukminigaon Guwahati-781022

Subject: Half Yearly Report for the period of (1st April'23 and 30th September'23) for BGR "INDMAX & BS-VI PROJECTS"

Dear Sir,

With reference to above, we are enclosing the Six Monthly Report for the period of 1" April'23 and 30th September'23for your kind perusal.

The reports are being sent as per EIA Rules'2006 for the "Environmental Clearances" issued by MoEF&CC to Bongaigaon Refinery, (BGR) for "INDMAX & BS-VI PROJECTS"

Thanking you,

Yours faithfully.

(Biman Gogoi) CM (HSE) Ph: 9435122647

Copy to:

- 1. Member Secretary, Pollution Control Board, Assam Bamunimaidam, Guwahati - 781 021
- 2. Zonal Officer, Central Pollution Control Board Eastern Zonal Office, 'TUM-SIR', Lower Motinagar, Near Fire Brigade H.Q., Shillong - 793014

तजिल्हाई ऑफिस जी-२, जहीं यादर जेम मार्ग, बान्द्रा (पूर्व) मुम्बई 400.051

रिफाइनरी विविजन : हेळ क्याटेर : इस्विजन ओयल मवन, रकोफ कप्लेक्श, कोर - 2, 7, इस्टिटयुशनल एरिया, लांचा रोठ, नह दिल्ली - 110.003

Regd. Office : 6-9, All Yavar Jung Marg. Bandra (East) Mumba-400.051 Refineries DMsion - Head Quarter : IndianOff Bhovan, SCOPE Camplex, Care 2, 7, Institutional Area, Lodhi Road, New Dehi - 110.003

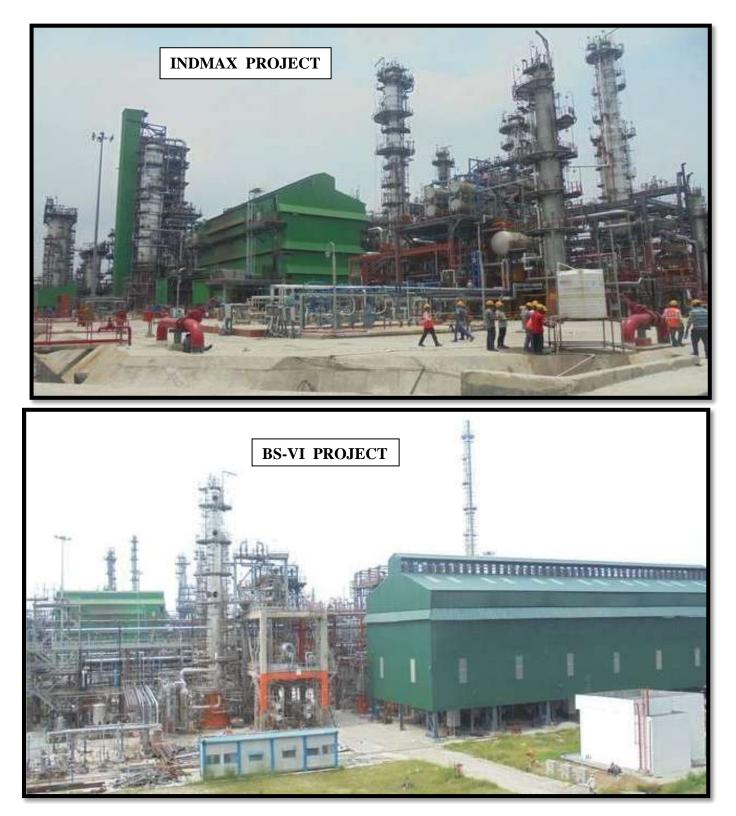
इंटियन ऑयल कॉर्पोरेशन लिमिटेड बोंगाइगाँव रिफाइनरी साकपर भारतीनीय - 783 385 जिला - पिरांग (ज्रसम्) Indian Oil Corporation Limited **Bongaigaon Refinery** PO : Dhaligaon, Dist : Chirang, Assam 783385 Phone : 03664-E-mail Websile: www.locl.com FAX: 03664-



Date: 27/12/23

Half yearly Report for BGR INDMAX & BS-VI Project

(1st April, 2023 to 30th September, 2023)



Submitted by:

Indian Oil Corporation Limited Bongaigaon Refinery PO: Dhaligaon. District: Chirang. Assam

Details of the Project

IOCL, the energy of India is contributing the nation in its development by means of employment generation and through CSR activity. For the development of the nation as well as the company and for Environment protection, IOCL is adding new plant for environment friendly and value added product. IOCL, Bongaigaon Refinery has established a new unit, INDMAX for LPG maximization and BS-VI project for cleaner fuel.

To establish the new unit, EIA study was done by M/s ABC TECHNO LABS INDIA PVT. LTD, Chennai.

Based on the EIA study, IOCL, BGR applied for EC to MoEF&CC on 31/05/2015.

Going through all the process and formalities, MoEF&CC granted EC No. J-11011/48/216-IA-II

(I), Dated: 19th April 2017 to IOCL, BGR to establish following projects:

sl	Units	Date of commissioning
1.	Refinery capacity enhancement from 2.35 MMTPA to 2.70 MMTPA	30.04.2021 (after commissioning of NHT Unit under BS-VI Project)
2.	INDMAX FCC Unit, 740 TMTA	07.11.2020
3.	Prime- G+/ BS-VI projects (Including SRU, SDS/ARU)	Prime G+ : 05.12.2020 ARU : 30.10.2020 SDS : 30.04.2021 SRU : 24.06.2022
4.	DHDT capacity enhancement from 1.2 MMTPA to 1.8 MMTPA	15.03.2020
5.	HGU Revamp (Capacity enhancement from 25 TMTPA to 30 TMTPA)	12.03.2020
6.	CRU-MSQ Revamp	With the commissioning of Prime- G+/ BS-VI projects

Compliance/ progress report for the above projects are listed below:

BGR INDMAX & BS-VI PROJECTS: EC CONDITIONS, COMPLIANCE STATUS. EC Reference: J-11011/48/2016-IA-II (I) Dt. 19.04.2017

Monthly Status Report for the period (1st April, 2023 to 30th September, 2023)

INDEX:

SI. No	Conditions	Status
1.	General conditions and Compliance status of IndMax & BS-VI Project.	
2.	Six monthly Stack Monitoring/ Air Quality Data	Furnished in Appendix-A1
3.	Six monthly effluent discharged Quality	Furnished in Appendix-A2
4.	Tree Plantation Data	Furnished in Appendix-A3
5.	Additional Information	Furnished in Appendix-A4
6.	Fugitive Emission Data	Furnished in Appendix-A5
7.	Annual return of hazardous waste	Furnished in Appendix-A6(a)
8.	Authorization from PCBA under Hazardous and Other Waste (Management and Transboundary Movement) Rules 2016	Furnished in Appendix-A6(b)
9.	Details of Waste water treatment and disposal system	Furnished in Appendix-A7
10.	Quarterly Noise Survey Report.	Furnished in Appendix-A8
11.	Status of Rainwater Harvesting	Furnished in Appendix-A9
12.	Screen Shot of IOCL Website upload of report	Furnished in Appendix-A10
13.	NABL certificate of QC Lab of Bongaigaon Refinery	Furnished in Appendix-A11
14.	Employees Occupational Heath Check up Status	Furnished in Appendix-A12
15.	Flare system.	Furnished in Appendix-A13

BGR INDMAX & BS-VI PROJECTS: EC CONDITIONS, COMPLIANCE STATUS. EC Reference: J-11011/48/2016-IA-II (I) Dt. 19.04.2017

Six Monthly Status Report for the period (1st April, 2023 to 30th September, 2023)

Special Conditions:

EC				
SI	Condition	Compliance Status		
No (i) All	pollution			
cor mo equ sha insi and with pro	ntrol and onitoring uipments all be talled, tested d interlocked h the ocess.	Complied Total 19 nos. of SOx, NOx, CO and PM analyzers have been installed in all 5 stacks of - 1. ATF Splitter re boiler 2. New NHT furnace 3. New SRU furnace 4. INDMAX Flue Gas Boiler 5. PrimeG+two new furnaces with common stack (102-F-01 & 102-F-02)		
gra to 0 ens the pol equ cor sto dra har stru Gre upl cor rep wel hav	Operate' after suring that all e mentioned lution control uipments, nstruction of rm water in, rain water rvesting ucture, eenbelt, oading of mpliance bort on the bsite etc	 CTO "Consent to Operate" for commissioning projects issued by PCBA vide letter no. WB/BONG/T-2266/pt-I/08-09/51/580, dated 15/10/2020. "Consent to Operate" for whole refinery including all commissioned Projects has been renewed by PCBA with validity period till 31/03/2027 vide letter no. WB/BONG/T-2266/08-09/58/154 dated 25/04/2022. All the units of the Project commissioned successfully. Construction of storm water drains in the project area completed. Two roof top RWH scheme commissioned in the new project and under function. This is in addition to total 21 nos. of RWH schemes for ground water recharge already existing in BGR combining both refinery and township. Details of setting up of green belt in different phases (Phase-I & II) Phase-1: 10000 saplings planted in newly developed green belt area (Old debris yard area) during May-July 2017. Photograph of the green belt attached Details of plantation done in and around the complex, since 2017-18 Year 2017-18: 29600 nos of saplings Year 2018-19: 30060 nos. of saplings Year 2020-21: 25606 nos. of saplings Year 2021-22: 1,00,000 nos. of saplings (Including outside location from the refinery, township & North side of the IndMax unit: 11,500 sapling planted) Year 2022-23: 27610 nos. of saplings planted Year 2022-24(1** Half): 75630 nos. of saplings planted Year 2022-24(1** Half): 75630 nos. of saplings planted Year 2022-24(1** Half): 75630 nos. of saplings planted Detawer direction and along road side of new project area : Plantation done Uploading of EC compliance status report on the website is in practice. See (Appendix-A10). 		

EC SI. No	Special Condition	Compliance Status
(ii)	Ambient air quality data shall be collected as per NAAQS standards notified by the Ministry vide G.S.R. No. 826(E) dated 16th September, 2009. The levels of PM10, PM2.5, SO2, NOx, VOC and CO shall be monitored in the ambient air and emissions from the stacks and displayed at a convenient location near the main gate of the company or at important public places. The company shall upload the results of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MOEF&CC, the respective Zonal office of CPCB and the state Pollution Control Board (SPCB).	 Online Ambient air quality data & Stack emission monitoring data of the existing units including new units viz IndMax, Prime-G, NHT and New SRU (SRU-II) are being displayed at BGR Main gate. DHDT ATF furnace is not commissioned till now. The results of monitored data are uploaded on IOCL website. Also half yearly status reports for the running units are submitted in the month of December and June to the Regional office of MoEF&CC, the Zonal office of CPCB and the State Pollution Control Board (SPCB) regularly.
(iii) (iv)	In plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive emissions shall be controlled by providing closed storage, closed handling & conveyance of chemicals/ materials, multi cyclone separator and water sprinkling system. Dust suppression system including water sprinkling system shall be provided at loading and unloading areas to control dust emissions. Fugitive emissions in the work zone environment, product, raw materials storage area etc. shall be regularly monitored. The emissions shall conform to the limits stipulated by the SPCB. The project proponent shall take due care and adopt best practices to ensure that there is no oil spill. However, to meet with any unforeseen situation and combat the oil spill, the PP shall prepare the Oil Spill Disaster Contingency Plan in line with the provisions of the National Oil Spill Disaster Contingency Plan. Regular mock drills shall also be conducted.	 Fugitive emissions are monitored from all vulnerable sources (i.e. Glands, flanges, pump seal etc) and rectification is carried out if leakage is observed. Quarterly fugitive emissions Survey is being carried out regularly in the work zone environment, product, raw materials storage area etc. and confirm the emission limits stipulated by as per SPCB norms. The quarterly fugitive emission reports for the period of 1st April, 2023 to 30th September, 2023 are attached as <u>Appendix-A5</u> All liquid and gaseous products and chemicals are handled in the closed system. Water sprinkling system is being taken care off at loading area to control dust emission. Approved Emergency Response & Disaster Management Plan (ERDMP) is in place at BGR to handle any unforeseen situation due to oil spill and mock drills (on-site & off-site) conducted quarterly on various emergency scenarios. Onsite Mock drills for FY 23-24 (Q-1, Q-2) conducted on 27/06/23, and 27/09/23 respectively.

EC SI No	Special Condition	Compliance Status
(v)	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.	Complied The gaseous emission from DG set is dispersed through adequate stack height (3.0 Mtrs as per CPCB standards). However, DG set not available for the new projects.
(vi)	Total fresh water requirement from existing source shall not exceed 370m ³ /hr and prior permission shall be obtained from the Competent Authority. No ground water shall be used without permission.	NOC from CGWA for ground water extraction for Fresh water requirement for refinery use applied. Application No: 21-4/ 1306 /AS / IND/2021, dated: 21/04/2021. Based on the application CGWA has issued NOC No: CGWA/NOC/IND/ORIG/2023/18583, Dated: 24/05/2023, Valid from 21/04/2021 to 20/04/2024
(vii)	Waste water shall be treated in ETP. The treated effluent water shall be reused as make up water for cooling tower and green belt development. No Effluent shall be discharged outside the plant premises.	 a. Waste water is treated in ETP and in TTP. b. The treated effluent water is reused as make up water for cooling tower, Fire water network, housekeeping and horticulture. c. No effluent is discharged outside the plant premises.
(viii)	Automatic / online monitoring system (24 x 7 monitoring devices) for flow measurement and relevant pollutants in the treatment system to be installed. The data to be made available to the respective SPCB and in the Company's website.	Reused 100% Online Continuous Effluent monitoring system for flow measurement and relevant pollutants in the treatment system is available. On-line data is made available to CPCB and SPCB and rolling displayed at BGR main gate. Data also uploaded in company's website along with the six monthly compliances report.
(ix)	Adequate odour management plan and its mitigation measure to be implemented on priority.	Adequate odour management plan and its mitigation measure had been implemented along with the project.
(x)	Regular VOC monitoring to be done at vulnerable points.	Occupational Health section is monitoring the VOC at different vulnerable areas in the Refinery on monthly basis.
(xi)	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.	The oily sludge is processed in melting pit for oil recovery and stored in brick lined sludge lagoon. Oily sludge from lagoon is processed for recovery of oil regularly. A third party is engaged for processing of the oily sludge & recovery of oil from the oily sludge stored in the sludge lagoon. During 1 st April, 2023 to 30 th September, 2023, 3389.0 MT of oily sludge has been processed by mechanized processing. The leftover residue is further bio-remediated before disposal.
(xii)	Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MoEF&CC. Outcome from the report to be implemented for conservation scheme.	M/s EIL conducted a comprehensive water audit & final report submitted. Action plan formulated for implementation of short & long term conservation schemes.

EC SI No	Special Condition	Compliance Status		
(xiii)	Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.	Complied Oil catchers/ oil traps are already there in the existing storm water channel and have been installed in rain/ storm water drainage system in the new project also. One additional oil catcher/oil trap system provided in rain/storm water drain channel along with project		
(xiv)	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc.	Complied Hazardous chemicals are stored in tanks and drums.		
	Flame arresters shall be provided on tank farm.	Complied Flame arrestors are installed as per design of tanks in tank farm.		
	Solvent transfer shall be by pumps.	Installation of solvent transfer pumps is completed.		
(xv)	The by-products which fall under the purview of the Hazardous Waste Rules, be handled as per the provisions of the said Rules and necessary permissions shall be obtained.	Hazardous by-products generated from commissioned units will be subjected to pre treatment facility in EPT facility being set up in the complex. Post pre treatment, the effluents containing hazardous by-products will undergo treatment in main effluent treatment of refinery complex (WWTP) for meeting the MINAS as per statutory guidelines.		
(xvi)	The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC)	The rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 is complied.		
	Rules, 1989 as amended time to time. All Transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	Transportation of Hazardous Chemicals is followed as per the Motor Vehicle Act (MVA), 1989.		
xvii)	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms			
(xviii)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied. Occupational health surveillance of the workers are done on a regular basis and records maintained as per the Factories Act. Details attached as <u>Appendix-A12</u> .		

EC SI No	Special Condition	Compliance Status
(xix)	At least 2.5 % of the total cost of the project shall be earmarked towards the Enterprise Social Commitment (ESC) based on local needs and action plan with financial and physical breakup /details shall be prepared and submitted to the Ministry's Regional Office. Implementation of such program shall be ensured accordingly in a time bound manner.	As per MoEF&CC guideline dtd. 1 st May 2018, ESC has been replaced with CER (Corporate Environment Responsibility). Expenditure incurred under CSR for the year: 2016-17: Rs. 304.84 lakhs 2017-18: Rs. 740.95 lakhs 2018-19: Rs. 960.00 lakhs 2019-20: Rs. 916.08 lakhs 2020-21: Rs. 184.66 lakhs 2020-21: Rs. 184.66 lakhs 2021-22: Rs 681.41 lakh 2022-23: Rs 667.54 lakhs 2023-24(1 st Half): Rs. 303.71 lakhs. Expenditure incurred under CER for the year: FY 2023-24(1 st half) Rs. 58.63 lakhs and total 1227.19 Lacks till 30/09/23 against the project.
(xx)	A regular Environment Manager, having post graduate qualification in environmental sciences/ environmental engineering, to be appointed for looking after the environmental management practices in the plant.	The officer with one year PG Diploma course on Env. Management from Tezpur University has been posted in Panipat refinery in May'22 in the last transfer published for FY 21-22 as per IOCL policy. New chemical engineer posted in HSE dept. is identified for similar course on PG Diploma on Env. Management from Tezpur University / other institution. Action for enrolment in the course will be taken accordingly. Otherwise also, HSE dept. has always been putting constant effort for proper environmental management practices in the plant either by direct monitoring or by engaging external authorized environmental agencies.
(xxi)	As proposed, green belt over 33% shall be developed within plant premises with at least 10 meter wide green belt (perennial trees) on all sides along the periphery of the project area, in downward direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.	 Details of setting up of green belt in different phases(Phase-I&II) Phase-1: 10000 saplings planted in newly developed green belt area (Old debris yard area) during May-July 2017. Photograph of the green belt attached Details of plantation done in and around the complex, since 2017-18 Year 2017-18: 29600 nos of saplings Year 2018-19: 30060 nos. of saplings Year 2019-20: 14340 nos. of saplings Year 2020-21: 25606 nos. of saplings Year 2021-22: 1,00,000 nos. of saplings Year 2021-22: 1,00,000 nos. of saplings (Including outside location from the refinery, township & North side of the IndMax unit: 11,500 sapling planted) Year 2022-23: 27610 nos. of saplings planted Year 2023-24(1st Half): 75630 nos. of saplings planted Surrounding of PSF Building area (c) Downward direction and along road side of new project area : Plantation done

EC GENERAL CONDITIONS:

EC SI No	Condition	Compliance Status
(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.	Strict adherence to stipulations made by Statutory authorities complied along with project implementation.
(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.	Noted and being complied.
(iii)	The location 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 station is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	 4(Four) manual ambient air quality monitoring stations are installed inside the refinery complex in consultation with the State Pollution Control Board. 1(One) manual ambient air quality monitoring station is in BGR township. 1(One) more continuous ambient air quality monitoring station is in BGR township. 1(One) more continuous ambient air guality monitoring station is in BGR township. Real time data from the same is being shared with / transmitted to CPCB/PCBA
(iv)	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16 th November, 2009 shall be followed.	NAAQES issued by the Ministry is being followed & 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 of noise generation. The ambient noise level shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	Complied. Taken care during implementation of the project. Quarterly Noise Survey is being carried out regularly for noise level monitoring; Quarterly Reports Q-1 (23-24) & Q-2 (23- 24) are attached as Appendix-A8 .
(vi)	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.	

EC SI. No	General Condition	Compliance Status
(vii)	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Training on safe handling of chemicals is imparted to all employees. Pre-employment and routine periodical medical examinations for all employees are undertaken on regular basis. Details of occupational health checkup (OHC) attached as <u>Appendix-A12</u> .
(viii)	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.	Environmental protection measures and safeguards as recommended in EIA has been complied and implemented along with commissioning of the project.
(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.	Measures for improving the socio-economic condition of the surrounding area is undertaken under CSR activities on yearly basis.
(x)	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	Measures are being undertaken in the nearby villages of the project area under CSR & CER Expenditure incurred under CSR for the year: 2016-17: Rs. 304.84 lakhs 2017-18: Rs. 740.95 lakhs 2018-19: Rs. 960.00 lakhs 2019-20: Rs. 916.08 lakhs 2020-21: Rs. 184.66 lakhs 2021-22: Rs 681.41 lakh 2022-23: Rs 667.54 lakhs 2023-24(1 st Half): Rs. 303.71 lakhs. Expenditure incurred under CER for the year: FY 2023-24(1 st half) Rs. 58.63 lakhs and total 1227.19 Lacks till 30/09/23 against the project.
(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.	Already exists. BGR is having a separate environmental monitoring dept. (HSE dept.) and a full-fledged Quality control laboratory to carry-out environment management and monitoring functions. BGR Environment Laboratory is accredited by NABL <u>Appendix-A11</u>
(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 and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purposes.	Fund is earmarked and available per annum for compliance of jobs pertaining to EC conditions. No any fund is diverted for any other purposes

EC SI. No	General Condition	Action
(xiii)	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parisad/Municipal Corporation, Urban local body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.	Not Applicable. However, the clearance dated 19.04.2017 has been published in local dailies, "The Sentinel" and "Amar Asom" on 27.04.2017.
(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 concerned SPCB. A copy of Environmental Clearance and six monthly compliance status reports shall be posted on the website of the company.	Noted and being complied. Soft copy of last six monthly compliance reports was submitted vide, document no. IOC/BGR/ENV/ INDMAX ETC / MoEF&CC/2022-23/02 Date: 28.06.2023 Same is also uploaded in IOCL website. Ref: Appendix-A10
(xv)	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 shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.	Noted and under compliance.
(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.	Complied. The granting of Environment clearance dated 19.04.2017 has been published in "The Sentinel" and "Amar Asom" on 27.04.2017. The copy of the publication of EC forwarded to the Regional office of MoEF&CC, Shillong and SPCB office on 08.05.2017.
(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.	Complied Date of final approval and the date of start of the project were informed to the Regional office as well as Ministry vide letter dtd. 08.05.2017. Financial closure of the Project is not yet completed. Under progress towards closure.

APPENDIX –A1

STACK MONITORING DATA: (1st April, 2023 to 30th September, 2023)

Staaka	Emission Std.	Observed value		
Stacks		Min	Avg.	Max
CDU-I		2.52	60.5	144.8
CDU-II]	5.92	8.2	14.7
DCU-I		0.99	8.9	52.0
DCU-II		6.99	8.3	10.6
CPP	700	7.37	44.8	125.4
Reformer	— II	0.00	29.1	129.6
HO-1			102.2	447.6
HO-2	For F.O.	Shut Down		
Isomerisation		0.5	35	149.7
DHDT		4.7	5.6	6.1
HGU		3.1	20.9	100.0
SRU		172	172	172
GTG		5.8	20.3	71.8
IGHDS	50	1.0	6.5	28.8
NHT	- 50 -	0.0	0.9	3.8
INDMAX	850	1.7	2.0	2.2

A. SO₂ Emission (mg/Nm³)

B. NO_x Emission (mg/Nm³)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I		0.98	25.4	42.4
CDU-II		2.68	6.18	11.2
DCU-I		1.78	15.7	164.6
DCU-II		8.94	9.01	9.1
CPP	350	21.0	27.6	31.5
Reformer		34.7	48.0	62.6
HO-1	 ວ່ວ	16.5	89.4	119.4
HO-2	ட்ட	Shut Down		
Isomerisation	For	4.00	31.3	85.7
DHDT	ĽĽ		7.2	8.01
HGU		10.0	34.7	118.1
SRU		No Analyser		
GTG		16.0	16.0	16.0
IGHDS	250	3.12	20.0	32.7
NHT	250	0.00	1.80	2.01
INDMAX	350	0.07	3.54	41.7

Stacks	Emission Std.		Observed val	ue
	Emission Stu.	Min	Avg.	Max
CDU-I		0.40	1.49	19.7
CDU-II		0.07	0.69	6.4
DCU-I		2.40	6.52	15.0
DCU-II		1.52	7.14	19.4
СРР	g o	0.52	12.3	56.5
Reformer	For F.O. = 100 For F.G. = 10	1.99	5.11	8.32
HO-1		0.99	3.88	7.30
HO-2		Shut Down		
Isomerisation	For	1.25	5.05	11.07
DHDT		0.24	0.55	1.06
HGU		0.17	0.85	2.76
SRU		0.54	0.90	1.14
GTG		1.52	4.12	6.59
IGHDS	- 250 -	0.94	1.33	1.86
NHT	230	0.98	2.10	4.80
INDMAX	350	0.00	7.32	16.0

C. PM Emission (mg/Nm³)

STACK MONITORING DATA: (1st April, 2023 to 30th September, 2023)

D. CO Emission (mg/Nm³)

Stacks	Emission		Observed va	lue		
Oldens	Std.	Min	Avg.	Max		
CDU-I		0.83	12.9	45.6		
CDU-II		0.99	5.99	20.8		
DCU-I		3.06	8.15	15.6		
DCU-II		2.38	4.31	6.7		
СРР	00	12.0	15.9	17.9		
Reformer	= 200	3.74	39.6	199.3		
HO-1	<u> </u>	2.53	10.0	15.6		
HO-2			Shut Down			
ISOMERISATION	For	2.04	10.2	15.9		
DHDT		0.29	7.02	36.3		
HGU		9.29	21.5	25.3		
SRU		0.24	0.25	0.3		
GTG		0.08	11.8	22.0		
IGHDS	250	0.77	21.6	65.3		
NHT	200	3.20	15.8	30.3		
INDMAX	350	0.00	5.99	13.9		

STACK MONITORING DATA: (1st April, 2023 to 30th September, 2023)

	Emission		Observed va	lue
Stacks	Std.	Min	Avg.	Мах
CDU-I		BDL	BDL	BDL
CDU-II		BDL	BDL	BDL
DCU-I		BDL	BDL	BDL
DCU-II	ى د	BDL	BDL	BDL
СРР		BDL	BDL	BDL
Reformer		BDL	BDL	BDL
HO-1/2	For F.O.	BDL	BDL	BDL
ISOMERISATION	Ĕ	BDL	BDL	BDL
DHDT		BDL	BDL	BDL
HGU		BDL	BDL	BDL
SRU		BDL	BDL	BDL
GTG		BDL	BDL	BDL

E. Ni + V Emission (mg/Nm³):

AMBIENT AIR QUALITY AROUND BGR COMPLEX

(Average of monthly sample Schedule – VII) (1st April, 2023 to 30th September, 2023)

	Station	Continuous Monitoring Station	Near Tube Well No.14	Near LPG Bottling plant	Rural Health Centre	Bartala Rail Gate	Near TW No.7 in Township
1	SO₂ (Std. 50/80 μg/m	1 ³)					
	Min	0.06	9.0	8.5	9.1	8.6	8.7
	Average	0.91	12.3	11.5	10.7	11.0	10.5
	Max	5.33	17.2	14.8	12.9	14.3	12.9
	No. of observation	Continuous	42	42	42	42	42
2	NO ₂ (Std. 40/80 µg/m	³)					
	Min	2.59	14.4	14.3	14.5	14.1	13.1
	Average	3.95	19.2	19.9	18.2	18.1	15.3
	Max	5.61	23.9	23.6	21.2	21.7	19.9
	No. of observation	Continuous	42	42	42	42	42
3	PM-10 (Std. 60/100 μ	g/m³)					
	Min	14.5	66.7	67.9	67.0	70.0	61.3
	Average	37.8	73.9	73.5	75.4	75.5	66.1
	Max	69.4	77.9	77.1	80.1	79.8	74.5
	No. of observation	Continuous	42	42	42	42	42

	Station	Continuous Monitoring Station	Near Tube Well No.14	Near LPG Bottling plant	Rural Health Centre	Bartala Rail Gate	Near TW No.7 in Township
4	PM-2.5 (Std. 40/60 µg	g/m³)					
	Min	1.06	27.1	27.5	28.7	28.7	27.1
	Average	13.3	34.5	34.0	35.4	35.6	32.1
	Мах	34.9	40.0	40.4	41.7	41.2	36.7
	No. of observation	Continuous	42	42	42	42	42
5	Ammonia (Std. 100/4	l00 μg/m³)					
	Min	2.09	12.8	13.4	12.7	11.2	8.50
	Average	2.12	16.1	15.4	15.6	15.2	13.4
	Мах	3.68	21.6	19.6	20.0	20.8	19.6
	No. of observation	Continuous	42	42	42	42	42
6	Pb (Std. 0.5/1.0 µg/m	1 ³)					
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Мах		BDL	BDL	BDL	BDL	BDL
	No. of observation		42	42	42	42	42
7	Arsenic (As) (Std. 6	ng/m3)					
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Мах		BDL	BDL	BDL	BDL	BDL
	No. of observation		42	42	42	42	42
8	Ni (Std. 20 ng/m3)						
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Мах		BDL	BDL	BDL	BDL	BDL
	No. of observation		42	42	42	42	42
9	CO (Std. 2/4 mg/m3						
	Min	0.00	0.09	0.11	0.01	0.06	0.01
	Average	0.06	0.14	0.14	0.06	0.14	0.04
	Max	0.36	0.17	0.17	0.14	0.17	0.08
	No. of observation	Continuous	42	42	42	42	42

		Statio	n	Moni	nuous toring tion	Near Tu Well No		Near LP Bottling p		Rural Health Centre	Bartala Rail Gat		ar TW o.7 in vnship
10	Ozon	e (Std.	100/180	µg/m³ fo	or 8 hrs/	1 hr)							
	Min			3′	1.0	11.9)	9.5		11.9	11.1		0.5
	Avera	ige		3!	5.0	15.7	7	11.1		14.8	14.3		4.3
	Max			4	1.5	21.5	5	14.8		18.2	19.2		7.9
	No. c	of obse	rvation	Conti	nuous	42		42		42	42		42
11	Benz	ene (St	td. 5 μg/	/m³)									
	Min			0.	55	BDL	-	BDL		BDL	BDL		3DL
	Avera	ige		0.	60	BDI	-	BDL		BDL	BDL		3DL
	Max	•		0.	69	BDI	-	BDL		BDL	BDL		BDL
		of obse	rvation	Conti	nuous	42		42		42	42		42
12													
	Min					BDI	-	BDL		BDL	BDL		BDL
	Avera	ige				BDL	-	BDL		BDL	BDL		BDL
	Max					BDL	-	BDL		BDL	BDL		BDL
	No. c	of obse	rvation			42		42		42	42		42
	1				A	verage	of Six	Stations	5				
	imete r	SO ₂	NO ₂	РМ- 10	PM- 2.5	NH ₃	Pb	As	Ni	Benzo (a) Pyrene	со	C ₆ H ₆	O ₃
U	Init			μg	/m ³				ng/m	3	mg/m ³	μg	/m ³
S	AAQ Std. 009	50/ 80	40/ 80	60/ 100	40/ 60	100/ 400	0.5/ 1.0	Max 6	Max 20	Max 1	2/4	Max 5	100/ 180
N	<i>l</i> lin	0.06	2.59	14.5	1.06	2.09	BDL	BDL	BDL	BDL	0.00	0.55	9.50
Ave	erage	9.50	15.8	67.0	30.8	13.0	BDL	BDL	BDL	BDL	0.10	0.60	17.5
N	lax	17.2	23.9	80.1	41.7	21.6	BDL	BDL	BDL	BDL	0.36	0.69	41.5

APPENDIX-A2

Effluent Discharged (Figure in M³/Hr): (1st April, 2023 to 30th September, 2023)

Α	Industrial Effluent M ³ /Hr	149.2
в	Domestic Effluent from BGR Township M ³ /Hr	52.6
С	Total Effluent Treated (A + B) M ³ /Hr	201.8
D	Treated Effluent Reused M ³ /Hr	201.8
Е	Effluent Discharged M ³ /Hr	0.00
F	M ³ of Effluent discharged for 1000 tons of Crude processed	0.00

1. Treated Effluent Quality

(1st April, 2023 to 30th September, 2023)

SI. No	Parameter	Std,2008	Min	Avg.	Max
1	p ^H value	6.0 - 8.5	6.50	7.26	7.80
2	Oil and Grease, mg/l	5.0	2.00	3.94	4.80
3	Bio-Chemical Oxygen Demand (3 Day at 27°C), mg/l	15.0	4.00	7.11	13.0
4	Chemical Oxygen Demand (COD), mg/l	125.0	20.0	56.3	117.0
5	Suspended solids, mg/l	20.0	5.00	12.1	18.0
6	Phenolic compounds (as C6H5OH), mg/l	0.35	0.06	0.19	0.30
7	Sulphide (as S), mg/l	0.50	0.10	0.25	0.42
8	CN mg/l	0.20	0.02	0.02	0.02
9	Ammonia as N, mg/l	15.0	2.52	3.02	3.64
10	TKN, mg/l	40.0	7.28	8.46	9.24
11	P, mg/l	3.0	0.19	0.21	0.28
12	Cr (Hexavalent), mg/l	0.10	-	BDL	-
13	Cr (Total), mg/l	2.0	-	BDL	-
14	Pb, mg/l	0.10	-	BDL	-
15	Hg, mg/l	0.01	-	BDL	-
16	Zn, mg/l	5.0	0.21	0.26	0.29
17	Ni, mg/l	1.0		BDL	
18	Cu, mg/l	1.0	0.28	0.34	0.39
19	V, mg/l	0.20	-	BDL	-
20	Benzene, mg/l	0.10	-	BDL	-
21	Benzo (a) pyrene, mg/l	0.20	-	BDL	-

2. Final Outlet (From the Complex) storm water channel Quality

SI. No.	Parameter	Std 2008	Min	Avg.	Max
1	p ^H value	6.0 - 8.5	7.22	7.36	7.46
2	Oil and Grease, mg/l	5.0	2.00	2.00	2.00
3	Bio-Chemical Oxygen Demand (3 Days at 27° C), mg/l	15.0	9.50	9.50	9.50
4	Chemical Oxygen Demand (COD), mg/l	125.0	10.0	16.0	30.00
5	Suspended Solids, mg/l	20.0	5.00	10.8	14.00
6	Phenolic compounds (as C_6H_5OH), mg/l	0.35	BDL	BDL	BDL
7	Sulphide (as S), mg/l	0.50	0.35	0.35	0.35
8	CN, mg/l	0.20	BDL	BDL	BDL
9	Ammonia as N , mg/l	15.0	1.12	1.62	2.80
10	TKN, mg/l	40.0	6.16	7.06	7.84
11	P, mg/l	3.0	0.15	0.186	0.23
12	Cr (Hexavalent), mg/l	0.10	-	BDL	-
13	Cr (Total), mg/l	2.0	-	BDL	-
14	Pb, mg/l	0.10	-	BDL	-
15	Hg, mg/l	0.01	-	BDL	-
16	Zn, mg/l	5.0	0.15	0.22	0.26
17	Ni, mg/l	1.0	BDL	BDL	BDL
18	Cu, mg/l	1.0	0.17	0.18	0.20
19	V, mg/l	0.20	-	BDL	-
20	Benzene, mg/l	0.10	-	BDL	-
21	Benzo (a) pyrene, mg/l	0.20	-	BDL	-

(1st April, 2023 to 30th September, 2023)

APPENDIX - A3

Tree Plantation (1st April, 2023 to 30th September, 2023)

The entire area inside BGR covered with greenery through massive plantation activities. Through massive plantation work and by giving protection to natural forest growth in side BGR premises, the entire area has become green. The entire plant area where processing plant facilities do not exist has a green cover. This helps in reduction of noise and air pollution level in one hand while on the other hand provides protection to ecological features of the area. The refinery has an excellent quality environment around its complex. Natural greenery can be seen all around the complex as well as in BGR Township in all seasons of the year.

Tree Census was done by Divisional Forest Office, Chirang in the year 2012-13. As per census, 84545 numbers of plants which include trees including shrubs, ocular estimated 33000 numbers bamboos in 1150 no. bamboo culms and also trees, planted by BGR during 2003 to 2012.

To comply IndMax BS-VI EC conditions, BGR has planted 29600 nos of saplings in the FY 2017-18, in FY 2018-19, 30,062 nos, in FY 2019-20, 14340 nos, in FY 2020-21, 25606 nos, in FY 2021-22, 1,00,000 nos and in FY 2022-23 BGR has planted 26710 nos. of tree saplings of saplings planted in and around the complex

During the FY 2023-24(1st half) BGR has planted 75630 nos. of tree saplings.



Tree Plantation 2017-18

Birhangaon State Dispensary Plantation 10000 nos in Aug'2017 and 5375 nos. (2nd Phase in August, 2019), Sapling Planted by Miyawaki Method. Grouth as on October, 2023



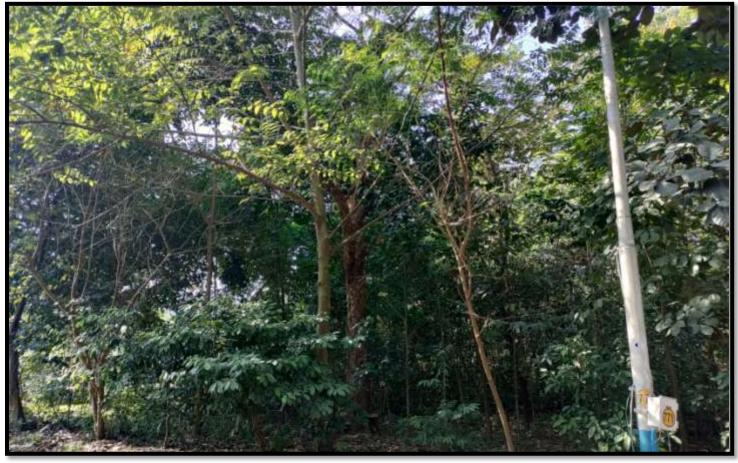
BGR TOWNSHIP PLANTATION, Planted Van mahotsav 2018, Growth as on November'2023

Tree Plantation 2019-20



North Bongaigaon High School, 5250 Sapling Planted by Miyawaki Method in the month of September,2019, Grouth as on September,2023.

Tree Plantation 2020-21



On WED'2020, 3740 nos. of sapling planted in BGR Township, Grouth as on November, 2023.

Tree Plantation 2020-21



4810 nos of sapling Planted in the month of August'2020 at Hatipota Brahma Mandir, Grouth as on October,2023. Tree Plantation 2021-22(One Lacks sapling planted during FY 2021-22)



Planted on WED'2021, in BGR Township, Grouth as on November, 2023



<u>Tree Plantation 2021-22</u>(One Lacks sapling planted during FY 2021-22)

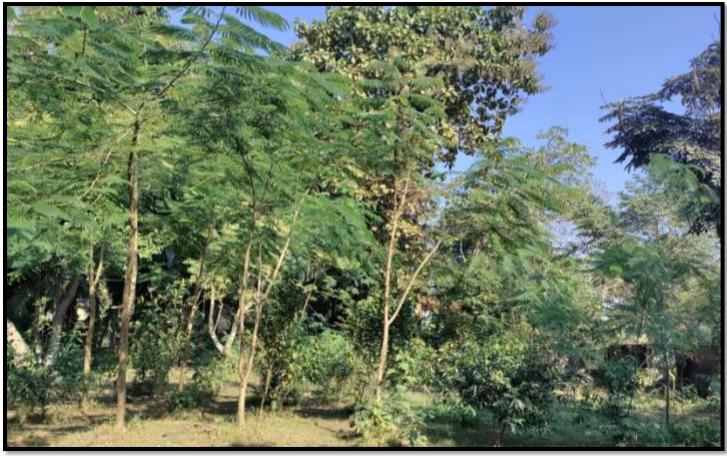
Planted on Aug,2021, in the complex, North side of new project(IndMax & BS-VI), Grouth as on October,2023

Tree Plantation 2021-22(One Lacks sapling planted during FY 2021-22)



Planted on Aug,2021, in the complex, North side of new project(IndMax & BS-VI), Grouth as on October,2023

Tree Plantation 2022-23



Planted on WED'2022, in BGR Township, Grouth as on November, 2023

APPENDIX – A 4

Additional Information

(1st April, 2023 to 30th September, 2023)

Effluent reused during the period is **100%** of the total effluent treated which includes plant effluent as well as BGR Township sewer.

Under the Leak Detection and Repair programme (LDAR), BGR is conducting quarterly Fugitive Emission Survey. During the period from 1st April, 2023 to 30th September, 2023, all potential leaky points checked and few Leaky points detected and rectified. By following LDAR programme in true spirit, the company could not only avoid potential loss of 661.86 KG/Day (approx.) of light Hydrocarbon to the atmosphere, through fugitive sources, but also able to keep healthy work environment in the plants.

To ensure work area quality and health of equipments, quarterly noise survey was conducted covering all the operating plants, control rooms and ambient surrounding the BGR. During 1st April, 2023 to 30th September, 2023, Noise Survey for two quarters of 2023-24(Q-1 & Q-2) has been completed and no major abnormality was reported.

As a measure of Hazardous Waste Management, A third party has been engaged for processing tank bottom sludge through mechanized treatment. Another third party is engaged for processing of the oily sludge & recovery of oil from the oily sludge stored in the concrete lagoon. Melting pit facility is available for recovering oil from oily sludge.

One old slurry thickener in ETP from Petrochemical section was converted to confined space bioremediation reactor to treat oily sludge with help from IOCL-R&D. The process of bio-remediation started from July 2017. From 1st April, 2023 to 30th September, 2023, 14.0 MT of oily sludge has been processed in the Bio-reactor.



Bio-remediation facility of BGR

Further two more Rain Water Harvesting (Ground Water Recharging) schemes in BS-VI project have been implemented during 2019-20 and Two more implemented in the FY 2020-21 in Admn. Building and inside BGR Township temple complex.

APPENDIX – A5

Quarterly Fugitive emission survey Data (LDAR) (1st April, 2023 to 30th September, 2023)



Fugitive Emission irvey_1st quarter_2



APPENDIX-A6 (a)

Annual return of hazardous waste (2022-23)





Authorization from PCBA for Hazardous Waste (Management and Transboundary Movement) Rules 2016

No. WB/BONG/T-748/19-20/109





Pollution Control Board:: Assam Bamunimaidam; Guwahati-21 (Department of Environment & Forests:: Government of Assam) Phone: 0361-2652774 & 3150318; Fax: 0361-3150319 Website: www.pcbassam.org

No. WB/T-311/21-22/ 252

Dated Guwahati the, 18 the September, 2022

FORM – 2 [See Rule 6(2)]

[Grant of Authorization under the Provision of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016]

- 1. Number of Authorisation and date of issue : No. WB/T-311/21-22/ dtd. .09.2022
- 2. Reference of application (No. and date) : 634914
- M/s Indian Oil Corporation Limited (IOCL), Bongaigaon Refinery, NH 31C (New NH 27), Dhaligaon, Chirang is hereby granted an authorisation based on the signed inspection report for Generation, storage and transportation of Hazardous or Other wastes or both.

DETAILS OF AUTHORISATION

SI, No.	Category of Hazardous Waste as per the Schedules-I, II & III of these rules			Mode of Management
1	Schedule-I, SI.No. 4.1 : Oil sludge or emulsion	Generation, Storage & Transportation	7000 MT/Annum	Transportation to authorized actual user/Recyclers/ Disposa agencies/ reprocessing and recovery/Captive treatment,through Bio- remediation as per prescribed norms
2	Schedule-I, SI.No. 4.2: Spent catalyst	Generation, Storage & Transportation	2500 MT/Annum	Transportation to authorized actual user/Recyclers in accordance with HOWM Rules,2016
3	Schedule-I, SI.No. 4.3: Slop Oil	Generation, Storage & Transportation	32000 MT/Annum	Captive Utilization as per prescribed norms.
4	Schedule-I, SI.No. 5.1: Used or spent oil	Generation, Storage & Transportation	20 MT/Annum	Transportation to authorized actual user/Recyclers
5	Schedule-I, SI.No. 33.1:Empty barrels/containers/liners contaminated with hazardous chemicals/wastes	Generation, Storage & Transportation	7000 numbers/Annum	Transportation to authorized actual user/Recyclers

- This authorisation shall be in force in force for the period of five years up to 31.03.2027 unless otherwise revoked or withdrawn within this period.
- 5. The authorisation is subject to the following general and specific conditions:

A. GENERAL CONDITIONS OF AUTHORISATION:

- The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
- The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
- The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorization.
- The agencies should ensure that the barrels are decontaminated before collection in the premises of the occupier / generator equipped with adequate effluent treatment plant.
- 5. Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorization.
- 6. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time
- 7. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time



APPENDIX-A7

Detail of Waste water treatment and disposal system.



ANNEXURE-A8

Quarterly Noise Survey Data (1st April, 2023 to 30th September, 2023)

HSE (ENVIRONMENT) DEPARTMENT





ANNEXURE-A9 Rain Water Harvesting Data

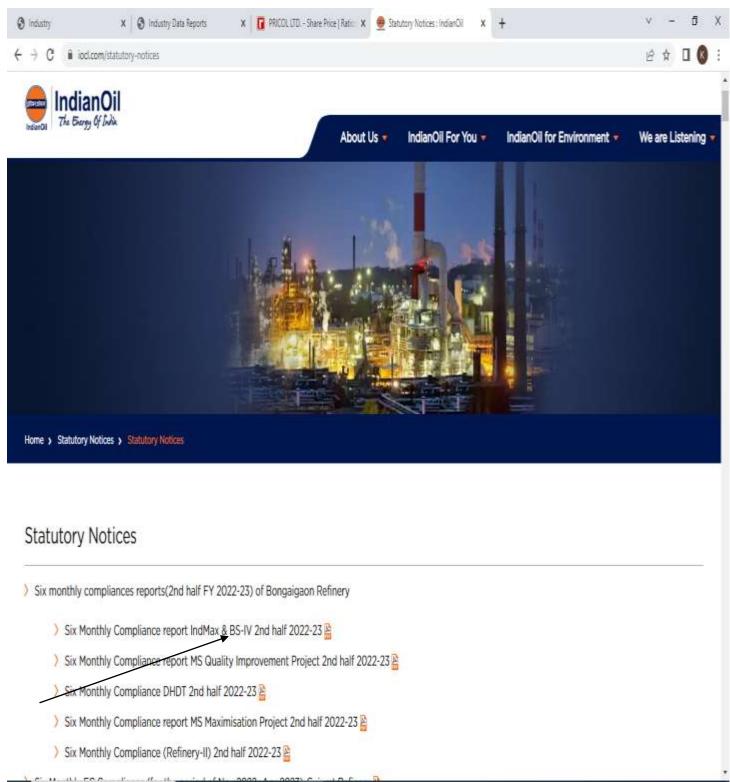
BGR: Rain Water Harvesting till March 2021

SI.No.	RWH systems	Area in m ²	Recharging, m ⁸ /Yr	Total Recharging, m ³ /Yr	Status
1	Rainwater Harvesting at Mandir Complex Pond	7125	20748		
2	Manjeera Guest House	677	1848	100	
3	Deoshri Guest House	581	1586	99239.14	In operation
4	Rainwater Harvesting at Parivesh Udyan Pond	5775	16817		
5	Rainwater Harvesting at Eco-Park Pond	20000	58240		100
6	Mandir Complex	833	2274		
7	Manas Guest House	639	1744		
8	BGR HS School, BGR Township	1361	3716	14597	In operation
9	DPS Block-I	704	1922		
10	DPS Block-II	1810	4941		in the second
11	BGR Canteen, CISF Office & Scooter Shed	3134	8555	8556	In operation
12	Champa Club (Officers Club)	1100	3003	10046	In operation
13	Refinery Club cum Community Centre	2580	7043	10040	moperation
14	Employee Union Conference Hall Building	275	751	3003 In	In operation
15	CISF Quarter Guards Building	825	2252		in operation
16	CISF Conference Hall & Barack	1050	2867	4541	In operation
17	BGR Community Centre	650	1775	4041	in operation
18	Foot Ball Stadium gallery	-			
19	Vollybell Stadium Gallery	988	2697	2697	In operation
zu	Control Room - BS-VI	1372.5	3747	3747	Commissioned
21	Substation - BS-VI	942	2572	2572	in June'2020
22	Admin. Block-B	1730	4723	4723	Commissioned In Aug'2020
23	Temple Complex(NEW)	1015.1	2771	2771	Commissioned in March 2021
	TOTAL	55,167	156593	156592	

My (ial 21 HSE)

ANNEXURE-A10

Screen Shot of IOCL Website upload of report Link: <u>https://iocl.com/statutory-notices</u>



408 PM

11-Jul-23

\delta 30°C Rain 🛛 🗛 🖸 🕸 ENG .

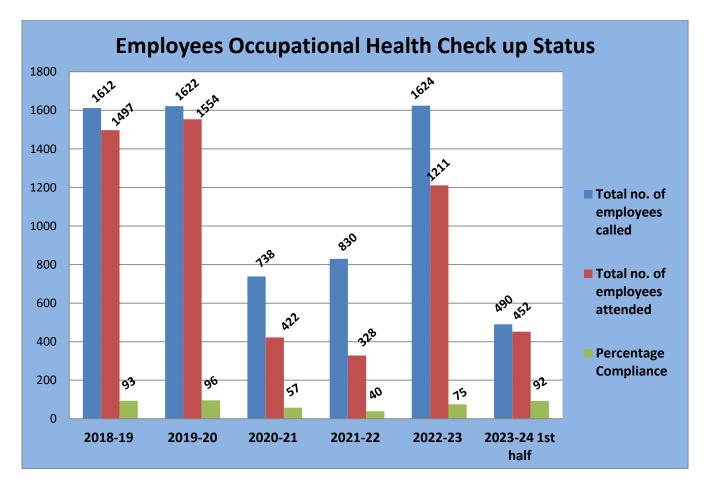


ANNEXURE-A11

NABL certificate of QC Lab of Bongaigaon Refinery

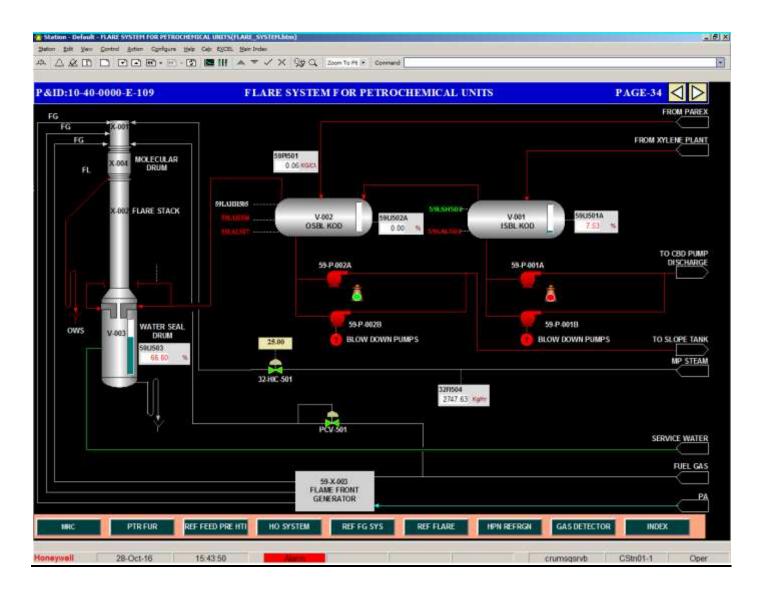


Appendix-A12



Employees Occupational Heath Check up Status

Note: Employees occupational health check up program affected during the year 2020-22, due to the COVID-2019 pandemic situation. Appendix-A13



Flare system.

THANKS