



## इंडियन ऑयल कॉर्पोरेशन लिमिटेड

गुजरात रिफ़ाइनरीज़, डाकघर : जवाहरनगर

जिला : वडोदरा, गुजरात - 391 320

### Indian Oil Corporation Limited

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रिफ़ाइनरीज़ प्रभाग  
Refineries Division

Ref: HSE/EP/MoEF/2022

30<sup>th</sup> November, 2022


To,  
SHRI SANTOSH TIWARI, IFS (Addl. Charge),  
Deputy Director General of Forest(Central)  
Integrated Regional Office, Kendriya Paryavaran Bhawan,  
Link Road No. 3, E-5, Ravi Shankar Nagar  
Bhopal- 462016  
Madhya Pradesh.

**Sub: Status of EC conditions for BS-IV & BS-VI, LuPech project at Gujarat Refinery & Acrylics/oxo alcohol & other projects at Dumad**

Dear Sir

The compliance status of Environmental Compliance conditions specified in EC letter of the subject projects is enclosed herewith, for your kind information.

Thanking You,

  
B B Makwana  
Deputy General Manager (HSE)  
Gujarat Refinery



Encl: As above

CC: The Member Secretary  
Gujarat Pollution Control Board  
Paryavaran Bhavan  
Sector - 10 A  
Gandhinagar - 382021

पंजीकृत कार्यालय : जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व) मुम्बई - 400 051 महाराष्ट्र (भारत)  
Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East) Mumbai - 400 051 Maharashtra (India)  
CIN-L 23201 MH1959 GOI 011388

**DESCRIPTIVE REPORT ON STATUS OF COMPLIANCE TO CONDITIONS OF ENVIRONMENT CLEARANCE AND ENVIRONMENT MANAGEMENT**

Compliance status (for the period of May 2022- Oct 2022) of Environmental clearance issued by MoEF, New Delhi. Environment Clearance Reference letter No. **J-11011/96/2015-IA-II (I) Dated 20.03.2017.**

**Detail of project: BS-IV and BS-VI project at Gujarat Refinery.** As per the Auto fuel vision and policy 2025, refinery has to switched over completely to BS-IV in April'17 and 100% BS-VI in Jan'20.

**A. SPECIFIC CONDITIONS:**

Sr. No	Stipulations	Compliance Status as on 30.11.2022
1	All Pollution control and monitoring equipment shall be installed, tested and interlocked with the process, SPCB shall grant 'consent to Operate' after ensuring that all the mentioned pollution control equipment, construction of storm water drain, rain water harvesting structure, Green belt, uploading of compliance report on the website etc have been implemented.	<p>Gujarat Refinery has applied for Consent to Operate. Inspection by GPCB, Vadodara was done on 30.10.2018. GPCB, Gandhinagar granted the consent to Operate on 28.02.2019 for phase 1 project. The Consent to Operate for Phase 2 Project was granted by GPCB on 08.11.2019. It will be ensured that all pollution control and monitoring equipment are installed, tested and interlocked with the process.</p> <p>Storm water drain and rainwater harvesting structures already exist at Gujarat Refinery.</p> <p>Total of 16000 saplings have been planted in head works area. Existing green belt of 148 acres is being maintained and every year about 5000 trees are planted to overcome any loss of trees.</p> <p>Gujarat Refinery has developed a Miyawalki in an area of 1600m2 with a plantation of 1850 Trees.</p> <p>Compliance report is regularly uploaded on the Company website.</p> <p>Web link where the compliance report is uploaded: <a href="https://www.iocl.com/statutory-notice">https://www.iocl.com/statutory-notice</a></p>
2	SO2 emissions after expansion from the plant shall not exceed 900 kg/hr and further efforts shall be	Total SO2 emissions from refinery remain in the range of 386-415 kg/hr for the period May 2022 to Oct 2022.

	<p>made for reduction of SO<sub>2</sub> load through use of low sulphur fuel. Sulphur recovery units shall be installed for control of H<sub>2</sub>S emissions.</p>	<table border="1"> <thead> <tr> <th>Month</th> <th>SO<sub>2</sub> (Kg/hr)</th> </tr> </thead> <tbody> <tr> <td>May'22</td> <td>402</td> </tr> <tr> <td>June'22</td> <td>415</td> </tr> <tr> <td>July'22</td> <td>395</td> </tr> <tr> <td>Aug'22</td> <td>386</td> </tr> <tr> <td>Sep'22</td> <td>397</td> </tr> <tr> <td>Oct'22</td> <td>402</td> </tr> </tbody> </table>	Month	SO <sub>2</sub> (Kg/hr)	May'22	402	June'22	415	July'22	395	Aug'22	386	Sep'22	397	Oct'22	402	
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3	<p>Ambient air quality data shall be collected as per NAAQS standards notified by the Ministry vide G.S.R. No. 826(E) dated 16<sup>th</sup> September,2009. The Levels of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC and CO shall be monitored in the ambient air emissions from the stacks and displayed at a convenient location near the main gate of the company and at important public places. The company shall upload the result of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MOEF, the respective zonal office of CPCB and the state pollution Control Board (SPCB).</p>	<p>Sulphur recovery units are already in place to control H<sub>2</sub>S emissions.</p> <p>The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. no. 826(E) dated 16<sup>th</sup> November, 2009 are being followed at Gujarat Refinery.</p> <p>Following measures are taken for monitoring of pollutants level:</p> <ul style="list-style-type: none"> <li>• Real-time monitoring and manual monitoring of stack emissions and ambient air quality is done on regular basis.</li> <li>• 1 no's of mobile van for measurement of Ambient air quality in and around refinery is also available.</li> <li>• Manual monitoring on monthly basis is done by GPCB approved Schedule II environment auditor.</li> <li>• SO<sub>2</sub>, NO<sub>x</sub>, CO and PM emissions are also continuously displayed at the Refinery Gate Main entrance.</li> <li>• Ambient monitoring stations are connected to the CPCB and GPCB server for continuous monitoring</li> <li>• LDAR Monitoring is being done for continuous monitoring of VOC emission and remedial action at site is taken</li> </ul> <p>Online ambient air and stack monitoring data are connected to the CPCB and GPCB server for continuous monitoring</p> <p>Monitoring report is sent to GPCB, Gandhinagar on monthly basis</p>															

PARAMETER	PERMISSIBLE LIMIT ANNUAL	PERMISSIBLE LIMIT 24 HRS. AVERAGE	Observatory (Sep'22)		
			MIN.	MAX.	AVG.
ParticulateMatter-10[PM10]	60 Microgram/NM3	100 Microgram/NM3	7.6	65.9	37.7
ParticulateMatter-2.5	40 Microgram/NM3	60 Microgram/M3	6.9	57.9	34
Oxides of Sulphur	50 Microgram/NM3	80 Microgram/M3	8.7	13.1	10.8
Oxides of Nitrogen	40 Microgram/NM3	80 Microgram/M3	32.6	36.1	33.5
Hydrocarbons as CH <sub>4</sub>	-----	160 Microgram/M3	2.046	2.548	2.2
CO	-----	2 Milligram/M3	0.35	0.83	0.59

4	<p>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 &amp; 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.</p>	<p>Control measures for checking fugitive emissions from vulnerable sources have been provided.</p> <p>Various measures have been undertaken at Gujarat refinery to control fugitive emission like :</p> <ul style="list-style-type: none"> <li>• Monthly measurement of volatile organic carbon (VOC)</li> <li>• Monthly detection of leaks in pumps, compressors, tanks etc through Leak Detection and Repair (LDAR) program (conducted monthly).</li> <li>• Provision of primary and secondary seal (double seals) in floating roof tanks .</li> <li>• Provision of double mechanical seals in Class A product tanks.</li> <li>• Provision of double mechanical seals to prevent VOC Emissions.</li> <li>• Provision of cyclone separator at Delayed Coker Unit (DCU).</li> <li>• Provision of Dust Supression system at Pet Coke yard.</li> </ul> <p>Gas detectors in all process units and tank farm area are present to detect gas leakage at minimum concentrations.</p> <p>In addition to this, VOC emissions are monitored by VOC Leak Detection and repair (LDAR) Program. Gujarat Refinery engaged an external agency, to monitor the leaks as per defined monthly schedule. Every month around 1600-1700 points and yearly total 20000 points</p>
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		<p>are measured for controlling the fugitive VOC emissions. Any leaks detected, even not reportable (up to 100 ppm) are attended within minimum possible time and next month the leaks are verified by the agency.</p> <p>Monitoring is purely a field job. Samples cannot be taken and hence are not analyzed in laboratory.</p>														
5	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 pollutions.	Emergency power is taken from Gujarat Electricity Board (GEB) and DG sets are not available at Gujarat Refinery. Hence, the condition is not applicable.														
6	The total fresh water requirement from Mahi River shall not exceed 60.07 MLD and prior permissions shall be obtained from the Competent Authority. No ground water shall be used without permission.	<p>Total freshwater requirement from Mahi River will remain within 60.07 MLD. No additional groundwater will be used without prior permission.</p> <p>For the period May 22 – Oct 22, it ranges from 35.592 – 54.528 MLD.</p> <table border="1"> <thead> <tr> <th>Month</th> <th>Freshwater consumption (MLD)</th> </tr> </thead> <tbody> <tr> <td>May 2022</td> <td>38.736</td> </tr> <tr> <td>June 2022</td> <td>37.248</td> </tr> <tr> <td>July 2022</td> <td>36.528</td> </tr> <tr> <td>Aug 2022</td> <td>35.592</td> </tr> <tr> <td>Sep 2022</td> <td>54.528</td> </tr> <tr> <td>Oct 2022</td> <td>45.84</td> </tr> </tbody> </table>	Month	Freshwater consumption (MLD)	May 2022	38.736	June 2022	37.248	July 2022	36.528	Aug 2022	35.592	Sep 2022	54.528	Oct 2022	45.84
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7	Waste water shall be sent to CETP and balanced quantity of treated effluent shall be discharge to Vadodara Enviro Channel Ltd. (VECL) which is finally discharged into Gulf of Khambhat.	<p>Wastewater from all process units are sent to CETP. Treated water from CETP is maximized in refinery operations. Remaining treated effluent is discharged to VECL, which is finally discharged into Gulf of Khambhat.</p> <p>Adequate measures have been taken and VECL samples are meeting all the norms w.r.t. Ammonical Nitrogen and parameters like pH, Flow, BOD, COD and TSS are connected to CPCB/GPCB server for continuous online monitoring.</p>														
8	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	<p>a) Online monitoring system for flow measurement and pH, COD, BOD and TSS in the treatment system is already installed.</p> <p>b) Connectivity of online analysers for pH, COD, BOD and TSS with GPCB/CPCB server has been completed by May '2016.</p>														

	website.															
9	Adequate odour management plan and its mitigation measure to be implemented on priority.	VOC LDAR Programme and Work Environment Monitoring for chemicals are being carried out regularly.  Gujarat refinery has installed odour control system at the boundary wall of CETP to eliminate any foul smell.														
10	Regular VOC monitoring to be done at vulnerable points.	VOC emissions are monitored by VOC Leak Detection and repair (LDAR) Program. Gujarat Refinery engaged an external agency, to monitor the leaks as per defined monthly schedule. Every month around 1700 points and yearly total 20000 points are measured for controlling the fugitive VOC emissions. Any leaks detected, even not reportable (up to 100 ppm) are attended within minimum possible time and next month the attended leaks are verified by the agency.														
11	The oily sludge shall be subjected to melting pit for oily recovery and the residue shall be bio-remediated. The sludge shall be stored in HDPE lined pit with proper leachate collection system.	The oily sludge is subjected to melting pit and oil recovery is done by M/s. Plantech. The residual sludge thereby generated is sent for bio-remediation/Co-processing to Cement plants.. The sludge is stored in HDPE lined pit.														
<p>Monthly Average sludge generation rate is in the range 2562-3453 m3 and there is no much variation in the sludge generation rate. There are available methodologies for processing of Oily sludge.</p> <p>I—Co processing in own processing unit of DCU: 1951.5 M3 between May 22 – Oct 22</p> <p>III---Oil recovery through agency i.e. M/s Plantech and processing of 17925M3 sludge between May 22 – Oct 22 through sludge processing units in ETP.</p> <p>Total sludge processing is around 250-350 m3/day.</p> <table border="1" data-bbox="306 1615 809 1915"> <thead> <tr> <th>Month</th> <th>Avg Sludge generation (m3)</th> </tr> </thead> <tbody> <tr> <td>Oct 2022</td> <td>3453</td> </tr> <tr> <td>Sep 2022</td> <td>2891</td> </tr> <tr> <td>Aug 2022</td> <td>3278</td> </tr> <tr> <td>July 2022</td> <td>2562</td> </tr> <tr> <td>June 2022</td> <td>3252</td> </tr> <tr> <td>May 2022</td> <td>3249</td> </tr> </tbody> </table>			Month	Avg Sludge generation (m3)	Oct 2022	3453	Sep 2022	2891	Aug 2022	3278	July 2022	2562	June 2022	3252	May 2022	3249
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12	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.	Comprehensive water audit carried out by Engineers India limited (EIL) in association with Centre of High technology (CHT) via w.o No: 25590290 dated 31.07.2018. Outcome of the report is being implemented for conservation of water. Water audit done by Gujarat refinery by internal committees and many points implemented.
13	Oil catchers / oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.	Oil catchers are provided at strategic locations like near UDEX unit, near flare, near Dhaula kuan pump house and final outlet of open channel in rain/storm water drainage system to prevent the possibility of oil contamination in storm water channel. Storm water channel going outside remains completely dry during non monsoon season. Also Hay filter has been installed in the final Storm water channel point in order to free the water from oil, if any.
14	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm. Solvent transfer shall be by pumps.	Hazardous chemicals are stored in tanks, tank farms, drums, carboys etc. Flame arresters are provided on tank farm. Solvent transfer is being done by pumps in the process units.
15	The company shall Strictly comply with the rules and guidelines under Manufacture, Storage and import of Hazardous Chemicals (MSIHC) Rule, 1989 as amended time to time. All Transportation of Hazardous chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	Rules and guidelines under Manufacture, Storage and import of Hazardous Chemicals (MSIHC) Rule, 1989 are being followed. Transportation of Hazardous Chemicals are as per the Motor Vehicle Act, 1989.
16	The unit shall make the arrangement for the protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.	Gujarat Refinery is in operation for last 50 years and full-fledged fire protective measures are available , which includes: <ul style="list-style-type: none"> <li>• 11 fire tenders consists of 2 foam nurser,</li> <li>• One emergency rescue tender</li> <li>• One hydraulic platform for firefighting and rescue operation at height.</li> <li>• Charged Fire water network all across the units and building</li> </ul> Fire-fighting facilities are updated time to time as per norms.

17	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	<p>Occupational health surveillance of workers are being done on regular basis and records are being maintained as per the Factories Act.</p> <p>The Gujarat Refinery has a well-established Occupational Health Centre, which harmoniously combines environmental protection and health promotion of the employee.</p> <p>To maintain the healthy workforce, refinery's OHC focuses on:</p> <ul style="list-style-type: none"> <li>• Regular PME checkups of employees handling hazardous material like Benzene, CO, Cl<sub>2</sub>, H<sub>2</sub>S, SO<sub>2</sub>, LPG and employees working as welders, loco operator, drivers, and radiographers.</li> <li>• Well person medical examination of executives above 40 years of age.</li> <li>• Audiometry of employees working in high noise areas (Turbines, Boilers, Steam-air line, Pump houses).</li> <li>• Titmus Vision testing of all employees.</li> <li>• Pulmonary function test of all employees.</li> <li>• CISF yearly medical checkup.</li> <li>• Health education training to the employees.</li> <li>• Pre-employment medical checkup</li> <li>• Industrial canteen visit by Dietician.</li> <li>• Regular Toxic Gas level monitoring &amp; sound level monitoring by industrial hygienist.</li> </ul> <p>In addition to that Gujarat Refinery has a well-established 24 bedded Hospital well equipped with all sorts of modern facilities available to handle any mishap.</p>
18	At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment (ECS) 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.	<p>As per EC total cost of BSIV &amp; BSVI project is 3701.44 crores and 2.5% of the project cost comes out to be 92.58 crores.</p> <p>Considering such high project cost and correspondingly high ESC amount for the project, an application vide Ref No MoEF&amp;CC/Corr/2017-18/1 dtd 19.06.17 had been sent to MoEF&amp;CC from Refinery Headquarters requesting waiver/reduction of mandatory funds towards ESC for all refineries of IOCL.</p> <p>Subsequently, a new regulation with respect to fund allocation for Corporate Environment Responsibility (CER) has been introduced vide F.No. 22-65/2017-</p>



		<p>IA.III dtd 1<sup>st</sup> May'18. As per the new regulation, the cost of CER fund to be allocated has been categorized based on type of project and the investment involved.</p> <p>However, based on discussions of Refinery Headquarters with MoEF&amp;CC, it has been communicated to Gujarat refinery that the new CER regulation is applicable only for projects with Environmental Clearance post 1<sup>st</sup> May'18 (regulation enforcement date).</p> <p>Projects having EC previous to new regulation will comply with the conditions as given in original Environmental Clearance. Hence, implementation of actions for ESC shall be taken up by Gujarat Refinery</p> <p>Accordingly as per guidelines from Corporate office of IOCL ,a CER/ECS Committee for Gujrat Refinery had been formed with members from HSE,HR and Project and it was approved by Director (Refinery) of IOCL on 20/4/20. Committee already had one meeting and identified potential projects for the neighboring villages. The committee in consultation with DC Vadodara has already spent 7.42 crores for the nearby areas in the last year.</p> <p>Total 23.82 Lakhs expenditure is done during the Apr'22-Sep'22 period.</p>
19	All the commitments made during the public Hearing/public Consultation meeting held on 5.11.2016 should be satisfactorily implemented and adequate budget provision should be made accordingly.	Commitments made during Public Hearing (PH) meeting held on 05.11.2016 towards Drinking water, Health care, Environmental sustainability and rural development were implemented.
20	As proposed, green belt over 70 acres area shall be developed at Refinery Township area and dense plantation of around 21 acres shall be undertaken at Head works area. Selection of plant species shall be as per the CPCB guidelines in consultations with the DFO. Existing Green belt of 148 acres shall be maintained around the periphery of Refinery with a total of about 215,000 trees in the green belt.	<p>70 acres green patch is available at JR township. Dense plantation completed in headwork's area.</p> <p>Total of 16000 saplings have been planted in head works area. Existing green belt of 148 acres is being maintained and every year about 5000 trees are planted to overcome any loss of trees.</p> <p>Gujarat Refinery has developed a Miyawalki in an area of 1600m2 with a plantation of 1850 Trees.</p>

**B. GENERAL CONDITIONS:**

<b>Sr. No.</b>	<b>Stipulations</b>	<b>Compliance Status as on 30.11.2022</b>
1	The project authorities must strictly adhere to the stipulations made by the state Pollution control Board (SPCB), State Government and any other statutory authority.	<p>Gujarat Refinery strictly adheres to the stipulations made by the Gujarat Pollution Control Board with respect to air, water, and hazardous waste. GPCB has accorded consolidated Consent &amp; Authorization (CCA) vide consent order No: AWH 115975 valid up to 30.06.2026. Time to time inspection of facility is also done by GPCB.</p> <p>In addition to EC conditions, it has also been specified by GPCB to comply with Fugitive emission standards. Various measures have been undertaken at Gujarat refinery to control fugitive emission like :</p> <ul style="list-style-type: none"><li>• Monthly measurement of volatile organic carbon (VOC)</li><li>• Monthly detection of leaks in pumps, compressors, tanks etc through Leak Detection and Repair (LDAR) program (Conducted monthly).</li><li>• Provision of double seals in floating roof tanks etc.</li><li>• Provision of double mechanical seals in Class A product tanks.</li></ul>
2	No further expansion of 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 environment protection measure required, if any.	Gujarat Refinery shall apply to MoEF, New Delhi for installation and commissioning of any upcoming Project. No work shall be taken up till the Environment Clearance is obtained. So it is complied that no further expansion or modernization in the plant is carried out without prior approval of the Ministry of Environment and Forests.
3	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	Ambient air quality monitoring has been carried out as per the Gujarat Pollution Control Board(GPCB) consent conditions. As advised, Air quality monitoring stations are positioned in the upwind and downwind direction at spots where maximum ground level concentrations are anticipated. Monitoring stations are

	<p>the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.</p>	<p>placed at Main Fire station observatory, QC lab, SRU, 6<sup>th</sup> Gantry, Bajwa gate and township BOD and one at Vadodara city.</p> <p>Presently 7 ambient air quality monitoring stations have been installed out of which 6 stations are surrounding the refinery and one monitoring station is in the Vadodara City. The monitoring station in the city was recommended by Gujarat Pollution Control Board (GPCB).</p>
4	<p>The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).</p>	<p>Noise level is regularly monitored at plant and at periphery of the Refinery. Outside the plant it remains around 75 dBA. Within the plant, in some areas it is around 85 dBA. In some cases where noise level is higher than 85 dBA within the refinery, ear plugs and ear muffs are compulsory for all the working personnel for maintaining noise level below 85 dBA.</p>
5	<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>	<p>Total of 75 no of RWH wells are installed at Gujarat refinery and its township covering more than 80% of catchment area as per IOCL policy of RWH.</p>
6	<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. Training to all employees on handling of chemicals shall be imparted.</p>	<p>Training is being imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees are conducted on regular basis. Apart from this, Material Safety Datasheet (MSDS) of the chemicals is being displayed at all process units.</p>
7	<p>The company shall also comply with all the environmental protection measure and safeguards</p>	<p>Gujarat Refinery strictly adheres to all the environmental protection measure and safeguards proposed in the documents submitted to the Ministry.</p>

	<p>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>	<p>All recommendations made in the EMP and risk analysis reports have been implemented.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Air monitoring through four continuous monitoring stations as well high volume sample of air is also done on 4 defined locations in monthly basis.</li> <li>• Process waste water is treated in Centralized Effluent Treatment Plant(CETP)</li> <li>• Continuous stack monitoring is available for SO<sub>2</sub>, NO<sub>x</sub>, PM &amp;CO. In addition to this third party monitoring is also done for all stacks on monthly basis by GPCB approved agency.</li> <li>• Ground water and soil monitoring is being done by 3<sup>rd</sup> party on quarterly basis by GPCB approved agency.</li> <li>• Environment audit by GPCB appointed external agency is being carried out every year.</li> <li>• Rain water harvesting (RWH) is also done on yearly basis to main the surrounding water table. Presently there are total 75 no. of recharge wells covering more than 80% of catchment area as per IOCL policy on RWH.</li> <li>• Regular acoustics checking is done.</li> <li>• IFO with sulfur content less than 0.5 % is used</li> <li>• Fuel gas is used with less than 100 ppm H<sub>2</sub>S</li> </ul> <p>Similarly for risk mitigation measures have been implemented like:</p> <ul style="list-style-type: none"> <li>• Use of superior metallurgy for H<sub>2</sub>S handling lines</li> <li>• Use of piping of increased wall thickness,</li> <li>• Higher corrosion allowance</li> <li>• 100% radiography for all welds</li> <li>• Proper inspection and maintenance procedures of mounded bullets etc are complied.</li> </ul>
8	<p>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.</p>	<p>CSR activities are done every year involving local villages and administration. In financial year 2021-22, Rs. 205.04 lakh was CSR expenditure and in last 5 yrs expenditure of Rs.2163.63 Lakhs was done on CSR.</p>
9	<p>The company shall undertake co-developmental measures including</p>	<p>As stated above, company is undertaking co-developmental measures including community welfare</p>

	community welfare measure in the project area for the overall improvement of the environment.	measure in the project area for the overall improvement of the environment.
10	A Separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the environmental Management and Monitoring functions.	A full-fledged NABL accredited laboratory with a separate environment section for Environment related testing / analysis is available at Gujarat Refinery. This laboratory caters round the clock support for all the samples received. Pollution control laboratory equipped with sophisticated analytical equipment as per requirement of APHA and IS 3025 standards. Our Quality Control lab includes the section of environment monitoring with all required equipments and scientific manpower provided below. However Environment cell of HSE section is separate entity with engineers from chemical engineering back ground with special experience in environment management. Moreover recruitment of environment engineer in HSE cell is under consideration at corporate level.

**Details of laboratory equipment**

S.No.	Eq. ID	Equipment	Make/ Model	Commissioning Year	TYPE
01	QC Eq 24/1	Analytical Balance	Sartorius BSA 2245 CW	2016	Auto
02	QC Eq 28/3	Hot Air Oven	Ketan Sl No:2625	2000	Manual
03	QC Eq 30/2	Conductivity Meter for Water	Hanna HI-2300	2011	Manual
04	QC Eq 30/3	Conductivity Meter for Water	Hanna HI-2300	2011	Manual
05	QC Eq 31/2	pH Meter	Analab instruments	2012	Manual
06	QC Eq 31/3	pH Meter	Analab instruments	2012	Manual
07	QC Eq 32/1	Turbidity Meter	Systronics 132	2011	Manual
08	QC Eq 32/2	Turbidity Meter	Systronics 132	2011	Manual
09	QC Eq 35	Incubator and Oxytrap for BOD	WTW	2015	Manual

10	QC Eq 61/3	UV-VIS Spectrophotometer and COD Digester	Merck Pharo 3000	2018	Auto
11	QC Eq 61/4	UV-VIS Spectrophotometer	Merck	2014	Auto

**Details of scientific manpower**

S.No.	Designation	Qualification
01	Chemist	M.Sc. (Chemistry)
02	Assistant Manager	Ph.D . (Chemistry)

11	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 condition stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.	<p>a) Adequate funds are available for implementation of the conditions stipulated by MoEF.</p> <p>b) This is ensured that these funds are not diverted for any other purposes</p>
12	A copy of the clearness 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.	The EC letter was sent to Sarpanch of nearby villages like, Bajwa, Koyali, Karachiya, Undera, Karodiya, Angad, ganpat pura , Mahapura, Rayaka, Asaram, Sokhada, Nandesari, Ankodiya, Sindhrot, Hathipura, Khanpur, Fajalpur Sherkhi, etc, on 15.04.2017
13	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	<p>a) Six monthly reports are submitted to MoEF, Bhopal. Last report submitted on 1<sup>st</sup> June, 2022.</p> <p>The Environment Clearance and EC compliance report is uploaded on the Company Website in folder Statutory notices.</p>

	of MoEF, 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.	
14	The environmental statement for each financial year ending 31 <sup>st</sup> 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 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 Office of MoEF by e-mail.	<p>a) Environmental Statement for each financial year is submitted to Gujarat Pollution Control Board.</p> <p>Last Environment Statement for financial year 2021-22 was submitted to GPCB on 28<sup>th</sup> September, 2022.</p> <p>b) Environment Statement is regularly updated on Company Website under the folder of Statutory notices.</p>
15	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 <a href="http://moef.nic.in">http://moef.nic.in</a> . 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.	Information regarding EC was published in two newspapers i.e. English newspaper and Gujrati newspaper on 5 <sup>th</sup> April 2017 and 6 <sup>th</sup> April 2017 respectively.
16	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 date of start of the project.	Details will be furnished after completion of the project

**DESCRIPTIVE REPORT ON STATUS OF COMPLIANCE TO CONDITIONS OF ENVIRONMENT CLEARANCE AND ENVIRONMENT MANAGEMENT**

Compliance status (for the period of May 22 – Oct 22) of Environmental clearance issued by MoEF, New Delhi. Environment Clearance Reference letter No. F No J 11011/370/2016-IA-II(I)  
Dated 05.03.2020

**Detail of project: Proposed Acrylics/oxo alcohol project, creation of necessary facility for origination of Koyali-Ahmednagar-sholapur pipeline (KAHSPL) & installation of Tank Truck loading facility (TTL) for LAB and laying 9 piggable dedicated hydrocarbon service cross country pipelines (Including LPG supply and return) between refinery and Dumad in the existing Right Of Way (ROW) at Dumad**

S. No.	Action Point	Status as on 30.11.2022
<b>A. Specific Condition</b>		
i.	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.	CTE Granted by GPCB 07.04.2020
ii.	Necessary authorization required under the Hazardous and Other Wastes (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.	Noted for compliance.
iii.	As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.	ZLD is part of project
iv.	The National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 18 <sup>th</sup> March, 2008 and G.S.R. 595(E) dated 21 <sup>st</sup> August, 2009 as amended from time to time, shall be followed.	Noted for compliance
v.	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.	Control measures for checking fugitive emissions from vulnerable sources have been provided.  Various measures have been undertaken at Gujarat refinery to control fugitive emission.



S. No.	Action Point	Status as on 30.11.2022
		The gaseous emissions are dispersed through stacks of adequate height as per CPCB/SPCB guidelines.
vi.	Total fresh water requirement shall not exceed 8952 cum/day to be met from existing French wells. Prior permission in this regard shall be obtained from the concerned regulatory authority/CGWA.	Noted for compliance
vii.	Process effluent/any wastewater shall not be allowed to mix with storm water. Storm - water drain shall be passed through guard pond.	Noted for compliance
viii.	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.	Hazardous chemicals are stored in tanks, tank farms, drums, carboys etc. Flame arresters are provided on tank farm. Solvent transfer is being done by pumps in the process units.
ix.	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF. The ash from boiler shall be sold to brick manufacturers/cement industry.	Noted for compliance
x.	(x) 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.	Rules and guidelines under Manufacture, Storage and import of Hazardous Chemicals (MSIHC) Rule, 1989 are being followed. Transportation of Hazardous Chemicals are as per the Motor Vehicle Act, 1989.
xi.	Regular VOC monitoring to be done at vulnerable points.	VOC emissions are monitored by VOC Leak Detection and repair (LDAR) Program. Gujarat Refinery engaged an external agency, to monitor the leaks as per defined monthly schedule. Every month around 1600-1700 points and yearly total 20000 points are measured for controlling the fugitive VOC emissions. Any leaks detected, even not reportable (up to 100 ppm) are attended within minimum possible time and next month the attended leaks are verified by the agency.

S. No.	Action Point	Status as on 30.11.2022
		Monitoring is purely a field job performed by M/s Ecotech Instruments. Samples cannot be taken and hence are not analyzed in laboratory.
xii.	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.	The oily sludge is subjected to melting pit and oil recovery is done by M/s. Plantech. The residual sludge thereby generated is sent for bio-remediation/Co-processing to cement industries. The sludge is stored in HDPE lined pit.
xiii.	Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MEF&CC. Outcome from the report to be implemented for conservation scheme.	Comprehensive water audit carried out by Engineers India limited (EIL) in association with Centre of High technology (CHT) via w.o No: 25590290 dated 31.07.2018. Outcome of the report is being implemented for conservation of water. Water audit done by Gujarat refinery by internal committees and many points implemented.
xiv.	Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.	Oil catchers are provided at strategic locations like near UDEX unit, near flare, near Dhaula kuan pump house and final outlet of open channel in rain/storm water drainage system to prevent the possibility of oil contamination in storm water channel. Storm water channel going outside remains completely dry during non monsoon season. Hay filter is installed in the last storm water channel point in order to make the water free from oil, if any.
xv.	The company shall undertake waste minimization measures as below:- a. Metering and control of quantities of active ingredients to minimize waste. b. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. c. Use of automated filling to minimize spillage. d. Use of Close Feed system into batch reactors. e. Venting equipment through vapour	Noted for compliance

S. No.	Action Point	Status as on 30.11.2022
	<p>recovery system.</p> <p>f. Use of high pressure hoses for equipment clearing to reduce wastewater generation.</p>	
xvi.	<p>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.</p>	Noted for compliance.
xvii.	<p>The fund provision for Corporate Environment Responsibility (CER) shall be provided as per the guidelines issued by the Ministry dated 1<sup>st</sup> May 2018 and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office. .</p>	<p>Noted for compliance</p> <p>Fund as per CER guidelines will be allocated and CSR activities will be taken up.</p>
xviii.	<p>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 provided to DG set for controlling the noise pollution.</p>	Noted for compliance
xix.	<p>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.</p>	Noted for compliance
xx.	<p>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. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet.</p>	Noted for compliance
xxi.	<p>Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.</p>	<p>Occupational health surveillance of workers are being done on regular basis and records are being maintained as per the Factories</p>

S. No.	Action Point	Status as on 30.11.2022
		<p>Act.</p> <p>The Gujarat Refinery has a well-established Occupational Health Centre, which harmoniously combines environmental protection and health promotion of the employee.</p> <p>Gujarat Refinery also has a well-established 24 bedded Hospital well equipped with all sorts of modern facilities available to handle any mishap.</p>
<b>B. General Conditions:</b>		
i.	The Project Proponent shall obtain all other statutory/necessary permissions / recommendations / NOCs prior to start of construction/operation of the project, which inter alia include, permission / approvals under the Forest (Conservation) Act, 1980; the Wildlife (Protection) Act, 1972; the Coastal Regulations Zone Notification, 2019, as amended from time to time, and other Office Memoranda / Circular issued by the Ministry of Environment, Forest and Climate Change from time to time, as applicable to the project.	CTE Granted by GPCB 07.04.2020
ii.	The project proponent shall ensure compliance of 'National Emission Standards', as applicable to the project, issued by the Ministry from time to time. The project proponent shall also abide by the rules/regulations issued by the CPCB/SPCB for control/abatement of pollution.	Noted for compliance
iii.	The project authorities shall adhere to the stipulations made by the State Pollution Control Board / Committee, Central Pollution Control Board, State Government and any other statutory authority.	CTE Granted by GPCB 07.04.2020. CTO applied for LMW/HMW and granted by GPCB Vide Consent order No.-AWH-19056 dtd 01.06.2022 and valid till 31.03.2027. CTO for other units shall be applied after commissioning of facilities.
iv.	The project proponent shall prepare a site specific conservation plan and wildlife management plan in case of the presence of Schedule-1 species in the study area, as	Not Applicable

<b>S. No.</b>	<b>Action Point</b>	<b>Status as on 30.11.2022</b>
	applicable to the project, and submit to Chief Wildlife Warden for approval. The recommendations shall be implemented in consultation with the State Forest/Wildlife Department in a time bound manner.	
v.	No further expansion or modifications in the plant, other than mentioned in the EIA Notification, 2006 and its amendments, 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 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 for compliance
vi.	The energy source for lighting purpose shall be preferably LED based, or advance having preference in energy conservation and environment betterment.	Noted for compliance
vii.	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 station each is Installed In the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	Noted for compliance
viii.	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16 <sup>th</sup> November, 2009 shall be followed.	Noted for compliance
ix.	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	Noted for compliance
x.	The Company shall harvest rainwater from the	Noted for compliance

S. No.	Action Point	Status as on 30.11.2022
	roof tops of the buildings and storm \ water drains to recharge the ground water and to utilize the same for process requirements.	
xi.	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 is being imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees are conducted on regular basis. Apart from this, Material Safety Datasheet (MSDS) of the chemicals is being displayed at all process units.
xii.	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, and risk mitigation measures relating to the project shall be implemented.	Gujarat Refinery strictly adheres to all the environmental protection measure and safeguards proposed in the documents submitted to the Ministry. All recommendations made in the EMP and risk analysis reports have been implemented.
xiii.	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CER activities shall be undertaken by involving local villages and administration and shall be implemented.	CSR activities are done every year involving local villages and administration.
xiv.	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	As stated above, company is undertaking co-developmental measures including community welfare measure in the project area for the overall improvement of the environment.
xv.	A separate Environmental Management Cell (having qualified person with Environmental Science / Environmental Engineering/specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	At JR, A separate Environmental Management Cell in form of HSE department is looking after for monitoring and adherence to related statutory compliance with qualified Engineers.  However, recruitment of qualified person with Environmental Science / Environmental Engineering will under consideration of Top management.
xvi.	The company shall earmark sufficient funds towards capital cost and recurring cost per	a) Adequate funds are available for implementation of the conditions stipulated

S. No.	Action Point	Status as on 30.11.2022
	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 so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.	by MoEF.  b) This is ensured that these funds are not diverted for any other purposes
xvii.	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla-Parishad /Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.	Copy of the clearance letter published in Times Of India in English language and Divya Bhaskar in Gujarati language dated:10.03.2020.
xviii.	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.	a) Six monthly reports are submitted to MoEF, Bhopal. Last report submitted on 1 <sup>st</sup> June, 2022.  The Environment Clearance and EC compliance report is uploaded on the Company Website in folder Statutory notices.
xix.	The environmental statement for each financial year ending 31 <sup>st</sup> 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.	a) Environmental Statement for each financial year is submitted to Gujarat Pollution Control Board.  Last Environment Statement for financial year 2021-22 was submitted to GPCB on 28 <sup>th</sup> September, 2022.  b) Environment Statement is regularly updated on Company Website under the folder of Statutory notices.
xx.	The project proponent shall inform the public	Copy of the clearance letter published in

S. No.	Action Point	Status as on 30.11.2022
	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 and at <a href="https://parivesh.nic.in/">https://parivesh.nic.in/</a> . 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.	Times Of India in English language and Divya Bhaskar in Gujarati language dated: 10.03.2020.
xxi.	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.	Noted for compliance
xxii.	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.	Noted for compliance



**DESCRIPTIVE REPORT ON STATUS OF COMPLIANCE TO CONDITIONS OF ENVIRONMENT CLEARANCE AND ENVIRONMENT MANAGEMENT**

Compliance status (for the period of May 20221- Oct 2022) of Environmental clearance issued by MoEF, New Delhi. Environment Clearance Reference letter No. F NO IA J 11011/93/2018-IA-II(I) dated 05.01.2021

**Detail of project: Expansion cum Modernisation of Gujarat Refinery from 13.7 to 18 MMPTA with Lube and Petro Chemical Integration((LuPech), LAB Revamp and N-Butanol Project at Koyali, District Vadodara(Gujarat) by M/s. Indian Oil Corporation Limited-Environmental Clearance- reg**

S. No.	Action Point	Status as on 30.11.2022
	<b>General Condition</b>	
12.0	Based on the proposal submitted by the project proponent and recommendations of the EAC (Industry-3), Ministry of Environment, Forest and Climate change hereby accords environmental clearance to the project for Expansion cum Modernization of Gujarat Refinery from 13.7 to 18 MMTPA with Lube & Petro chemical Integration (LuPech), LAB Revamp and N-Butanol Project by M/s Indian Oil Corporation Limited located at Koyali, District Vadodara, Gujarat, under the provisions of the EIA Notification, 2006, subject to the compliance of terms and conditions as under:-	
i	The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the earlier EIA/EMP report and updated in respect of environmental management, and risk mitigation measures relating to the project shall be implemented.	Gujarat Refinery strictly adheres to all the environmental protection measure and safeguards proposed in the documents submitted to the Ministry. All recommendations made in the EMP and risk analysis reports have been implemented.
ii	As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises. Treated effluent shall be reused in the process/utilities. Treated Industrial effluent shall not be used for gardening/greenbelt development / horticulture.	Noted for compliance. ZLD is part of project
iii	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	Noted for compliance

S. No.	Action Point	Status as on 30.11.2022
	<b>General Condition</b>	
	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.	
iv	The National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 18th March, 2008 and G.S.R.595(E) dated 21st August, 2009 as amended from time to time, shall be followed.	Noted
v	Volatile organic compounds (VOCs)/Fugitive emissions shall be controlled at 99.997% with effective chillers/modern technology. For emission control and management, use of FG/NG in heater as fuel, adequate stack height, use of Low NOX burners in heater & boiler, continuous stack monitoring, Sulphur recovery plant, etc. shall be installed / ensured.	Noted for compliance
vi	Occupational health center for surveillance of the worker's health shall be set up. The health data shall be used in deploying the duties of the workers. All workers & employees shall be provided with required safety kits/mask for personal protection.	Being complied
vii	Process safety and risk assessment studies shall be carried out using advanced models in repeated intervals, and the mitigating measures' shall be undertaken/implemented accordingly.	Noted for compliance
viii	The storage of toxic/hazardous raw material/products shall follow all the safety norms and best practices to avoid any leakage/explosion/emissions. 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.	Noted for compliance
ix	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Safety and visual reality training	Training is being imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine

S. No.	Action Point	Status as on 30.11.2022
	<b>General Condition</b>	
	shall be provided to employees.	periodical medical examinations for all employees are conducted on regular basis. Apart from this, Material Safety Datasheet (MSDS) of the chemicals is being displayed at all process units.
x	Total additional fresh water requirement shall not exceed 45456 cum/day proposed to be met from wells at Mahiriver and from treated Municipal waste water. Necessary permission in this regard shall be obtained from the concerned regulatory authorities, and renewed from time to time.	Noted for compliance
xi	Storm water from the roof top shall be channelized through pipes to the storage tank constructed for harvesting of rain water in the premises and harvested water shall be used for various industrial processes in the unit. No recharge shall be permitted within the premises. Process effluent/ any wastewater shall not be allowed to mix with storm water.	Noted for compliance
xii	The company shall undertake waste minimization measures as below (a) Metering and control of quantities of active ingredients to minimize waste; (b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. (c) Use of automated filling to minimize spillage. (d) Use of Close Feed system into batch reactors. (e) Venting equipment through vapour recovery system. (f) Use of high pressure hoses for equipment clearing to reduce wastewater generation.	Noted for compliance. Incorporated in Process
xiii	The green belt of at least 5-10 m width shall be developed in nearly 33% of the total project area, mainly along the plant periphery. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department. Records of tree canopy shall be monitored through remote sensing map.	Noted for compliance
xiv	The activities and the action plan proposed by	Noted for compliance

S. No.	Action Point	Status as on 30.11.2022
	<b>General Condition</b>	
	the project proponent to address the socio-economic issues in the study area, shall be completed as per the schedule presented before the Committee and as described in the EMP report in letter and spirit. All the commitments made during public hearing shall be satisfactorily implemented. Preference shall be given to local villagers for employment in the unit.	
xv	A separate Environmental Management Cell (having qualified person with Environmental Science/Environmental Engineering/specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	At JR, A separate Environmental Management Cell in form of HSE department is looking after for monitoring and adherence to related statutory compliance with qualified Engineers.  However, recruitment of qualified person with Environmental Science / Environmental Engineering will under consideration of Top management.
12.1	The grant of environmental clearance is further subject to compliance of other general conditions as under:-	
i	No further expansion or modifications in the plant, other than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable. 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/SEIAA to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Gujarat Refinery strictly adheres to all the environmental protection measure and safeguards proposed in the documents submitted to the Ministry. All recommendations made in the EMP and risk analysis reports have been implemented.
ii	The energy source for lighting purpose shall be preferably LED based, or advance having preference in energy conservation and environment betterment.	Noted for compliance
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	Noted for compliance

S. No.	Action Point	Status as on 30.11.2022
	<b>General Condition</b>	
	least one Station each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	
iv	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16" November, 2009 shall be followed.	Noted for compliance
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 levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	Noted for compliance
vi	The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and to utilize the same for process requirements.	Noted for compliance
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 is being imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees are conducted on regular basis. Apart from this, Material Safety Datasheet (MSDS) of the chemicals is being displayed at all process units.
viii	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. The activities shall be undertaken by involving local villages and administration.	CSR activities are done every year involving local villages and administration. In last 5 yrs expenditure of Rs. 5163.63 Lakhs was done on CSR. In financial year 2021-22, Rs. 205.04 lakh was CSR expenditure
ix	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	As stated above, company is undertaking co-developmental measures including community welfare measure in the project area for the overall improvement of the environment.

S. No.	Action Point	Status as on 30.11.2022
	<b>General Condition</b>	
x	A separate Environmental Management Cell (having qualified person with Environmental Science/Environmental Engineering/specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	At JR, A separate Environmental Management Cell in form of HSE department is looking after for monitoring and adherence to related statutory compliance with qualified Engineers.  However, Recruitment of qualified person with Environmental Science / Environmental Engineering will under consideration of Top management.
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 Change 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 purpose.	a) Adequate funds are available for implementation of the conditions stipulated by MoEF.  b) This is ensured that these funds are not diverted for any other purposes
xii	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.	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.	a) Six monthly reports are submitted to MoEF, Bhopal. Last report submitted on 1 <sup>st</sup> June, 2022.  The Environment Clearance and EC compliance report is uploaded on the Company Website in folder Statutory notices.
xiv	The environmental statement for each	a) Environmental Statement for each

S. No.	Action Point	Status as on 30.11.2022
	<b>General Condition</b>	
	financial year ending 31% 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.	financial year is submitted to Gujarat Pollution Control Board.  Last Environment Statement for financial year 2021-22 was submitted to GPCB on 28 <sup>th</sup> September, 2022.  b) Environment Statement is regularly updated on Company Website under the folder of Statutory notices.
xv	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 and at <a href="https://parivesh.nic.in/">https://parivesh.nic.in/</a> . 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.	Copy of the clearance letter published in Times Of India in English language and Gujarat Samachar in Gujarati language dated: 12.01.2021.
xvi	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.	Noted for compliance
xvii	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.	Noted