

Compliance Status Report for Gasoline Hydro Treatment Unit (GTU) (0.9 MMTPA) & associated facilities to produce 100% BS-VI MS

EC Letter no. J-11011/98/2016-1A II (I) dated 20th March 2017

Consent To Operate (CTO) for Gasoline Treatment Unit (GTU) amalgamated with existing refinery CTO has been received from Maharashtra Pollution Control Board (MPCB) on 13th Sept-2019.

GTU plant was commissioned on 22nd Oct 2019.

As per the stipulations given in the Environmental Clearance for Gasoline Hydro Treatment Unit (GTU) (0.9 MMTPA) & its associated facilities to produce 100% BS-VI MS, the detailed compliance status is given below:

A. SPECIFIC CONDITIONS :

Sr. No.	SPECIFIC CONDITION	STATUS as on 01.12.2020
i.	M/s BPCL shall comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18 th March, 2008	Complied.
ii.	Compliance to all the environmental conditions stipulated in the environmental clearance letter no. J J-11011/582/2011-IA II (I) dated 7 th June'2013, letter no. J-11011/140/2012-IA II (I) dated 12 th June 2013, letter no.-J-11011/270/2013-IA II (I) dated 8 th August 2014 and letter no. J-11011/21/2013-IA II (I) dated 13 th August 2015, shall be satisfactorily implemented and compliance reports submitted to the Ministry's Regional Office.	Complied. Compliance reports are regularly sent to MoEF & CC Western Regional Office at Nagpur on 6 monthly basis and uploaded to MoEF & CC portal.
iii.	Continuous on-line stack monitoring for SO ₂ , NO _x and CO of all the stacks shall be carried out. Low NO _x burners shall be installed.	The following features at GTU ensure process emissions to confirm to the standards prescribed under EPA <ul style="list-style-type: none">• Air preheater provided for improving efficiency• Provision of stack dampers, on-line indication for stack temperature, excess O₂.• Stacks of adequate height All stacks have been provided with analyzers for continuous online monitoring of SO _x , NO _x , CO & SPM. Similarly, analyzers have been installed at GTU stacks for continuous on-line monitoring of SO ₂ , NO _x CO and PM. Low NO _x burners have been installed at two furnaces of GTU.

		Stack analyzers connection to MPCB server and YIL server have been completed and data is getting transmitted to MPCB/ CPCB server on real time basis.
iv.	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. Besides, acoustic enclosure/silencer shall be installed wherever noise levels exceed the limit.	Noted. Power is supplied to GTU unit from Captive Power Plant existing at the refinery or shall be imported from Tata Electric Company, if required. Additional DG set is not required for GTU unit and Existing refinery DG set is not operating continuously. It supplies power to critical equipment's in the refinery only in case of total power failure for safe shutdown of unit.
v.	Fresh water requirement from MCGM shall not exceed 15950 m ³ /day. After expansion and prior permission shall be obtained from competent authority. About 300 m ³ /hr of cooling water blow down will be discharged to sea.	Complied. Please refer Annexure-1 for Water Balance.
vi.	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.	Noted. Latest water audit was conducted in 2018 through M/s CIL. Comprehensive water audit for 2019 was carried out at BPCL Mumbai Refinery and report for the same is expected shortly. Refer Annexure-1 for Water Balance.
vii	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, Regional Office of MoEF&CC and in the Company's website.	Complied. On line analyzers have been provided at Effluent Treatment Plant outlet for measuring PH, BOD, COD & TSS with continuous connectivity to CPCB/ MPCB servers. ETP outlet water is 100% recycled to process cooling towers.

viii	The Company should strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000. Hazardous waste should be disposed of as per Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and amended time to time.	<p>Complied.</p> <p>Hazardous Waste is disposed of as and when generated as per Hazardous waste rules and as per Consent to Operate issued by MPCB to MPCB approved Recycler party M/s MWML (Mumbai Waste Management Ltd.). (Refer Annexure-2: Membership Certificate of M/s MWML).</p> <p>Hazardous Waste annual return form (Form-IV) is filled up every year before 30th June of every year for previous financial year.</p> <p>For 2019-20, Form- IV was filled on 18th June-2020. Please refer Annexure-2a.</p>
ix.	Acoustic enclosure/silencer shall be installed wherever it is possible.	Noted
x.	Occupational Health Surveillance of the workers should be done on regular basis and records maintained as per the Factories Act.	<p>Complied.</p> <p>Periodic Health check-up for employees is carried out regularly.</p>
xi.	Green belt over 33% area should be developed within plant premises with at least 10 meter wide green belt on all sides along the periphery of 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.	<p>Noted.</p> <p>GTU unit is within the premises of existing Mumbai refinery. Tree plantation is being carried out in and around Chembur / Mumbai to mitigate the effect of emissions.</p> <ul style="list-style-type: none"> - In the year 2014-15, 10000 tree saplings were planted at various locations around Mumbai (Among these saplings, 3000 were planted at AMPC Vashi to develop four acres of green belt in the heart of Navi Mumbai. Refer Annexure- 3: Certificate from APMC Vashi). - In 2016-17, more than 3000 trees were planted at MIDC area at Taloja. (Refer Annexure- 4: Certificate from M/s Mumbai Waste Management Limited (MWML). - In 2017-18, 5000 Trees were planted at Thane Municipal Corporation in the year 2017. (Refer Annexure- 5: Certificate from Certificate from TMC, Thane). - In 2018-19, more than 1350 saplings were planted at Marine Oil Terminal

		<p>area, MBPT area, inside BPCL refinery and National Park Borivali.</p> <ul style="list-style-type: none"> - In 2019-20, a total of 10400 tree saplings were planted at different locations around Mumbai regions through M/s CERE and all the trees were Geo-tagged. - In 2020-21, a total of 1000 tree saplings were planted at Mumbai through M/s Unique Pest Control.
xii.	The company should make the arrangement for protection of possible fire and explosion hazards during construction and operation phase. To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition sources and flammable materials shall be in place.	<p>Noted.</p> <p>Latest standards applicable (OISD, API, ASTM, IBR) have been incorporated at the design stage itself to ensure safety and mechanical integrity of the unit.</p>
xiii.	All the recommendations motioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.	<p>Noted.</p> <p>As per risk assessment report, blast proof control room has been built up at GTU site. Hydrocarbon & H2S meters has been installed at critical locations.</p>
xiv.	At least 2% of the total cost of the project shall be earmarked towards the Enterprises Social Commitment (ESC) based on local needs and action plan with financial and physical breakup/details shall be prepared and submitted to the Ministry Of Regional Office. Implementation of such program shall be ensured accordingly in a time bound manner.	<p>Noted.</p> <p>Please refer Annexure-6 for Enterprises Social Commitment (ESC) expenditure details.</p>
xv.	Zero liquid discharge to be ensured.	<p>Noted.</p> <p>There is no additional requirement of fresh water and no additional generation of effluent from GTU project.</p> <p>ETP outlet water is 100% recycled to process cooling towers (ZLD).</p> <p>Transmission ETP Flow data and ETP camera images to CPCB / MPCB servers job has been completed on 19th Aug-2019.</p>

B.GENERAL CONDITIONS:

Sr. No.	Condition	Status as on 01.12.2020
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i.	The project authorities must strictly adhere to the stipulations made by the Maharashtra Pollution Control Board (SPCB), State Government and any other statutory authority.	Complied
ii.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change. In case of deviations or alterations in the project proposed 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
iii.	The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one station is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	<p>Three Ambient Air Quality Monitoring Stations are existing in the refinery for on-line monitoring of PM-10, PM-2.5, SO₂, NO_x, CO, Ammonia, Ozone and Meteorological parameters of Wind speed, Wind Direction, Temperature & Relative humidity as per National Ambient Air Quality Standards (NAAQS). Real time AMS data is being transmitted to CPCB/ MPCB site.</p> <p>Also, online data of parameters namely Benzene, Toluene, O/M/P- Xylene and Methane & Non Methane hydrocarbon from AMS have been successfully connected and transmitted to MPCB and CPCB servers since 31st Dec 2018.</p> <p>Also, Mercaptan analyzer has been installed at AMS and data is being transmitted to MPCB/CPCB servers.</p>
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.	<p>Ambient Air quality data is being collected at three locations in the existing refinery. The quality is conforming to the standard as specified in the NAAQS.</p> <p>Ambient air Quality report at BPCL is attached as Annexure-7.</p>
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 should conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules and 1989 viz. 75 dBA (daytime) and 70 dBA (night time).	<p>Noted.</p> <p>Ambient Noise levels conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules. Monitoring carried out in the periphery of the refinery is attached. (Refer Annexure-7: Noise Monitoring Data).</p>
vi.	The company shall harvest rain water from roof tops of the buildings and storm water drains to recharge the	<p>Complied.</p> <p>Rain water harvesting systems are provided at BPCL MR at 14 locations out</p>

	ground water and use the same waste for the process activities to the project to conserve fresh water.	<p>of which RWH system at DHDS & DHT substation roof top were commissioned in June-2019. Details of total Rain water harvested are as below:</p> <p>2016-17: 88 Thousand KL 2017-18: 65.7 Thousand KL 2018-19: 42.8 Thousand KL 2019-20: 71 Thousand KL 2020-21: 67 Thousand KL</p>
vii.	Training shall be imparted to all employees on safety & health aspects of chemicals handling. Pre – employment & 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>Complied.</p> <p>Safety trainings are carried out for BPCL employees as well as contractor employees which includes Hands on fire fighting, Behavior based safety training & safety in refining etc. Mandatory periodic health check is done for employees and also pre-employment check is carried out at BPCL medical center. Comprehensive safety training is provided to contractor staff during registration process by Fire & Safety Dept.</p>
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 and risk mitigation measures relating to the project shall be implemented.	Complied.
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.	<p>Being implemented.</p> <p>CSR activities are conducted on regular basis for local villages which involves Cancer screening camp, Eye screening camp Blood donation camp, Public health center, Ambulance service during emergency, providing fish nets to local fishermen.</p>
x.	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	<p>Complied.</p> <p>BPCL is providing scholarships to needy students through local schools. Also felicitates 10th & 12th std. students every year.</p> <p>E & E department carries out tree plantation and awareness functions in nearby schools as a part commitment towards sustainable environment.</p>

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.	<p>There is no requirement of additional Laboratory for GTU Project. Existing BPCL Laboratory is used for GTU. Refinery has a full-fledged NABL approved Laboratory.</p> <p>BPCL refinery already has an Environment section to carry out environmental management and monitoring functions.</p>
xii.	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management / pollution control measures shall not be diverted for any other purpose.	<p>Various Environmental projects incurring capital expenditure are being carried out regularly.</p> <p>List of recent Environment projects is attached as Annexure-8.</p>
xiii.	A copy of clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla Parishad / Municipal Corporation, Urban local Body and the Local Body and the local NGO, if any from whom any suggestions / representations, if any, from whom suggestions / representations, if any, were received while processing the proposal.	<p>Complied</p> <p>Environment Clearance letter has been put on the BPCL corporate website www.bharatpetroleum.in/EnergizingEnvironment/HealthSafety&Environment / Environment Clearance letter has been sent to Municipal corporation</p>
xiv.	The project proponent shall also submit six monthly reports on 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 Regional office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environment Clearance and six monthly compliance status report shall be posted on the website of the company.	<p>Complied.</p> <p>Six monthly compliance statement was sent to the regional office of MoEF, Nagpur, Zonal office of CPCB, and SRO/ RO office of MPCB in Oct-2018.</p> <p>The Environment Clearance and six monthly compliance report was also posted on the BPCL corporate website.</p>
xv.	The Environmental Statement for each financial year ending 31 st March in Form-V as is mandated to be submitted to the concerned State Pollution Control Board as prescribed under Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the web site of company along with compliance of Environmental Clearance conditions and shall also be sent to the respective Regional Office of MoEF&CC by e-mail.	<p>Duly filled form V (Environment Statement) for every financial year is submitted to MPCB office before 30th Sept of every assessment year.</p> <p>For 2019-20 also, Form-V was submitted to MPCB on 25th Sept-2020. Please refer Annexure- 9.</p>

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 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 same shall be forwarded to the Regional Office of the Ministry.	Subsequent to obtaining Env. Clearance from MoEF for GTU, dt 20 th March-17, the same was published in two newspapers (Indian Express in English & Maharashtra Times Marathi) on 7 th of April 2017. Annexure- 10 & 10a.
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 commencing the land development work.	Noted.

Compliance Status Report for Diesel Hydro treatment Unit (DHT) & associated facilities to produce 100% BS-IV HSD

EC Letter no. J-11011/21/2013-1A II (I) dated 13th Aug-2015

As per stipulations given in the Environmental Clearance for Diesel Hydro Treatment (DHT) Unit & associated facilities to produce 100% BS-IV HSD.

DHDT Unit was commissioned on 26.06.2017

Specific Conditions:

Sr. No.	SPECIFIC CONDITION	STATUS as on 01.12.2020
i.	Compliance to all the environmental conditions stipulated in the environmental clearance letter no. J-11011/180/2008-IA II(I) dated 28 th April, 2008 , F.No.J-11011/140/2012-IA II I dated 12 th June 2013, J-11011/582/2011-IA II (I) dated 7 th June 2013 and J-11011/270/270/2013-IA (I) dated 8 th August 2014 , shall be satisfactorily implemented and compliance reports submitted to Ministry's regional office at Bhopal.	Compiled Compliance reports are regularly sent to MoEF & CC Western Regional office at Nagpur.
ii.	M/s BPCL shall comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules. 1986 vide G S R 186(E) dated 18 th March, 2008.	Complied
III.	Continuous on-line stack monitoring for SO ₂ , NO _x and CO of all the stacks shall be carried out. Low NO _x burners shall be installed.	Analyzers are installed at DHT stacks for continuous on-line monitoring of SO ₂ , NO _x CO and PM. Low NO _x burners are provided.

		Please Refer GTU compliance report as on 31.12.2020 for further details.
iv	The process emissions [SO ₂ , NO _x , HC (Methane & No-methane)], VOCs and Benzene from various units shall conform to the standards prescribed under the Environment (Protection) Act. At no time the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency of the pollution control device has been achieved.	<p>The following features at DHD process emissions to conform with the standards prescribed under EPA</p> <ul style="list-style-type: none"> • Fuel gas is fired in the furnaces. • Air pre-heater provided for improving efficiency • Provision of stack dampers, on-line indication for stack temperature, excess O₂. • Stacks of adequate height. <p>At BPCL refinery, Ambient Air Quality monitoring is carried out on regular basis which includes parameters SO_x, NO_x, CO, O₃, NH₃, PM-10. PM-2.5, Hydrocarbon. Also analyzers have been installed at each AMS for transmitting data to MPCB/ CPCB server.</p> <p>Ambient air quality as monitored at refinery is attached as Annexure-7.</p>
v.	Leak Detection and Repair program shall be prepared and implemented to con HC/VOC emissions. Focus shall be given to prevent fugitive emission for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of HC from product storage tank yard etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.	<p>LDAR program is already being followed in the existing refinery as per GSR-186 (E). Compressors, exchangers, pumps, valves, equipment's, etc are being regularly monitored for identifying VOC emissions and rectifying the identified leaks.</p> <p>HC leak detectors are provided in the plant area at strategic locations.</p> <p>Preventing maintenance schedule exists for all critical pumps / compressors and is being adhered to.</p> <p>In consecutive quarterly LDAR reports of Jun-2019 & Oct-2019, the component wise leaks are less than 2%. Hence, as per GSR-186 (E) next LDAR monitoring of all refinery units will be carried out on half yearly basis i.e. from month of Apr & May-2020 onwards. Due to the situation of COVID-19, half yearly LDAR monitoring program for refinery is being done.</p> <p>Please refer Annexure-11 for typical LDAR report.</p>

vi.	SO ₂ emissions after expansion from the plant shall not exceed 10.44 TDP, Sulphur recovery units shall be installed for control of H ₂ S emissions.	Complied. Tail Gas Treatment Units (TGTU) is commissioned in Nov-2017 for improving SRU efficiency to 99.9 %. Please refer Annexure-12 .
vii	As proposed, record of sulphur balance shall be maintained at the Refinery as part of the environmental data on regular basis. The basic component of sulphur balance include sulphur input through feed (sulphur content in crude oil), sulphur output from Refinery through products, byproduct (elemental sulphur), atmospheric emissions etc.	Typical Sulfur balance from the existing refinery attached as Annexure-12
viii	Ambient air quality monitoring stations, [PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , H ₂ S, mercaptan, non-methane-HC and Benzene] shall be set up in the complex in consultation with Maharashtra Pollution Control Board, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs.	Three Ambient Air Quality Monitoring Stations are existing in the refinery. On-line monitoring of PM-10, PM-2.5, SO ₂ , NO _x , H ₂ S, CO, Methanic & non methanic hydrocarbons, benzene, Ammonia, Ozone and meteorological parameters of Wind speed, wind direction, temperature, & Relative humidity is being carried out as per National Ambient Air Quality Standards (NAAQS). Real time data is continuously sent to CPCB / MPCB site. Please refer Annexure-7 for environment monitoring reports.
ix	Ambient air quality data shall be collected as per NAAQEA standards notified by the Ministry on 16 th November, 2009 and trend analysis w.r.t. past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.	Ambient air quality data is being collected at three locations in the existing refinery through third party. The quality is conforming with the standard as specified in the NAAQS. Ambient air Quality at North west corner of Refinery is attached as Annexure-7
x.	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. Besides, acoustic enclosure/silencer shall be installed wherever noise levels exceed the limit.	Noted. Power is supplied to DHT unit from Captive Power Plant existing at the refinery. Additional requirement of power shall be imported from Tata Electric Company. Additional DG set is not required for DHT unit.
xi.	Total fresh water requirement from Municipal Corporation of Greater Mumbai after expansion shall not exceed 16,100m ³ /day. After expansion and prior to permission shall be obtained from competent authority.	Complied. Please Refer GTU compliance report as on 31.12.2020 for further details.

		Please refer Annexure-1 for Water Balance.
xii	Industrial effluent generation shall not exceed 155 m ³ /Hr and treated in effluent treatment plant. Treated effluent shall be fully as make-up water for raw water cooling towers. Domestic Sewage shall be treated in sewage treatment plant (STP)	<p>Treated effluent is fully recycled as make water to various raw water cooling towers in the Refinery.</p> <p>A new Sewage Treatment plant with a capacity of 250 CMD for administrative block has been commissioned in Dec 2014.</p> <p>Please refer Annexure-1 for Water Balance.</p> <p>BPCL has provided analyzers at ETP for COD, BOD, TSS, PH monitoring with direct connectivity to CPCB/ MPCB server.</p>
xiii	Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.	<p>Complied.</p> <p>Oil catchers equipped with skimmers, weirs, drum skimmer, rope skimmer, hay filters etc have been provided.</p> <p>Please Refer GTU compliance report as on 31.12.2020 for further details.</p>
xi v.	As committed, BPCL needs to implement the outcome of study for water reduction and its optimize use as result of water auditing. No process effluent shall be discharged outside the premises.	<p>Complied.</p> <p>Treated effluent is fully recycled as make water to various raw water cooling towers in the Refinery. BPCL has provided analyzers for COD, BOD, TSS, PH monitoring with direct connectivity to CPCB/ MPCB server.</p> <p>Please refer Annexure-1 for Water Balance.</p>
xv	Automatic /online monitoring system (24X7 monitoring devices) For flow measurement and relevant pollutants in the treatment system to be installed. The data to be made available to respective SPCB, Regional office of MoEF & CC and Company's site	<p>Complied.</p> <p>BPCL has provided analyzers for COD, BOD, TSS, PH monitoring with direct connectivity to CPCB/ MPCB server.</p>
xv i.	Oily sludge shall be disposed off into Cocker. Annual oily sludge generation and disposal data shall be submitted to Ministry of Regional offices and CPCB.	<p>Not Applicable</p> <p>There is no coker installed at BPCL Mumbai Refinery.</p>
xv ii.	The Company should strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules,1989 as amended in October, 1994 and January,2000 Hazardous waste	<p>Complied.</p> <p>Please Refer GTU compliance report as on 31.12.2020 for further details.</p>

	should be disposed of as per Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and amended time to time	
xv iii.	The membership of common TSDF should be obtained for the disposal of hazardous waste. Copy of authorization or membership of TSDF should be submitted to Ministry's Regional Office at Bhopal. Chemical/inorganic sludge shall be sent to treatment storage disposal facility (TSDF) for hazardous waste. Spent catalyst shall be sent to authorized recyclers/re-processors.	BPCL MR has membership of Mumbai Waste Management Limited, which is authorized TSDF. Membership certificate is attached as Annexure-2 .
xi x.	Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.	Complied Please Refer GTU compliance report as on 31.12.2020 for further details.
xx	Acoustic enclosure/silencer shall be installed wherever it is possible.	Please Refer GTU compliance report as on 31.12.2020 for further details.
xx i	The company shall strictly follow all the recommendations mentioned in the charter on Corporate Responsibility for Environmental protection (CREP).	Please refer Annexure-13 for details of Corporate Responsibility for Environmental protection (CREP).
xx ii.	To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition source and flammable material shall be in place	Complied.
xx ii.	To prevent fire & explosion at oil & gas facility, potential ignition, sources and flammable materials shall be in place.	Complied.
xx iii.	Thick greenbelt with suitable plants species shall be developed around unit, Selection of plants as per CPCB guidelines.	Please Refer GTU compliance report as on 31.12.2020 for further details.
xx iv.	All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.	Implemented.
xx v.	At least 2.5% of the total cost of the project shall be unmarked towards the Enterprise social responsibility based on need of the affected people with consultation of local Administration and item-wise details along with long time bound action plan shall be prepared and submitted TO Ministry of Regional Office at Bhopal. Implementation of such program shall be ensured accordingly in a time bound manner.	Complied. Please Refer GTU compliance report as on 31.12.2020 for further details.
xx vi	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health	Project is completed and Commissioned.

	care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	
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B.GENERAL CONDITIONS:

Sr. No.	Condition	STATUS as on 01.12.2020
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.	Complied
ii.	No further expansion or modifications in the project shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviation or alterations in the project proposed 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
iii.	The project authorities must strictly comply with the rules & regulation under manufacture. Storage and import of Hazardous chemical Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate, etc. must be obtained, wherever applicable.	Compiled. CCOE, OISD and other approvals taken prior to commissioning of the plant.
iv.	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, enclosure etc, on all sources of noise generation. The ambient noise levels should conform the standards prescribed under Environmental (Protection) Act, 1986 Rules and 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	Complied. Please Refer GTU compliance report as on 31.12.2020 for further details.
v.	A separate environmental management cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	BPCL refinery already has an Environment section to carry out environmental management and monitoring functions. The Refinery also has a full-fledged NABL approved Laboratory.
vi.	Adequate funds shall be earmarked towards capital cost and recurring cost for environment pollution control measures and shall be used to implement the conditions stipulated by MOEF as well as state government along with implementation schedule for all the conditions stipulated herein. Funds so provided should not be diverted for any other purpose.	Adequate funds are being provided for environment pollution control measures. Various Environment projects incurring capital expenditure are being carried out regularly. List of recent environmental projects is attached as Annexure-8 .
vii.	The Regional office of the Ministry/ data and the statistical interpretation shall be submitted CPCB will	Complied

	be monitor stipulated conditions. A six monthly compliance report and the monitored regularly.	Six monthly compliance report is regularly sent to MOEF&CC WR office.
viii.	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zillparishad / Municipal Corporation Urban Local Body and Local NGO, if any from whom any suggestions / representations, if any, here received while processing proposal. The clearance letter shall be put on web site of company proponent.	Complied. Please Refer GTU compliance report as on 31.12.2020 for further details.
ix.	The project proponent shall upload the status of compliance of stipulated environment clearance conditions, including results of monitored data on their website and shall update the same update periodically. It should simultaneously send to Regional office of MoEF, the respective Zonal office of CPCB and SPCB. .The criteria of pollutant levels namely PM ₁₀ ,PM _{2.5} ,SO ₂ ,NOX,HC (Methane & Non-Methane) , VOC's(ambient levels as well as stack emission)or critical sect oral of parameters, indicated for projects shall be monitored and displayed at the convenient location near main gate of the company in public domain.	Complied. Six monthly compliance statement of EC is being sent to the regional office of MoEF&CC, Nagpur zonal office of CPCB, and MPCB. The compliance report is also posted on the BPCL corporate website. Environmental display board has been provided at the main gate of the refinery, which continuously displays ambient air quality monitored at the north west corner of the refinery.
x.	The project proponent shall also submit six monthly reports on status of compliance of stipulated environmental conditions including results of monitored data (both in hard copies as well as by email) to the Regional office of MoEF, the respective Zonal Office of CPCB and SPCB. The Regional Office of Ministry/CPCBSPCB shall monitor the stipulated conditions.	Complied. Six monthly compliance statement of EC is being sent to the regional office of MoEF&CC, Vadodara zonal office of CPCB and MPCB office.
xi.	The Environmental Statement for each financial year ending 31 st March in Form-V as mandated to be submitted by project proponent concerned SPCB as prescribed under Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the web site of company along with compliance of Environmental conditions and shall also be sent to respective Regional Office of MoEF by e-mail.	Complied Please Refer GTU compliance report as on 31.12.2020 for further details.
xii.	The project proponent shall inform the public that the project has been accorded environmental clearance by the ministry and copies of the clearance are available with the SPCB and may also be seen at website of Ministry of Environment and Forests at http://envfor.nic.in . This shall be advertised within seven days from the date of issue of clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in	Subsequent to obtaining Env. Clearance from MoEF & CC for DHT, dt 13 th August-15, the same was published in two newspapers (Indian Express in English & Maharashtra Times Marathi) on 25 th August-2015.

	vernacular language of the locality concerned, and a copy of same shall be forwarded to the Regional Office.	
xiii.	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 commencing the land development work.	Noted

Compliance Status Report for Conversion of existing Catalytic Reformer Unit (CRU) to Isomerization Unit (ISOM) and revamp of existing Naphtha Hydro desulfurization Unit (NHDS) at BPCL Mumbai Refinery (MR)

EC Letter no. J-11011/270/2013-1A II (I) dated 8th Aug 2014

As per the stipulations given in the Environmental Clearance for Conversion of existing Catalytic Reformer Unit (CRU) to Isomerization Unit and revamp of existing Naphtha Hydro desulfurization Unit (NHDS), the detailed compliance status is given below:

Sr. No.	Specific Condition	Status as on 01.12.2020
i.	Compliance to all the environmental conditions stipulated in the environmental clearance letter no. J-11011/180/2008-IA II(I) dated 28th April, 2008 , F.No.J-11011/140/2012-IA II I dated 12th June 2013 shall be satisfactorily implemented and compliance reports submitted to ministry's regional office at Bhopal.	Complied.
ii.	M/s BPCL shall comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules. 1986 vide G S R 186(E) dated 18th March,2008 and GSR 820(E) dated 9th November 2012.	Complied.
iii.	Continuous on-line stack monitoring for SO ₂ ,NO _x and CO of all the stacks shall be carried out. Low NO _x burners shall be installed.	Analyzers are installed at ISOM stack for continuous on-line monitoring of SO ₂ , NO _x CO and PM. Low NO _x burners are provided.
iv.	The process emissions [SO ₂ ,NO _x ,HC (Methane & No-methane)]. VOCs and Benzene from various units shall conform to the standards prescribed under the Environment (Protection) Act. At no time the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency of the pollution control device has been achieved.	Please Refer GTU compliance report as on 31.12.2020 for further details.

v.	Leak Detection and Repair programme shall be prepared and implemented to control HC/VOC emissions. Focus shall be given to prevent fugitive emission for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of HC from product storage tank yard etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.	<p>LDAR program is already being followed in the existing refinery as per GSR-186 (E). Compressors, exchangers, pumps, valves, equipment's, etc are being regularly monitored for identifying VOC emissions and rectifying the identified leaks.</p> <p>HC leak detectors are provided in the plant area at strategic locations.</p> <p>Preventive maintenance schedule exists for all critical pumps / compressors and is being adhered to.</p> <p>In consecutive quarterly LDAR reports of Jun-2019 & Oct-2019, the component wise leaks are less than 2%. Hence, as per GSR-186 (E) next LDAR monitoring of all refinery units will be carried out on half yearly basis i.e. from month of Apr & May-2020 onwards. Due to the situation of COVID-19, half yearly LDAR monitoring program for refinery is being done.</p> <p>Please refer Annexure-11 for typical LDAR report.</p>
vi.	SO ₂ emissions after expansion from the plant shall not exceed 10.44 TDP, Sulphur recovery units shall be installed for control of H ₂ S emissions. The overall sulphur recovery efficiency of Sulphur recovery unit with tail gas treating shall not be less than 99.9 %.	Tail Gas Treatment Units (TGTU) was commissioned for increasing existing SRU efficiency to 99.9%.
vii.	As proposed, record of sulphur balance shall be maintained at the Refinery as part of the environmental data on regular basis. The basic component of sulphur balance include sulphur input through feed (sulphur content in crude oil), sulphur output from Refinery through products, byproduct (elemental sulphur), atmospheric emissions etc.	Typical Sulfur balance from the existing refinery attached as Annexure-12 .
viii.	Ambient air quality monitoring stations, [PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , H ₂ S, mercaptan, non-methane-HC and Benzene] shall be set up in the complex in consultation with Maharashtra Pollution Control Board, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs.	Please Refer GTU compliance report as on 31.12.2020 for further details.
ix.	Ambient air quality data shall be collected as per NAAQEA standards notified by the Ministry on 16th November,2009 and trend analysis w.r.t. past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.	Please Refer GTU compliance report as on 31.12.2020 for further details.

x.	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. Besides, acoustic enclosure/silencer shall be installed wherever noise levels exceed the limit.	Complied. Power is supplied to ISOM unit from Captive Power Plant existing at the refinery, or shall be imported from Tata Electric Company. DG set is not operating continuously. It supplies power to critical equipments in the refinery only in case of total power failure.
xi.	Total raw water requirement from Municipal Corporation of Greater Mumbai water supply shall not exceed 16500 m3/day. Industrial effluent shall be treated in the effluent treatment plant. Treated effluent shall be recycled/reused recycled as make up for the raw water cooling tower. Domestic sewage shall be treated in sewage treatment plant (STP).	Complied. Treated effluent water from ETP is fully recycled to various raw water cooling towers as make up. A new Sewage Treatment plant with a capacity of 250 CMD for administrative block has been commissioned in Dec 2014. Please refer Annexure-1 for Water Balance.
xii.	Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.	Oil catchers equipped with skimmers, weirs, oil adsorbent booms, pillows, hay filters etc have been provided.
xiii.	Oily sludge shall be disposed off into Coker. Annual Oily sludge generation and disposal data shall be submitted to the Ministry's Regional Office and CPCB.	Not Applicable There is no coker installed at BPCL Mumbai Refinery. Other Oily sludge generated in the refinery is subject to mechanical/chemical treatments for oil recovery, and the residual sludge is bio-remediated using Oil Zapper bacteria supplied by M/S OTBL. Report regarding sludge is sent to MPCB.
xiv.	The Company should strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000 Hazardous waste should be disposed of as per Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and amended time to time.	Complied.
xv.	The membership of common TSDF should be obtained for the disposal of hazardous waste. Copy of authorization or membership of TSDF should be submitted to Ministry's Regional Office at Bhopal Chemical/inorganic sludge shall be sent to treatment storage disposal facility (TSDF) for hazardous waste. Spent catalyst shall be sent to authorized recyclers/re-processors.	BPCL MR has membership of Mumbai Waste Management Limited, which is authorized TSDF. A membership certificate is attached as Annexure-2 .
xvi.	Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.	Proper oil spillage prevention management plan exist. Closed sampling system has been provided to avoid spillage/leakage of oil. Vacuum operated truck system is available in the refinery to take care of any spillages.

xvii.	The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).	Please refer Annexure-13 for details of Corporate Responsibility for Environmental Protection (CREP).
xviii.	To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition sources and flammable materials shall be in place.	Latest standards applicable (OISD, API, ASTM, IBR) have been incorporated at the design stage itself to ensure safety and mechanical integrity of the unit.
xix.	Green belt shall be developed at least in 45 acres area land around the plant premises to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with DFO. Thin greenbelt with suitable plant species shall be developed around unit. Selection of plant species shall be as per the CPCB guidelines.	Tree plantation is done in and around Mumbai Region. Please refer Annexures-3/4/5 .
xx.	All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.	Please Refer GTU compliance report as on 31.12.2020 for further details.
xxi.	Company shall adopt Corporate Environment Policy as per the Ministry's OM No J-11013/41/2006-IA II(I) dated 26th April 2011 and implemented.	BPCL MR is an ISO 14001 certified company. Quality, Environment, Occupational Health & Safety policy as per Integrated management systems is in place.
xxii.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Housing facilities was provided by individual contractors for their workmen in the vicinity of Mumbai Refinery site. The basic facilities such as mobile toilets, clean drinking water, and emergency medical facility was also provided for construction labour at ISOM site.

Sr. No.	General Condition	Status as on 01.12.2020
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.	Complied
ii.	No further expansion or modifications in the project shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviation or alterations in the project proposed 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
iii.	The project authorities must strictly comply with the rules & regulation under manufacture. Storage and import of Hazardous chemical Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of	Complied

	Explosives, Fire Safety Inspectorate, etc. must be obtained, wherever applicable.	
iv.	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, enclosure etc, on all sources of noise generation. The ambient noise levels should conform the standards prescribed under Environmental (Protection) Act, 1986 Rules and 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	Complied
v.	A separate environment management cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	BPCL MR already has an Environment section to carry out environmental management and monitoring functions. The Refinery also has a full-fledged NABL approved Laboratory.
vi.	Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall be used to implement the conditions stipulated Ministry of Environment and Forests as well as state government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	Various Environmental projects incurring capital expenditure are being carried out regularly. List of recent Environmental projects is attached as Annexure-8 .
vii.	The Regional Office of this Ministry / Central Pollution control Board / State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly.	Complied Six monthly compliance Report is submitted for the Environmental Clearances granted to BPCL MR to WR office of MoEF & CC.
viii.	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila parishad/Municipal Corporation, Urban local body, and the local NGO if any, from whom suggestions, representations, if any were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	Complied.
ix.	The project proponent shall upload the status of compliance of the stipulated environmental conditions including the results of monitored data on their 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 SPCB. The criteria pollutant levels, namely PM10, PM2.5, SO2, NOx, HC (Methane & non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Complied Environmental display board has been provided at Refinery Main Gate which continuously displays ambient air quality monitored at the north west corner of the refinery.
x.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by	Six monthly compliance statement of EC is being sent to the regional office of MoEF, Vadodara zonal office of CPCB,

	e-mail) to the Regional office of MoEF, the respective zonal office of CPCB, and the SPCB. The Regional office of this ministry,/CPCB/SPCB shall monitor the stipulated conditions.	and MPCB. The compliance report is also posted on the BPCL corporate website.
xi.	The Environmental statement for each financial year ending 31st March in form V as is mandated to be submitted by the project proponent 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 conditions and shall also be sent to the respective Regional Offices of the MoEF by e-mail.	Please Refer GTU compliance report as on 31.12.2020 for further details.
xii.	The project proponent shall inform the public that the project has been accorded environmental clearance by the ministry and copies of the clearance are available with the SPCB and may also be seen at website of Ministry of Environment and Forests at http://envfor.nic.in . This shall be advertised within seven days from the date of issue of clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in vernacular language of the locality concerned, and a copy of same shall be forwarded to the Regional Office.	Subsequent to obtaining Env. Clearance from MoEF for ISOM, dt 8th August-14, the same was published in two newspapers (Indian Express in English & Maharashtra Times Marathi) on 3rd of September 2014.
xiii.	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 commencing the land development work.	Noted.

Compliance Status Report for Construction of new Crude Distillation Unit and Vacuum Distillation Unit (CDU-4) as a replacement of two old crude and vacuum units at BPCL Mumbai Refinery.

EC Letter no. J-11011/140/2012-1A II (I) dated 12th June 2013

The Ministry of Environment and Forests accorded environmental clearance for the project as per EIA Notification dated 14th September 2006.

Status of the projects (as of 1.07.2016)

As per the stipulations given in the Environmental Clearance for construction of new CDU/VDU (CDU4) as a replacement of two old units,

CDU-4 Unit was commissioned on 30/11/2015

SPECIFIC CONDITIONS:

Sr. No.	SPECIFIC CONDITION	STATUS as on 01.12.2020
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I	Compliance to all the environmental conditions stipulated in the environmental clearance letter no. J-11011/180/2008-1A II (I) dated 28 th April 2008 shall be satisfactorily implemented and compliance reports submitted to the Ministry's Regional Office at Bhopal.	Compliance reports are being regularly sent to MoEF western Regional office Nagpur.
ii.	M/s BPCL shall comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules. 1986 vide G S R 186(E) dated 18 th March, 2008 and GSR 820(E) dated 9 th November-2012	Complied
III.	Continuous on-line stack monitoring for SO ₂ , NO _x and CO of all the stacks shall be carried out. Low NO _x burners shall be installed.	<p>Analyzers are installed at new CDU/VDU (CDU4) stacks for continuous on-line monitoring of SO₂, NO_x, and CO.</p> <p>Low NO_x burners are provided.</p> <p>Please Refer GTU compliance report as on 31.12.2020 for further details.</p>
iv	The process emissions [SO ₂ , NO _x , HC (Methane & No-methane)]. VOCs and Benzene from various units shall conform to the standards prescribed under the Environment (Protection) Act. At no time the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency of the pollution control device has been achieved.	<p>The following features at new CDU/VDU (CDU4) ensure process emissions to conform with the standards prescribed under EPA</p> <ul style="list-style-type: none"> • Low sulfur fuel is fired in the furnaces • Air pre heater provided for improving efficiency • Provision of stack dampers, on-line indication for stack temperature, excess O₂ • Stacks of adequate height. <p>Please Refer GTU compliance report as on 31.12.2020 for further details.</p>
v.	Leak Detection and Repair programme shall be prepared and implemented to control HC/VOC emissions. Focus shall be given to prevent fugitive emission for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of HC from product storage tank yard etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.	<p>LDAR program is already being followed in the existing refinery as per GSR-186 (E). Compressors, exchangers, pumps, valves, equipment's, etc are being regularly monitored for identifying VOC emissions and rectifying the identified leaks.</p> <p>HC leak detectors are provided in the plant area at strategic locations.</p> <p>Preventive maintenance schedule exists for all critical pumps / compressors and is being adhered to.</p> <p>In consecutive quarterly LDAR reports of Jun-2019 & Oct-2019, the component wise leaks are less than 2%. Hence, as per GSR-186 (E) next LDAR monitoring</p>

		<p>of all refinery units will be carried out on half yearly basis i.e. from month of Apr & May-2020 onwards. Due to the situation of COVID-19, half yearly LDAR monitoring program is being done.</p> <p>Please refer Annexure-11 for typical LDAR report.</p>
vi.	SO ₂ emissions after expansion from the plant shall not exceed 10.44 TDP, Sulphur recovery units shall be installed for control of H ₂ S emissions. The overall sulphur recovery efficiency of Sulphur recovery unit with tail gas treating shall not be less than 99.9 %.	Please Refer GTU compliance report as on 31.12.2020 for further details.
vii	As proposed, record of sulphur balance shall be maintained at the Refinery as part of the environmental data on regular basis. The basic component of sulphur balance include sulphur input through feed (sulphur content incude oil), sulphur output from Refinery through products, byproduct (elemental sulphur), atmospheric emissions etc.	Typical Sulfur balance from the existing refinery attached as Annexure-12
Viii	Ambient air quality monitoring stations,[PM ₁₀ ,PM _{2.5} ,SO ₂ , NO _x , H ₂ S, mercaptan, non-methane-HC and Benzene] shall be set up in the complex in consultation with Maharashtra Pollution Control Board, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs.	<p>Three Ambient Air Quality Monitoring Stations (AMS 1/2/3) exist in the refinery for on-line monitoring concentration of PM-2.5, SO₂, NO_x, H₂S, CO, Methanic & non methanic hydrocarbons, ozone, ammonia, benzene and meteorological parameters of Wind speed, wind direction, temperature, & Relative humidity. Online Data already sent to CPCB site.</p> <p>Please Refer GTU compliance report as on 31.12.2020 for further details.</p>
Ix	Ambient air quality data shall be collected as per NAAQEA standards notified by the Ministry on 16 th November-2009 and trend analysis w.r.t. past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.	<p>Ambient air quality data is being collected at three locations in the existing refinery. The quality is conforming to the standard as specified in the NAAQS.</p> <p>Air Monitoring Report at BPCL is attached as Annexure-7.</p>
x.	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. Besides, acoustic enclosure/silencer shall be installed wherever noise levels exceed the limit.	<p>Noted.</p> <p>Power is supplied to new CDU/VDU (CDU4) unit from Captive Power Plant existing at the refinery, or shall be imported from Tata Electric Company. Additional DG set is not required for CDU4 unit.</p>

xi.	Total raw water requirement from Municipal Corporation of Greater Mumbai water supply shall not exceed 687.4 m ³ /hr and prior permission shall be obtained from the competent authority. Industrial effluent generation from new CDU/VDU project shall be 60 m ³ /hr and treated in the effluent treatment plant. Treated effluent shall be recycled /reused recycled as make up for the raw water cooling tower. Domestic sewage shall be treated in sewage treatment plant (STP).	Raw water requirement for refinery and generation of effluent from new CDU/VDU (CDU4) is complied with. Treated effluent water from ETP is fully recycled to various raw water cooling towers as make up. A new Sewage Treatment plant with a capacity of 250 CMD has been commissioned in the month of Dec'2014. Please refer GTU compliance report dated 1 st Oct-2018 for further details. Please refer Annexure-1 for Water Balance.
xii.	Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.	Please Refer GTU compliance report as on 31.12.2020 for further details.
Xiii	Oily sludge shall be disposed off into Coker. Annual Oily sludge generation and disposal data shall be submitted to the Ministry's Regional Office and CPCB.	Not applicable There is no Coker installed at BPCL Mumbai Refinery. Other Oily sludge generated in the refinery is subject to mechanical/chemical treatments for oil recovery, and the residual sludge is bio remediated using Oil Zapper bacteria supplied by M/S OTBL. Data related to oily sludge is submitted to state pollution Control Board MPCB.
xiv	The Company should strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules,1989 as amended in October, 1994 and January,2000 Hazardous waste should be disposed of as per Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and amended time to time	Please Refer GTU compliance report as on 31.12.2020 for further details.
xv	The membership of common TSDF should be obtained for the disposal of hazardous waste. Copy of authorization or membership of TSDF should be submitted to Ministry's Regional Office at Bhopal Chemical/inorganic sludge shall be sent to treatment storage disposal facility (TSDF) for hazardous waste. Spent catalyst shall be sent to authorized recyclers/re-processors.	BPCL MR has membership of Mumbai Waste Management Limited, which are authorized TSDF. Membership certificates are attached as Annexure-2 .
xvi.	Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.	Proper oil spillage prevention management plan exists. Closed sampling system has been provided to avoid spillage/leakage. Vacuum

		operated truck system is available in the refinery to take care of any spillages. Please Refer GTU compliance report as on 31.12.2020 for further details.
xvii.	The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).	Please refer Annexure-13 for details Corporate Responsibility for Environmental Protection (CREP).
xviii.	To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition sources and flammable materials shall be in place.	Latest standards applicable (OISD, API, ASTM, IBR) have been incorporated at the design stage itself to ensure safety and mechanical integrity of the unit.
xix.	Green belt shall be developed at least in 45 acres area land around the plant premises to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with DFO. Think greenbelt with suitable plant species shall be developed around unit. Selection of plant species shall be as per the CPCB guidelines.	New CDU/VDU (CDU4) unit is within the premises of existing Mumbai Refinery. Tree plantation is restricted around to new CDU/VDU (CDU4) due to space constraint and safety considerations. Please Refer GTU compliance report as on 31.12.2020 for further details.
xx.	All the issues raised and commitment made during the public hearing/consultation meeting held on 25 th September,2012 shall be satisfactorily implemented. Accordingly, provision of budget to be kept.	Points were addressed during public hearing are complied
xxi	Based on Hazop study carried out and recommendation to reduce the risk shall be expeditiously implemented, and report sent to regional office of ministry	Complied.
xxii	Company shall adopt Corporate Environment policy as per ministry's O.M. No J-11013/41/2006-IA II(I) dated 26 th April 2011 and implemented.	BPCL MR is an ISO 14001 certified company. Quality, Environment, Occupational Health & Safety policy as per Integrated management systems is in place.
xxiii	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc.The housing may be in the form of temporary structures to be removed after the completion of the project.	Housing facilities were provided by individual contractors for their workmen in the vicinity of Mumbai Refinery site. The basic facilities such as mobile toilets, clean drinking water, and emergency medical facility were also provided for construction labour at to new CDU/VDU (CDU4) site.

A. GENERAL CONDITIONS :

Sr. No.	Condition	Status as on 01.12.2020
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.	Complied
ii.	No further expansion or modifications in the project shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviation or alterations in the project proposed 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
iii.	The project authorities must strictly comply with the rules & regulation under manufacture. Storage and import of Hazardous chemical Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate, etc. must be obtained, wherever applicable.	CCOE, OISD and other approvals taken before commissioning of the plant.
iv.	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, enclosure etc, on all sources of noise generation. The ambient noise levels should conform the standards prescribed under Environmental (Protection) Act, 1986 Rules and 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	Noise levels conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules. Monitoring carried out in the periphery of the refinery confirms the same.
v.	A separate environment management cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	BPCL MR already has an Environment section to carry out environmental management and monitoring functions. The Refinery also has a full-fledged NABL approved Laboratory
vi.	Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall be used to implement the conditions stipulated Ministry of Environment and Forests as well as state government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	Adequate funds are being provided for environmental pollution control measurement. Various Environmental projects incurring capital expenditure are being carried out regularly. List of recent Environmental projects is attached as Annexure-8 .
vii.	The Regional Office of this Ministry / Central Pollution control Board / State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with	Complied. Six monthly compliance report is submitted for the Environmental Clearances granted to BPCL MR to WR office of MoEF & CC.

	statistical interpretation should be submitted to them regularly.	
viii.	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila parishad/Municipal Corporation, Urban local body, and the local NGO if any, from whom suggestions, representations, if any were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	Please Refer GTU compliance report as on 31.12.2020 for further details.
ix.	The project proponent shall upload the status of compliance of the stipulated environmental conditions including the results of monitored data on their 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 SPCB. The criteria pollutant levels, namely PM10, PM2.5, SO2, NOx, HC (Methane & non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain	<p>Six monthly compliance statement to EC is sent to the regional office of MoEF, Vadodara zonal office of CPCB, and MPCB.</p> <p>The compliance report is also posted on the BPCL corporate website.</p> <p>Environmental display board has been provided at the main gate of the refinery, which continuously displays ambient air quality monitored at the north west corner of the refinery.</p>
x.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional office of MoEF, the respective zonal office of CPCB, and the SPCB. The Regional office of this ministry, /CPCB/SPCB shall monitor the stipulated conditions.	<p>Six monthly compliance statement to EC is being sent to the regional office of MoEF, Vadodara zonal office of CPCB, and MPCB.</p> <p>The compliance report is also posted on the BPCL corporate website.</p>
xi.	The Environmental statement for each financial year ending 31 st March in form V as is mandated to be submitted by the project proponent 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 conditions and shall also be sent to the respective Regional Offices of the MoEF by e-mail	<p>Duly filled form V (Environment Statement) being submitted to MPCB for the financial year before the 30th of September.</p> <p>Please Refer GTU compliance report as on 31.12.2020 for further details.</p>
xviii.	The project proponent shall inform the public that the project has been accorded environmental clearance by the ministry and copies of the clearance are available with the SPCB and may also be seen at website of Ministry of Environment and Forests at http://envfor.nic.in . This shall be advertised within seven days from the date of issue of clearance letter,	Subsequent to obtaining Env. Clearance from MoEF for CDU/VDU, dt 12 th June-13, the same was published in two newspapers (Indian Express in English & Maharashtra Times Marathi) on 18 th of June 2013.

	at least in two local newspapers that are widely circulated in the region of which one shall be in vernacular language of the locality concerned, and a copy of same shall be forwarded to the Regional Office.	
xix.	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 commencing the land development work.	Noted.

Compliance Status Report for Installation of Continuous Catalytic Regeneration Reformer (CCR 1.2 MMT) at BPCL Mumbai Refinery

Reference to Letter no. F. No. J-11011/180/2008-IA II(I), DATED 28/4/2008 and J-11011/582/2011-1A II (I) dated 7th June 2013.

The Ministry of Environment and Forests accorded environmental clearance for installation of new Continuous Catalytic Regeneration Reformer (CCR 1.2 MMTPA) within the premises of BPCL Mumbai Refinery. As per the stipulations given in the Environmental Clearance, the detailed compliance status is given below:

Status of the CCR Project

- CCR Unit commissioned on 04.03.2014 and on grade product diverted to storage on 08.03.2014. Project completed.

Sr. No.	SPECIFIC CONDITIONS	STATUS as on 01.12.2020
i.	Compliance to all the Environmental conditions stipulated in the environmental clearance letter no J-11011/180/2008-1A II (I) dated 28 th April 2008 shall be satisfactorily implemented and compliance reports submitted to the Ministry's Regional office at Bhopal	Compliance reports sent to MoEF & CC western Regional office. Project has been commissioned on 4 th March-2014.
ii.	M/s BPCL shall comply with new standards/norms for Oil refinery Industry notified under Environment (Protection) Rules 1986 vide GSR 186 (E) dated 18 th March 2008	Please Refer GTU compliance report as on 30.06.2020.
iii.	Continuous on-line stack monitoring for SO ₂ , NO _x and CO of all the stacks shall be carried out. Low NO _x burners shall be installed.	Complied Analyzers have been installed at CCR & NHT stacks for continuous on-line monitoring of SO ₂ and NO _x . Low NO _x burners have been installed at CCR & NHT furnaces.

		Please Refer GTU compliance report as on 31.12.2020 for further details.
iv.	The process emissions {SO ₂ , NO _x , HC (Methane & Non methane)}, VOC's and benzene from various units shall conform to the standards prescribed under Environment (Protection) Act. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency of the pollution control device has been achieved.	<p>The following features at CCR ensure process emissions to confirm to the standards prescribed under EPA</p> <ul style="list-style-type: none"> • Amine treated fuel gas and RLNG is being fired in the furnaces • Air preheater provided for improving efficiency • Provision of stack dampers, on-line indication for stack temperature, excess O₂ • Stacks of adequate height CCR (88.5m), NHT (75 m). <p>At BPCL refinery, Ambient Air Quality monitoring is carried out on regular basis which includes parameters SO_x, NO_x, CO, O₃, NH₃, PM-10. PM-2.5, Hydrocarbon. Also analyzers have been installed at each AMS for transmitting data to MPCB/ CPCB server.</p> <p>Ambient air quality as monitored at BPCL is attached as Annexure-7.</p>
v.	Leak detection and Repair program shall be prepared and implemented to control HC/VOC emissions. Focus shall be given to prevent fugitive emissions for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of storage tank yards etc must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.	<p>LDAR program is already being followed in the existing refinery. Pumps, Valves, flanges, pump seals, equipments, etc are being regularly monitored for identifying and rectifying sources of VOC emissions.</p> <p>HC leak detectors have been provided in the plant area at strategic locations.</p> <p>LDAR program is carried out on quarterly basis in Aromatics complex and Product Dispatches (TDU). The frequency of monitoring has been revised as per GSR 186 (E) rule for all process plants.</p> <p>Please refer Annexure-11 for typical LDAR monitoring report.</p>
vi.	SO ₂ emissions after expansion from the plant shall not exceed 12 TPD. Sulfur recovery units shall be installed for control of H ₂ S emissions. The overall	<p>Fuel gas is being used as fuel in the CCR & NHT furnaces.</p> <p>Efficiency of existing Sulfur Recovery Units (SRU) is 99%. In Nov-2017, Tail</p>

	sulfur recovery efficiency of Sulfur recovery units with tail gas treating shall not be less than 99.9%.	<p>Gas Treatment Unit (TGTU) has been commissioned which has improved sulfur recovery efficiency to 99.99 %.</p> <p>As cited in Environment Clearance received for CDU-4 project (commissioned in Dec-2015), SO₂ emissions from refinery are well below 10.44 MT/D.</p> <p>Please refer Annexure- 12 for further details.</p>
vii.	As proposed, record of sulfur balance shall be maintained at the refinery as a part of the environmental data on regular basis. The basic component of sulfur balance include sulfur input through feed (sulfur content in the crude oil), sulfur output from refinery through products, by products, atmospheric emissions etc.	Typical Sulfur balance from the existing refinery attached as Annexure-12 .
viii.	Ambient Air quality monitoring stations {PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , H ₂ S, mercaptan, non methane-HC and benzene shall be set up in the complex in consultation with Maharashtra Pollution Control Board based on occurrence of maximum ground level concentration and down wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs.	<p>Ambient Air Quality Monitoring Stations exist in the refinery for on-line monitoring concentration of PM-2.5, SO₂, NO_x, H₂S, CO, Methanic & non methanic hydrocarbons, ozone, ammonia, benzene and meteorological parameters of Wind speed, wind direction, temperature, & Relative humidity at AMS.</p> <p>Please Refer GTU compliance report as on 31.12.2020 for further details.</p>
ix.	Ambient air quality data shall be collected as per N AAQES standards notified by the ministry on 16 th November 2009 and trend analysis wrt past monitoring results shall be also carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.	Ambient air quality data is being collected at three locations in the existing refinery. The quality is conforming to the standard as specified in the NAAQS. Ambient air Quality report at BPCL is attached as Annexure-7 .
x.	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. Besides acoustic enclosure/silencer shall be installed where ever noise pollution exceeds the limit.	<p>Noted</p> <p>Power is being provided to CCR unit from Captive Power Plant existing at the refinery or is being imported from Tata Electric Company.</p> <p>Additional DG set is not required for CCR unit.</p>

xi.	Total raw water requirement for the proposed project shall not exceed 4995 m3/day and prior permission shall be taken from competent authority. Industrial effluent generation from CCR unit shall not exceed 129 m3/day. Industrial effluent shall be treated in effluent treatment plant. Treated effluent shall be recycled /re-used in the existing cooling tower. Domestic sewage shall be treated in sewage treatment plant. (STP)	<p>Complied.</p> <p>Treated effluent is fully recycled /re-used in the existing process cooling towers.</p> <p>New Sewage Treatment plant with a capacity of 250 CMD has been commissioned in the month of Dec'2014.</p> <p>Treated water at RCF STP unit is received in BPCL process cooling Tower which has reduced fresh make up water.</p> <p>Please refer Annexure-1 for Water Balance.</p>
xii.	Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.	<p>Complied.</p> <p>There are 3 oil catchers inside BPCL premises equipped with all facilities for removal of oil.</p>
xiii.	Oily sludge shall be disposed off into Coker. Annual oily sludge generation and disposal data shall be submitted to the ministry's Regional office and CPCB.	<p>Not Applicable</p> <p>There is no coker installed at BPCL Mumbai Refinery.</p> <p>There is no oily sludge generation from CCR complex.</p> <p>Other Oily sludge generated in the refinery is subject to mechanical/chemical treatments for oil recovery and the residual sludge is bio-remediated to reduce oil content below 0.5 wt% before it can be disposed off as per Hazardous waste Rule 2016.</p>
xiv.	The company should strictly comply with the rules and guidelines under manufacture, storage and import of hazardous chemicals Rules 1989 as amended in October 1994 and January 2000. Hazardous waste should be disposed off as per Hazardous waste (Management, Handling and Trans-boundary movement) rules 2008 and amended time to time.	<p>Complied</p> <p>Spent catalyst will be generated from various catalyst beds during turnarounds.</p>
xv.	The membership of common TSDF should be obtained for the disposal of hazardous waste. Copy of authorization or membership of TSDF should be submitted to Ministry's regional office at Bhopal. Chemical/inorganic sludge shall be sent to	<p>BPCL MR has membership with M/s Mumbai Waste Management Ltd. Membership certificate is attached as Annexure-2.</p>

	Treatment storage disposal facility (TSDF) for hazardous waste. Spent catalyst shall be sent to authorized recyclers/re-processors.	
xvi.	Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.	<p>Closed sampling system has been provided to avoid spillage/leakage of oil.</p> <p>Vacuum operated trucks are available to take care of any spillage. Close Blow down system is operational for close draining of hydrocarbons during maintenance activity. Oil catchers are provided for removing oil from water going out of refinery.</p>
xvii.	The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP)	<p>Complied.</p> <p>Please refer Annexure-13.</p>
xviii.	To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to minimum and adequate separation distance between potential ignition sources and flammable materials shall be in place.	Latest standards applicable (OISD, API, ASTM, IBR) have been incorporated at the design stage itself to ensure safety and mechanical integrity of the unit.
xix.	Green belt shall be developed at least in 33% of the plant area in and around the plant premises to mitigate the effect of fugitive emissions all around the plant as per the CPCB guidelines.	Please refer GTU compliance report as on 30.06.2020.
xx.	All the recommendations mentioned in the rapid risk assessment report, disaster management plan, and safety guidelines shall be implemented.	<p>Quantitative Risk Assessment for BPCL MR considering CCR and CDU/VDU-4 project was carried out by M/s EIL.</p> <p>All the recommendations for mitigating risks are being implemented.</p> <p>As per ER DMP Act, new Emergency Response Disaster Management Plan prepared, and same has been approved and certified by DMI (Disaster Management Institute) Bhopal in June-13.</p>
xxi.	All the issues raised and commitment made during public hearing/consultation meeting held on the 25 th September 2012 shall be satisfactorily implemented. Accordingly, provision of budget to be kept.	<p>The following commitments made during public hearing are compiled:</p> <ul style="list-style-type: none"> • Continue the existing mock drills • Ensure adherence to on-site and offsite DMP

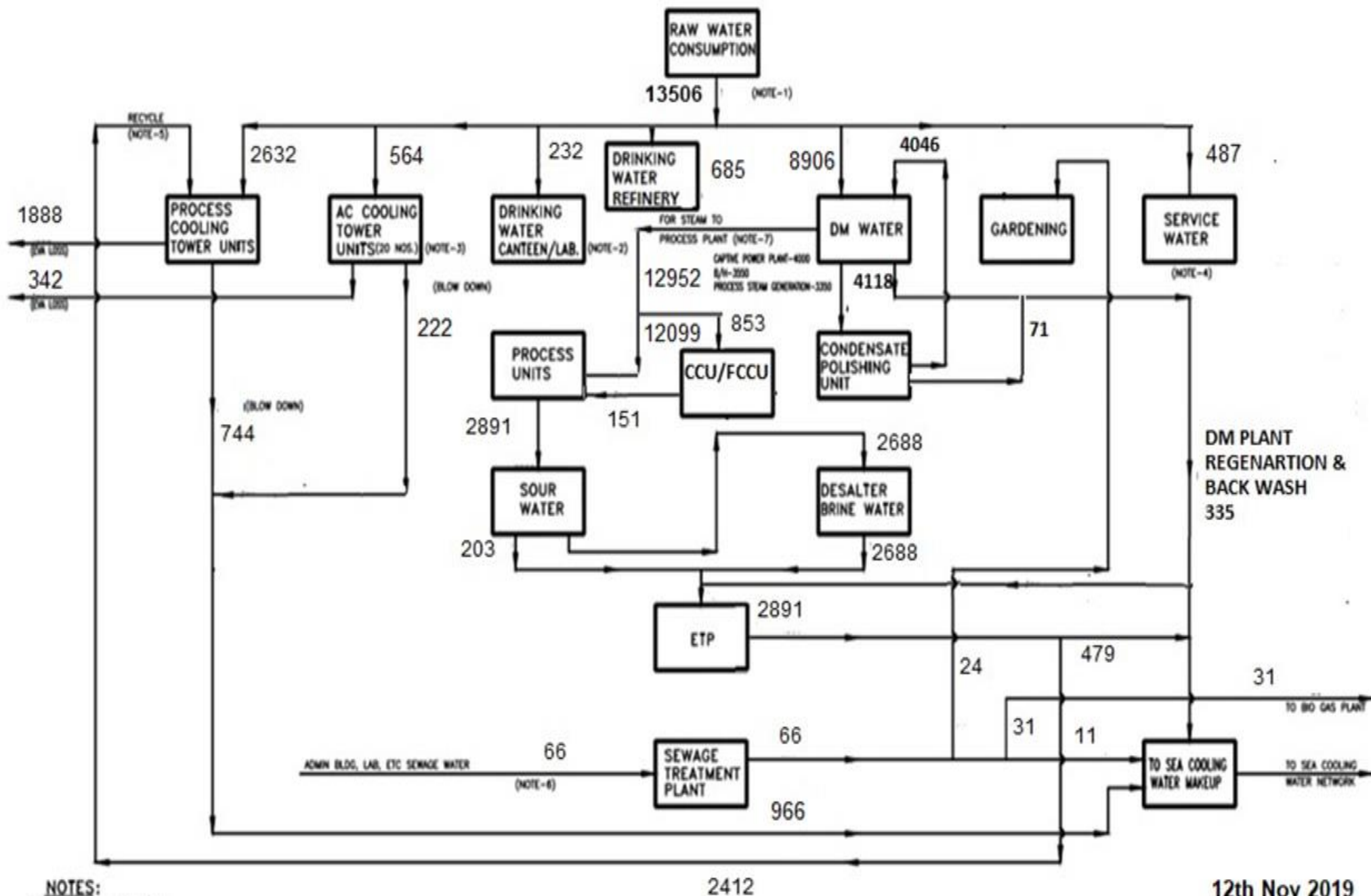
		<ul style="list-style-type: none"> • Use of clean fuel to ensure no impact on SO₂ emission • Installation of Low NO_x burners
xxii.	Company shall adopt Corporate Environment policy as per ministry's O.M. No J-11013/41/2006-IA II(I) dated 26 th April 2011 and implemented.	BPCL MR is an ISO 14001 certified company. Quality, Environment, Occupational Health & Safety policy as per Integrated Management System.
xxiii.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Housing facilities was provided by individual contractors for their workmen in the vicinity of Mumbai Refinery site. The basic facilities such as mobile toilets, clean drinking water, and emergency medical facility was also provided during construction at CCR site and these facilities are being provided during all projects.

SR. NO.	GENERAL CONDITIONS	STATUS as on 01.12.2020
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.	Complied
ii.	No further expansion or modifications in the project shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviation or alterations in the project proposed 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
iii.	The project authorities must strictly comply with the rules & regulation under manufacture. Storage and import of Hazardous chemical Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate, etc. must be obtained, wherever applicable.	<p>Complied</p> <p>OISD check listing of facilities prior to commissioning was done in the month of May-13.</p> <p>Project was commissioned on 4th Mar-2014.</p>
iv.	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, enclosure etc, on all sources of noise generation. The ambient noise levels should conform	Noise levels conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules. Monitoring is being carried out in the

	the standards prescribed under Environmental (Protection) Act, 1986 Rules and 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	periphery of the refinery including process plants.
v.	A separate environment management cell equipped with full-fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	BPCL refinery already has an Environment section to carry out environmental management and monitoring functions. The Refinery also has a full-fledged NABL approved Laboratory
vi.	Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall be used to implement the conditions stipulated Ministry of Environment and Forests as well as state government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	Please refer Annexure-8 .
vii.	The Regional Office of this Ministry / Central Pollution control Board / State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly.	Complied. Six monthly compliance report is submitted regularly for the Environmental Clearances granted to BPCL MR to western region of MOEF office Nagpur, Vadodara zonal office of CPCB, and MPCB office.
viii.	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila parishad/Municipal Corporation, Urban local body and the local NGO if any, from whom suggestions, representations, if any were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	Complied. Please Refer GTU compliance report as on 31.12.2020 for further details.
ix.	The project proponent shall upload the status of compliance of the stipulated environmental conditions including the results of monitored data on their 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 SPCB. The criteria pollutant levels, namely PM10, PM2.5, SO2, NOx, HC (Methane & non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Six monthly compliance statement of EC is sent to the regional office of MoEF, Vadodara zonal office of CPCB, and MPCB office. The compliance report is also posted on the BPCL corporate website. Environmental display board has been provided at Main gate of the refinery which continuously displays ambient air quality monitored at the north west corner of the refinery.

x.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional office of MoEF, the respective zonal office of CPCB, and the SPCB. The Regional office of this ministry, /CPCB/SPCB shall monitor the stipulated conditions.	Complied. The six monthly compliance statement to EC is being sent to the regional office of MoEF, Vadodara zonal office of CPCB, and MPCB. The compliance report is also posted on the BPCL corporate website.
xi.	The Environmental statement for each financial year ending 31 st March in form V as is mandated to be submitted by the project proponent 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 conditions and shall also be sent to the respective Regional Offices of the MoEF by e-mail.	Complied. Duly filled form V (Environment Statement) for every financial year is submitted to MPCB office before 30 th Sept of every assessment year. Please Refer GTU compliance report as on 31.12.2020 for further details.
xii.	The project proponent shall inform the public that the project has been accorded environmental clearance by the ministry and copies of the clearance are available with the SPCB and may also be seen at website of Ministry of Environment and Forests at http://envfor.nic.in . This shall be advertised within seven days from the date of issue of clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in vernacular language of the locality concerned, and a copy of same shall be forwarded to the Regional Office.	Subsequent to obtaining Env. Clearance from MoEF for CCR (1.2 MMTPA), the same was published in two newspapers (Indian Express in English & Maharashtra Times Marathi) on 13 th of June 2013.
xiii.	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 commencing the land development work.	Noted.

RAW WATER BALANCE FOR BPCL MUMBAI REFINERY



NOTES:

1. ALL UNITS ARE IN M³/DAY.
2. DRINKING WATER IS USED FOR DRINKING PURPOSE, IN CANTEEN FOR WASHING, FOOD PREPARATION & LABORATORY.
3. COOLING TOWER A/C CONSISTS OF 20 NOS. OF PROCESS UNITS AIR CONDITIONING / ELECTRICAL SWITCH HOUSE, ALL OVER REFINERY & ADMINISTRATION BLDG.
4. SERVICE WATER IS USED IN PROCESS UNIT FOR CLEANING OF AIR FINE COOLERS, HYDROTESTING OF HEAT EXCHANGERS POST CLEANING AND FLUSHING OF PROCESS PIPELINE.
5. BASED ON INTERNAL OPTIMISATION BY MAXIMUM RAW WATER RECYCLE AND MINIMUM STEAM CONSUMPTION.
6. BASED ON ADMIN BUILDING, MEDICAL CENTRE, LABORATORY, FIRE STATION & CANTEEN SEWAGE WATER QUANTITY.
7. MAJOR STEAM CONSUMPTION IN STEAM EJECTORS, STEAM REBOILERS, STEAM TO HEATING COILS, STEAM TRACING ETC.

2412

12th Nov 2019

ABBREVIATIONS:

ETP - EFFLUENT TREATMENT PLANT
 CPP - CAPTIVE POWER PLANT
 B/H - BOILER HOUSE
 CT - COOLING TOWER
 A/C - AIR CONDITIONING



भारत पेट्रोलेियम कॉर्पोरेशन लिमिटेड
 Bharat Petroleum Corporation Ltd.

RAW WATER BALANCE FOR BPCL
 MUMBAI REFINERY



Mumbai Waste Management Ltd.

Plot No. P-32 & Part, MIDC Talaja, Tal. Panvel,
Dist. Raigad, Maharashtra 410 208. India
Phone: 8422877163 / 65 / 7710082601
Phone: 7304992789 / 90 / 91 / 92 & 93
Email: mbdmwml@ramky.com
www.mumbaiwastemanagement.com
CIN: U90001TG2001PLC037829

24th March 2020

M/s. Bharat Petroleum Corporation Ltd.- Mumbai Refinery

8931/TA/111

Chembur, Mahul, Mumbai -400 074

Tel no. 022-25533888 /182

Kind Attn: Mr. Ajay Pagare

Membership No. : MWML- HzW - MUM – 3247

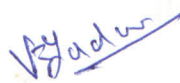
Dear Sir,

We are pleased to extend your Membership Registration up to **31st March' 2021.**

Kindly complete all the pending formalities to enable waste collection logistics within this period.

Please do contact us for any further details.

Thanks & Best Regards,
for **Mumbai Waste Management Ltd.**


Kalyan Deshpande
Marketing Head

An ISO 9001:2015, ISO 14001 : 2015 & OHSAS 18001 : 2007 Certified Company



Towards sustainable growth

bsi.

Mumbai Waste Management Limited

Certificate

M/S. Bharat Petroleum Corporation Ltd. Mumbai - Refinery

is a registered member of

CHW-TSDF at MIDC, Talaja

for safe & secure disposal of
Hazardous Waste.

Membership no.: MWML - HZW - MUM - 3247

This Certificate is valid up to

March, 31st, 2020

Somnath Malgar
Head - MWML

Dinkar Adhavi
Director



Maharashtra Pollution Control Board

महाराष्ट्र प्रदूषण नियंत्रण मंडळ

Form 4

See rules 6(5),13(8),16(6) and 20(2) of Hazardous and other wastes 2016

FORM FOR FILING ANNUAL RETURNS

[To be submitted to state pollution control board/pollution control committee by 30th June of every year for the preceeding period April to march]

Unique Application Number:

MPCB-HW_ANNUAL_RETURN-0000014004

Submitted On:

18-06-2020

Submitted for Year:

April 2019 to March 2020

1. Name of the generator/operator of facility

SHRI. P V RAVITEJ, EXECUTIVE DIRECTOR (I/C), MUMBAI REFINERY

Address of the unit/facility

BHARAT PETROLEUM CORPORATION LTD.,
MUMBAI REFINERY, MAHUL, CHEMBUR,
MUMBAI-400074

1b. Authorization Number

Format 1.0/BO/CAC-Cell/ UAN No. 0000071817/ 5TH CAC/ 1909000323 Sep 13, 2019

Date of issue

Date of validity of consent

Aug 31,
2021

2. Name of the authorised person

Mr. N S Kandalkar, D.G.M. ENERGY & ENVIRONMENT

Full address of authorised person

TECHNOLOGY DEPT. , BHARAT PETROLEUM
CORPORATION LTD., MUMBAI REFINERY, MAHUL,
CHEMBUR, MUMBAI-400074

Telephone

02225533173

Fax

NA

Email

kandalkarns@bharatpetroleum.in

3. Production during the year (product wise), wherever applicable

Product Type *	Product Name *	Consented Quantity	Actual Quantity	UOM
Oil Refinery (Mineral Oil or Petro Refineries)	LPG & POLY PROPYLENE FEED STOCK	1764.00	1512	MT/Day
Oil Refinery (Mineral Oil or Petro Refineries)	BENZENE & TOLUENE	350.00	143	MT/Day
Oil Refinery (Mineral Oil or Petro Refineries)	SBP, HEXANE, MS, MTBE, NAPHTHA	8269.00	7484	MT/Day
Oil Refinery (Mineral Oil or Petro Refineries)	SKO, MTO, ATF	5217.00	2358	MT/Day
Oil Refinery (Mineral Oil or Petro Refineries)	HSD, LDO	15723.00	20366	MT/Day
Oil Refinery (Mineral Oil or Petro Refineries)	FO, LSHS, BITUMEN, SULFUR	6140.00	4528	MT/Day
Oil Refinery (Mineral Oil or Petro Refineries)	LUBE OIL BASE STOCK (LOBS)	680.00	849	MT/Day
Oil Refinery (Mineral Oil or Petro Refineries)	HYDROTREATED GASOLINE	2692.80	2446	MT/Day

PART A: To be filled by hazardous waste generators

1. Total Quantity of waste generated category wise

Type of hazardous waste	Waste Name	Consented Quantity	Quantity	UOM
4.2 Spent catalyst	SPENT CLAY	2538.75	9.49	MTA
4.2 Spent catalyst	ADSORBENT CHLORIDE		MTA	

4.2 Spent catalyst	SPENT CARBON		MTA	
4.2 Spent catalyst	SPENT RESIN		MTA	
4.2 Spent catalyst			MTA	
4.2 Spent catalyst			MTA	
4.2 Spent catalyst	CCU SPENT CATALYST	2538.75	57.94	MTA
4.2 Spent catalyst	HCU SPENT CATALYST	2538.75	30.04	MTA

2. Quantity dispatched category wise.

Type of Waste	Quantity of waste	UOM	Dispatched to	Facility Name
4.2 Spent catalyst	195.62	MTA	Disposal Facility	MUMBAI WASTE MANAGEMENT LTD. PLOT NO P-32, MIDC TALOJA, PANVEL. RAIGAD. NAVI MUMBAI-410208
4.2 Spent catalyst	92.36	MTA	Disposal Facility	MUMBAI WASTE MANAGEMENT LTD. PLOT NO P-32, MIDC TALOJA, PANVEL. RAIGAD. NAVI MUMBAI-410208
4.2 Spent catalyst	16.95	MTA	Disposal Facility	MUMBAI WASTE MANAGEMENT LTD. PLOT NO P-32, MIDC TALOJA, PANVEL. RAIGAD. NAVI MUMBAI-410208
4.2 Spent catalyst	42.36	MTA	Disposal Facility	MUMBAI WASTE MANAGEMENT LTD. PLOT NO P-32, MIDC TALOJA, PANVEL. RAIGAD. NAVI MUMBAI-410208
4.2 Spent catalyst	39.63	MTA	Disposal Facility	MUMBAI WASTE MANAGEMENT LTD. PLOT NO P-32, MIDC TALOJA, PANVEL. RAIGAD. NAVI MUMBAI-410208
4.2 Spent catalyst	9.49	MTA	Disposal Facility	MUMBAI WASTE MANAGEMENT LTD. PLOT NO P-32, MIDC TALOJA, PANVEL. RAIGAD. NAVI MUMBAI-410208
4.2 Spent catalyst	57.94	MTA	Disposal Facility	MUMBAI WASTE MANAGEMENT LTD. PLOT NO P-32, MIDC TALOJA, PANVEL. RAIGAD. NAVI MUMBAI-410208
4.2 Spent catalyst	30.04	MTA	Co-processors or pre-processor	REFRACAST METALLURGICALS

3. Quantity Utilised in-house,If any

Type of Waste	Name of Waste	Quantity of Waste	UOM
	NA	0	MTA

4. Quantity in storage at the end of the year

Type of Waste	Name of Waste	Quantity of Waste	UOM
	NIL	0	MTA

PART B: To be filled bt Treatment,storage, and disposal facility operators

1.Total Quantity received	UOM	State Name
NA	KL/Anum	Maharashtra
2. Quantity in stock at the beginning of the year	UOM	
NA	KL/Anum	
3. Quantity treated	UOM	
NA	KL/Anum	
4. Quantity disposed in landfills as such and after treatment		
Direct landfilling	UOM	
NA	KL/Anum	

Landfill after treatment	UOM
NA	KL/Anum
5. Quantity incinerated (if applicable)	UOM
NA	KL/Anum
6. Quantiry processed other than specified above	UOM
NA	KL/Anum
7. Quantity in storage at the end of the year.	UOM
NA	KL/Anum

PART C: To be filled by recyclers or co-processors or other users

1. Quantity of waste received during the year

Waste Name/Category	Country Name	State Name	Quantity of waste received from domestic sources	Quantity of waste imported(If any)	Units
NA	India	Maharashtra	NA	NA	KL/Anum

2. Quantity in stock at the beginning of the year

Waste Name/Category	Quantity	UOM
NA	NA	KL/Anum

3. Quantity of waste recycled or co-procesed or used

Name of Waste	Type of Waste	Quantity	UOM
NA	NA	NA	KL/Anum

4. Quantity of products dispatched (wherever applicable)

Name of product	Quantity	UOM
NA	NA	KL/Anum

5. Total quantity of waste generated

Waste name/category	quantity	UOM
NA	NA	KL/Anum

6. Total quantity of waste disposed

Waste name/category	quantity	UOM
NA	NA	KL/Anum

7. Total quantity of waste re-exported (If Applicable)

Waste name/category	quantity	UOM
NA	NA	KL/Anum

8. Quantity in storage at the end of the year

Waste name/category	quantity	UOM
NA	NA	KL/Anum

Personal Details

Place	Date	Designation
MUMBAI	2020-06-18	D.G.M. ENERGY & ENVIRONMENT



Mumbai Agricultural Produce¹²¹ Market Committee, Mumbai
(ESTD. 1977)

HEAD OFFICE : Central Building, Sector-18, Vashi, Navi Mumbai - 400 703
BRANCH OFFICE : Shri Chhatrapati Shivaji Maharaj Mandai,
3rd Floor, Palton, Mumbai - 400 001.

TELEPHONES :
HEAD. OFF. : 2788 9416
EPABX : 2788 8414
FAX : 91-22-27889507
BRANCH OFF. : 2261 6624
FAX : 2261 4888
E-mail : mapmc@bom3.vsnl.net.in

NO.APMC/ENGG.DEPT./ 501 /14

Date : 4/12/14

To,


BPCL Mumbai Refinery,
Mahul, Chembur,
Mumbai 400 074.

Sub : Certification Letter.

Ref : Your request letter No.TA/PC/Gen-II, dtd. 27.11.2014.

Sir,

With reference to the above subject, this is to certify that BPCL Mumbai Refinery (Environment Department) has planted a total No. of 3050 tree saplings at Plot No.8 and Plot no.10 area of APMC, Sector-19, Vashi, Navi Mumbai. The plantation is covering an area of approximately 4 acres. The plantation was carried out in the monsoon season of 2014. The saplings planted are in healthy condition and have gained firm roots as on date, 30th November, 2014.


Addl. Commissioner & Secretary
Mumbai APMC, Mumbai.



Mumbai Waste Management Ltd.

Plot No. P-32, MIDC Taloja, Dist. Raigad,
Tal. Panvel Maharashtra 410 208. India
Tel.: 022-2740 1468 to 71 & 2741 1473
Fax: 022-2740 1474
Email: mbdmwm@gmail.com
www.mumbaiwastemanagement.com

Date: 26/10/2016 To,

To,

Bharat Petroleum Corporation Limited

8931/TA/111, Mahul, Chembur

Mumbai -400074

Sub: Tree Plantation at Mumbai Waste Management Ltd.

Kind Attn: Mr. Joshi

Dear Sir,


As you are aware that your esteemed firm had allotted 3000 trees for plantation at MWML Premises on the occasion of World Environment Day 2016.

MWML is grateful to you for this warm gesture and we would like to inform you that these trees have been planted in our premises at Taloja.

For your reference we are enclosing few photographs with this letter.

Thank You

Sincerely,



26/10/16

Authorized Signatory

Mumbai Waste Management Ltd.

Certified by



bsi.

ISO 9001:2008
C. No. FS 570487

ISO 14001:2004
C. No. EMS 570497

OHSAS 18001:2007
C. No. OHS 570500

Corporate Office:

Ramky Enviro Engineers Ltd.

Ramky Grandiose Floor, 12, 13, Ramky Tower Complex,
Gachibowli Hyderabad - 500 032.

Tel.: 040-2301 5000 (40 Lines) • Fax: 040-2330 2353 • Website: www.ramky.com



ठाणे महानगरपालिका, ठाणे
महानगरपालिका भवन, डॉ. अल्मेडा रोड, चंदनवाडी, पांचपाखाडी, ठाणे ४००६०२
THE MUNICIPAL CORPORATION OF THE CITY OF THANE

संदर्भ क्र : ठामपा/वृप्रा/वृअ - ७२०

दि. २३/६/२०१७

चला एकत्र येऊया : ठाणे हिरवेगार करूया !

प्रति,
मे. भारत पेट्रोलियम कॉर्पोरेशन लि.,
भारत भवन, करीमभाय रोड,
बेलाड इस्टेट, मुंबई. ४००००१



विषय: ५ लक्ष वृक्षलागवड योजना ...

संदर्भ : १. आपले दि. २५/०५/२०१७ रोजीचे पत्र.

२. ठामपा/वृप्रा/वृअ-५२० दि. १३/०६/२०१७

३. आपले आ.क्र. २२२९ दि. २३/०६/२०१७ रोजीचे पत्र.

महोदय,


संदर्भ क्र. २ च्या पत्रान्वये आपणास ५ लक्ष वृक्षलागवड योजनेचा शुभारंभ जागतिक पर्यावरण दिनी ५ जून २०१७ रोजी करण्यात आला असून आपणामार्फत आपल्या स्वःखर्चाने या योजनेमध्ये ५००० वृक्षांचा पुरवठा करण्याबाबत कळविले आहे.

संदर्भ क्र. ३ च्या पत्रान्वये आपणामार्फत वृक्षांचे रोपण करण्याबाबत व त्यांच्या दैनंदिन निगा व देखभालीबाबत विचारणा करण्यात आलेली आहे.

सदर अनुषंगाने आपणास कळविण्यात येते की, आपणामार्फत पुरवठा करण्यात येणाऱ्या वृक्षांचे रोपण व त्यांची दैनंदिन निगा व देखभाल ठाणे महानगरपालिकेमार्फत करण्यात येईल.

वरीलप्रमाणे रोपे उपलब्ध करून देण्याबाबत उलट टपाली इकडे कळविण्यात यावे व रोपे पुरवठा बाबत प्रगती अहवाल gs@thanecity.gov.in या ई-मेलवर पाठविणेत यावा.

आपण पर्यावरण रक्षणासाठी ठाणे महानगरपालिकेस करीत असलेल्या सहकार्याबद्दल आभार !


(केदार पाटील)

वृक्षअधिकारी
ठाणे महानगरपालिका, ठाणे.

प्रत : मा. अति- आयुक्त सो यांचे माहितीसाठी सविनय सादर ...

PROPOSED "ESC" PROJECT SPENDS: 2017-18 TO 2021-22

I. 2017/18: Works to commence and implemented over 18 months.		TOTAL
1. Cleaning & Beautification of Water body – RCF Pond near Ashish Theatre.		Rs. 1.50 Crores
(Likely spend till March 2018: Rs. 0.15 Crore).		
a. Architect, Tendering, Cost Estimation & Certification Fees: Rs. 0.10 Crore		
b. Erecting Boundary Wall/ painting/ relaying of side walk (1.5 km length approx.)		
c. Internal beautification/ Lighting/ Landscaping		
d. Entrance Gate/ CCTV/ Water Fountain/ painting etc.		
2. MR Main gate to North Gate Boundary Wall/ Area social redesigning.		Rs. 4.35 Crores
(Likely spend till March 2018: Rs. 0.15 Crore).		
a. Architect, Tendering, Cost Estimation & Certification Fees: Rs.0.10 Crore.		
b. Traffic Island outside Main gate - High Mast LED Lighting/ facelift		
c. Barricading of Side walk (1 km approx..)		
d. Smoothening/ Laying Walking track/ Lighting/ CCTV at Side walk		
e. Painting/ Cladding/ Branding on Boundary Wall		
3. 4 RO Drinking Water System/ Plant at Mahul, Shankardeol, Vashinaka.		Rs. 2.00 Crores
(Likely spend till March 2018: Rs. 0.20 Crore).		
Estimates of Vendors sought – approx.. Rs.0.25 cr. each plant and includes:		
a. Borewell/ Plant - Erection/ Installation/ Commissioning		
b. Maintenance for 3 years		
4. Waste Disposal System implementation at Mahul/ Ambapada		Rs. 0.65 Crore
(Likely spend till March 2018: Rs. 0. 50 Crore)		
1 year Operational / Maintenance expenditure: Rs.0.15 Crore.		
(Total likely spend on above 4 Projects as detailed) - Rs. 1.00 Crore.		
Sub Total:		Rs. 8.50 Crores
II. 2018/19: Works to commence and implemented in 12 months		
1. Building, Landscaping of Strategic Traffic junctions near MR/ Chembur.		Rs. 2.10 Crores
2. Completion & Expenditure on PY Works during the year.		Rs. 7.50 Crores
Sub Total:		Rs. 9.60 Crores

III. 2019/20: Works to commence and implemented in 12 months

1. Desilting/ Upgradation & Beautification of Mahul - Jetty/ Nallas	Rs. 2.50 Crores
2. Providing Transit camp/ Housing for MR Contract labor/ Apprentices.	Rs. 2.50 Crores
3. Preliminary work/ Approvals for setting up BPCL-MR School/ Hospital.	Rs. 1.00 Crore
4. Providing Solar Street Lights at Mahul/ MR surroundings	Rs. 1.00 Crore
5. Setting up of CT Scan/ Physiotherapy/ Dialysis Centre at Mahulgaon.	Rs. 3.50 Crores
Sub Total:	Rs. 10.50 Crores

IV. 2020/21-2021/22: 24 mths. Gestation for Estimates/ Approvals & Commissioning

1. Setting up Recreational/ Sports Academy at Ambapada (Detailed Project feasibility incl. land lease cost / Building Plan/ Cost of Construction to be made prior to execution).	Rs. 8.30 Crores
2. Setting up English Medium High School for locals by MR Foundation.	Rs. 12.27 Crores
3. Setting up BPCL Charitable Hospital for locals by MR Foundation.	Rs. 12.26 Crores
Sub Total:	Rs. 32.83 Crores

Total ESC Estimated spend over five years (2017 – 2022) I+II+III+IV**Rs. 53.93 Crores**

A] Ambient Air monitoring stations:• **AMS-1:**

Parameter	Unit	Jan-20	Feb-20	Mar-20
PM ₁₀	(µg/m ³)	87.8	87.4	75.5
PM _{2.5}	(µg/m ³)	44.0	44.8	38.0
SO ₂	(µg/m ³)	11.8	12.2	12.0
NO ₂	(µg/m ³)	22.9	26.0	25.6
Lead	(µg/m ³)	0.10	0.09	0.10
CO	(mg/m ³)	0.30	0.30	0.27
NH ₃	(µg/m ³)	19.5	19.2	20.0
Ni	(ng/m ³)	<1.0	<1.0	<1.0
As	(ng/m ³)	<1.0	<1.0	< 1.0
O ₃	(µg/m ³)	3.0	3.0	3.2
Benzene	(µg/m ³)	4.14	4.68	4.29
Benzo (a) pyrene	(ng/m ³)	<0.5	<0.5	<0.5
HC	(ppm)	1.85	1.82	1.83

*Due to the situation of COVID-19, Ambient Air monitoring through third party could not be done in Apr-20, May-20 & Jun-20.

• **AMS-2:**

Parameter	Unit	Jan-20	Feb-20	Mar-20
PM ₁₀	(µg/m ³)	80.3	90.8	79.5
PM _{2.5}	(µg/m ³)	48.2	51.9	34.9
SO ₂	(µg/m ³)	12.4	12.7	12.4
NO ₂	(µg/m ³)	23.7	27.7	27.2
Lead	(µg/m ³)	0.12	0.07	0.12
CO	(mg/m ³)	0.37	0.40	0.41
NH ₃	(µg/m ³)	19.1	21.1	21.9
Ni	(ng/m ³)	<1.0	<1.0	<1.0
As	(ng/m ³)	< 1.0	< 1.0	< 1.0
O ₃	(µg/m ³)	2.9	3.4	2.9
Benzene	(µg/m ³)	3.73	3.83	4.30
Benzo (a) pyrene	(ng/m ³)	<0.5	<0.5	<0.5
HC	(ppm)	1.73	1.84	1.74

*Due to the situation of COVID-19, Ambient Air monitoring through third party could not be done in Apr-20, May-20 & Jun-20.

• **AMS-3:**

Parameter	Unit	Jan-20	Feb-20	Mar-20
-----------	------	--------	--------	--------

PM ₁₀	(µg/m ³)	92.2	92.3	74.9
PM _{2.5}	(µg/m ³)	55.8	55.4	39.3
SO ₂	(µg/m ³)	12.5	14.2	14.9
NO ₂	(µg/m ³)	26.3	31.1	30.4
Lead	(µg/m ³)	0.09	0.13	0.06
CO	(mg/m ³)	0.38	0.34	0.35
NH ₃	(µg/m ³)	21.9	22.0	23.1
Ni	(ng/m ³)	<1.0	<1.0	<1.0
As	(ng/m ³)	< 1.0	< 1.0	< 1.0
O ₃	(µg/m ³)	3.1	2.5	2.6
Benzene	(µg/m ³)	4.37	3.93	3.98
Benzo (a) pyrene	(ng/m ³)	<0.5	<0.5	<0.5
HC	(ppm)	1.76	1.71	1.93

*Due to the situation of COVID-19, Ambient Air monitoring through third party could not be done in Apr-20, May-20 & Jun-20.

B) Effluent Treatment Plant (ETP):

Parameter	Jan-20	Feb-20	Mar-20
pH	7.79	7.36	7.42
Oil & grease	3.20	2.00	3.00
BOD	10.40	10.25	10.67
COD	110.60	107.75	99.33
TSS	13.80	15.75	12.67
Phenolic compound	<0.001	0.16	0.21
Sulphide	0.31	0.32	0.28
Cyanide as CN	<0.01	<0.01	<0.01
Ammonical Nitrogen	11.31	11.38	11.33
Total Kjeldhal Nitrogen (TKN)	15.12	21.70	15.90
Total Phosphate	<3	<3	<3
Hexavalent Chromium	<0.05	<0.05	<0.05
Total Chromium	<0.01	<0.01	<0.01
Lead (Pb)	<0.01	<0.01	<0.01
Mercury (Hg)	<0.001	<0.001	<0.001
Zinc (Zn)	<0.05	<0.05	<0.05
Nickel (Ni)	<0.01	<0.01	<0.01
Copper (Cu)	<0.04	<0.04	<0.04
Vanadium (V)	<0.2	<0.2	<0.2
Benzene	<0.01	<0.01	<0.01
Benzo (a) pyrene	<0.01	<0.01	<0.01

*Due to the situation of COVID-19, ETP water sampling and testing through third party could not be done in Apr-20, May-20 & Jun-20.

C] Noise Monitoring:

Noise Monitoring Survey from Jan-2020 to Jun-2020		
Jan to Jun-2020*	Plant	Points covered
Jan	CCR complex, ARU complex, GTU	83
Feb	FCCU, DHDS Complex, Pump House and flare	79
Mar	All Gates, LAB, CCU, RMP CONTROL ROOM	83
Cumulative	Total	245

*Due to the situation of COVID-19, Noise monitoring through third party could not be done in month of Apr-20, May-20 & Jun-20.

RECENT ENVIRONMENTAL PROJECTS COMMISSIONED

Sr no	PROJECTS	YEAR	ENVIRONMNET IMPROVEMNET	CAPEX In Rs. Crores
1.	FCC Gasoline Splitter, DHDS & HCU revamp	2010-11	BS-III MS & HSD maximization BS-IV MS/HSD	233
2.	Oil catchers fixed roof cover	2011-12	Fugitive emission reduction	0.45
3.	Secondary seals / guide pole sleeves for crude & Hexane tanks	2011-12	For reduction of VOC emission	2.64
4.	Procurement of drum type oil skimmers at Main Oil Catcher and OC-I	Mar-2012	To recover oil	0.64
5.	Fixed cover for FPU and CCU oil catchers	June 2012	VOC reduction	0.66
6.	Aluminum dome roof for ATF floating roof storage tank.	Sept-2012	VOC reduction	1.27
7.	De-mountable flare	Mar-2013	Better dispersion of emissions due to increased height, ease of maintenance	54.54
8.	To provide additional analyzers for monitoring PM 2.5, NH3, benzene, O3 and THC at AMS-1	Dec-2013	Monitoring Ambient Air.	1.41
9.	Continuous Catalytic Regeneration Reformer	Mar-2014	Enhanced production of BS-IV MS, and capacity building for Euro-V MS production	1827
10.	LPG pumping facilities from Refinery to Uran	Oct-2014	Reduce congestion, pollution in Mumbai and improve safety. Eliminating rail and reducing road transportation of bulk LPG from BPCL & HPCL MR 10" pipeline, 28 Kms long (12 off shore), design capacity of 1200 MT/day, Bulk lorries from BPCL will reduce by 425 MT/D (25 lorries), and 4-5 rakes	246
11.	Flare gas recovery	Nov-2014	Emission reduction (Lower flaring) and energy conservation	13.61
12.	Rain Water Harvesting at Sports Club	June-2014	Raw water conservation	1.46
13.	Internal Aluminum floating re\ SBP tank 904/905	May-2014	To reduce fugitive emission from storage tanks	0.41
14.	40 KWp solar power plant at Admin south block rooftop.	Aug-2014	Renewable source of energy. Fossil fuel conservation, &	0.38

			reduction in GHG emissions	
15.	OC-2 & OC-3 rotating disc skimmers	Oct-2014	Skimming of oil from oil catchers.	0.73
16.	Condensate Recovery system at Boiler house	Oct-2014	Resource conservation, flash steam recovery	0.88
17.	Sewage Treatment Plant at Admin	Dec-2014	Treatment of sewage, and re-use for gardening.	0.86
18.	Replacement of old crude & Vacuum distillation units with new CDU/VDU-IV	Nov-2015	Reduce Fuel consumption and emission	1419
19.	Decantation valve for slop tanks	Sep-2015	To reduce oil loss	0.9
20.	Provision of disc type oil skimmer at OC-II middle bay	Dec-2015	Effective removal of heavy oil from oil catcher	1
21.	Aluminum Floating Roof (IFR) for HSD Fixed Roof HSD Storage Tanks Tk-432, Tk-514, Tk-516 and Tk-517.	Jun-2016	To reduce hydrocarbon Storage losses from fixed roof storage tank. Reduction in emission of VOC's.	3.1
22.	To provide all stack analyzer data to CPCB / MPCB Like-SO ₂ / Nox / PM ₁₀ / CO.	Aug-2016	To provide all stack analyzer data to CPCB / MPCB Like-SO ₂ / Nox / PM ₁₀ / CO.	12
23.	Replacement of AMS 1 & AMS 2 Analysers.	Jun-2016	To be able to monitor ambient air quality as per National standards.	2.81
24.	To provide Solar water heater at LPG canteen.	Dec-2016	Renewable source of energy. Fossil fuel conservation, & reduction in GHG emissions.	2.7
25.	Catalytic Reforming unit to Isomerization Unit (ISOM)	Feb-2017	100 % BS-IV MS production	725
26.	Diesel Hydro-treater Unit (DHT)	June-2017	100 % BS-IV HSD production	2368
27.	Tail Gas Treatment Unit (TGTU)	Nov-2017	For enhancing sulfur recovery from 99 % to 99.9 %	112
28.	Benzene Analyzer in ARU	March-2018	For Identifying and checking any leaks as well as continuous monitoring of Benzene levels	115
29.	Rain Water Harvesting at CCR/ DHDS	June-2018	Water conservation	0.9
30.	Revamp of oil catcher	May-2018	Environment Protection	3.2
31.	Energy Saving by replacing conventional lighting by LED	In progress	Energy conservation	0.6

32.	Installation of roof top solar panels	March-2018	Energy conservation and utilization of solar power	3.13
33.	Implementation of Dynamic limit for mixed fuel fired furnace	Sept-2018	Compliance of CPCB direction	0.7
34.	Install Closed loop sampling system for balance units	Sept-2019	For reduction of VOC emission	0.6
35.	Cover Tilted Plate Interceptor (TPI), Corrugated Plate Interceptor (CPI), TPI Sump, Neutralization Tanks, Neutralization Tank feed sump, Slop Oil Sump, Flash Mixing Tanks, Flocculation Tanks and Dissolved Air Floatation (DAF) sub-units of ETP. Covering of these sub-units of ETP along with installation of VOC removal system.	Sept-2019	For up-gradation of existing ETP unit and VOC emission reduction	1.7
36.	Installation of Gasoline Treatment Unit (GTU)	Oct-19	As a part of Auto fuel policy i.e. for making BS-VI grade MS	544

New Project in progress:

S.N.	FUTURE PROJECTS	EXPECTED TIMELINE	ENVIRONMENT IMPROVEMENT
1	Comprehensive Environment audit from MoEF&CC approved agency, M/s NEERI	Jul-20	For detailed Environmental Audit & Environmental Emission Monitoring Study at BPCL MR
2	DCS integration of e-SEEMA (Simulation Enabled Emission Monitoring & Advisory) application for refinery stacks	Ju-20	For effective Stack emission monitoring, supplementing and validating online analyzers' data; to calculate / predict stack emissions (i.e. SOx, NOx, CO) on real time basis based on process parameters & monitor values in case of analyzer failure.
3	e-SOX model for refinery SOX emissions on real time basis	Jul-20	To predict and monitor refinery SOX emissions on real time basis with the help of CS&S
4	Nitrogen (N2) blanketing of Benzene tanks 806, 807 & 912 and Toluene tanks 904 & 905	Dec-20	Statutory requirement

	with closed blown down (CBD) system connected to flare.		
5	Provision for Bottom filling facility for tanker filling (Benzene & Toluene).	Dec-20	Statutory requirement
6	Installation and commissioning of Kerosene Hydro-treatment Unit (KHT)	2022	Auto fuel policy i.e. for production of low sulphur BS VI grade ATF and KHT product stream blending in BS VI grade HSD
7	96 pumps having single mechanical seal to be converted to double mechanical seal as per latest	Jul-22	As per latest OISD 125 guidelines



Maharashtra Pollution Control Board

महाराष्ट्र प्रदूषण नियंत्रण मंडळ

FORM V

Environmental Audit Report for the financial Year ending the 31st March 2020

Unique Application Number

MPCB-ENVIRONMENT_STATEMENT-0000027602

Submitted Date

25-09-2020

Company Information**Company Name**

Bharat Petroleum Corporation Limited

Application UAN number

NA

Address

Bharat Petroleum Corporation Ltd., Mumbai Refinery.

Plot no

234/482

Taluka

Kurla

Village

Mahul

Capital Investment (In lakhs)

1082800

Scale

L.S.I

City

Mumbai

Pincode

400074

Person Name

Supriya Sapre

Designation

Chief Manager (Energy & Environment)

Telephone Number

02225533188

Fax Number

NA

Email

sapre@bharatpetroleum.in

Region

SRO-Mumbai III

Industry Category

Red

Industry Type

R56 Oil Refinery (mineral Oil or Petro Refineries)

Last Environmental statement submitted online

yes

Consent Number

BO/CAC-Cell/UAN No
00000071817/5th CAC/190900323

Consent Issue Date

13/09/2019

Consent Valid Upto

31/08/2021

Product Information**Product Name**

Liquified Petroleum Gas, C3

Consent Quantity

643860

Actual Quantity

553450

UOM

MT/A

Benzene, Toulene

127750

52314

MT/A

SBP, Hexane, Motor spirit, MTBE, Naphtha

3018185

2739058

MT/A

SKO, Mineral Turpentine Oil, Aviation Turbine Fuel

1904205

862910

MT/A

High Speed Diesel, Light Diesel oil

5738895

7443030

MT/A

Furnace oil, Low sulfur Heavy stock, Bitumen, Sulfur

2241100

1657300

MT/A

Lube product

248200

310770

MT/A

Hydrotreated Gasoline (MS VI)

985564.8

895070

MT/A

By-product Information**By Product Name**

NA

Consent Quantity

NA

Actual Quantity

NA

UOM

MT/A

1) Water Consumption in m3/day

Water Consumption for Process	Consent Quantity in m3/day	Actual Quantity in m3/day
	20405	13866
Cooling	153790	98182
Domestic	1408	882
All others	NA	NA
Total	175603	110129

1) Effluent Generation in CMD / MLD

Particulars	Consent Quantity	Actual Quantity	UOM
Effluent from Plants	5760	2692	CMD
Sea water blowdown	146319	93273	CMD

2) Product Wise Process Water Consumption (cubic meter of process water per unit of product)

Name of Products (Production)	During the Previous financial Year	During the current Financial year	UOM
NA	NA	NA	MT/A

3) Raw Material Consumption (Consumption of raw material per unit of product)

Name of Raw Materials	During the Previous financial Year	During the current Financial year	UOM
Crude Throughput	14772720	15016676	MT/A

4) Fuel Consumption

Fuel Name	Consent quantity	Actual Quantity	UOM
GAS	338501	181581	MT/A
LSHS	232542	179783	MT/A
COKE	109500	86967	MT/A
RLNG	335727	232123	MT/A
BHAG	21900	188	MT/A
NAPHTHA	9271	2643	MT/A
PSA OFF GAS	94900	77270	MT/A

Pollution discharged to environment/unit of output (Parameter as specified in the consent issued)

[A] Water

Pollutants Detail	Quantity of Pollutants discharged (kL/day)	Concentration of Pollutants discharged(Mg/Lit) Except PH,Temp,Colour	Percentage of variation from prescribed standards with reasons	Standard	Reason
	Quantity	Concentration	%variation		
PH	1999 kL/Day Total Effluent	7.44	0	6 to 8.5	NA
Oil & Grease	1999 kL/Day Total Effluent	2.73	0	5	NA
BOD (3 days 27°C)	1999 kL/Day Total Effluent	10.77	0	15	NA
COD	1999 kL/Day Total Effluent	103.87	0	125	NA
Suspended Solids	1999 kL/Day Total Effluent	14.10	0	20	NA
Phenols	1999 kL/Day Total Effluent	0.21	0	0.35	NA

Sulphides	1999 kL/Day Total Effluent	0.31	0	0.5	NA
CN	1999 kL/Day Total Effluent	<0.01	0	0.2	NA
Ammonia as N	1999 kL/Day Total Effluent	11.68	0	15	NA
TKN	1999 kL/Day Total Effluent	24.12	0	40	NA
Phosphate	1999 kL/Day Total Effluent	<3	0	3	NA
Cr (Hexavalent)	1999 kL/Day Total Effluent	<0.05	0	0.1	NA
Cr (Total)	1999 kL/Day Total Effluent	<0.01	0	2	NA
Pb	1999 kL/Day Total Effluent	<0.01	0	0.1	NA
Hg	1999 kL/Day Total Effluent	<0.001	0	0.01	NA
Zn	1999 kL/Day Total Effluent	<0.001	0	5	NA
Ni	1999 kL/Day Total Effluent	<0.001	0	1	NA
Cu	1999 kL/Day Total Effluent	<0.01	0	1	NA
V	1999 kL/Day Total Effluent	<0.2	0	0.2	NA
Benzene	1999 kL/Day Total Effluent	<0.01	0	0.1	NA
Benzo (a)-Pyrene	1999 kL/Day Total Effluent	<0.01	0	0.2	NA

[B] Air (Stack)

<i>Pollutants Detail</i>	<i>Quantity of Pollutants discharged (kL/day)</i>	<i>Concentration of Pollutants discharged(Mg/NM3)</i>	<i>Percentage of variation from prescribed standards with reasons</i>		
	<i>Quantity</i>	<i>Concentration</i>	<i>%variation</i>	<i>Standard</i>	<i>Reason</i>
SO2	7580	102.2	0	1700	NA
NOx	8580	170.2	0	450	NA
CO	977	43.04	0	200	NA
Ni & V	6.12	0.10	0	5	NA
SPM	561	8.62	0	100	NA

HAZARDOUS WASTES

1) From Process

<i>Hazardous Waste Type</i>	<i>Total During Previous Financial year</i>	<i>Total During Current Financial year</i>	<i>UOM</i>
4.2 Spent catalyst	2538.75	484.39	MT/A

2) From Pollution Control Facilities

<i>Hazardous Waste Type</i>	<i>Total During Previous Financial year</i>	<i>Total During Current Financial year</i>	<i>UOM</i>
4.2 Spent catalyst	NA	NA	MT/A

SOLID WASTES

1) From Process

<i>Non Hazardous Waste Type</i>	<i>Total During Previous Financial year</i>	<i>Total During Current Financial year</i>	<i>UOM</i>
FERROUS SCRAP	6538	5335	MT/A
WOOD SCRAP	274	198	MT/A
DRUMS & TINS	15140	2085	Nos./Y
NON FERROUS SCRAP	196	134	MT/A

2) From Pollution Control Facilities

<i>Non Hazardous Waste Type</i>	<i>Total During Previous Financial year</i>	<i>Total During Current Financial year</i>	<i>UOM</i>
NA	NA	NA	MT/A

3) Quantity Recycled or Re-utilized within the unit

Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
0	0	0	MT/A

Please specify the characteristics(in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

1) Hazardous Waste

Type of Hazardous Waste Generated	Qty of Hazardous Waste	UOM	Concentration of Hazardous Waste
4.2 Spent catalyst	484.39	MT/A	The composition details of hazardous waste is given in form 4 submitted online on 18-06-2020

2) Solid Waste

Type of Solid Waste Generated	Qty of Solid Waste	UOM	Concentration of Solid Waste
NA	NA	MT/A	NA

Impact of the pollution Control measures taken on conservation of natural resources and consequently on the cost of production.

Description	Reduction in Water Consumption (M3/day)	Reduction in Fuel & Solvent Consumption (KL/day)	Reduction in Raw Material (Kg)	Reduction in Power Consumption (KWH)	Capital Investment(in Lacs)	Reduction in Maintenance(in Lacs)
Replacement of 3505 numbers of conventional light fitting with LED	NA	NA	NA	134.9	69	NA
Steam trap management was done in CDU4 during Jun'19 turnaround.	170	NA	NA	NA	430	NA
Replacement of existing Raw water supply pump 139-P-901A in DM plant by new low life cycle cost (LLC) pump to improve efficiency	NA	NA	NA	20	13	NA
Replacement of existing metallic blades of AFC's (28 AFCs) in CDU 4 with new generation energy efficient FRP blades	NA	NA	NA	97.14	111	NA
Tail gas from V276 is diverted to Fuel gas header and pressure was reduced to 6 kg/cm2 ex 11 Kg/cm2 to reduce Tail gas compressor load.	NA	NA	NA	164.6	10	NA
Existing steam tracing was replaced by electrical tracing for FO supply line to CDU 3, HCU, LOBS, CDU 4 & ARU.	40	NA	NA	NA	450	NA
Recirculation of hot sour water from the CDU-4 crude column hot reflux drum (144-V-102) as wash water in the overhead exchangers(144-E-102 A/B/C/D) for steam saving.	44	NA	NA	NA	58	NA

Installation of 506 KWp roof top solar panels at CDU4 SRR, RMP Control Room, DHDS Control Room, DHT SRR, ARU SRR, Transformer Substation, and HTPL substation	NA	NA	NA	506	298	NA
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Additional measures/investment proposal for environmental protection abatement of pollution, prevention of pollution.
[A] Investment made during the period of Environmental Statement

<i>Detail of measures for Environmental Protection</i>	<i>Environmental Protection Measures</i>	<i>Capital Investment (Lacks)</i>
Disposal of Hazardous waste	Hazardous waste management rule,2016	40.62
Monitoring of stacks, Noise levels, Fugitive emissions, effluent quality, Ambient Air by Approved Laboratory	Routine Environmental monitoring	24.37
Covering of ETP subunits and installation of VOC recovery system	For Environment Protection	1850
Tree Plantation of 10400 trees	For CO2 Sequestration	56
Installation of Close loop sampling	For Environment Protection	241.17
Installation of GTU	As a part of Auto fuel policy i.e. for making BS-VI grade MS	54400
Carbon Sequestration study	To reduce carbon footprint	6.5

[B] Investment Proposed for next Year

<i>Detail of measures for Environmental Protection</i>	<i>Environmental Protection Measures</i>	<i>Capital Investment (Lacks)</i>
Nitrogen (N2) blanketing of Benzene tanks 806, 807 & 912 and Toluene tanks 904 & 905 with closed blown down (CBD) system connected to flare.	For Environment Protection	252
Provision for dual filling i.e. Bottom filling facility along with existing top filling at white oil gantry & tanker.	For Environment Protection	149
Installation and commissioning of Kerosene Hydro-treatment Unit (KHT)	Auto fuel policy i.e. for production of low sulphur BS VI grade ATF and KHT product stream blending in BS VI grade HSD	70000

Any other particulars in respect of environmental protection and abatement of pollution.

Particulars

Based on the national demand for products (HSD/MS/LOBS etc.), crude processing pattern varies leading to variation in product streams with respect to consented production quantities.

Name & Designation

SUPRIYA SAPRE

सर्वात तरुण महिला वैमानिक उडविणार मिग २९

म. टा. विशेष प्रतिनिधी, मुंबई

सर्वात तरुण वयात वैमानिक बनलेली मुंबईची तरुणी आयेशा अजीझ हिने आता ध्वनिपेक्षाही अधिक वेगाने आभाळात उडणारे मिग २९ हे रशियन विमान उडविण्याचे मनावर घेतले आहे. मुंबईच्या बॉम्बे फ्लाईंग क्लबमध्ये उड्डाण प्रशिक्षण घेतलेल्या आयेशाला नुकताच



मूळची काश्मिरची बारामुल्ला जिल्ह्यातील आहे. आईबरोबर श्रीनगरला जाताना आयेशा नेहमी विमानाने जायची व त्याचवेळी आकाशभरारीचे स्वप्न पाहायची. ती शाळेत असतानाच तिचे वैमानिक प्रशिक्षण सुरू झाले. १६व्या वर्षीच विद्यार्थी उड्डाण परवाना मिळविणारी ती सर्वात तरुण महिला ठरली. बॉम्बे फ्लाईंग क्लबमधून तिने वैमानिक उड्डाण प्रशिक्षण घेतले.

२०१२मध्ये ती नासामध्ये अंतराळवीराचे प्रशिक्षण घेण्यासाठीही गेली होती. गेल्या आठवड्यात तिच्या हाती व्यापारी वैमानिक परवाना (सीपीएल) आला आणि आता तिला मिग २९ विमानाचे सारथ्य करण्याचे वेध लागले आहेत. त्यासाठी रशियन एजन्सीशी तिची

बोलणी सुरू आहेत. बॉम्बे फ्लाईंग क्लबचे कॅप्टन मिहिर भगवती यांनी सांगितले की, ती आमची विद्यार्थिनी राहिली आहे.

आह्मनही ती यशस्वीरीत्या पेलेल, असा मला विश्वास वाटतो.

२ दिवसांचा व्यवसाय प्रशिक्षण कार्यक्रम

सौर ऊर्जा विषयावर

प्रत्यक्ष हाती कामाचे तांत्रिक प्रशिक्षण

सौर ऊर्जा व्यवसाय क्षेत्रात उद्योग करायला सुरु करावा

राष्ट्रीय उद्योजकता आणि चतुःपक्षीय विकास संस्था (निएसबी)

The National Institute for Entrepreneurship & Small Business Development (NIESBUD)

कोशल्या विकास आणि उद्योजकता मंत्रालय, भारत सरकार

१८-२३, सेक्टर-६२, मीरबा उड्डाण, - २०१३०९, आवारासाठी ९००९२००८ प्रमाणित

दिनांक :- ०८ व ०९ एप्रिल, २०१७ (सोन विरसा) वेळ :- रा. १० ते सायं. ५.३०

शुल्क :- रु. ७,५००/- (यासाठी अभ्यासक्रम शुल्क, प्रमाणित, ऑफिस दफ्तरी पेट्रोल, तुराचे जेवण समाविष्ट. रवाना :- ऑनलाईन ईमेलद्वारे इमेलद्वारे ऑनलाईन वेबसाईट - गूगलमैप, रवानाकरण नमन, सी.डी, हार्डीकॉपी मार्ग, अंधेरी (पश्चिम))

अभ्यासक्रमामधील घटक :- सौर व्यवसाय प्रारंभ । ऊर्जा व राज्य धोरण । विज्ञानस मांडव । आवकआय आणि पेमेंट । सौर प्रणालीचे आरेखन आणि उभारणी । संरक्षण व घटक । रवाना विरलेला । भारतात । नवीनीकरण व सरकारी पाठबळ । नॅशनल ग्रीडनेट । सौर प्रणाली ऑफ गिड/ ऑन गिड/ ग्रॅन्ट) व्यवसाय रीती (पॅनेल उत्पादन)

सौर ऊर्जा उद्योग क्षेत्रात उत्तम इच्छितारे कुणीही या कार्यक्रमात उपस्थित राहू शकतात.

प्रारंभिक सत्र । सौर ऊर्जा संबंधित घटकांची प्रत्यक्ष उभारणी

अधिक उपशिल व नोंदीपुढील संपर्क करा । **मर्यादित जागा ४५**

समनव्ययक:- ९९५३९२०८८९, ९९५३९२०८९८ । www.niesbud.nic.in

निबंधकी प्रमाणपत्र देण्यात येईल.

भारत पेट्रोलियम कॉर्पोरेशन लिमिटेड
(भारत सरकारचा उपक्रम)

मुंबई रिफायनरी, माहूल, चेंबूर, मुंबई ४०००७४, महाराष्ट्र

भारत पेट्रोलियम कॉर्पोरेशन लिमिटेड, मुंबई रिफायनरी येथे १००% बीएस-६ प्रतीचे पेट्रोल बनविण्याकरिता गॅसोलीन हायड्रो ट्रीटमेंट संयंत्र (जीटीयु) व संलग्न यंत्रणा (क्षमता ०.९ एमएमटीपीए) उभारणीकरिता पर्यावरणात्मक मंजूरी दिली आहे.

पर्यावरण, वने आणि हवामान बदल मंत्रालयाचे पत्र क्रमांक, जे-११०११/९८/२०१६-१७-२(१) दि. २० मार्च २०१७ अंतर्गत भारत पेट्रोलियम कॉर्पोरेशन लिमिटेड, मुंबई रिफायनरी येथे १००% बीएस-६ प्रतीचे पेट्रोल बनविण्याकरिता गॅसोलीन हायड्रो ट्रीटमेंट संयंत्र (जीटीयु) व संलग्न यंत्रणा (क्षमता ०.९ एमएमटीपीए) उभारणीकरिता पर्यावरणात्मक मंजूरी दिली आहे.

पर्यावरण, वने आणि हवामान बदल मंत्रालयाद्वारे विवरित मंजूरी पत्राची प्रत महाराष्ट्र राज्य प्रदूषण नियंत्रण मंडळाकडे उपलब्ध असून त्या पर्यावरण, वने आणि हवामान बदल मंत्रालयाची वेबसाइट <http://www.envfor.nic.in> वरही उपलब्ध आहेत.

सर्व संबंधितांसाठी सदर माहिती जारी करण्यात येत आहे.

एनएनएडिआर लाइव्ह; एनएनएडिआर विज्ञानस

मुंबई : गेल्या अनेक महिन्यांपासून प्रलंबित असलेल्या पत्रकार हल्लाविरोधी विधेयकाच्या मसुद्यास गुरुवारी राज्य मंत्रिमंडळाच्या बैठकीत मंजुरी देण्यात आली. आज, शुक्रवारी विधिमंडळ

पत्रकार हल्लाविरोधी विधेयक आज विधिमंडळात अविशेषाच्या अखेरच्या दिवशी हे संरक्षण मिळावे, यासाठी पत्रकार हल्लाविरोधी कायदा करण्याची मागणी मुख्यमंत्री देवेंद्र फडणवीस यांच्याकडे केली होती. मुख्यमंत्र्यांनी ही मागणी मान्य करताना हे विधेयक या अधिवेशनात मांडण्याचे आश्वासन दिले होते.

हे गृहकर्ज, तुमच्या हिताचे

मुंबई : संभाव्य घर खरेदीदारांवर हाती घेण्यात आलेल्या एका अलिकडच्या अभ्यासातून काही विस्मयजनक गोष्टी कळून आल्या. गृह कर्जदारांचा एक मोठा गट, लागू असलेले शुल्क आणि देण्यात येणाऱ्या पूर्ण सवलती यांची कसून तपासणी न करताच गृहकर्जासाठी बँकेची निवड करतात. ५ पैकी ३ कर्जदार, कोण जास्तीत जास्त सवलती देतो ते पाहण्याकरिता अनेक धनकोंकडे जाण्याऐवजी एकाच बँकेत गृहकर्जासाठी अर्ज करतात. ह्या अभ्यासात समावेश असलेल्या बहुतेक संभावित खरेदीदारांनी सांगितले की, गृहकर्जाबाबत माहिती देणारे त्यांचे प्रमुख स्रोत कर्ज देणारी बँक स्वतःच होती किंवा ते ज्यांच्याकडून घर खरेदी करायचे ते बिल्डर तरी होते. “विकिस ठेवलेल्या घर मिळकतीची जागा निवडण्यासाठी ग्राहक खूप वेळ खर्च करतात, विविध धनकोंकडून गृह कर्जाची निवड करताना तसाच उत्साह दिसला पाहिजे. ह्या बाबत केलेले हे थोडेसे संशोधन कर्जदाराकरिता दीर्घ कालावधीत खूपच फायदेशीर ठरू शकते कारण, गृहकर्जाची निवड करताना विचारपूर्वक घेतलेला निर्णय, येणाऱ्या काळात मोठी बचत करू शकतो” श्रीमती मनिषा रावदेव, ग्रेटर बँकेच्या चीफ एक्झिक्युटिव्ह ऑफिसर यांनी एका निवेदनात असे म्हटले आहे.

तुमच्या अटी निश्चित करा : कर्जासाठी शॉपिंग करणे अवघड होण्यामागचे एक प्रमुख कारण आहे. ते म्हणजे त्याचे वेगवेगळे प्रकार, फिक्सड आणि फ्लोटिंग व्याजदर, कर्जाचा योग्य प्रकार, ईएमआय तसेच कर्जाचा कालावधी ह्यावर परिणाम करणाऱ्या व्याजदरावर (आरओआय) अवलंबून असतो. सोप्या पध्दतीने सांगायचे तर,

बहुतांश घर खरेदीदार ‘सुयोग्य घर’ शोधण्यात बराच वेळ घालवतात, परंतु त्यातले बहुतेक सर्वच सुयोग्य गृहकर्ज निवडण्याकडे दुर्लक्ष करतात. कर्जदाराला ही चुक नंतरच्या काळात लक्षावधी रुपयांनी महागात पडते.

२० वर्ष कालावधीसाठी रु. १० लाखांच्या कर्जासाठी कर्जदाराने १०.५% व्याजदराने पैसे भरल्यास ग्रेटर बँक देऊ करत असलेल्या ८.५% व्याजदराच्या तुलनेत तो रु. ३,१३,४४०/- जास्त रक्कम प्रदान करतो. **आताच किंवा कधीच नाही** : एप्रिल २०१६ पासून, कर्जाचे दर आधीच जवळपास एक टक्क्याने घसरले आहेत. जागतिक आणि भारतातील आर्थिक स्थिती पाहता, नजिकच्या काळात व्याज दराची पुढील कपातीची अपेक्षा नाही. तेव्हा गृह कर्ज घेण्यासाठी हीच सुवर्णसंधी आहे. जास्तीत जास्त २० वर्षांच्या कालावधीसाठी ८.५० टक्केच्या सर्वात कमी आणि फिक्सड व्याजदराने ग्रेटर बँक तिचे गृह कर्ज देऊ करत आहे. महिला कर्जदारांसाठी ८.४० टक्क्यांचा विशेष व्याजदर ठरविण्यात आला आहे. **हा बदल घडवून आणा** : जेव्हा बँकांनी त्यांचे दर कमी केलेले आहेत तेव्हा जुने कर्जदार अजूनही उच्च व्याजदरानेच प्रदान करत आहेत. ह्या कर्जदारांसाठी “स्वीच ओव्हर” केल्याने खरोखर मोठा फरक पडतो. उदा.- २० वर्षांच्या



श्रीमती मनिषा रावदेव, चीफ एक्झिक्युटिव्ह ऑफिसर दी ग्रेटर बॉम्बे को-ऑपरेटिव्ह बँक लिमिटेड (रोझवुड बँक)

कालावधीच्या (ज्यापैकी ३ वर्ष पूर्ण झाली आहेत) १०.५% दराने रु. १० लाखांच्या कर्जासाठी, ८.५% व्याजदराने ग्रेटर बँकेच्या गृह कर्जात केलेल्या स्वीच ओव्हरमुळे कर्जदाराला त्याचे रु. ३,७९,३९२/- वाचवता येतात. ह्या मर्यादित कालावधीच्या प्रस्तावासाठी सर्व गृह कर्ज हस्तांतरणावरील प्रक्रिया शुल्क देखील ग्रेटर बँकेने माफ केले आहे. परंतु बदल करण्याचे ठरविण्यापूर्वी प्रत्येक बँक देऊ करत असलेल्या बदल पर्यायांची नोंद घ्या. लक्षात ठेवा, कर्ज थकबाकी आणि कालावधी जेवढा जास्त तेवढा फायदा जास्त.

टीप : ग्रेटर बँकेने सर्व गृह कर्ज हस्तांतरणावरील प्रक्रिया शुल्क माफ केले आहे. मर्यादित कालावधीची सवलत.

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बृहन्मुंबई महानगरपालिका - सार्वजनिक आरोग्य खाते

उष्माघातापासून संरक्षण होण्यासाठी खालील गोष्टी पाळा.

हे करा

- तहान लागलेली नसतानाही पुरेसे पाणी प्या.
- उन्हात डोक्यावर छत्री, टोपीचा वापर करा.
- डोके, गळा, चेहऱ्यासाठी ओल्या कपड्याचा वापर करा.
- सौम्य रंगाचे, सैल व कॉटनचे कपडे वापरा.
- अशक्तपणा जाणवत असेल तर त्वरीत डॉक्टरांचा सल्ला घ्या.
- प्रवास करताना पाण्याची बाटली सोबत ठेवा.
- ओआरएस, घरी बनविलेली लस्सी, लिंबूपाणी, ताक इ. प्यावे.
- रात्रीच्या वेळेस घराच्या खिडक्या उघड्या ठेवा.
- आपले घर थंड ठेवण्यासाठी पडदे व सनशेड बसवा.
- पंख्याचा वापर करा तसेच थंड पाण्याने आंघोळ करा.

हे करू नका

- दुपारी १२ ते ३ शक्यतो बाहेर जाणे अथवा फिरणे टाळा.
- मद्यसेवन, चहा, कॉफी व शीतपेय पिणे टाळा. त्यामुळे डिहायड्रेट होते.

उष्माघाताची लक्षणे

- शरीराचे तापमान ४० अंशाच्या पुढे जाणे.
- डोकेदुखी व धडधड जाणवणे.
- चक्कर, मळमळ व उलट्या होणे.
- उष्णता असूनही घाम न येणे.
- स्नायू दुखणे व गोळे येणे.
- हृदयाचे ठोके जलद पडणे.
- मनाचा गोंधळ उडणे.

VIT HAS RETAINED NO.1 POSITION AMONG THE PRIVATE ENGINEERING INSTITUTIONS IN INDIA

National Institutional Ranking Framework
Ministry of Human Resource and Development
Government of India

Institute ID	Name	City	State	Score	Rank
IR17-ENG-1-1-77	Indian Institute of Technology Madras	Chennai	Tamil Nadu	87.96	1
IR17-ENG-2-1-3633	Indian Institute of Technology Bombay	Mumbai	Maharashtra	87.87	2
IR17-ENG-2-1-3630	Indian Institute of Technology Kharagpur	Kharagpur	West Bengal	81.93	3
IR17-ENG-2-1-79	Indian Institute of Technology Delhi	New Delhi	Delhi	81.08	4
IR17-ENG-2-1-8248	Indian Institute of Technology Kanpur	Kanpur	Uttar Pradesh	76.83	5
IR17-ENG-2-1-3677	Indian Institute of Technology Roorkee	Roorkee	Uttarakhand	73.10	6
IR17-ENG-2-1-251	Indian Institute of Technology Guwahati	Guwahati	Assam	72.30	7
IR17-ENG-2-1-3632	Anna University	Chennai	Tamil Nadu	63.97	8
IR17-ENG-2-1-3636	Jadavpur University	Kolkata	West Bengal	62.59	9
IR17-ENG-2-1-345	Indian Institute of Technology Hyderabad	Hyderabad	Telangana	60.24	10
IR17-ENG-1-1-370	National Institute of Technology Tiruchirappalli	Tiruchirappalli	Tamil Nadu	59.44	11
IR17-ENG-2-1-140	National Institute of Technology Rourkela	Rourkela	Odisha	58.78	12
IR17-ENG-2-1-3572	Vellore Institute of Technology	Vellore	Tamil Nadu	58.16	13
IR17-ENG-2-1-3621	Institute of Chemical Technology	Mumbai	Maharashtra	57.97	14
IR17-ENG-2-1-346	Indian Institute of Technology Indore	Indore	Madhya Pradesh	57.70	15
IR17-ENG-2-1-3559	Birla Institute of Technology & Science - Pilani	Pilani	Rajasthan	55.43	16
IR17-ENG-2-1-3690	Indian Institute of Engineering Science & Technology, Shibpur	Howrah	West Bengal	54.42	17
IR17-ENG-1-1-3627	Indian Institute of Technology Bhubaneswar	Bhubaneswar	Odisha	54.32	18
IR17-ENG-2-1-344	Indian Institute of Technology Patna	Patna	Bihar	54.02	19
IR17-ENG-1-1-3556	Jamia Millia Islamia	New Delhi	Delhi	53.70	20

MHRD, Govt. of India has ranked VIT AS THE BEST PRIVATE ENGINEERING INSTITUTION in the country

- No.1 position amongst Private Engineering Institutions in the country for the **second year in a row**
- No.3 amongst Private Institutions under 'Management Institutions' category in the country
- With 2598 research papers VIT had the highest number of publications in the country in 2016 (Based on Scopus Database as on 05.01.2017)

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VIT - A PLACE TO LEARN; A CHANCE TO GROW

servatories across the state have already recorded temperature above 40 degrees Celsius.

ing and then build a robot to provide solution.

"We received a total of 331

monitor the crop, own an agricultural farms and an electronic money transfer system that uses fingerprint for transactions.

trained about copyrights and intellectual property laws. They will also be mentored in entrepreneurship," said Arya.

Congestion on port road eliminated: JNPT

Jams, days-long wait had resulted in truck drivers turning violent in 2015

EXPRESS NEWS SERVICE
MUMBAI, APRIL 6

THE JAWAHARLAL Nehru Port Trust (JNPT) has claimed to have eliminated traffic congestion on roads leading to its three terminals.

A source of constant frustration for drivers of trucks delivering cargo to the terminals, who have had to spend hours in queues waiting for their documents to be verified by port officers, the JNPT administration has said a number of measures have resulted in zero traffic congestion in the past nine months.

Massive traffic jams and days-long waiting period had resulted in truck drivers turning violent in November 2015, attacking port officers and policemen, and ransacking buildings.

Identifying long queues as a focus area, JNPT chairman Anil Diggikar said the submission of hard copies of documents at the entry gate has been stopped. "We have introduced e-forms and RFID tags, so now truck drivers submit their forms online. Each truck saves at least five minutes," he said.

The port has also created a traffic management team to regulate traffic, as the local police were not able to do it on their own.

ulate traffic, as the local police were not able to do it on their own.

The port also introduced what is called the inter-terminal movement, allowing trucks to return to processing areas without having to travel 7.5 km on the port road to exit.

Diggikar said this has led to a 8 per cent drop in congestion on the road and fuel savings of Rs 125 crore.

On Thursday, JNPT also published its figures for financial year 2016-17, recording a marginal increase in its operating income.

Its income was Rs 1,677.90 crore in the just-concluded year, compared to Rs 1,665.10 crore in

the previous year.

Owing to an increase in fuel prices, its expenditure rose to Rs 788.49 crore, up 13 per cent from Rs 693.12 crore in 2015-16, said Neeraj Bansal, Deputy Chairman, JNPT.

In 2016-17, the port handled 4.50 million tonne equivalent units (TEUs) of container traffic, the highest since its inception. The port's own cargo terminal, the JNPT, also logged a significant rise in cargo traffic the previous year, handling 1.53 million

TEUs over 1.43 million TEUs in 2015-16.

Bansal said the first phase of the port's fourth terminal, which is being built in partnership with the Port of Singapore Authority, would be completed by December 2017, while the second phase is expected to be completed by 2023.

Each phase will increase the length of the berth by one km and is expected to add 2.4 million TEUs to the port's capacity.

EX-SERVICEMEN CONTRIBUTORY HEALTH SCHEME (ECHS)

EMPLOYMENT NOTICE

ECHS invites application for engagement of Staff as Medical Officer at ECHS Polyclinic Mumbai Upnagar, on contractual basis for a period of one year, renewable for additional period. For details visit www.echs.gov.in or call 022-25075448 before 24th April 2017.

TATA
TATA POWER
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CIN: L28220MH1919PLC000567
Email: tatapower@tatapower.com Website: www.tatapower.com

NOTICE OF RECORD DATE

NOTICE is hereby given pursuant to Section 91 of the Companies Act, 2013 that Monday, 24th April 2017 has been fixed as the Record Date for the purpose of payment of interest to the holders of 11.40% Unsecured Subordinated Perpetual Rated Listed Securities in the form of Non-Convertible Debentures (ISIN:INE245A08034) aggregating ₹ 1,500 crore due on 28th April 2017.

For The Tata Power Company Limited
H. M. Mistry
Company Secretary

Place : Mumbai
Dated : 6th April 2017



EMPLOYEES' PROVIDENT FUND ORGANISATION

(Ministry of Labour and Employment, Govt. of India)
REGIONAL OFFICE MUMBAI-III, KANDIVALI
Plot No. 222, BHAVISHYA NIDHI BHAVAN,
Charkop, Kandivali (West), Mumbai - 400067.

ATTENTION EMPLOYERS/EMPLOYEES/EMPLOYER REPRESENTATIVES/ EMPLOYEE REPRESENTATIVES "NIDHI AAPKE NIKAT"

Employees Provident Fund Organisation, Regional Office, Kandivali is organising a programme "Nidhi Aapke Nikat" in its office premises on 10th April, 2017 as scheduled below:

1. For Members/ claimant/ Pensioners : 10:30 Am to 12:30 Pm
2. Employers / Worker Representative/ : 3.00 Pm to 5:00 Pm

Exempted Establishments
All the employers/ members/ worker union representatives/pensioners of RO, Kandivali are invited to participate in the programme.

It is organisations endeavor to become more accessible to all its stakeholders by providing platform to approach the office for redressal of grievance/ resolving the difficulties and to educate them on IT related new innovations pertaining to online customer services/ compliance reporting.

Member/ claimants/ pensioners having grievances/ issues related to customer service may approach on this day with the relevant documents for speedy redressal. Additionally the programme will provide support/ practical demonstration on technical/ operational matters as mentioned below:

1. Uploading and approval of KYC data seeded to UAN and member's activation of UAN.
2. Organising Aadhar Camp in the premises of employers.
3. Deposit of EPF dues through Internet Banking.
4. Registration and uploading of digital signature for approval of KYC data/ online transfer applications.
5. UAN activation.
6. Registration of Digital Life Certificate.

Regional Provident Fund Commissioner
Regional Office, Kandivali



Bharat Petroleum Corporation Limited

(A Govt. of India Enterprise)

Mumbai Refinery, Mahul, Chembur, Mumbai 400074, Maharashtra

Environmental Clearance for Installation of Gasoline Hydro Treatment Unit (GTU) 0.9 MMTPA and associated facilities to produce 100% BS VI MS at Bharat Petroleum Corporation Limited, Mumbai Refinery.

Ministry of Environment, Forest & Climate Change has accorded environment clearance for Installation of Gasoline Hydro Treatment Unit (GTU) 0.9 MMTPA and associated facilities to produce 100% BS VI MS at Bharat Petroleum Corporation Limited, Mumbai Refinery vide letter number J-11011/98/2016-IA-II(I) dated 20th March 2017.

Copy of the clearance letter issued by MoEF&CC is available with the Maharashtra State Pollution Control Board and may also be seen at website of the Ministry of Environment, Forest & Climate Change at <http://www.envfor.nic.in>

This is for the information of all concerned.



Energising Lives; Energising Business

Indian Express (Mumbai) 07-04-2017 P-5

LDAR VOC MONITORING REPORT FOR BPCL MAHUL.



LEAK DETECTION AND REPAIR (LDAR) PROGRAM

REPORT FOR THE MONTH OF JUNE, 2019

PLANT LEAK SUMMARY

Sr.No	Name of the Unit	Description	Component	Line Size	Location	Leak Type	Hydrocarbon Readings while Monitoring. Date 19/06/2019		Hydrocarbon Readings after attending leak (Attended on Date- 25/06/2019)		Total Saving
							ppm	kg/day	ppm	kg/day	
1	DHT	151-PSV-1331 A U/S I/V	Valve	8"	Isolation Valve	Gland	9000	0.758	75	0.003	0.755

Verified by

Surekha
Surekha Jamdar
Dy. Technical Manager

Checked by

Shraddha
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Sulfur Balance:

TYPICAL SO2 STACK EMISSION FROM REFINERY Components	SO2 in T/Day
Low Sulfur Heavy Stock (Liquid Fuel)	6.5
Gaseous Fuel	0.1
Coke from Catalytic Cracking units	2.2
From Sulfur Recovery Units	1.4
	*10.2

*This typical SO2 emission and contribution from individual elements would vary very marginally depending upon the unit operating levels, crude mix, etc.

TYPICAL SULFUR BALANCE OF THE EXISTING REFINERY		
INPUT	Sulfur (MT/D)	%
Crude Oil	357.45	99.6
R LNG	0	0
External Feed Stock	0	0
Intermediate Stock Depletion	1.60	0.4
	359.05	100.0
OUTPUT		
Products Light Ends	13.45	3.7
Products Heavy Ends	155.32	43.3
Elemental Sulfur	183.39	51.1
Refiner Fuel+ Loss	6.89	1.9
	359.05	100.0

CREP action points for oil refineries:

CREP Point	BPCL reply
A) Air Pollution Management	
All refineries located in the critically pollution areas, identified by CPCB, will submit an action plan for phase wise reduction of SO ₂ emissions. Future Refineries will have SRU with minimum 99 % efficiency. To enhance the efficiency of SRUs in the existing refineries, an expert committee will be constituted to look into the various aspects and suggest a road map	As per Consent to operate (Consent order no.: Formate 1.0/ BO/ CAC/-Cell/ UAN No. 0000004527, 0000009015/ 5 th CAC/ dated 17 th Jan-2018) received from Maharashtra Pollution control Board (MPCB). BPCL Mumbai Refinery has installed Sulfur Recovery Units for recovering sulfur from sour gases. In 2017, Tail Gas Treatment Units have been commissioned which has improved sulfur recovery efficiency to 99.99 %.
With regard to NO _x emission, the new refinery/ process units will be installed to low NO _x burners. For retrofitting of low NO _x burners in existing units, the expert committee will suggest the strategies and action plan including NO _x std.	All new process units have been equipped with Low NO _x burners. Also ongoing Gasoline Treatment Unit (GTU) project (expected to be completed in Dec-2019), includes Low NO _x burners. Status of GTU project: On 18 th Oct-2018, Consent to establish has been received.
The flare losses will be minimized and monitored regularly.	BPCL Mumbai Refinery has provided Flare recovery system where flare gases are recovered and treated in Fuel Gas treatment unit. After removing H ₂ S, treated flare gases are diverted to fuel gas system for burning to furnace.
Refineries shall install CEMS for SO _x , NO _x in major stacks with proper calibration facilities	As per CPCB guideline, all refinery stacks have been provided with Sox, NO _x , CO and SPM analyzers with proper calibration facilities. Stack analyzer details are continuously transmitted to CPCB/ MPCB server. Also as per recent CPCB direction, dynamic limits have been incorporated for mixed fuel fired furnace.
Refineries will also monitor total HC and benzene in the premises (particularly at Loading-Unloading operations and ETP).	Ambient air quality monitoring is carried out on regular basis through MOEF approved and NABL accredited third party M/s Netel India Ltd. Reports of AMS monitoring are submitted to MPCB office every month.
B) Waste water management	
Refineries will prepare action plan for conservation of water resources and maximize reuse recycling of treated effluent. The treated effluent discharge (excluding once through cooling tower) will be limited to 0.4 m ³ / tone (for 90 % of time) except for the season.	BPCL Mumbai Refinery is "Zero Liquid discharge" refinery and process water is treated in Effluent Treatment Plant (ETP). Treated water is reused in process cooling towers. Analyzers for monitoring BOD, COD, TSS & PH at ETP outlet have been provided with provision of continuous data transmission to CPCB/ MPCB.
Oil spill response facilities at coastal refineries will be in position. To facilitate this MoEF will coordinate with Coast Guards, Port Trust and departments.	_____
Solid waste management	
Refineries will explore new technologies for reduction in the generation of oils sludge strategy.	At BPCL MR, oily sludge is processed for oil recovery with the help of third party contract M/s Plantek and processed sludge after oil recovery, is

	treated with bioremediation process using oil zapper bacteria. For carrying out bioremediation process, BPCL has an agreement M/s OTBL.
The petroleum coke having high sulfur content will be sold to/ reused by organized industries (having consent from SPCB) which have system to control SO2 emissions.	-----