

# **COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE**

**(E.C. Letter No. F. No. J-11011/316/2006-IA II (I) Dated 21-11-2007  
and EC extension letter dated 01-03-2013,  
EC Letter No: J-11011/316/2006-IA (II) (I) dtd: 30.09.2015)  
(For the Period April'2022 to September '2022)**

**FOR**

**Dahej Petrochemical Complex  
M/s. ONGC Petro Additions Ltd.  
Located at - Plot no. Z-1 & Z-83, Z-83/1,  
Dahej SEZ Ltd., Village-Ambheta,  
Taluka - Vagra, Dist. - Bharuch (Gujarat)**

**F. No. J-11011/316/2006- IA II (I)**  
**Government of India**  
**Ministry of Environment and Forests**  
**(I.A. Division)**

**Paryavaran Bhawan**  
**CGO Complex, Lodhi Road**  
**New Delhi – 110 003**  
E-mail : [plahujarai@yahoo.com](mailto:plahujarai@yahoo.com)  
Telefax: 011 - 24363973  
Dated November 21, 2007

To:

M/s ONGC Petro Additions Ltd  
7<sup>th</sup> Floor, Bank of Baroda Building  
Tower-II, 124, Indira Chowk, Connaught Place  
New Delhi – 110 001.

**Sub: Dahej Petrochemical Complex at village Ambheta, Tehsil Vagra in District Bharuch Gujarat by M/s ONGC Petro additions Ltd – Environmental Clearance reg.**

Sir,

This has reference to your letter no. ONGC/BD&JV/Petchem/MoEF/2006 dated 8<sup>th</sup> September, 2006 and subsequent communication no.GPCB/Unit-1/PH-13/21304 dated 27.07.2007 from the Gujarat Pollution Control Board on the above mentioned subject.

2. The Ministry of Environment and Forests has examined your application. It is observed that the M/s ONGC Petro additions Ltd (Opal) propose to set up a petrochemical complex at a distance of 10 km towards east of C2, C3 & C4 extraction plant which is a feed stock supplier and Petronet LNG Limited Terminal near village Ambheta in Dahej SEZ. A list of products to be manufactured is given at Annexure. Total area required for the petrochemical complex is 492 ha and is located in Seismic Zone-3. It is noted that water requirement will be 1,30,320m<sup>3</sup>/d. However, with the proposed recovery of 31920m<sup>3</sup>/d of water from the Cooling Tower Blow Down, treated effluent, including sanitary waste water, cracker steam drum and utility boiler blow down and cooling water, the net water requirement would be 98400m<sup>3</sup>/d and will be met from the Narmada river supplied by GIDC. Power requirement of 208 MW will be met from the Power plant in Dahej SEZ. Both process effluent and contaminated rain water effluent will be treated in the waste water treatment plant and reused in DM plant. The RO rejects from DM plant will be disposed of into Gulf of Cambay through effluent disposal pipeline. The treated processed effluent of 3000 m<sup>3</sup>/d and 2160 m<sup>3</sup>/d of sanitary waste water would meet the MINAS standard and proposed to be used as RO plant feed. Hazardous waste as per the category will be sold to the authorized recyclers, incinerated in the incinerator or disposed of in the secured landfill facility. It is noted that public hearing of the project was held on 21.07.2007. Cost of the project is Rs 13,540 crores.

3. The project has been considered in accordance with para {2.1 (2.1.1)(ii)} interim operational guidelines dated 13<sup>th</sup> October 2006 issued by the Ministry of Environment and Forests under Para 12 of the EIA Notification, 2006.

4. Based on the information submitted by you, the Ministry of Environment and Forests hereby accords environmental clearance to above project under the provisions of Environmental Impact Assessment Notification dated 14<sup>th</sup> September, 2006 subject to the compliance of the following Specific and General conditions:

**A. SPECIFIC CONDITIONS:**

- i. Ambient air quality monitoring stations, [SPM, SO<sub>2</sub>, NO<sub>x</sub> and NMHC] shall be set up in the petrochemical complex in consultation with SPCB, 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. Continuous on-line stack monitoring system shall be installed for measurement of SO<sub>2</sub> and NO<sub>x</sub>. Data on VOC shall be monitored and submitted to the SPCB / Ministry.
- ii. Continuous monitoring of AAQ shall be carried out at least at three locations and data displayed on the website.
- iii. Fugitive emissions of HC from product storage tank yards etc must be regularly monitored. Sensors for detecting HC leakage shall also be provided at strategic locations. The company shall use low sulphur fuel to minimize SO<sub>2</sub> emission.
- iv. The company shall install online O<sub>2</sub> monitor in the furnaces and boilers shall be operated with minimum excess air for optimal fuel consumption and to minimize NO<sub>x</sub> emission. Fire stack burners and steam injection system shall be designed for smokeless operation to minimize NO<sub>x</sub> emission.
- v. For control of fugitive emissions, the company shall provide for a main flare system and an auxiliary flare system, and route all unsaturated hydrocarbons to the flare system. All the pumps and other equipment's where there is a likelihood of HC leakages shall be provided with LEL indicators and also provide for immediate isolation of such equipment, in case of a leakage. The company shall adopt Leak Detection And Repair (LDAR) programme for quantification and control of fugitive emissions.
- vi. Data on fugitive emissions shall be regularly monitored and records maintained. The company shall conform to the process vent standards for organic chemicals including non-VOCs and all possible VOCs i.e. TOCs standard and process vent standards for top priority chemicals. The company shall install online monitor for VOC measurements. Action on the above shall be taken during the detailed design stage of the NCC and intimate to this Ministry.
- vii. The company shall ensure that no halogenated organic is sent to the flares. If any of the halogenated organic are present then the respective streams may be incinerated, if there are no technically feasible or economically viable reduction/recovery options. Any stream containing organic carbon, other than halogenated shall be connected to proper flaring system, if not to a recovery device or an incinerator.

- viii. All new standards/norms that are being proposed by the CPCB for petrochemical plants, and notified subsequently shall be applicable for the proposed unit.
- ix. Flue gas emissions from the various stacks attached to the boilers, furnace/heaters shall conform to the prescribed standards.
- x. The effluent generation shall not exceed 35520 m<sup>3</sup>/d. The waste water generated shall be treated in waste water treatment plant. As reflected in the EIA/EMP report, the company shall maximize the recycling of treated effluent and treated effluent ( 3600m<sup>3</sup>/d) after conforming to the prescribed standards shall be discharged into the deep sea through effluent disposal pipeline. A holding pond for treated effluent for bio assay test shall be constructed before discharging the effluent into the sea. The domestic effluent (2160m<sup>3</sup>/d) after treatment and conforming to the prescribed standards shall be discharged along with industrial effluent. A proper drainage system shall be provided for storm water drain.
- xi. The company shall obtain necessary approval from the State Irrigation Department to meet the water requirement.
- xii. The company shall undertake rainwater harvesting measures, to recharge the ground water and also to minimize the water drawl from the Narmada river.
- xiii. Green belt shall be raised in an area of 52.5 ha to mitigate the fugitive emissions from the plant. Selection of plant species shall be as per the Central Pollution Control Board guidelines.
- xiv. Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.
- xv. The company shall comply with all the recommendations made in the EIA/EMP report and risk assessment report.

**B. GENERAL CONDITIONS:**

- i. No further expansion or modernization in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.
- ii. The gaseous emissions (SO<sub>2</sub>, NO<sub>x</sub>, CO, NMHC, Cl<sub>2</sub> and HCl) from the various process units should conform to the standards prescribed under Environment (Protection) Rules, 1986 or norms stipulated by the SPCB whichever is more stringent. At no time, the emission level shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.
- iii. At no time, the emissions should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.


- iv. The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
  - v. The project authorities must strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commission of the project.
  - vi. The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.
  - vii. The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.
  - viii. The stipulated conditions will be monitored by the Regional of this Ministry at Bhopal/Central Pollution Control Board/State Pollution Control Board. A six monthly compliance report and the monitored data should be submitted to them regularly.
  - ix. 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 State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at <http://www.envfor.nic.in>. This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional office.
  - x. 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.
5. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
6. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner will implement these conditions.

7. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management and Handling) Rules, 2003 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

  
(Dr. P. L. Ahujarai)  
Director

Copy to:-

1. The Secretary, Department of Environment and Forests, Govt. of Gujarat, Block No. 14, 8<sup>th</sup> floor, Sachivalaya, Gandhinagar- 382010.
2. The Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office, E - 3 / 240 Arera Colony Bhopal - 462 016.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar New Delhi – 110 032.
4. The Chairman Gujarat Pollution Control Board, Paryavaran Bhavan, Sector-10A, Gandhi Nagar, -382043
5. Monitoring Cell, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi.
6. Guard File.
7. Monitoring File.
8. Record File.

  
(Dr. P. L. Ahujarai)  
Director

File no. J-11011/316/2006.IA II (I)

The details of various products and their production capacity as per proponent are given below:

Intermediate Product	Qty (KTPA)
1. Ethylene	1100
2. Propylene	340

**Final Products**

1. HDPE (Dedicated)	1 x 300
2. LLDPE/HDPE (Swing)	2 x 360
3. PP	1 x 340
4. SBR	140

**Associated / By products**

1. Hydrogenated Py Gas	135
2. CBFS	75
3. Hydrogen	63
4. Fuel Gas	405
5. Butene-1	35
6. Butadiene	95
7. Benzene	135
8. Styrene	160

  
(Dr. P. L. Ahujara)  
Director

F. No. J-11011/316/2006 - IA II (I)  
Government of India  
Ministry of Environment and Forests  
(I.A. Division)

Paryavaran Bhawan  
CGO Complex, Lodhi Road  
New Delhi - 110 003

E-mail: [r.sundar@nic.in](mailto:r.sundar@nic.in)  
Telefax: 011: 2436 6739  
Dated: 1<sup>st</sup> March 2013

To,

M/s ONGC Petro Additions Limited  
7<sup>th</sup> floor, Bank of Baroda Building  
Tower II, 124, Indira Chowk, Connaught Place  
New Delhi - 110 001.

**Subject :** Proposed Dahej Petrochemical Complex At Dahej SEZ Ltd. Village: Ambheta, Tal. Vagra, Bharuch District (Gujarat) By M/s ONGC Petro Additions Ltd.- regarding extension of validity Environmental Clearance

Ref: i) MoEF letter no. J-11011/316/2006 - IA II (I) dated 21.11.2007  
ii) Your letter no. OPaL/BDA/PR/PRJ/001/12-13 dated 13.6.2012

Sir,

This is in continuation of this Ministry's letters referred above and your letter under reference, wherein you have requested for extension in the environmental clearance letter cited above further for a period of five years.

2. The proposal referred above was placed before the Reconstituted Expert Appraisal Committee (Industry) in its 3<sup>rd</sup> meeting held during 3-5<sup>th</sup> December, 2012. It was noted that the project was originally envisaged to be completed in 48 months from the date of award of Cracker with concurrent award of Polymer and Utility units. Cracker package was awarded in December 2008 with a completion schedule of 48 months. Project Management Cell (PMC) for the project -M/s Engineers India Limited (EIL) - came on board in November, 2008. The project configuration was optimized based on advice of EIL. Product slate was tweaked to suit the market conditions. The configuration of Polymer units was changed from 2x 540 KTPA -PE (Swing) to 2x 360 KTPA (Swing) + 1x340 Dedicated HDPE. Consequently, the award of Licensors for polymer got delayed. This resulted in extended schedule for Utility packages as the requisite data from Licensors was required to float the Utility tenders and EPC tender for Process packages. Although an aggressive completion schedule of 28 months was kept for all the Polymer and Utility packages, the overall completion schedule got extended mainly due to the extended period in award of Licensor, the requisite Govt. approval (i.e SIA approval) and receipt of Process package. The actual overall progress as of Oct'12 is 67 % against scheduled progress of 77%. It was also noted that the detailed progress report unit wise as on 31.10.2012 and the expected date of completion was also submitted. The Committee recommended for the extension of validity of environmental clearance by a period of five years with effect from 21.11.2012 subject to the specific and general environmental conditions.

3. The Ministry accepts the recommendation of the EAC (Industry) and extends the validity of environmental clearance by a period of five years with effect from 21.11.2012 subject to the specific and general environmental conditions.



4. The company shall comply with all the conditions stipulated in the environmental clearance even no. dated 21.11.2007.
5. This issues with the prior approval of the Competent Authority.

  
(Sundar Ramanathan)  
Deputy Director(S)

**Copy to:-**

1. The Principal Secretary, Forests & Environment Department, Government of Gujarat, Sachivalaya, 8<sup>th</sup> Floor, Gandhi Nagar - 382 010, Gujarat.
2. The Chief Conservator of Forests (Western Zone), Ministry of Environment & Forests, Regional Office, E-5, Arera Colony, Link Road -3, Bhopal -462 016, Madhya Pradesh.
3. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Chairman, Gujarat State Pollution Control Board, Paryavaran Bhawan, Sector 10 A, Gandhi Nagar-382 043, Gujarat.
5. The Monitoring Cell, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi.
6. Guard File/Monitoring File/Record File.

  
(Sundar Ramanathan)  
Deputy Director(S)

**F. No. J-11011/316/2006-IA II (I)**  
**Government of India**  
**Ministry of Environment, Forest and Climate Change**  
**(I.A. Division)**

Indira Paryavaran Bhawan  
Aliganj, Jorbagh Road,  
New Delhi -110003

**E-mail : [lk.bokolia@nic.in](mailto:lk.bokolia@nic.in)**  
**Telefax : 011-24695313**  
Dated: 30<sup>th</sup> September, 2015

To

The CEO-OPaL  
M/s ONGC Petro-additions Ltd.  
1<sup>st</sup> Floor, Omkara Building Sai Chokdi,  
Manjalpur, Vadodara-390011

**E mail: Nil. ; Fax : 91-265-6192666;**

**Subject: Dahej Petrochemical Complex at Dahej SEZ Ltd., Village Ambheta, Taluka Vagra, District Bharuch, Gujarat by M/s ONGC Petro Additions Ltd.- amendment in Environmental Clearance.**

**Ref.: (i) MoEF letter no. J-11011/316/2006 - IA II (I) dated 21.11.2007 and dated 1<sup>st</sup> March, 2013.**  
**(ii) Your online proposal no IA/GJ/IND/20503/2013 dated 25<sup>th</sup> March, 2015.**

Sir,

This is in continuation of this Ministry's letter referred above and your letter under reference, wherein it was informed that at the time of applying for EC only generic design information available. The licensor was finalized and selected after the receipt of EC, who has finalized the detailed design data. Further based on the market conditions and advice of project management consultant (EIL), the project configuration (product slate) was optimized. The following is the revised optimized products list:

<b>Details of Product Mix and Capacities</b>				
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>S.N.</b>	<b>Product</b>	<b>Quantity (KTPA) as per existing EC</b>	<b>Proposed Qty. (KTPA) for EC Amendment</b>	<b>Remarks</b>
<b>Intermediate Products</b>				
1	Ethylene	1100	1100	No change

*M*

2	Propylene	340	400	As per optimised design based on the selected Licensor's Cracker technology, propylene production is 400 kTPA. However, in initial EC it was considered as 340 kTPA based on DFR. Hence requires amendment. (340 KTPA captive consumption, 60 KTPA direct sale)
<b>Final Products</b>				
3	HDPE (Dedicated)	1 x 340	1 x 340	No change
4	LLDPE/HDPE(Swing)	2 x 360	2 x 360	No change
5	Polypropylene	1 x 340	1 x 340	No change
<b>Associated/By-products</b>				
6	Hydrogenated PyGas	135	164	As per optimised design based on the selected Licensor's technology.
7	CBFS	75	75	No change
8	Hydrogen	63	63	No change
9	Fuel Gas	405	405	No change
10	Butene-I	35	35	No change
11	Butadiene	95	115	As per optimised design based on the selected Licensor's technology.
12	Benzene	135	150	As per optimised design based on the selected Licensor's technology.
13	Styrene	95	No Change	Currently not planned for production.
14	Styrene Butadiene Rubber	160	No Change	Currently not planned for production.
15	C9 + fraction	Not included in existing EC	32.4	This fraction was considered to be generated along with Hydrogenated PyGas in a single stream during DFR stage. However, now it is perceived as a separate sellable by-product which is generated from Deoctanizer of PGHU unit.
16	Low Polymer Wax (Dedicated HDPE)	Not included in existing EC	8.211	This fraction is generated in the chosen Licensor's technology during termination of short chain polymer with hydrogen in polymerization reactor and subsequently separated in hexane recovery unit. Collected in flaked form from flaker unit or as polymer

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				lump from LP Wax pit for direct sale in market.
17	C6+	Not included in existing EC	2.9304	This fraction is generated in the chosen Licensor's technology for Butene -1 unit, which is saleable in the market .

2. The proposal referred above was placed before the Reconstituted Expert Appraisal Committee (Industry) in its 42<sup>nd</sup> meeting held during 16<sup>th</sup> -17<sup>th</sup> June, 2015 and the Committee recommended the amendment in EC for the above revised product profile.

3. The Ministry accepts the recommendation of the REAC (Industry) for amendment in the existing environmental clearance subject to the specific and general environmental conditions.

4. All other conditions including validity stipulated in the environmental clearance letter no. J J-11011/316/2006 - IA II (I) dated 21.11.2007 and dated 1<sup>st</sup> March, 2013 shall remain the same.

6. In future, in case of change in the scope of the project, the company shall obtain fresh environmental clearance.

7. This issues with the prior approval of the Competent Authority.



(Lalit Bokolia)  
Additional Director

**Copy to:-**

1. The Principal Secretary, Forests & Environment Department, Government of Gujarat, Sachivalaya, 8<sup>th</sup> Floor, Gandhi Nagar - 382 010, Gujarat.
2. The Chief Conservator of Forests (Western Zone), Ministry of Environment & Forests, Regional Office, E-5, Arera Colony, Link Road -3, Bhopal -462 016, M.P.
3. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Chairman, Gujarat State Pollution Control Board, Paryavaran Bhawan, Sector 10 A, Gandhi Nagar-382 043, Gujarat.
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhavan, Jor bagh Road, New Delhi.
6. Guard File/Monitoring File/Record File.



(Lalit Bokolia)  
Additional Director

## HALF YERALY COMPLIANCE REPORT TO ENVIRONMENTAL CLEARANCE CONDITIONS (For the Period of April'2022 to September'2022)

### ❖ Proposed Process Units with Production Capacity

Units	Capacity
Dual-feed Cracker unit	1100 KTPA
Pyrolysis Gasoline Hydrogenation (PGH) unit	360 KTPA
Linear Low-density Poly-ethylene (LLDPE)/High density Poly-ethylene (HDPE) Swing unit	2 x 360 KTPA
High density Poly-ethylene (HDPE) Dedicated unit	1 x 340 KTPA
Poly-propylene (PP)	1 x 340 KTPA
Butene-1 unit	35 KTPA
Benzene Extraction Unit (BzEU)	150 KTPA
Butadiene Extraction unit (BdEU)	115 KTPA
Styrene Monomer unit	95 KTPA
Styrene Butadiene Rubber (SBR)	160 KTPA
C9+ Fraction	32.4 KTPA
Low Polymer Wax	8.211 KTPA
C6+	2.9304 KTPA

- ❖ **Status of Dahej Petrochemical Complex:** As on 30<sup>th</sup> September - 2022 Dahej Petrochemical complex has been 100 % commissioned.
- ❖ **Status of Environmental Clearance:** Environmental Clearance was awarded vide Letter No. F. No. J-11011/316/2006-IA II (I) Dated 21-11-2007 by MoEF&CC. As per the EIA Notification 2006 the validity period of Environmental Clearance is for Five Years and accordingly submitted application for extension of validity period on 15<sup>th</sup> June, 2012 and the validity is of EC is extended for next five years (i.e., up to 2017). As per the EIA Notification 2006 the Environmental Clearance amendment in product profile is obtained vide letter no. F. No. J-11011/316/2006-IA II (I) Dated 30-09-2015 by MoEF&CC. The complex has been in operation & started production in the month of Jan 2017.
- ❖ **Status of Consent to Establish from GPCB:** Consent to establish was granted by GPCB vide reference letter CTE Order Ref. No.: GPCB/BRCH/NOC-3498/29716, Dated: 24-10-2007 and vide amendment letter-I (for Validity extension) CTE Order Ref. No.: GPCB/BRCH/NOC-3498/ID-30328/71708, Dated: 31-01-2011, which was valid up to 23-10-2012 and the same has been extended up to 23-10-2017.

Consent to establish (Amendment letter-II for setting up of an industrial Plant/activity) was granted by GPCB, CTE Amendment No.: 73651(Ref. No. GPCB/BRCH/CCA-154 (3)/ID-30328/334040), Dated: 07-12-2015. OPaL has applied to GPCB for amendment in Product profile in line with EC letter: J-11011/316/2006-IA II (I) dtd: 30.09.2015 and the application has been accepted by GPCB.

Consent to Establish (CTE) (Amendment) for laying (Installation) of LPG pipeline from GCPTCL storage tank to tank farm of the unit (OPaL) was granted by GPCB, CTE Amendment No.: GPCB/BRCH-B/CCA-154 (4)/ID-30328/497250, Dated: 08-03-2019.

Consent to Establish (CTE) (Amendment) for laying (Installation) Naptha pipeline from ONGC Gas Processing Complex Hazira to OPaL Dahej, CTE Amendment No.: GPCB/BRCH-B/CCA-154 (5)/ID-30328/497542, Dated: 11-03-2019.

Consent to Establish (NOC) (Amendment) for modification in industrial plant/activities to OPaL Dahej, CTE Amendment No.: GPCB/BRCH-B/CCA-154 (6)/ID-30328/555188, Dated: 19-02-2020.

Consent to Establish (NOC) (Amendment) for modification in industrial plant/activities to OPaL Dahej, vide CTE amendment no: 175601 Dated: 16.09.2020 for laying of additional Decoke pot at Dual Feed Cracker unit.

Consent to Establish (NOC) (Amendment) for proposed changes in an industrial plant activity to OPaL Dahej, vide CTE amendment no: 109306., which is valid up to 15-09-2025.

❖ **Status of consolidated consent and Authorization from GPCB:** Consolidated Consent & Authorization (CC&A) was granted by GPCB vide consent order No.: AWH-73652, Dated: 07-12-2015, which was valid up to 07-07-2020.

Consolidated Consent and Authorization (CC&A) Amendment for HC Feed Pipeline and Hazardous waste disposal. (CC&A) was granted by GPCB vide consent order No.: GPCB/BRCH-B/CCA-154(4)/ID-30328/454577, Dated: 08-05-2018, which was valid up to 07-07-2020.

Consolidated Consent & Authorization Renewal (CC&A) was granted by GPCB vide consent order No.: AWH-109305, Dated: 08-07-2020, which was valid up to 07-07-2025. and CCA amendment is placed at Annexure -XIII.

**Compliance to Conditions of Environmental Clearance:**

Sr. No.	Point	Compliance status
<b>A</b>	<b>Specific conditions</b>	
i.	<p>Ambient air quality monitoring stations, [SPM, SO<sub>2</sub>, NO<sub>x</sub> and NMHC] shall be set up in the petrochemical complex in consultation with SPCB, based on occurrence of maximum ground level concentration and down-wind direction of wind.</p> <p>The monitoring network must be decided based on modeling exercise to represent short term GLCS continuous on-line stack monitoring system shall be installed for measurement of SO<sub>2</sub> and NO<sub>x</sub> data on VOC shall be monitored and submitted to the SPCB / ministry.</p>	<p>Three nos. of online continuous ambient air quality monitoring stations are set up in factory premises as per GPCB NOC Order dated 23.10.2007 and its monitored data displayed on CPCB/GPCB server.</p> <p>In addition, that we have carried out regularly offline ambient air quality monitoring at three locations by MoEF and NABL approved laboratory and its results submitted to regional office of MoEF, Zonal office of CPCB and Gujarat Pollution Control Board (GPCB).</p> <p>The results of Ambient air quality monitoring are provided in the Table no.1 mention below:</p>

**Table.No.1: Ambient Air Quality Monitoring Data**

Max. and Min. of Ambient Air Quality Monitoring Data (Period: April - 2022 to September - 2022)													
LOCATI ON	Ma x. / Mi n.	Parameter with Results (µg/m <sup>3</sup> )											
		PM <sub>10</sub> (ug/ m <sup>3</sup> )	PM <sub>2.5</sub> (ug/ m <sup>3</sup> )	SO <sub>2</sub> (ug/ m <sup>3</sup> )	NO <sub>2</sub> (ug/ m <sup>3</sup> )	CO (mg/ m <sup>3</sup> )	O <sub>3</sub> (ug/ m <sup>3</sup> )	NH <sub>3</sub> (ug/ m <sup>3</sup> )	Pb (ug/ m <sup>3</sup> )	As (ng/ m <sup>3</sup> )	Ni (ng/ m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (ug/ m <sup>3</sup> )	B(a)P (ng/ m <sup>3</sup> )
AAQM- 1 (Near 220 KV Switch Yard Control Room)	Ma x.	84	32	18.6	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
	Min	62	18	10.3	13.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
AAQM- 2 (Near Sub Station: 11)	Ma x.	82	32	19.6	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
	Min	62	18	10.3	13.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
AAQM- 3 (Near Sub Station: 15)	Ma x.	82	33	18.4	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
	Min	62	18	10.2	12.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Permissible Limit as per NAAQMS		100	60	80	80	2.0	100	400	1.0	6.0	20	5.0	1.0
<p><b>NOTE:</b> 1) Ambient Air Monitoring carried out for 24 hours' time period, 2) NAAQMS: National Ambient Air Quality Monitoring Standard, 3) BDL: Below Detection Limit.</p> <p>Minimum Detection Limits: CO (1.0 mg/m<sup>3</sup>), O<sub>3</sub> (5.0 µg/m<sup>3</sup>), NH<sub>3</sub> (5.0 µg/m<sup>3</sup>), Pb (0.5 µg/m<sup>3</sup>), As (1.0 ng/m<sup>3</sup>), Ni (1.0 ng/m<sup>3</sup>), C<sub>6</sub>H<sub>6</sub> (1.0 µg/m<sup>3</sup>), B(a)P (0.1 ng/m<sup>3</sup>)</p> <p>Ambient Air quality monitoring was carried out by NABL accredited laboratory M/s. UniStar Environment and Research Labs Pvt. Ltd., Vapi, NABL Certificate No. TC-7753, NABL Valid Until: 22.09.2024.</p>													

ii.	Continuous monitoring of AAQ shall be carried out at least at three locations and data displayed on the website.	Three nos. of online continuous ambient air quality monitoring stations are set up in factory premises as per GPCB NOC Order dated 23.10.2007 and its monitored data displayed on CPCB/GPCB server.
iii.	Fugitive emissions of HC from product storage tank yards etc. must be regularly monitored. Sensors for detecting HC leakage shall also be provided at strategic locations. The company shall use low Sulphur fuel to minimize SO <sub>2</sub> emission.	Fugitive emissions are being monitored at hydrocarbon prone areas and Gas detectors have been provided near potential leakage sources to detect and provide alarm in case of any HC gas. OPaL ensures to use low sulfur fuels to minimize SO <sub>2</sub> emissions.
iv.	The company shall install online O <sub>2</sub> monitor in the furnace and boilers shall be operated with minimum excess air for optimal fuel consumption and to minimize NO <sub>x</sub> emission.	The Online O <sub>2</sub> monitor installed in the furnace and boilers to control the emission with minimum excess air for optimal fuel consumption and to minimize NO <sub>x</sub> emission.
v.	For control of fugitive emissions, the company shall provide for a main flare system and an auxiliary flare system, and route all unsaturated hydrocarbons to the flare system.	OPaL has provided main and auxiliary flare system and all unsaturated HC have been routed to this flare system.
	All the pumps and other equipment are where there is a likelihood of HC leakages shall be provided with LEL indicators and also provide for immediate isolation of such equipment, in case of a leakage.	All areas having potential of HC Leak are provided with HC detectors with LEL warning. Also, safe isolation distance is provided for the equipment of concern.
	The company shall adopt leak detection and repair (LDAR) programmer for quantification and control of fugitive emissions.	Being complied
vi.	Data on fugitive emission shall be regularly monitored and records maintained. The company shall conform to the process vent standards for organic chemicals including non-VOC <sub>s</sub> and all possible VOC <sub>s</sub> i.e., TOC <sub>s</sub> standard and process vent standard for top priority chemicals. The company shall install online monitor for VOC measurements. Action on the above shall be taken during the detailed design stage of the NCC and intimate to this ministry.	Complied



vii.	<p>The company shall ensure that no halogenated organic is sent to the flares. If any of the halogenated organic are present then the respective streams may be incinerated, if there are no technically feasible or economically viable reduction/recovery options.</p> <p>Any stream containing organic carbon, other than halogenated shall be connected to proper flaring system, if not to a recovery device or an incinerator.</p>	<p>There will not be any halogenated organic compound processing in the complex and we shall comply with this condition during routine operation of plant.</p>
viii.	<p>All new standards/norms that are being proposed by the CPCB for petrochemical plants and notified subsequently shall be applicable for the proposed unit.</p>	<p>Noted and being complied</p>
ix.	<p>Flue gas emission from the various stacks attached to the boilers, furnace/heaters shall conform to the prescribed standards.</p>	<p>We have carried out flue gas emission monitoring regularly by MoEF and NABL agency and its reports are enclosed as <b>Annexure- I</b>.</p>
x.	<p>The effluent generation shall not exceed 35520 m<sup>3</sup>/d. The waste water generated shall be treated in waste water treatment plant.</p> <p>As reflected in the EIA/EMP report, the company shall maximize the recycling of treated effluent and treated effluent (3600m<sup>3</sup>/d) after conforming to the prescribed standards shall be discharged into the deep sea through effluent disposal pipeline.</p> <p>A holding pond for treated effluent for bio assay test shall be constructed before discharging the effluent into the sea. The domestic effluent (2160m<sup>3</sup>/d) after treatment and conforming to the prescribed standards shall be discharged along with industrial effluent. A proper drainage system shall be provided for storm water drain.</p>	<p>Effluent generation is within the permissible limit and it is treated in fill- fledged effluent collection and treatment system.</p> <p>Effluent collection and treatment plant (ECTS) for the OPaL complex is designed to ensure that maximum amount of treated effluent is recycled within the complex.</p> <p>The Effluent Collection and Treatment System (ECTS) also includes RO Based Tertiary Treatment section to further process the treated Effluent and recycle the water as make-up water to Cooling Towers and as DM water.</p> <p>The effluent considered for discharge to Sea from the complex is not exceeding 3600 m<sup>3</sup>/day and meets the prescribed quality standards.</p> <p>Domestic effluent is being treated in a separate package unit and the treated domestic effluent is being recycled in RO based tertiary system.</p>

xi.	The company shall obtain necessary approval from the State Irrigation Department to meet the water requirement.	Water requirement met through GIDC, necessary permission taken from GIDC.
xii.	The company shall undertake rainwater harvesting measures, to recharge the ground water and also to minimize the water drawl from the Narmada River.	Rain water harvesting measures are provided nearby administrative building for roof top rain water harvesting from the buildings. Contaminated rain Water from the Process unit areas is being pumped to the Effluent Collection and Treatment System (ECTS) and is being treated in a dedicated Contaminated Rain Water Treatment (CRWS) system. The treated water is be being recycled and reused.
xiii.	Green belt shall be raised in an area of 52.5 ha to mitigate the fugitive emissions from the plant. Selection of plant species shall be as per the Central Pollution Control Board guidelines.	Being complied
xiv.	Occupational health surveillance of the workers should be done on a regular basis and records maintained as per the factories Act.	Occupational health surveillance of the employees is being carried out on regular basis and records maintained as per the Factories Rules. A separate Occupational Health Center is developed to carry out the different activities of occupational health services.
xv.	The company shall comply with all the recommendations made in the EIA/EMP report and risk assessment report.	Being complied
<b>B</b>	<b>General Condition</b>	
i.	No further expansion or modernization in the plant shall be carried out without prior approval of the Ministry of Environment Forests.	Noted and being complied
ii.	The gaseous emission (SO <sub>2</sub> , NO <sub>x</sub> , CO, NMHC, CL <sub>2</sub> and HCL) from the various process units should conform to the standers prescribed under Environment (Protection) Rules, 1986 or norms stipulated by the SPCB whichever is more stringent, at no time, the emissions level shall go beyond the stipulated standards. In the event of failure of Pollution Control System(s)	Being Complied

	adopted by the unit, the respective unit should not be restarted unit the control measures are rectified to achieve the desired efficiency.	
iii.	At no time, the emissions should go beyond the prescribed standards. In the event of failure of any Pollution Control System adopted by the units, the respective unit should be immediately put out of operation and should not be restarted unit the desired efficiency has been achieved.	Being Complied
iv.	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz, 75 dBA (day time) and 70 dBA (night time).	We regularly monitor noise level within the premises through MoEF and NABL accredited laboratory. We have provided noise control measures like acoustic hoods, silencers, enclosures etc. on all sources of noise generation i.e., D G set & boiler room. The Summary of noise level monitoring is provided in the Table no.2 mention below:

**Tale No.2: Noise Monitoring Data**

Noise Monitoring Data (Period April - 2022 to September - 2022)							
Month	Max./ Min.	NM-1, (Near Gate No.1)	NM-2, (Near Gate No.2)	NM-3, (Near Gate No.3)	NM-4, (Near Gate No.4)	NM-5, (Near Oil Catcher-01 Area)	NM-6, (Near Oil Cather-02 Area)
		Result dB (LEQ)					
April-22	Day time	67.2	65.8	67.1	66.8	63.9	66.2
	Night time	57.2	56.2	54.8	53.6	56.4	56.7
May-22	Day time	68.4	66.7	64.3	67.5	63.8	67.6
	Night time	58.4	54.2	55.3	54.6	52.7	54.8
June-22	Day time	69.2	62.3	65.7	66.1	63.8	68.4
	Night time	58.3	55.2	54.6	52.7	54.9	53.2
July-22	Day time	66.3	64.8	67.2	64.5	66.7	62.9
	Night time	57.2	54.4	56.3	51.1	53.6	52.7
August-22	Day time	64.2	58.6	61.2	66.3	62.4	61.6
	Night time	55.1	52.6	51.2	55.6	52.3	51.7
September-22	Day time	64.2	52.1	58.6	61.4	63.6	62.7
	Night time	56.2	55.4	52.7	51.4	52.8	55.6
<b>Max.</b>		<b>68.4</b>	<b>68.4</b>	<b>69.4</b>	<b>67.2</b>	<b>66.6</b>	<b>64.8</b>
<b>Min.</b>		<b>52.4</b>	<b>51.6</b>	<b>51.7</b>	<b>54.2</b>	<b>52.7</b>	<b>51.6</b>
<b>NOTE:</b> Permissible Limit CPCB (Day Time): <75 Db(A), Permissible Limit CPCB (Night Time): <70 Db(A) Noise monitoring was carried out by NABL accredited laboratory M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi, NABL Certificate No. TC-7753, NABL Valid Until: 22.09.2024.							

v.	The project authorities must strictly comply with the provisions made in manufacture, storage and import of hazardous chemicals rules 1989 as amended in 2000 for handling of hazardous chemicals etc.	All necessary approvals from Chief Controller of Explosives have been obtained prior commissioning of the project.
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	Necessary approvals from Chief Controller of Explosives must be obtained before commission of the project.	
vi.	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous waste in accordance with the Hazardous Waste (Management and Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.	We have obtained authorization from GPCB vide CCA order no. AWH-109305 dated 08/07/2020 valid up to 07/07/2025.
vii.	The project authorities will provide adequate funds both recurring and non-procuring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Being Complied
viii.	The stipulated conditions will be monitored by the regional office of this Ministry at Bhopal/Central Pollution Control Board/State Pollution Control Board. A six-monthly compliance report and the monitored data should be submitted to them regularly.	We are regularly submitting Comprehensive EC compliance report for the period of April to September and October to March to the IRO Gandhinagar, respective Zonal Office of CPCB and the Gujarat Pollution Control Board well within the stipulated date. The copy of Environmental Clearance and six-monthly compliance status reports is being posted on the website of the company.
ix.	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 State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspaper that are widely circulated in the region of which	Advertisement for accorded EC, has given in local newspaper as English language in Times of India and Gujarati language in Divya Bhaskar on 10/07/2014.

	one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional office.	
x.	The project authorities shall inform the Regional office as well as the Ministry, the date of financial closures and final approval of the project by the concerned authorities and the date of commencing the land development work.	Final approval of the project by the concerned authorities - Consolidated Consent & Authorization (CC&A) has been renewed by GPCB vide consent order No.: AWH-109305, Date of issue: 08.07.2020, which is valid till 07.07.2025 which is valid till 07.07.2025 A Copy of Consent to Established is placed as <b>Annexure-II</b> & Consolidated Consent and Authorization is placed as <b>Annexure-III</b> . The date of commencing the land development work. - 05/05/2008

### List of Annexure

No. of Annexure	Name of Annexure
I.	Monitoring report
II.	Copy of Consent to Establish and its amendment.
III.	Copy of Consolidated Consent and Authorization and its amendment.