



# 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

sapres@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

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

### 1) Effluent Generation in CMD / MLD

<b>Particulars</b>	<b>Consent Quantity</b>	<b>Actual Quantity</b>	<b>UOM</b>
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)

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

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

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

### 4) Fuel Consumption

<b>Fuel Name</b>	<b>Consent quantity</b>	<b>Actual Quantity</b>	<b>UOM</b>
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

<b>Pollutants Detail</b>	<b>Quantity of Pollutants discharged (kL/day)</b>	<b>Concentration of Pollutants discharged(Mg/Lit) Except PH,Temp,Colour</b>	<b>Percentage of variation from prescribed standards with reasons</b>	<b>Standard</b>	<b>Reason</b>
	<b>Quantity</b>	<b>Concentration</b>	<b>%variation</b>		
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)**

<b>Pollutants Detail</b>	<b>Quantity of Pollutants discharged (kL/day)</b>	<b>Concentration of Pollutants discharged(Mg/NM3)</b>	<b>Percentage of variation from prescribed standards with reasons</b>		
	<b>Quantity</b>	<b>Concentration</b>	<b>%variation</b>	<b>Standard</b>	<b>Reason</b>
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**

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

#### **2) From Pollution Control Facilities**

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

### **SOLID WASTES**

#### **1) From Process**

<b>Non Hazardous Waste Type</b>	<b>Total During Previous Financial year</b>	<b>Total During Current Financial year</b>	<b>UOM</b>
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**

<b>Non Hazardous Waste Type</b>	<b>Total During Previous Financial year</b>	<b>Total During Current Financial year</b>	<b>UOM</b>
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
---	----	----	----	-----	-----	----

**Additional measures/investment proposal for environmental protection abatement of pollution, prevention of pollution.**

**[A] Investment made during the period of Environmental Statement**

<b><i>Detail of measures for Environmental Protection</i></b>	<b><i>Environmental Protection Measures</i></b>	<b><i>Capital Investment (Lacks)</i></b>
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**

<b><i>Detail of measures for Environmental Protection</i></b>	<b><i>Environmental Protection Measures</i></b>	<b><i>Capital Investment (Lacks)</i></b>
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 filing i.e. Bottom filling facility along with existing top filing 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