



# हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड

(भारत सरकार संस्थान) रजिस्टर्ड ऑफिस 17 जमशेदजी टाटा रोड, मुंबई - 400 020

## HINDUSTAN PETROLEUM CORPORATION LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE) REGISTERED OFFICE : 17 JAMSHEDJI TATA ROAD, MUMBAI - 400 020

CIN : L23201MH1952GOI008858



विशाख रिफाइनरी, पोस्ट बाक्स नं. 15, विशाखपट्टणम - 530 011 (आं.प्र.), फोन : 2895000, 2895100  
VISAKH REFINERY, POST BOX NO. 15, VISAKHAPATNAM - 530 011 (A.P.), PHONES : 2895000, 2895100

Date: September 12, 2024

Ref. : TSD/PS&E/APPCB/53/24

**The Member Secretary,**  
Andhra Pradesh Pollution Control Board,  
D.No. 33-26-14 D/2, Near Sunrise Hospital,  
Pushpa Hotel Centre, Chalamalavari Street,  
Kasturibaipet, Vijayawada – 520010

Dear Sir,

**Sub:** Environmental statement for the year ending March 31, 2024

Please find enclosed the “Environmental Statement for the Financial Year 2023-24” in Form-V as per Rule 14 of the Environmental (Protection) Rules, 1986.

With best regards,

GB/BR

Ramakrishnan R,  
Executive Director – Visakh Refinery

cc: The Joint Chief Environmental Engineer, APPCB-ZO, Visakhapatnam  
cc: The Environmental Engineer, APPCB-RO, Visakhapatnam

## **FORM V**

### **ENVIRONMENTAL STATEMENT for the financial year ending 31<sup>st</sup> March, 2024**

#### **PART-A**

- (i) Name and Address : Ramakrishnan R,  
Executive Director,  
Hindustan Petroleum Corporation Limited,  
Visakh Refinery, Post Box No.15, Malkapuram,  
Visakhapatnam - 530 011 (A.P).
- (ii) Industry Category : Petroleum Refinery
- (iii) Production Capacity : 15 Million Metric Tonnes per annum of Crude  
(Consented quantity)
- (iv) Year of Establishment : 1957
- (v) Date of last environmental Statement : September 22, 2023  
Report submitted

#### **PART - B**

##### **WATER AND RAW MATERIAL CONSUMPTION**

(i) Water Consumption

S.No	Water Consumption (m <sup>3</sup> / calendar day)	2022-2023	2023-2024
1	Fresh water	17010	20834
2	Sea Water for cooling	213501	126081
3	Domestic	480	547

Name of products	Water consumption in m <sup>3</sup> /ton of crude processed		
		2022-2023	2023-2024
1. LPG/Propylene	Fresh water	0.67	0.60
2. MS/Naphtha	Sea water for Cooling	8.39	3.63
3. Kerosene/ATF/MTO			
4. Diesel/JBO			
5. LDO			
6. FO/LSHS			
7. Bitumen			

(ii) Raw Material Consumption

Name of Raw Material	Name of Products	Consumption of raw material per unit of output	
		2022-2023	2023-2024
Crude Oil	1. LPG/Propylene		
	2. MS/Naphtha		
	3. Kerosene/ATF/MTO		
	4. Diesel/JBO		
	5. LDO	1.082	1.079
	6. FO/LSHS		
	7. Bitumen		
	8. Sulphur		

**PART - C**  
**POLLUTION GENERATED**  
(As per Consent Order)

**WATER**

Parameter	Stipulated limit	Actual	% Variation with prescribed standards
pH	6.5 - 8.5	7.7	-Nil-
TSS (mg/Lit)	20	3.9	-Nil-
Oil & Grease (mg/Lit)	5	1.3	-Nil-
Phenols (mg/Lit)	0.35	0.05	-Nil-
Sulphides (mg/Lit)	0.5	0.2	-Nil-
BOD (mg/Lit)	15	8.5	-Nil-
COD (mg/Lit)	125	38.5	-Nil-
Effluent quantity discharged (m <sup>3</sup> /1000 tons of crude)	400	117.4	-Nil-

## AIR

### Emission from Stack:

Parameter		Stipulated limit	Actual	% Variation with prescribed standards
SPM (Tons/day)		1.11	0.74	Nil
SO <sub>2</sub> (Tons /day)		11.5	7.72	Nil
HC (Tons/day)		2.5	0.73	Nil
NO <sub>x</sub> (Tons/day)		6.5	2.65	Nil
SPM (mg/Nm <sup>3</sup> )	i) Stacks 1 to 23, 25 to 30, 32	100	21.6	Nil
	ii) Stacks 33 & 34	50	27.5	Nil
	iii) Stacks 24, 31 & 35	10	3.6	Nil

## **PART- D** **HAZARDOUS WASTES**

- A. From Process : Included in Part E  
B. From Pollution Control Facilities: Included in Part E

## **PART - E** **SOLID WASTES**

Quantities of hazardous waste generated:

S.no	Source		Quantity (MT) 2022-2023	Quantity (MT) 2023-2024
1	Process	Oily sludge	7958	346.9
		Spent catalyst	436.4	26.4
2	Pollution Control Facilities (Sludge from ETPs)		650	115
3	Recycled / re-utilized.		Refer Part F	

## PART - F

### Characteristics & Disposal practices for Hazardous & Solid Wastes

- **Oily Sludge:**

At Visakh Refinery, oily sludge to be handled is mainly from two sources. One is from the crude and product tanks during outages for inspection & maintenance activities and the other is from Effluent Treatment Plants (ETPs), sumps cleaning, sewer cleaning, etc.

Oily sludge is stored in lined lagoons and is being mechanically processed to recover oil. Processing of sludge from sludge lagoons was carried out by M/s Chandrika Environ. About 839.6 MT of sludge was processed in 2023-24. Oil recovered from sludge is transferred to crude oil tanks/VBU for reprocessing. Residual low oily sludge is sent to bio-remediation bins along with the sludge from ETP's to carry out bioremediation by HPCL-R&D.

- **Spent Catalyst / Carbon:**

Spent catalyst / carbon is generated from process units on periodic basis, once in 4-5 years whenever replacement becomes necessary. Non-regenerable spent catalysts are sold to SPCB authorized recyclers or disposed to Treatment Storage and Disposal Facility (TSDF). 26.42 MT of spent catalyst was disposed to authorized recyclers, 314.1 MT of spent carbon disposed to Alternate Fuel Resource Facility (AFRF) and 414.45 MT of spent catalyst, 57.22 MT of spent clay & 27.9 MT of spent resin was disposed to TSDF during 2023-24.

**PART - G**  
**Impact of Pollution Control Measures on Conservation of Natural Resources**  
**and consequently on the Cost of Production**

- Effluent Treatment Plants (ETPs) were in continuous operation and effluent quality is meeting the stipulated norms. The average process effluent generated during the year 2023-24 was 174 m<sup>3</sup>/hr.
- Fuel Gas Amine Absorption Units (FGAAU) for treatment of sour fuel gas was in continuous operation. The treated fuel gas was consumed as internal fuel in heaters/furnaces.
- Sulphur Recovery Units were in continuous operation to maintain the sulphur dioxide emissions from the refinery below the stipulated limit of 11.5 Tons/day. The total Sulphur recovered in SRU's in 2023-24 was 53061MT.
- Flue Gas Desulphurization (FGD) units for reduction of SPM from flue gases of Fluidized Catalytic Cracking Units (FCCUs) were in continuous operation.
- All the CAAMS (Continuous Ambient Air Monitoring Stations) analysers were continuously in service throughout the year. Online connectivity of CAAMS data to APPCB and CPCB servers is in place. Data is being transferred on a continuous basis.
- Online connectivity of stack analyzers to APPCB and CPCB servers is in place. Data is being transferred on a continuous basis.
- On-line connectivity of ETP-I & ETP-IV treated effluent analysers to APPCB and CPCB servers is in place. Data is being transferred on a continuous basis.
- New Integrated Effluent Treatment Plant (IETP) was commissioned and operational from Feb-24. Subsequently the earlier ETPs( ETP-I, ETP-II and ETP-IV) were decommissioned.

## PART – H

### Additional investment for environment protection including abatement of pollution

	Description	
<b><u>Major Investments in the last 3 years (in Rs.Lakhs)</u></b>		
1	Commissioning of Green Hydrogen Demonstration Unit	1815.9
2	Installation of CAAMS station at Yarada Park	200.4
3	Procurement of Oil Spill Response (OSR) equipment	507.1
<b><u>Regular Expenditure (cost in Rs. Lakhs / Year)</u></b>		
1	Ground water monitoring program	0.5
2	Leak Detection and Repair (LDAR) survey	4.98
3	Environmental monitoring by MoEF-recognized third party	4.83
4	Hazardous Waste disposal to TSDF & Recyclers	51.05
5	Maintenance of stack and CAAMS analyzers	128.74

## **PART- I**

### **MISCELLANEOUS**

#### **ANY OTHER PARTICULARS IN RESPECT OF ENVIRONMENT**

- **Continuous Ambient Air Monitoring Stations:**

Continuous Ambient Air Monitoring Stations (CAAMS), 3 in number, were in operation to measure ground level concentration of SO<sub>x</sub>, NO<sub>x</sub>, HC, PM 2.5, PM 10, CO, O<sub>3</sub>, NH<sub>3</sub>, C<sub>6</sub>H<sub>6</sub> and Mercaptans in ambient air along with weather monitoring station to monitor the meteorological conditions. Monitoring by MoEF recognized laboratory is also done on regular basis.

- **Stack Analyzers:**

Installation and commissioning of dedicated stack analyzers was carried out.

- **ENCON Activities:**

Refinery is carrying out periodic surveys for identifying and arresting steam leaks, compressed air leaks and Nitrogen leaks in process units and offsite areas.

- **Leak Detection And Repair:**

LDAR program for monitoring and control of VOC emissions is in place.

- **Oil Spill Response Plan:**

Visakh Refinery along with other oil companies entered into an agreement with VPT for oil spill management in the port area. This is in addition to HPCL's own facilities at Single Point Mooring (SPM) for oil spill response.

- **ISO-14001:**

Visakh Refinery is an ISO-14001:2015 certified organization. Environmental Management System is in place as per the requirement of ISO-14001 standard.