

**FORM V****ENVIRONMENTAL STATEMENT for the financial year ending March 31, 2010****PART-A**

- (i) Name and Address : P.A.B.Raju  
Executive Director  
Hindustan Petroleum Corporation Limited  
Visakh Refinery, Malkapuram  
Viskhapatnam -530 011 (A.P)
- (ii) Industry Category : Petroleum Refinery
- (iii) Production Capacity : 8.3 Million Metric Tonnes per annum of Crude Processing ( installed capacity)
- (iv) Year of Establishment : 1957
- (v) Date of last environmental Statement Report submitted : August 20, 2009

**PART - B****WATER AND RAW MATERIAL CONSUMPTION**

S.no	Water Consumption (m <sup>3</sup> /calendar day)	2008-2009	2009-2010
1	Fresh water	11,386	11,645
2	Sea Water For cooling	227,266	244,382
3	Domestic	180	180

Name of products	Water consumption in m <sup>3</sup> /ton of crude processed	
	2008-2009	2009-2010
1. LPG/Propylene		
2. MS/Naphtha	Fresh water	0.45
3. Kerosene/ATF/MTO	Sea Cooling water for Once Thro' Cooling.	
4. Diesel/JBO		
5. LDO		9.06
6. FO/LSHS		10.1
7. Bitumen		

## (2) Raw Material Consumption

Name of Raw Material	Name of Products	Consumption of raw material per unit of output	
		2008-2009	2009-2010
Crude Oil	1. LPG/Propylene	1.06	1.07
	2. MS/Naphtha		
	3. Kerosene/ATF/MTO		
	4. Diesel/JBO		
	5. LDO		
	6. FO/LSHS		
	7. Bitumen		

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

**WATER**

PARAMETERS	CONSENT LIMIT	ACTUAL (Typical)
pH	6.0 - 8.5	7.2
TSS (mg/Lit)	20	12
Oil & Grease (mg/Lit)	5	5
Phenols (mg/Lit)	0.35	0.3
Sulphides (mg/Lit)	0.5	0.32
BOD (mg/Lit)	15	13.6
Effluent quantity discharged (m <sup>3</sup> /1000 tons of crude)	700	199
Note: Quantity of effluent discharged pertains to process waste water( as MINAS is applicable to process waste water) as per CBPCWP letter No. 18/41/79-Tech February 06,1985.		

**AIR****Emission from Stack :**

<b>PARAMETERS</b>	<b>STANDARD</b>	<b>ACTUAL (Typical)</b>
SPM (mg/Nm <sup>3</sup> )	115	52
SO <sub>2</sub> (Tons /day)	11.5	8.34
CO (mg/Nm <sup>3</sup> )	500	45.6
HC (Kg/Ton of product)	0.2	0.018

Note: CO Boilers are in operation at FCCU-II and FCCU-I(R) for CO emissions control.

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

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

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

S.no	Source	Quantity (MT) 2008-09	Quantity (MT) 2009-2010
1	Process	1,606 (Note-1) 35 (Note-2)	436(Note-1) 453 (Note-2)
2	Pollution Control Facilities	290	240 (Note-3)
3	Recycled/ re-utilized.		Refer Part F

Note-1: Approx. quantity of oily sludge generated.

Note-2: Approx quantity of spent catalyst generated.

Note-3: Approx. quantity of low oily sludge from ETPs.

## **PART - F**

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

- **Oily Sludge:**

Oily sludge is generated from two sources:

- a) Crude/Slop oil tanks
- b) ETPs , Sumps cleaning, sewer cleaning etc.

Sludge generated is stored in lined lagoons and sold to CPCB / SPCB authorized recyclers.

Total 1191 MT of sludge was sold during 2009-10.

- **Spent Catalyst:**

Spent catalyst generation is from process units. Generation of spent catalysts is on periodic basis, once in 4-5 years. Non regenerable catalysts are being sold to CPCB/SPCB authorized recyclers. Total 6 MT of spent zinc oxide catalyst was sold during 2009-10.

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

- Installation and commissioning of Excess Oil Ingress Project facilities in ETP-I & II was completed by April-2010. The O&G concentration in the final effluent from ETPs is meeting the stipulated discharge standards.
- The average flow to ETPs in 2009-10 was 200 M<sup>3</sup>/hr compared to 265 M<sup>3</sup>/hr during 2008-09. Around 25% reduction in total Process Effluent generation could be achieved.
- Sulphur Recovery Units are in operation to limit the sulphur dioxide emissions from the Refinery below the stipulated limit of 11.5 tons/day. The total sulphur recovered in SRU's in 2009-10 was 13,716 MT.
- Fuel Gas Amine Absorption Unit (FGAAU) for treatment of sour fuel gas treatment was in continuous operation leading to complete sour gas treatment and contributing to minimum SO<sub>2</sub> emissions from Fuel Gas. The total Fuel Gas treated in FGAAU in 2009-10 was 141.5 TMT.
- Facilities under Clean Fuels Project for production of Euro-IV MS (S<50ppm) were commissioned and are in operation. Under this project, Sulphur Recovery Unit of 65 MTPD capacity, Effluent Treatment Plant of 180 M<sup>3</sup>/hr capacity and Sour water stripper unit of 21 M<sup>3</sup>/hr capacity were installed. The other units that were installed under this project were FCC-NHT, NHT-CCR, Isomerization unit, ARU & CFC.
- Low NO<sub>x</sub> burners were installed for controlling No<sub>x</sub> emissions.
- Nitrogen Blanketing facility was provided for Product Storage Tanks 120-T-189, 190, 192 & 193 for control of VOC emissions from the Tanks.

**PART - H****Additional investment for Environment Protection including abatement of pollution**

<b>Project</b>	<b>Approx. Project Cost (Rs. Lakhs)</b>
Excess Oil Ingress Project implementation in ETP-I & II.	7,200
Sea water Reverse Osmosis plant	1,500
Ground Water monitoring program	10
Periodic steam leak and compressed air surveys	5
Third Party Environment monitoring	6.5
Repair & Maintenance of Continuous Ambient Air Monitoring Stations & Stack analyzers.	72
Hydrogen Peroxide treatment for Sulfides in ETP-II	490
Clean Fuels Project for Euro-III/ BIS-II	220,500
APPCB payments and analysis charges towards Environment monitoring	120
LDAR program	10

**PART- I****MISCELLANEOUS****ANY OTHER PARTICULARS IN RESPECT OF ENVIRONMENT****• CAAMS:**

Continuous Ambient Air Monitoring Stations (CAAMS) (3 nos) are in operation to measure ground level concentration of SO<sub>x</sub> , NO<sub>x</sub>, HC, SPM and CO in ambient air along with weather station to monitor the meteorological conditions. Third party monitoring is also done on regular basis.

**• ENCON ACTIVITIES:**

Refinery is carrying out periodic surveys for identifying and arresting steam leaks and compressed air leaks in process units and off-site areas.

**• LDAR:**

LDAR program is being carried out for monitoring and control of VOC emissions.

**• Oil Spill Response Plan:**

Refinery entered into agreement with VPT for oil spill management in Port area.

**• Env Projects:**

Installation of FGDs in the FCCs for SPM and SO<sub>2</sub> reduction is being taken up at a cost of approximately 85 Crores.

**• ISO-14001:**

Refinery's ISO-14001 Certificate is valid upto 03<sup>rd</sup> May, 2012.

**• Recent Environment & ENCON Awards:**

1. Received Green Tech Environment Excellence Silver Award - 2009 for outstanding achievement in Environment management in petroleum sector during 2008-09.
2. Received Good Green Governance Awards-2009 (Runner up) for outstanding achievement in Environment management in petroleum sector during 2008-09.
3. Received FE-EVI Green Business Leadership award for 2009-10. HPCL has emerged as top rankers amongst best 66 companies who has been undertaking climate change mitigation initiatives, emission accounting, achievements in climate change management and its disclosure.