

Maharashtra Pollution Control Board

Proposed Action Plan For Chembur area, Mumbai

Regional Office, Mumbai



Introduction

- CPCB has published a report on Comprehensive Environmental Assessment of Industrial Cluster December, 2009.
- Chembur (Mumbai) ranked 19th in India & 3rd in Maharashtra.



Comprehensive Environmental Pollution Index (CEPI) to selected industrial clusters Ranking



1 Agra (Uttar Pradesh) 2 Ahmedabad (Gujarat)
3 Aligarh (Uttar Pradesh) 4 Angul Talcher
(Orissa)* 5 Ankleshwar (Gujarat) * 6 Asansole
(West Bengal) 7 Aurangabad (Maharashtra) 8
Bada Jamtara (Jharkhand) 9 Baddi (Himachal
Pradesh) 10 Batala (Punjab) 11 Bhadravati
(Karnataka) * 12 Bhavnagar (Gujarat) 13 Bhillai-
Durg (Chhattisgarh) 14 Bhiwadi (Rajasthan) 15
Bidar (Karnataka) 16 Bulandsahar-Khurza (Uttar
Pradesh) 17 Burnihat (Assam) 18 Chandrapur
(Maharashtra) 19 Chembur (Maharashtra) * 20
Coimbatore (Tamil Nadu)



Baseline Profile of Chembur area

Location Description:

- Chembur is a suburb in eastern Mumbai, Maharashtra, India. It is 15 km from downtown Mumbai and 10 km from Chhatrapati Shivaji International Airport.
- It is adjacent to Creek of Arabian sea.
- Chembur includes villages of Mahul, Ambapada, Gavanpada, Anek Village.

Population

As per the 2011 census:- 674850

Map of Chembur area, Mumbai



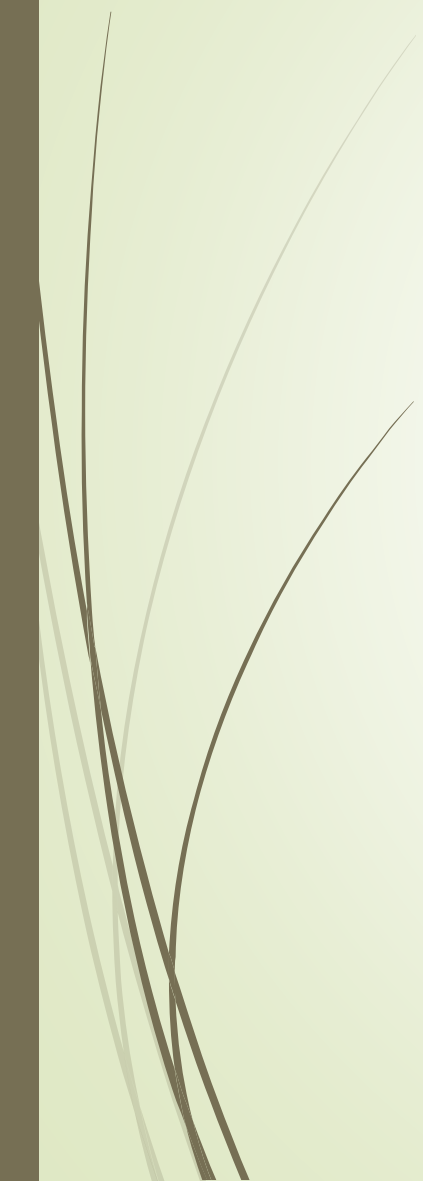



Baseline Profile of Chembur Industrial area

- Climate
 - Average Temperature :-27.2⁰ C (min) to 32.0 ⁰C (max)
 - Average humidity :- 67%
 - Average Rainfall :- 242 cm



Factors towards air pollution

- Industrial Source emissions
 - Dumping ground, Deonar
 - Vehicle transportation
 - Construction activity
- 



Major industries in Chembur Area

- 1) HPCL, Mumbai Refinery
 - 2) BPCL, Mumbai Refinery
 - 3) Tata Power Company
 - 4) RCF
 - 5) Sea Lord Containers Ltd
 - 6) Aegis Logistics Ltd
 - 7) IOCL, Lube blending plant
 - 8) HPCL, Bottling plant
- 



Baseline Profile of Chembur Industrial area

Industries

Type	Large	Medium	Small	Total
Red	8	1	0	9



Consent status

Sr. No.	HPCL	BPCL	Tata Power	RCF	Sealord Container	Aegis Logistics
Consent date	12/05/2016	30/12/2014	22/07/2016	23/12/2011	11/08/2016	25/02/2016
Validity	31/08/2020	31/08/2016 (Applied for renewal)	31/08/2021	1/08/2016 (Applied for renewal)	31/05/2017	31/01/2020



Baseline Profile of Chembur area

- Industrial area & Units
- HPCL = 321 Acres
- BPCL = 454 Acres
- RCF = 765 Acres
- Tata Power = 430 Acres

Water Budget statement

Industry	Industrial Consumption	Industrial Effluent	Domestic Consumption	Domestic Effluent	Discharge	
HPCL	99902	87554	870	600	Industrial Mahul Creek	Domestic Mixed in ETP
BPCL	174195	152079	1408	235	Cooling tower & sea	MCGM sewer
Tata Power	5058050	5058160	300	275	Recycle & sea	Gardening / Spraying on coal /sea
RCF	25000	9000	4500	235	Sea	MCGM sewer
Sealord Container	15	15	4	3.2	Flushing, Gardening	
Aegis Logistics	99	15	37	6	To be treated in Sealord Containers	Gardening / plantation



Water Pollution aspects

- In Chembur, HPCL, BPCL, Tata Power, RCF, Sealord Containers & Aegis Logistics has provided Effluent Treatment Plant.
- Treated effluent Used for various purpose like, Flushing, gardening, Cooling, etc and remaining disposal to sea.
- Industry has provided Sewage Treatment Plant as required.



Air Environment Aspects

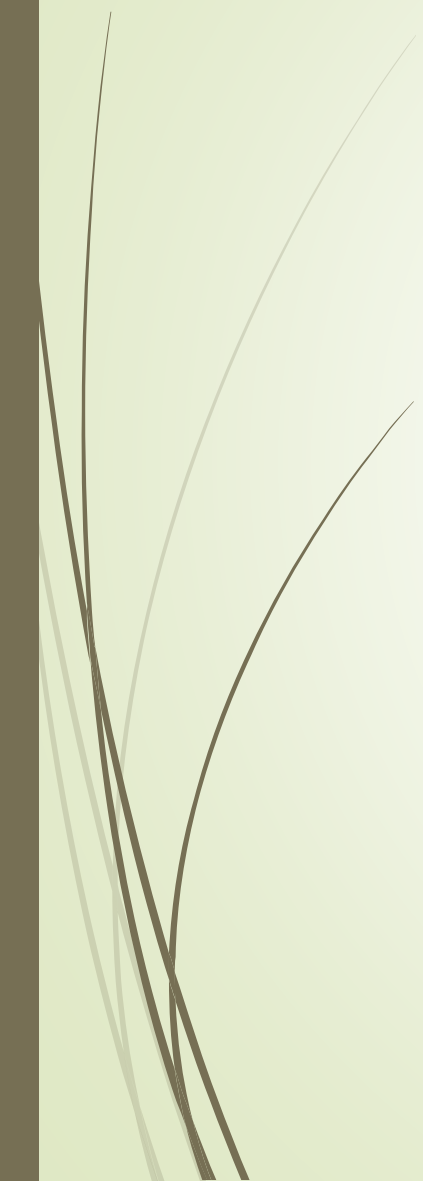

- Coal consumption quantity : 8400 T/D
- LDO/ F.O. consumption
quantity : 1001 T/D
- SO₂ Generated : @ 2450 T/D
- Number of boiler stacks: : 40
- Number of process stacks. : 66
- Number of other stacks (DG) : 12



HPCL

- HPCL Refineries has wide range of petroleum products, viz. LPG, MS, SKO, ATF, HSD, Bitumen etc. and various grades of lubricants, specialties and greases as per BIS standard.
- Provided 2 Nos. of ETP to treat trade effluent & floor wash and tank drains
- Mechanical (API) separators and Skim pond to handle cooling water discharge to sea.
- Two train of Sulphur recovery units.

Cont'd...



- CO-Boiler for FCCU off gases
- Utilization of pipelines for transportation of products
- Installed De-sulphurization facilities for HSD
- Mechanical Oil Recovery & Bio-Remediation treatment of Oily Sludge
- Green Fuel Emission Control Projects (including FGD for FCCU off gases)

BPCL

- The major activity carried out at Bharat Petroleum Refinery is refining of Crude oil & its separation into various fractions / constituents viz. Gas, LPG, Motor Spirit, Naphtha, Kerosene, Diesel, Fuel Oil, Low Sulphur Heavy Stock, Bitumen, etc. Various unit operations / processes are employed for achieving the same. The main products of the refinery are LPG, Naphtha, C3, Lube Oil Blending Stock (LOBS), Motor Spirit, Kerosene, Jet Fuel, HSD Oil, LSHS, Mineral Turpentine, Bitumen, Benzene and Toluene.
- Two Sulphur recovery units.
- Diesel Hydrodesulphurization facilities for production of low Sulphur diesel.

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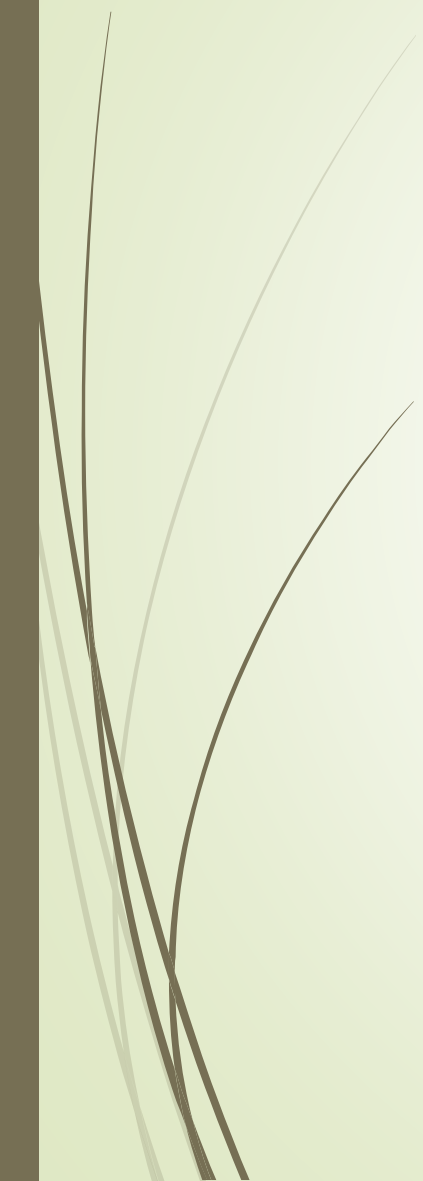

- Provision of 3 Nos. high efficiency Boilers in place of old vintage boilers
- Use of De-SOx additive in regenerator of FCCU
- Installation of Benzene vapour recovery scheme at Trombay Dispatch Unit
- Production of Euro III Grade products
- Mechanical Oil Recovery & Bio-Remediation treatment of Oily Sludge

Tata Power Co. (TPPS)

Tata Power Co. is a power generation unit based on imported coal, gas & Oil.

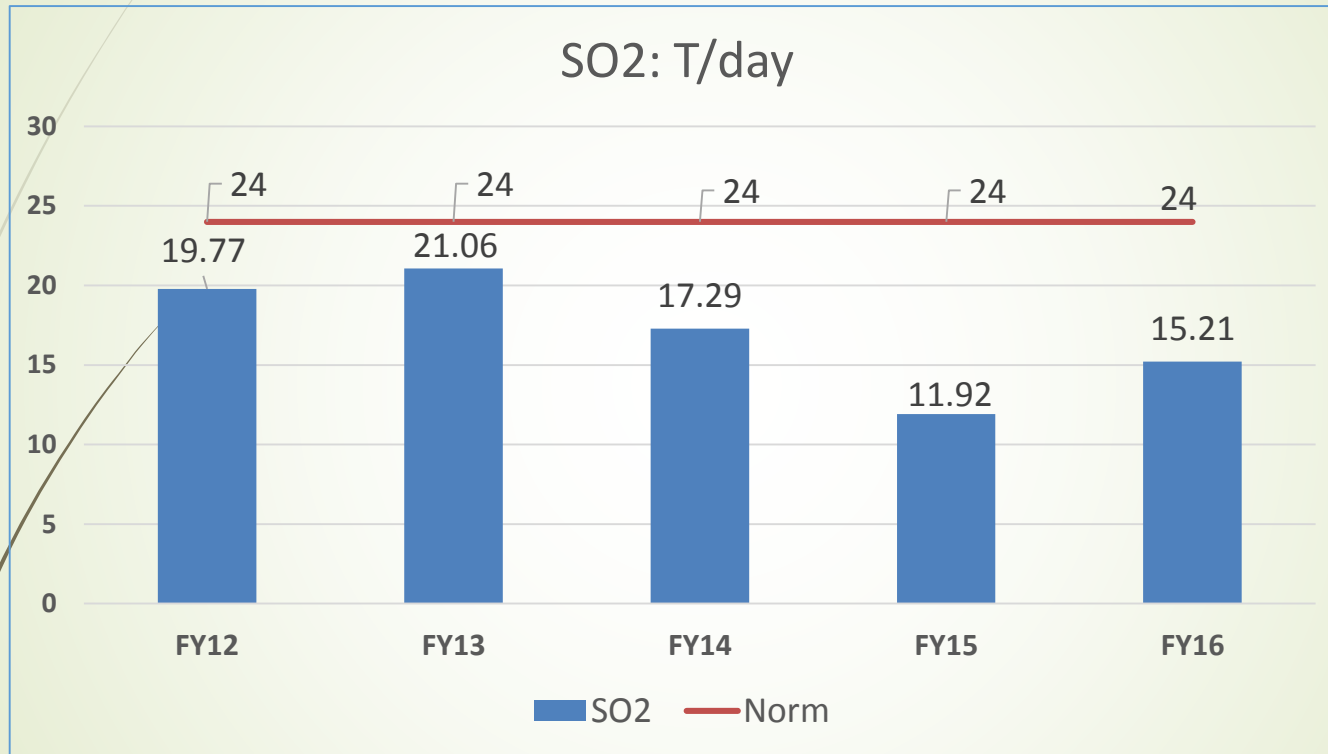
- Industry has provided Electrostatic Precipitator & Flue Gas Desulphurization units at Unit No. 5 to control particulate emission & SO₂ emission levels. They have provided ETP at DM Plant.
- Installed FGD for Unit 5
- Installed FGD for Unit 8
- ESP for Unit 5
- ESP for unit 8
- Low NO_x Burner For unit no 7
- Installed two STP (Sewage Treatment Plant)

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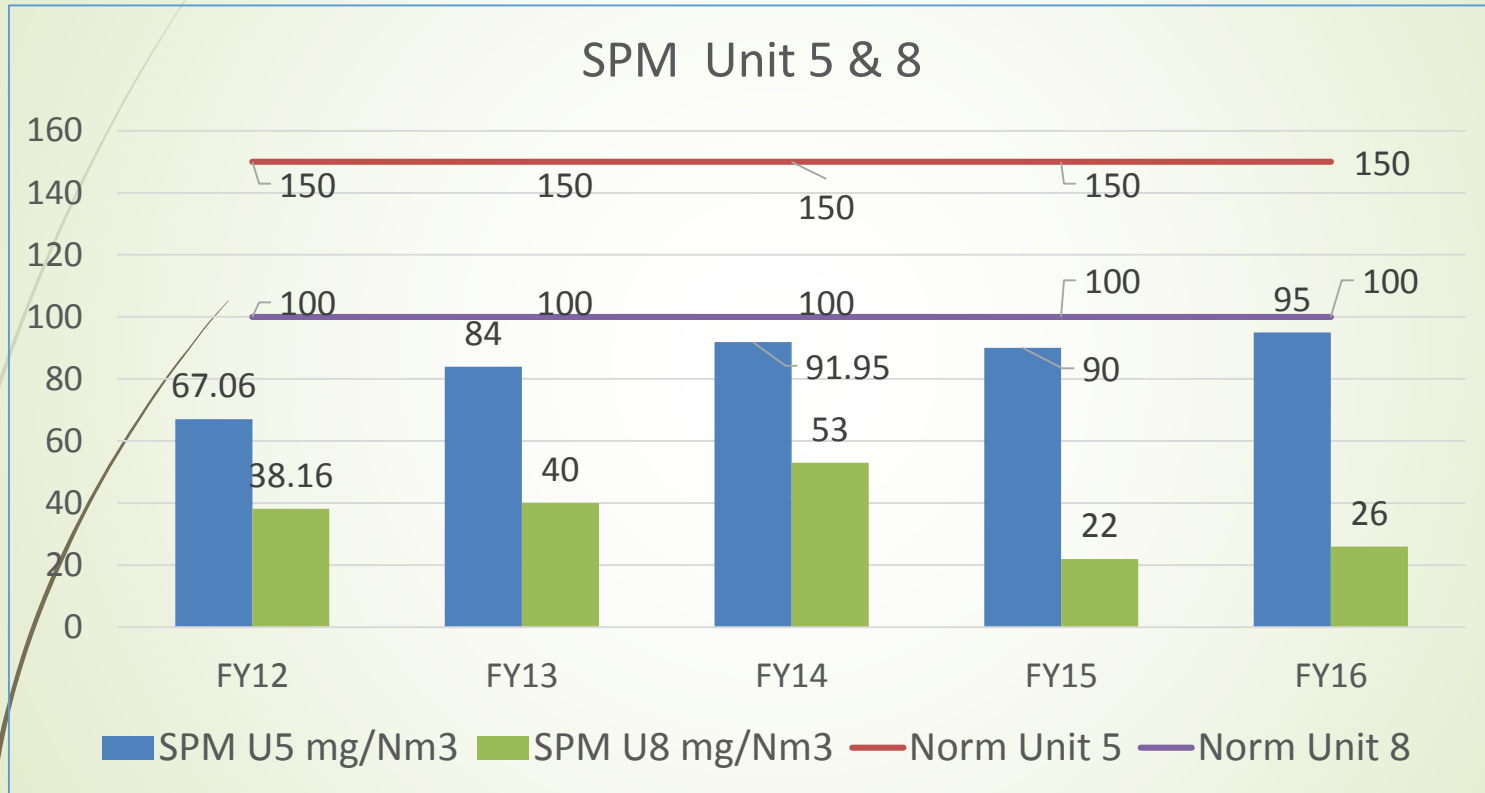


- Installed state of art, Screw unloader at coal yard for coal unloading.
- Pipe Conveyer for coal movement for unit 5 and unit 8 to reduce the fugitive emission.
- Using imported low ash low Sulphur coal for unit 5 and unit 8
- Bioremediation of Oily sludge.
- Installed CAAQMS station at two different locations
- Installed Aerators for reducing the condenser outlet temperature
- Cooling water system for reduction of temperature of discharge water
- 100% ash utilization
- Adequate green cover development in the plant area
- Brick making activity out of bottom ash

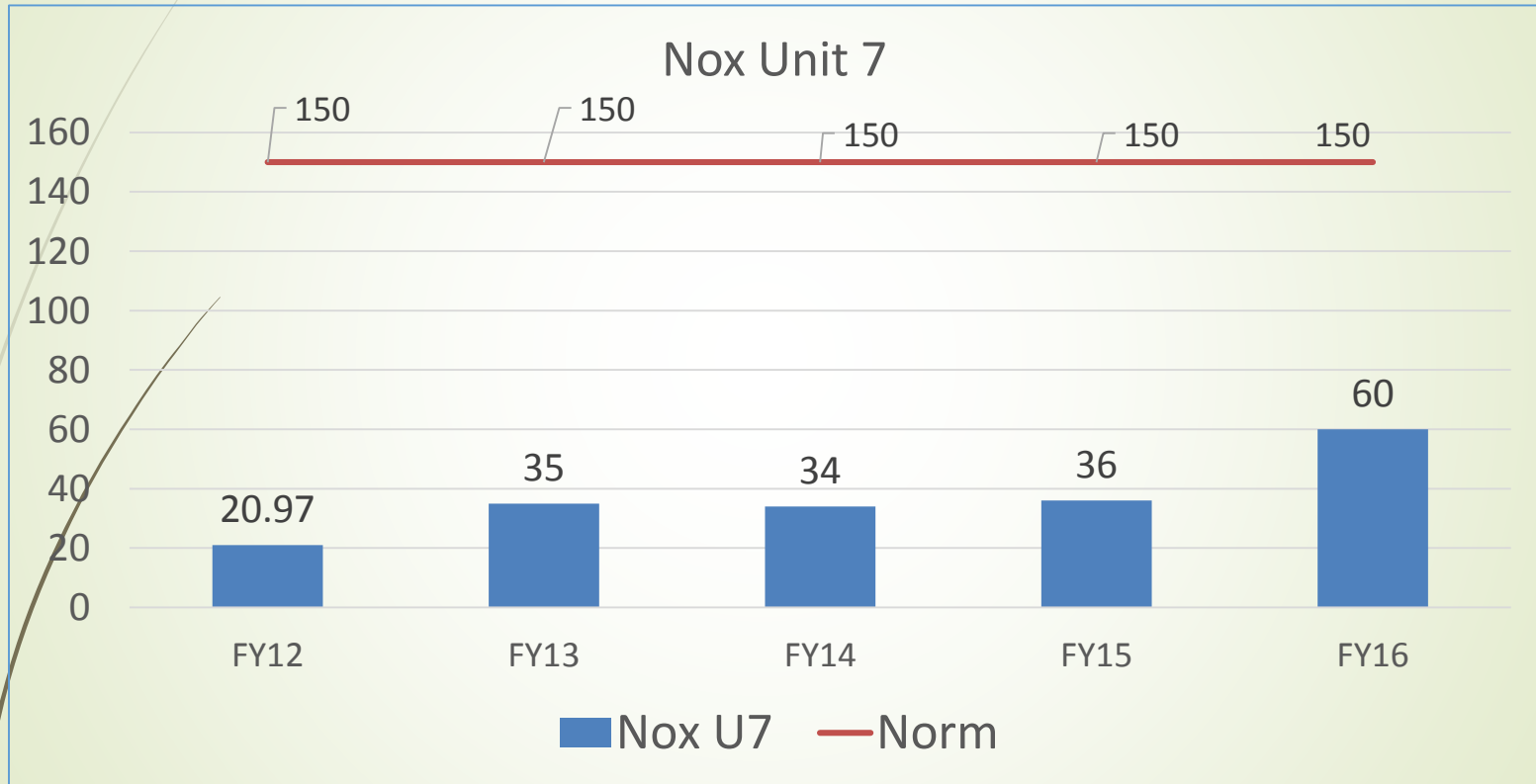
SO2 Emission from TTPS Online data



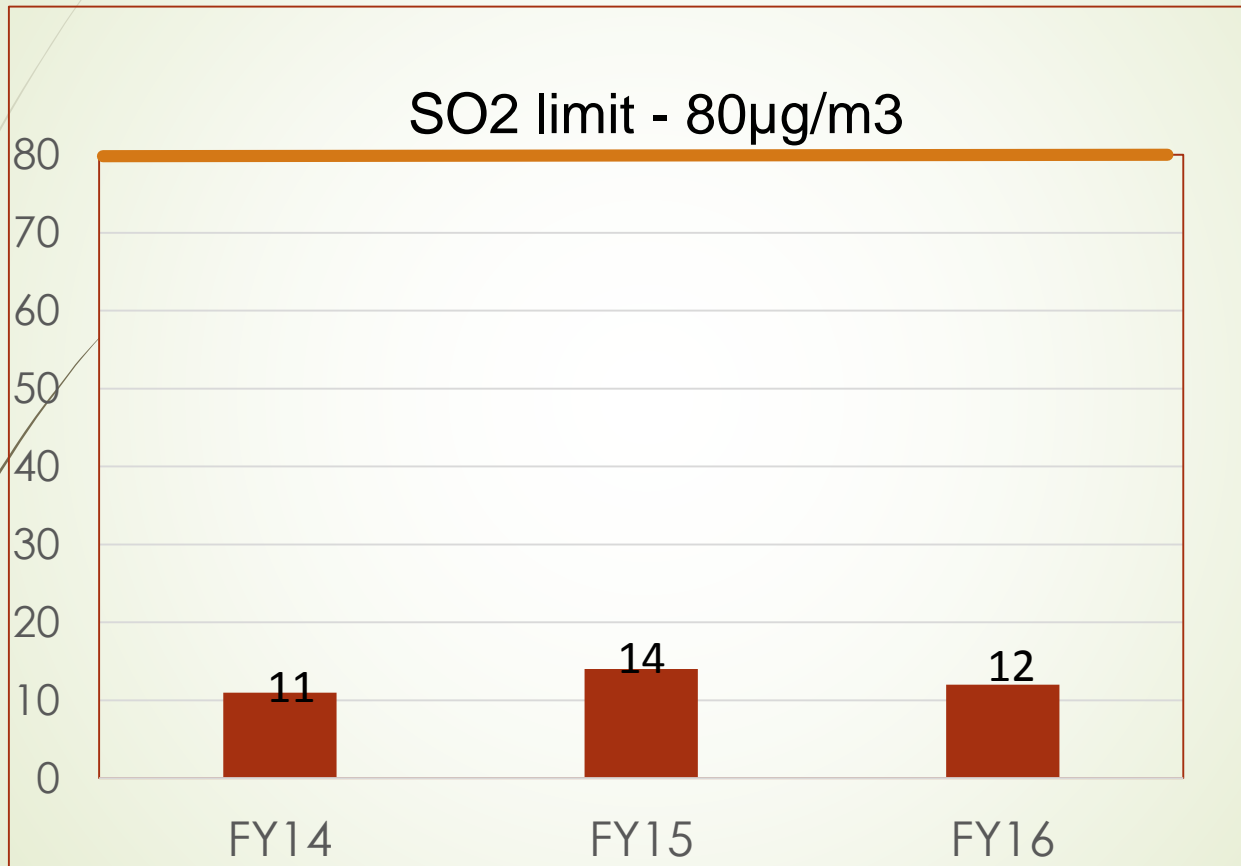
SPM Emission from TTPS online data



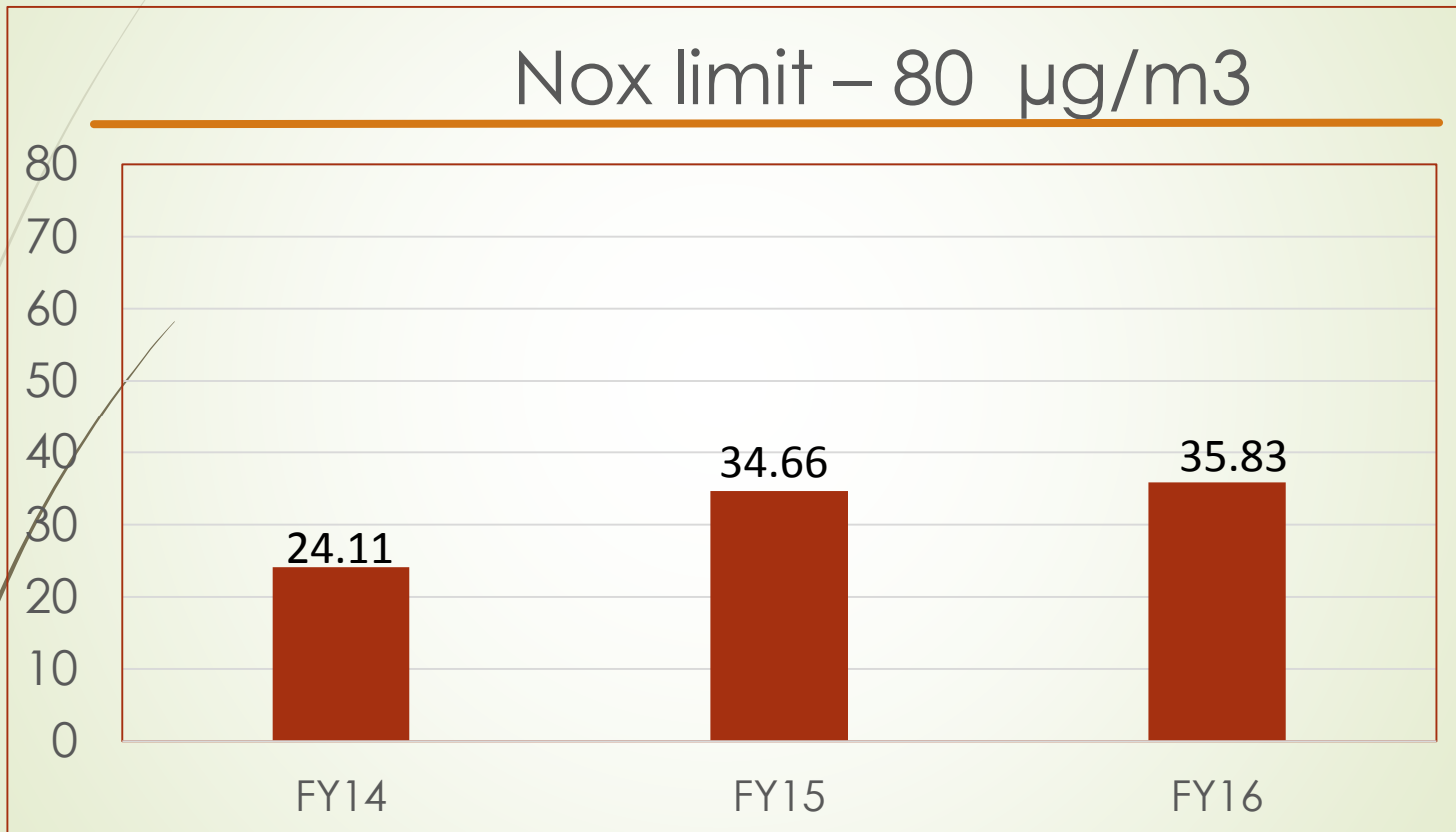
NOx Emission from TTPS online data



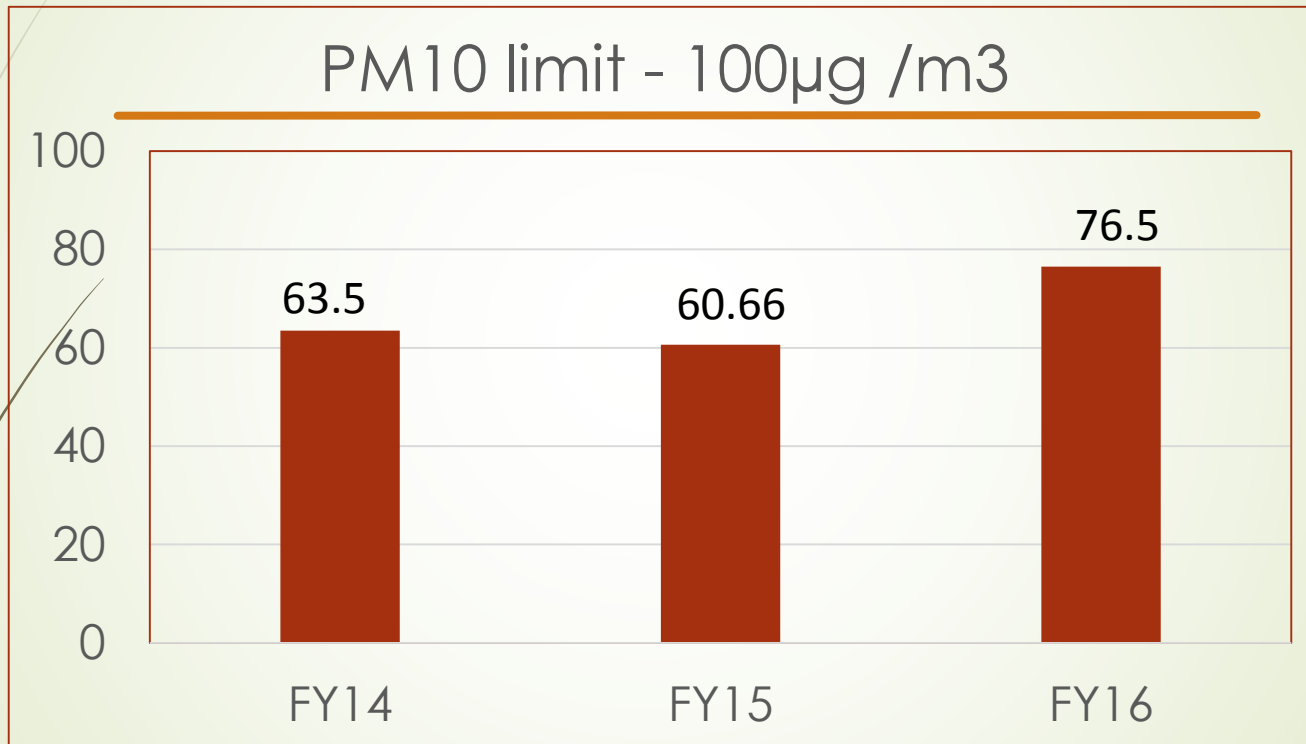
SO₂ in ambient air of TTPS online data



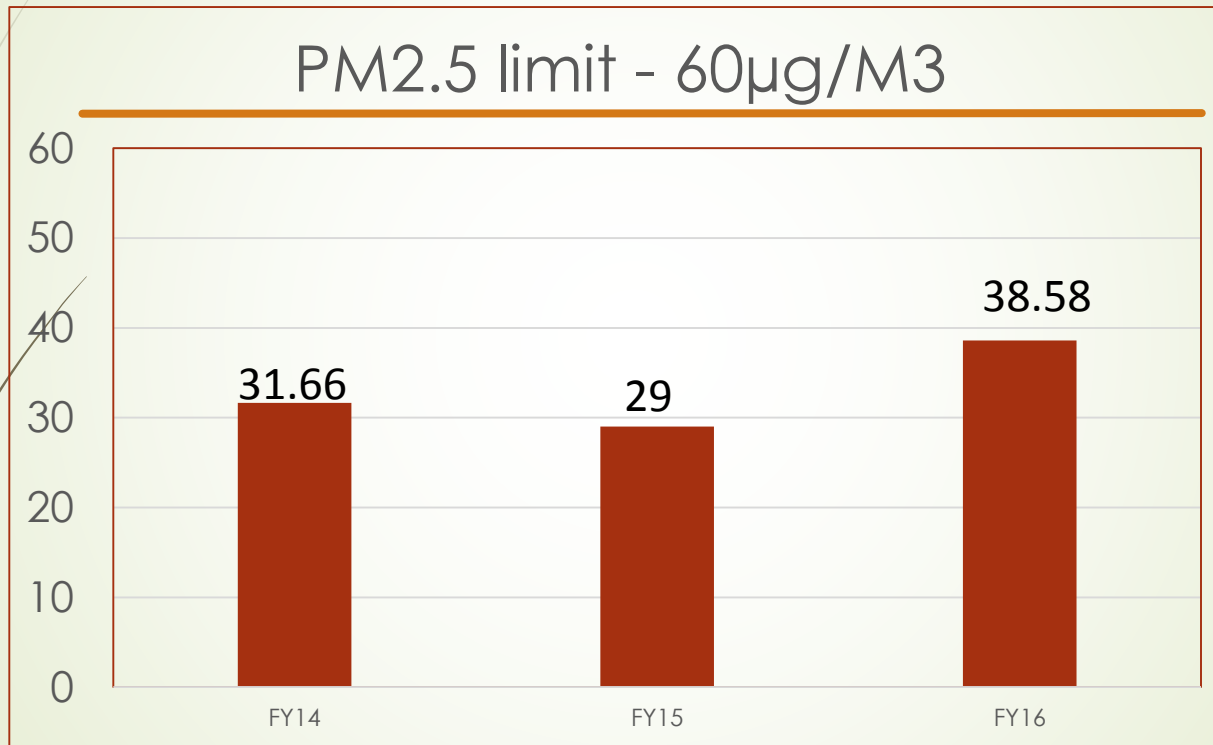
NOx in ambient air of TTPS online data



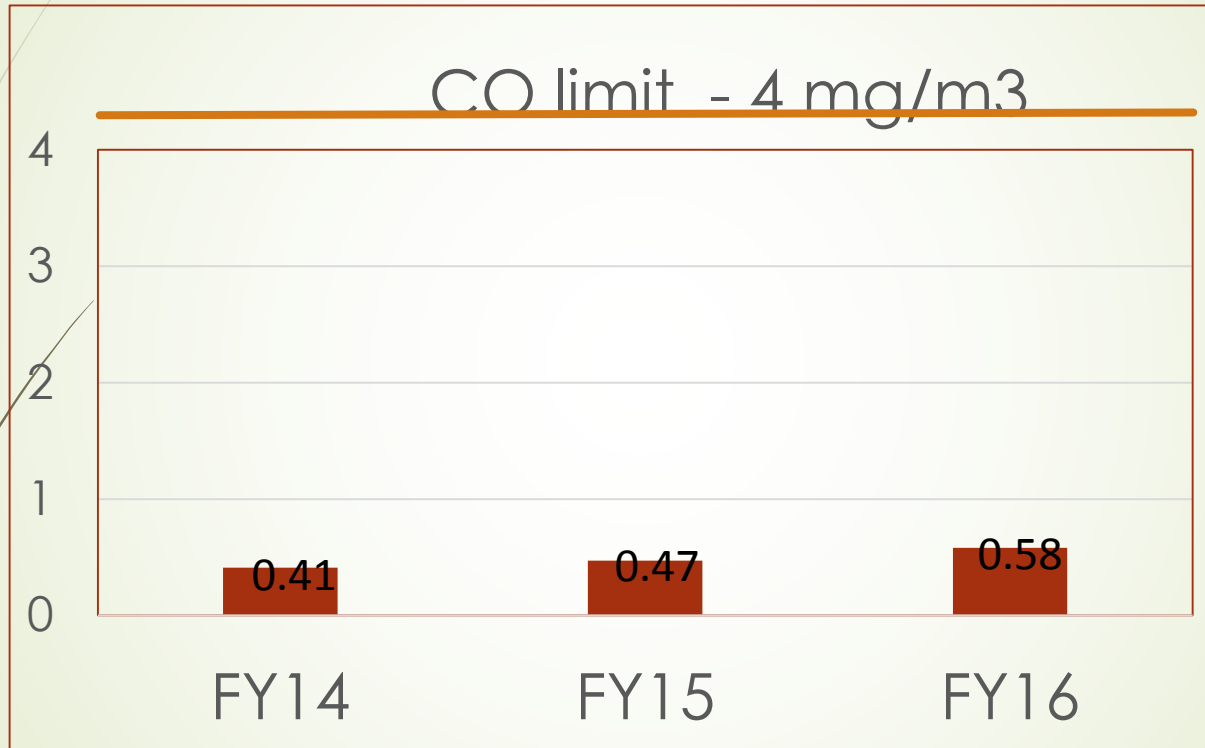
PM10 in ambient air of TTPS online data



PM 2.5 in ambient air of TTPS online data

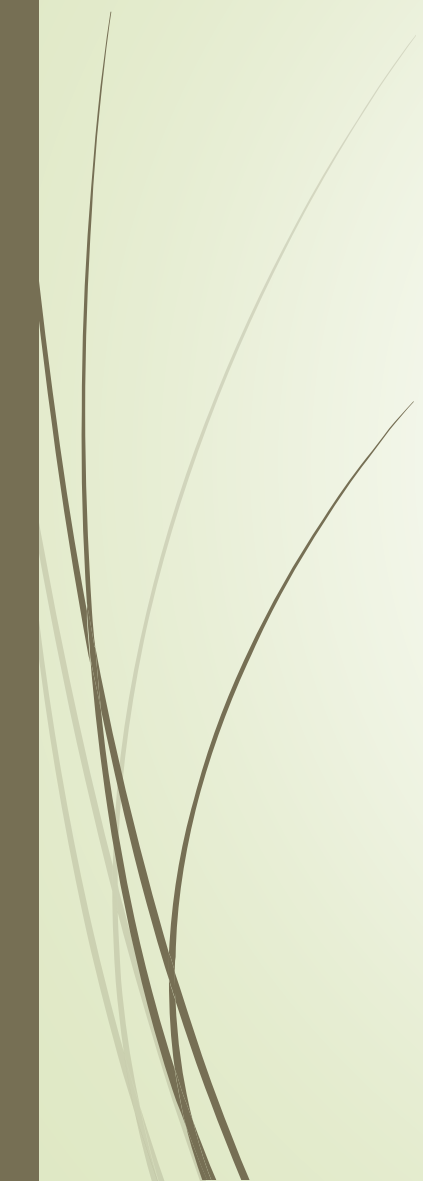


CO in ambient air of TTPS online data





RCF

- RCF is a national level Fertilizer industry in public sector.
 - Industry having different units in premises for various types of fertilizers.
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Measures taken by RCF

- Hot flare stack to eliminate the chances of ammonia emission to atmosphere.
- De-dusting system on the top of the Prilling Tower to reduce dust emission problem. Dust emission is 25-30 mg/Nm³
- Hydrolyser system for recovery of ammonia from waste water stream.
- Installation of New LP/Waste water vent gas scrubber for recovering ammonia from the LP/Waste water vent gases.
- Exporting of MP section Vent gases to Steam Generation Plant thus reducing fuel consumption in Steam Generation Plant.

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Stack Monitoring:
Continuous monitoring is carried out in process plants.

**Online SO₂ Analyzer at
Sulphuric Acid Plant**



**Online NO_x Analyzer at
Nitric Acid Plant**



**Ammonia analyzer in
Suphala plant**



Cont'd...

- Continuous Online RCF data from process plant & Effluent Treatment Plant are transmitted to MPCB & CPCB servers.
On line data of RCF Trombay Unit on MPCB & CPCB Server

EnviroConnect Environmental Monitoring

Maharashtra Pollution Control Board
apcbrg: sgpr:812015:0104

Welcome rcf [Logout] [Change Password]

Home | Support | Help

Device Tree

- EnviroConnect
 - RCF Chambur
 - RCF group
 - CEMS1
 - CEMS2
 - ETP



RCF Chambur - RCF group

Current Data

Sr. No	Parameter	Instantaneous as of	Instantaneous Value	Average as of	Average	Per
CEMS1						
1	MP NOx	08-12-2015 07:00:00	33.90 ppm	08-12-2015 07:00:00	36.28 ppm	
2	HP NOx	08-12-2015 07:00:00	27.84 ppm	08-12-2015 07:00:00	28.55 ppm	
CEMS2						
3	SO2	08-12-2015 07:00:00	199.58 ppm	08-12-2015 07:00:00	199.19 ppm	
4	NH3	08-12-2015 07:00:00	5 ppm	08-12-2015 07:00:00	7 ppm	
ETP						
5	pH	08-12-2015 07:45:00	6.57 pH	08-12-2015 07:45:00	6.63 pH	0 - 3
6	FLOW	08-12-2015 07:45:00	8.15 m3/hr	08-12-2015 07:45:00	8.25 m3/hr	0 - 3
7	NH3	08-12-2015 07:45:00	46.82 ppm	08-12-2015 07:45:00	47.17 ppm	0 - 2

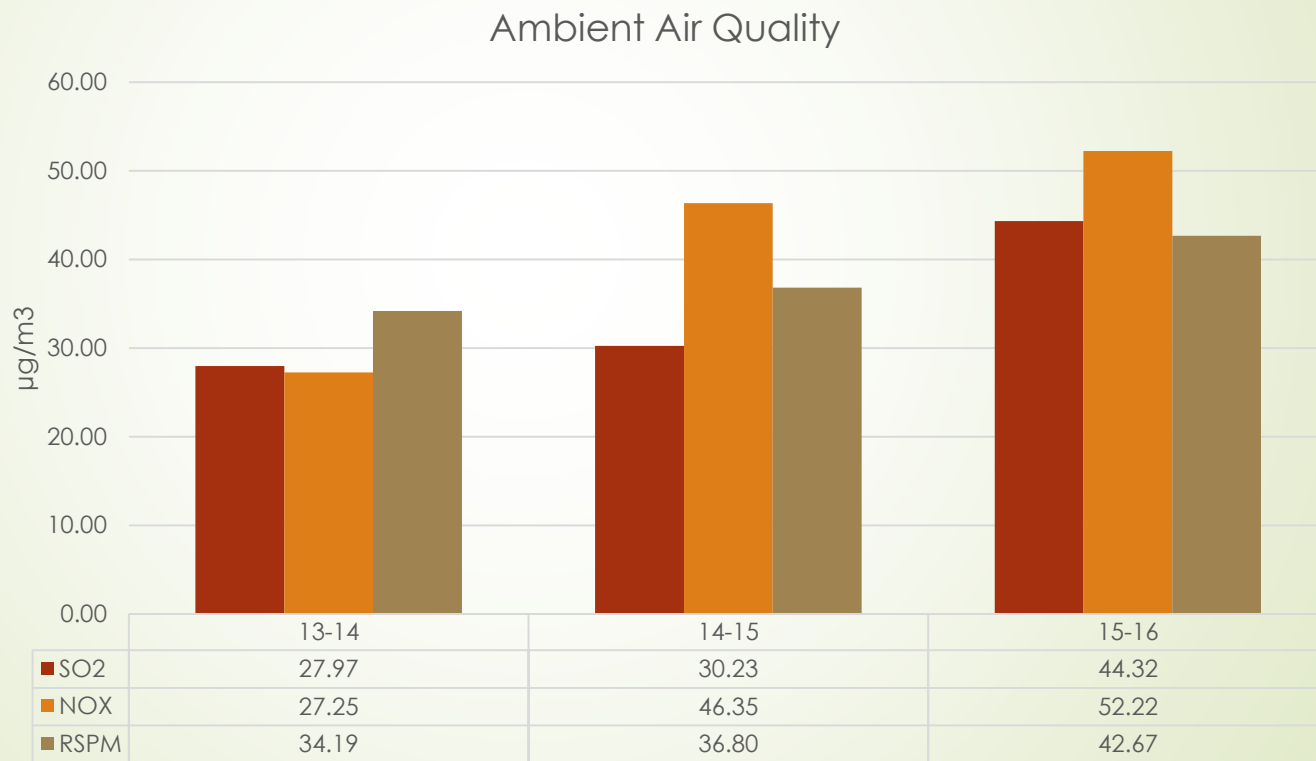
Reports

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- Installation of Fume scrubbers to for reaction section.
- Addition of urea solution to reactor to reduce NOx emission.
- Installation of Spray scrubbers & Ventury cyclones for control of Spherodizer dust.
- Dust cyclones, Bag filters for dust control.
- Adoption of granulation technology with high efficiency cyclone, ventury scrubbers and Tail Gas Scrubbers to reduce dust nuisance.
- Addition of urea solution to reactor to reduce NOx emission.
- Scrubbers, bag filters, cyclones provided as required.

HPCL Refinery near Vishnunagar CAAQMS data



HPCL Refinery near Vishnunagar, CAAQMS data

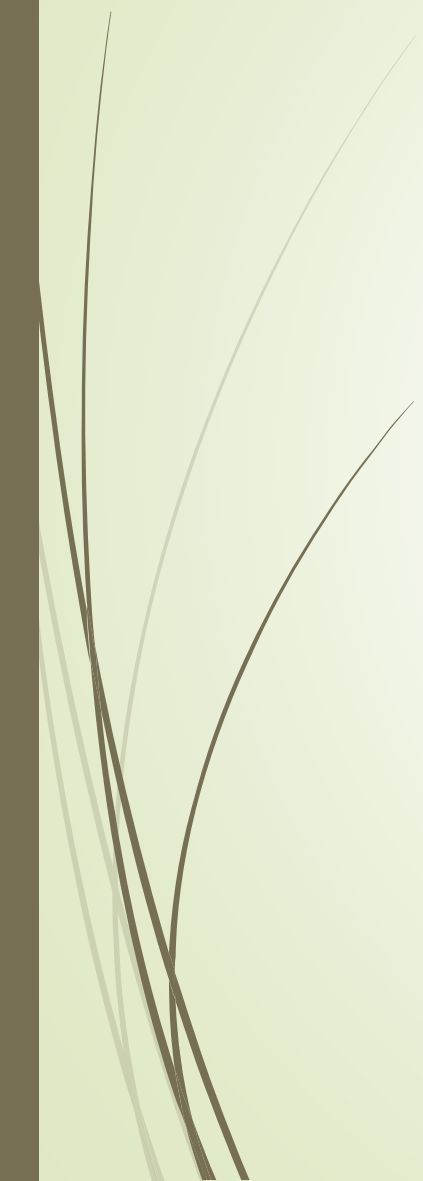

Parameter	SO ₂	NO _X	RSPM
Unit	µg/m ³	mg/m ³	µg/m ³
NAAQS Limit	80	80	60
13-14	27.97	27.25	34.19
14-15	30.23	46.35	36.80
15-16	44.32	52.22	42.67



M/s. Sea Lord Containers Ltd

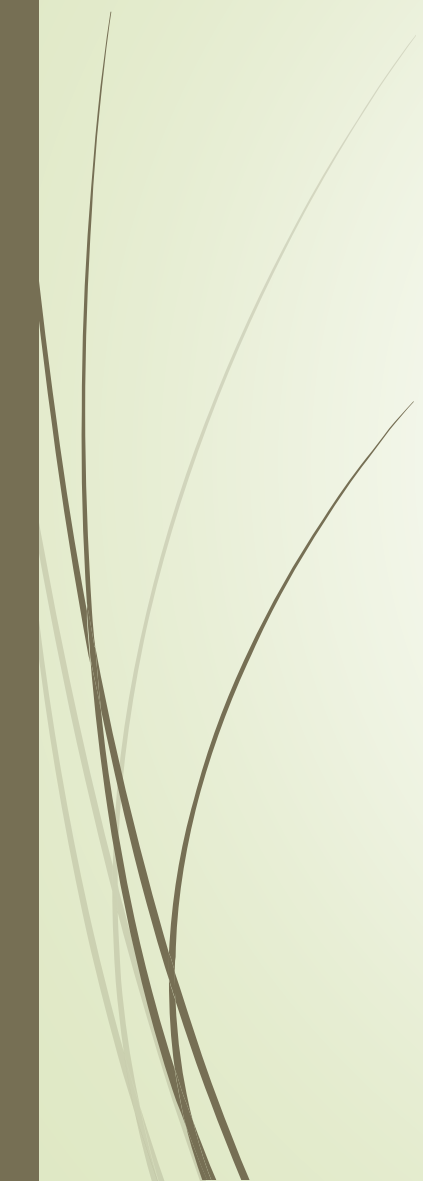

- M/s. Sea Lord Containers Ltd & M/s. Aegis Logistics Ltd are located in Mahul, Ambapada, Chembur area which handling chemicals & Petrochemicals in Tank Forms.
- MPC Board has received frequent complaints from residents of Village Mahul, regarding the smell nuisance and air pollution due to tankage and allied operations of M/s. Sea Lord Containers Ltd, & M/s. Aegis Logistics Ltd.
- The residents have filed an application no. 40 (WZ) of 2014 in National Green Tribunal, Western Zone Bench, Pune on the above issue principally alleging odour nuisance due to the tankages and allied operations of M/s. Sea Lord Containers Ltd.

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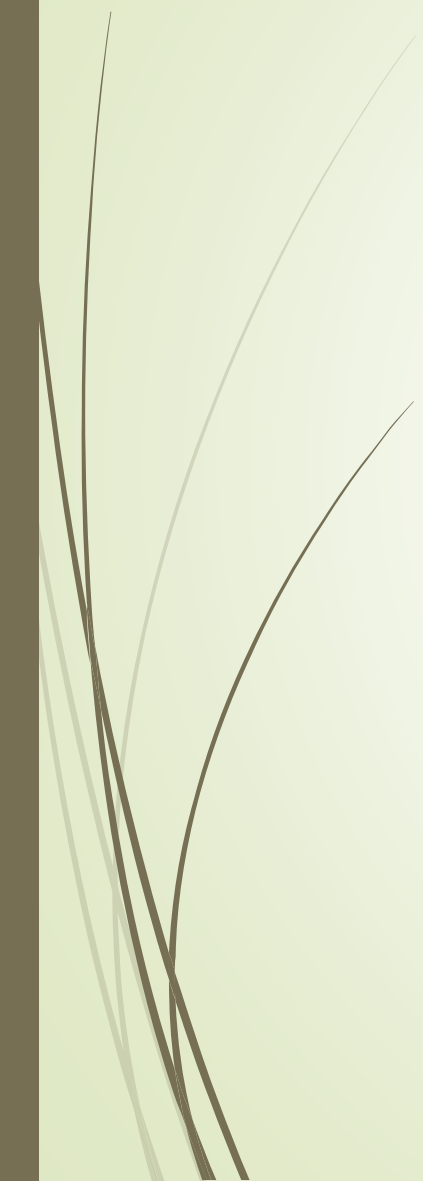

- In order to address the issues raised in the proper perspective and in view of need for specialized expertise, Maharashtra Pollution Control Board constituted a Committee comprising experts in the field such as Petroleum and Explosive Safety Organization (PESO), Directorate of Industrial Safety and Health (DISH) and technical experts in the field to study the matter in-depth and give their recommendations on the issues being raised

Cont'd...



- The committee formulated by MPCB pointed out the highly complex land use in Chembur- Mahul area with several contributing factors including large sized refineries, three storage terminals, other industrial units like Tata Thermal Ltd, RCF Ltd and heavy traffic as leading to emissions of hydrocarbons/ VOCs into the atmosphere. Hon. NGT also concurred with the Committee and passed interim order No.3 dt 28.05.14 directing the Committee to take a holistic view and not restrict to the two tankages viz M/s. Sea Lord Containers and Aegis Logistics.
- In the course of the deliberations/hearings, NGT asked KEM to conduct health morbidity studies in/near the respondent residents in Mahul- Ambapada as also asked Institute of Chemical Technology (ICT, Mumbai) to study the engineering controls existing with respect to VOC emissions from Sea Lord Containers Ltd.

Cont'd...



- The Environmental Pollution Research Centre (EPRC), Department of Chest Medicine, KEM Hospital, Parel has conducted a health (respiratory) morbidity studies in the period April 2003 to March 2014 in total 8 areas in the city of which 5 are in Chembur-Mahul area. The MPCB committee and the Hon NGT has appreciated the detailed assessment done by EPRC, KEM Hospital Parel and believes that such studies should be encouraged as it links the air pollution levels and the health effects seen.
- KEM and NEERI has given joint proposal for conducting comprehensive Health Impact Assessment Studies alongwith Emission inventory and VOC monitoring over a three years. MPCB has issued Work Order to KEM Hospital, Parel, Mumbai & NEERI, Mumbai on 13.04.2016. The cost of such studies shall be equally borne by Respondent-as per judgment passed by Hon'ble NGT (WZ).



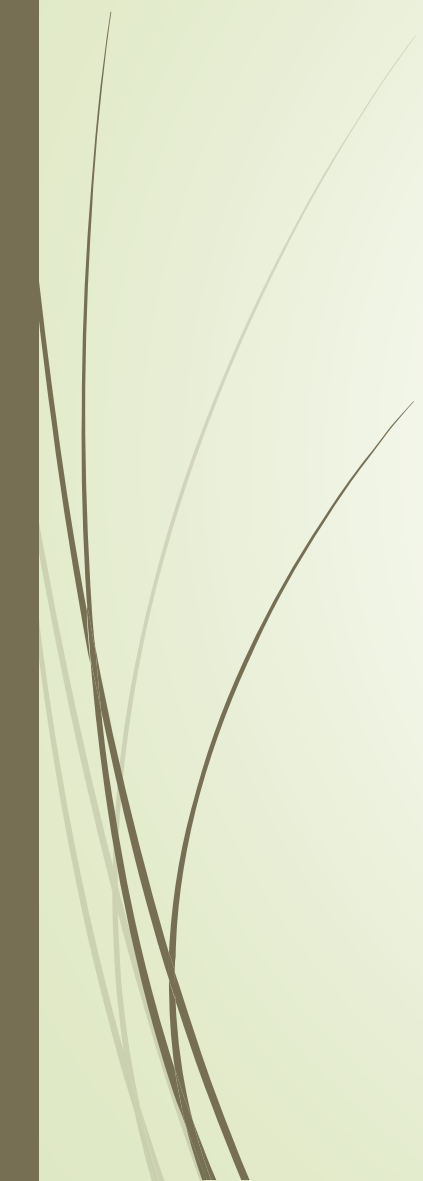
NGT Matter

MPCB issued directions to following industries located in Mahul area on 19.01.2016 as per recommendations of its Expert Committee as per judgement of Hon. NGT, Pune in application No. 40/2014 dated 18/12/2015.

- Sea Lords Containers Ltd (SCL)
- Aegis Logistics Ltd (ALL)
- Bharat Petroleum Corporation Ltd (BPCL)
- Hindustan Petroleum Corporation Ltd (HPCL)



Deonar dumping ground

- Dumping ground may be one of the major source of air pollution to effect the Chembur area.
 - Recently in January, 2016 & March, 2016 takes fires place in huge manner. It took long time to control the fire.
 - The Deonar dumping ground in Deonar has caused health issues for the residents of Chembur.
 - on the smoke coming out of the dumping ground, which may affects asthma diseases.
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Deonar dumping ground- AAQM results during Fire incidence In March, 2016

देवनार डंपींग ग्राऊंड, मुंबई येथे आग लागल्यावर मार्च २०१६ घटनास्थळी हवेची गुणवत्ता मोजली असता वरील घटकाचे प्रमाण खालीलप्रमाणे आढळून आले.

दिनांक	मे. टाईड वॉटर कंपनी, गोंवडी	मे. एस.एम.एस जवळ देवनार डंपींग	मे. मनिष फार्मा जवळ देवनार डंपींग
	PM ₁₀ (RSPM) (०८ Hrs)		
२४.०३.२०१६	४३६.००	--	--
२५.०३.२०१६	४६१.००	३८६.००	५४२.००
२६.०३.२०१६	३१२.००	४११.००	१९५.००
२७.०३.२०१६	--	४१०.००	३६२.००

Note- All the Results are expressed in ug/m^३

Short Term Action Plan for Air Pollution Measures

Sr. No.	Action	Responsible Authority	Time frame
1	WAYU Systems has been developed by NEERI & approved by MPCB shall be installed at traffic junctions within Chembur area.	NEERI	2 Months
2	Development of green belt at road dividers in Chembur.	MCGM	2 Months
3	Strict inspection & surveillance of major industries & identify non-complying units	MPCB	3 Months
4	Non Complied identified industries shall upgrade their APC & Shall ensure that the industries upgrade their APC failing which action to be initiated against industries.	MPCB	3 Months
5	Traffic congestion points shall be identified & proper management like making roads oneway re-aligning parking area, etc.	RTO/ Traffic Division	4 Months
6	Use Odd and Even formula for vehicles on roads in Mumbai City	RTO	3 Months

Cont'd...

Sr. No.	Action	Responsible Authority	Time frame
7	Focus on strengthening of Mass/Public transportation.	RTO	3 Months
8	Installation of AAQM Stations (Continuous) at Ambapada, Mahul, Gavanpada, Vashi naka, Vishnunagar, Anek village separately	Major industries	6 Months
9	IFRT & EFRT shall be provided with double seal with min. recovery of 96%	Concerned industries in Chembur	3 Months
10	Inspection and maintenance of storage tanks shall be carried out under strict control	MPCB	2 Months
11	Repairing of internal roads & proper maintenance of same	MCGM	3 Months

Long Term Action Plan for Air Pollution Measures

Sr. No.	Action	Responsible Authority	Time frame
1	Health Impact study of the residence of Chembur shall be carried out.	KEM	3 Years
2	The vehicles in this area shall be restricted to use clean fuel as LPG/ CNG	RTO	2 Years
3	Safe closure of Deonar dumping ground as there is no any scientific treatment since beginning.	MCGM	2 Years
4	Contribution of funds/ payment towards Health Impact Study.	Concerned industries	-----
5	Widening of roads, removal of obstructions, etc as per directions of RTO/Traffic Division.	RTO/Traffic Division & MCGM	2 Years
6	Require to start water transportation in Mumbai City and Sub urban area.	MSRDC	2 Years

Thank You

