

MONITORING OF ENVIRONMENTAL PLAN FOR JN PORT

ENVIRONMENTAL MONITORING REPORT- EXECUTIVE SUMMARY

1. Ambient Air Monitoring:

Monthly average values of Air Pollutants at various stations in JNP Area during September, 2016

STATION	PM ₁₀ , [µg/m ³]	PM _{2.5} , [µg/m ³]	SO ₂ , [µg/m ³]	NO _x , [µg/m ³]	NH ₃ , [µg/m ³]	O ₃ , [µg/m ³]	Pb, [µg/m ³]	C ₆ H ₆ , [µg/m ³]	CO, [mg/m ³]	CO ₂ , [ppm]
NAAQMS	100	60	80	80	400	100	1	5	4	-
INDUSTRIAL AREA										
POC	141 ± 27	51 ± 16	25.33 ± 2.24	28.65 ± 2.78	27.03 ± 2.35	8.36 ± 1.05	<0.5	1.53 ± 0.21	1.36 ± 0.13	291 ± 29
IMC	154 ± 37	53 ± 11	27.86 ± 3.40	31.16 ± 3.32	27.75 ± 1.82	8.93 ± 1.28	<0.5	1.30 ± 0.21	1.36 ± 0.16	292 ± 26
NG	170 ± 36	51 ± 11	26.91 ± 3.08	29.73 ± 3.29	28.68 ± 3.37	9.20 ± 1.17	<0.5	1.44 ± 0.13	1.33 ± 0.15	302 ± 30
SG	184 ± 25	54 ± 10	26.57 ± 2.70	28.97 ± 2.47	28.74 ± 1.82	8.92 ± 1.25	<0.5	1.51 ± 0.20	1.40 ± 0.12	305 ± 17
RESIDENTIAL AREA										
RC	113 ± 20	47 ± 9	23.26 ± 1.99	26.04 ± 1.46	24.47 ± 1.46	8.79 ± 1.30	<0.5	1.35 ± 0.19	1.25 ± 0.15	283 ± 22
ECO-SENSITIVE AREA										
EC	89	38	23.93	27.07	18.55	8.53	<0.5	<1.0	<1.0	285

Conclusion and Non-confirmatory:

From the results obtained for the month of September 2016, it can be concluded that overall Ambient Air Quality of the JN Port is within CPCB limits, except the levels of PM₁₀ which is higher at all locations due to overall development activities, except at Elephanta Caves.

Corrective Action Suggested:

- ✓ Upgradation/Concretization of roads.
- ✓ Adequate cleaning of roads and collection of debris from road sides. Cleaning and maintaining of paved and unpaved roads regularly.
- ✓ Dumpers carrying earth filling material and debris must be covered with tarpaulin sheets during transportation, to prevent dusting in the nearby areas.
- ✓ Minimizing emissions by regular maintenance and PUC document checkup of vehicles entering in the port area.
- ✓ Increasing the plantations in and around the port area on both sides of the roads and tank farms.
- ✓ Renovation work at JNP Township continued during September 2016, it should be

executed under controlled conditions like covering the close-by area with mesh cloth to prevent dust flow near the construction area.

2.0 Marine Water Quality

Observed Concentration Ranges of Marine Water for Various Parameters for JNP Area during Tidal Cycle (For September 2016)

Sr. No.	Parameter	Unit	Observed Range (Harbour)	Observed Range (Creek)	Prescribed Limits
1	Temperature	°C	24.5-26.9	25.1-26.3	-
2	pH	-	6.8-7.9	7.6-7.9	6.5 - 9.0
3	Salinity	ppt	27.4-30.3	27.5-30.6	-
4	Turbidity	NTU	21.9-33.6	17.2-33.4	-
5	TDS	mg/L	21082-22997	21945-23873	-
6	TSS	mg/L	42-147	37-52	-
7	TS	mg/L	21161-23139	21988-23921	-
8	DO	mg/L	5.5-6.6	5.4 – 6.0	3.0 mg/L(min.) or 40% of saturation value
9	COD	mg/L	43-96	54-83	-
10	BOD	mg/L	<2.0	<2.0	5 (max.)
11	NH ₃ -N	mg/L	<1.0	<1.0	-
12	Phenol	mg/L	< 0.001	< 0.001	-
13	Oil & Grease	mg/L	<4.0	<4.0	10 (max.)
14	Total Plate Count	CFU/ml	36-108	78-152	-
15	Fecal Coliforms	MPN/100ml	27-93	69-113	500 (max.)

Conclusion:

From the above results it can be concluded that, the Port's working does not affect the Quality of the Marine water. The overall Marine water Quality of the Harbour and Creek waters is in good category.

3.0 Marine Ecology (Flora and Fauna)

Sr. No.	Parameter	Observed Range	Criteria
1	Net Primary Productivity	125 – 175 mgC/m ³	<1500 mgC/m ³ /day at surface
2	Chlorophyll <i>a</i>	0.495 – 2.098 mg/m ³	<4 mg/m ³ (Oligotrophic class), 4-10 mg/m ³ (Mesotrophic class), >10 (Eutrophic class)
3	Phosphate	37 – 82 µg/L	0.1-90 µg/L
4	Nitrate	2146 – 2852 µg/L	1.0-500 µg/L
5	Nitrite	< 10 µg/L	<125 µg/L

6	Particulate Organic Carbon	432 – 781 mg/m ³	10-100 mg/m ³
7	Silicate	1252 – 1851 µg/L	10-5000 µg/L

The results obtained from the study for the month of September 2016, Net primary productivity, Chlorophyll-a, Phosphate, Nitrite and Silicate are well within prescribe standards for ecological parameters for Arabian Sea. However, the values for Nitrates and Particulate Organic Carbon (POC) exceeds the prescribe standards which might be natural phenomenon happening due to discharge of untreated sewage and Industrial waste in to the sea water by the concerned authorities like Brihanmumbai Municipal Corporation, Thane Municipal Corporation and Panvel Municipal Corporation etc.

Considering the activities in JNP Harbour and Nhava Creek area, it is seen that the marine ecosystem is not adversely affected by Port activities.

Corrective Action Suggested:

Proper treatment to sewage and Industrial waste must be done before discharging it into the sea water by the concerned authorities like Brihanmumbai Municipal Corporation, Thane Municipal Corporation and Panvel Municipal Corporation etc.

4.0 Drinking Water Quality

As per the drinking water specifications, given in IS 10500:2012 and also on the basis of analysis parameters, the drinking water being supplied to JN Port is safe for drinking purpose at all drinking water monitoring stations around port area.