

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 December, 2016

STATION	PM10, [$\mu\text{g}/\text{m}^3$]	PM2.5, [$\mu\text{g}/\text{m}^3$]	SO ₂ , [$\mu\text{g}/\text{m}^3$]	NOX, [$\mu\text{g}/\text{m}^3$]	NH ₃ , [$\mu\text{g}/\text{m}^3$]	O ₃ , [$\mu\text{g}/\text{m}^3$]	Pb, [$\mu\text{g}/\text{m}^3$]	C ₆ H ₆ , [$\mu\text{g}/\text{m}^3$]	CO, [mg/m^3]	CO ₂ , [ppm]
NAAQMS	100	60	80	80	400	100	1	5	4	-
INDUSTRIAL AREA										
POC	190 \pm 45	57 \pm 12	29.77 \pm 2.34	33.31 \pm 3.26	28.90 \pm 3.29	10.10 \pm 1.66	<0.05	1.67 \pm 0.35	1.58 \pm 0.26	297 \pm 31
IMC	215 \pm 69	59 \pm 11	31.51 \pm 2.91	35.59 \pm 3.32	30.70 \pm 1.49	11.36 \pm 2.13	<0.05	1.74 \pm 0.31	1.55 \pm 0.15	300 \pm 32
NG	228 \pm 77	58 \pm 11	32.89 \pm 2.11	36.96 \pm 2.69	32.49 \pm 3.30	10.85 \pm 1.35	<0.05	1.73 \pm 0.30	1.55 \pm 0.26	308 \pm 34
SG	213 \pm 66	52 \pm 10	32.70 \pm 1.85	36.89 \pm 2.97	31.78 \pm 0.80	11.72 \pm 2.02	<0.05	1.59 \pm 0.13	1.54 \pm 0.28	311 \pm 20
RESIDENTIAL AREA										
RC	119 \pm 36	45 \pm 10	26.30 \pm 2.53	29.36 \pm 2.79	27.65 \pm 2.32	9.82 \pm 1.70	<0.05	1.47 \pm 0.23	1.51 \pm 0.21	292 \pm 33
ECO-SENSITIVE AREA										
EC	91	42	26.28	29.16	26.61	9.22	<0.05	<1.0	<1.0	293

Conclusion and Non-confirmatory:

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

Corrective Action Suggested:

- ✓ Dumpers carrying earth filling material and debris must be covered with tarpaulin sheets during transportation, to prevent dusting in the nearby areas.
- ✓ Up-gradation/Concretization of roads and adequate cleaning, collection of debris from road sides and regular maintenance of paved and unpaved roads should be done, as significant amount of dust is generated due to vehicular movement which might be the source of particulate matter in the nearby areas.
- ✓ Regular sprinkling of water must be done during Construction of 4th Container Terminal, as significant amount of dust is generated due to earth filling activities at the site.
- ✓ Renovation work at JNP Township should be executed under controlled conditions like covering the close-by area with mesh cloth to prevent dust flow near the construction area. Debris should be disposed periodically

2.0 Marine Water Quality

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

Sr. No.	Parameter	Unit	Observed Range (Harbour)	Observed Range (Creek)	Prescribed Limits
1	Temperature	°C	24.1-26.0	24.0-25.7	-
2	pH	-	7.08-7.97	7.12-7.83	6.5 - 9.0
3	Salinity	ppt	34.0-35.9	32.8-34.9	-
4	Turbidity	NTU	17.8-39.2	42.9-58.1	-
5	TDS	mg/L	24032-26933	24577-26553	-
6	TSS	mg/L	41-127	87-135	-
7	TS	mg/L	24094-27016	24671-26688	-
8	DO	mg/L	5.7-6.8	5.1- 5.8	3.0 mg/L(min.) or 40% of saturation value
9	COD	mg/L	42-93	65-92	-
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	53-119	74-121	-
15	Fecal Coliforms	MPN/100ml	48-111	58-92	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	125.0 - 187.5 mgC/m ³	<1500 mgC/m ³ /day at surface
2	Chlorophyll <i>a</i>	1.123-2.858 mg/m ³	<4 mg/m ³ (Oligotrophic class), 4-10 mg/m ³ (Mesotrophic class), >10 (Eutrophic class)
3	Phosphate	41 - 95 µg/L	0.1-90 µg/L
4	Nitrate	2118 - 2647 µg/L	1.0-500 µg/L
5	Nitrite	< 10 µg/L	<125 µg/L
6	Particulate Organic Carbon	396 - 653 mg/m ³	10-100 mg/m ³
7	Silicate	1206- 1596 µg/L	10-5000 µg/L

The results obtained from the study for the month of December 2016, the values of Phosphate, Nitrates and Particulate Organic Carbon (POC) exceeds the prescribe standards, this might be a 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. However, Net primary productivity, Chlorophyll-a, Nitrite and Silicate are well within prescribe standards for ecological parameters for Arabian Sea

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:

Sewage and Industrial waste must be treated properly before discharging it into the sea water by the concerned authorities like Brihanmumbai Municipal Corporation, Thane Municipal Corporation 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.