

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 October, 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	170 \pm 46	53 \pm 13	34.16 \pm 3.19	36.87 \pm 3.02	30.19 \pm 1.92	9.27 \pm 1.53	<0.05	1.58 \pm 0.21	1.43 \pm 0.20	300 \pm 37
IMC	177 \pm 37	59 \pm 13	31.50 \pm 1.07	34.06 \pm 1.69	29.30 \pm 2.35	9.86 \pm 1.32	<0.05	1.46 \pm 0.16	1.54 \pm 0.20	314 \pm 27
NG	196 \pm 68	57 \pm 13	30.59 \pm 0.76	32.83 \pm 0.64	33.95 \pm 0.95	9.98 \pm 0.42	<0.05	1.72 \pm 0.26	1.44 \pm 0.35	300 \pm 38
SG	204 \pm 39	58 \pm 8	31.59 \pm 1.47	32.53 \pm 2.17	31.57 \pm 1.75	9.57 \pm 0.52	<0.05	1.56 \pm 0.24	1.61 \pm 0.23	313 \pm 30
RESIDENTIAL AREA										
RC	121 \pm 32	49 \pm 12	28.06 \pm 2.22	32.13 \pm 2.97	26.59 \pm 2.37	8.96 \pm 0.96	<0.05	1.41 \pm 0.12	1.50 \pm 0.15	291 \pm 29
ECO-SENSITIVE AREA										
EC	95	46	29.46	32.38	23.5	9.21	<0.05	<1.0	<1.0	293

Conclusion and Non-confirmatory:

From the results obtained for the month of October 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:

- ✓ Renovation work at JNP Township should be executed under controlled conditions to prevent dust flow near the construction area. The area under renovation should be covered with mesh cloth.
- ✓ Dumpers carrying earth filling material and debris must be covered with tarpaulin sheets during transportation, to prevent dusting in the nearby areas.
- ✓ Regular cleaning of roads, collection of debris from road sides and regular maintenance of paved and unpaved roads should be done.
- ✓ Minimizing emissions by regular maintenance and PUC document checkup of vehicles, entering in the port area.

2.0 Marine Water Quality

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

Sr. No.	Parameter	Unit	Observed Range (Harbour)	Observed Range (Creek)	Prescribed Limits
1	Temperature	°C	24.3-26.6	25.3-26.6	-
2	pH	-	7.06-7.95	7.68-7.89	6.5 - 9.0
3	Salinity	ppt	27.8-30.5	27.2-29.4	-
4	Turbidity	NTU	19.7-31.2	21.2-29.6	-
5	TDS	mg/L	19289-22723	21365-22831	-
6	TSS	mg/L	54-121	53-88	-
7	TS	mg/L	19343-22782	21418-22910	-
8	DO	mg/L	5.6-6.7	5.3 - 5.9	3.0 mg/L(min.) or 40% of saturation value
9	COD	mg/L	38-91	49-87	-
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	39-95	73-119	-
15	Fecal Coliforms	MPN/100ml	30-87	61-92	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	112.5 – 187.5 mgC/m ³	<1500 mgC/m ³ /day at surface
2	Chlorophyll <i>a</i>	5.434 – 25.779 mg/m ³	<4 mg/m ³ (Oligotrophic class), 4-10 mg/m ³ (Mesotrophic class), >10 (Eutrophic class)
3	Phosphate	32 – 87 µg/L	0.1-90 µg/L
4	Nitrate	2106 – 2636 µg/L	1.0-500 µg/L
5	Nitrite	< 10 µg/L	<125 µg/L
6	Particulate Organic Carbon	487 – 803 mg/m ³	10-100 mg/m ³
7	Silicate	1288– 1692 µg/L	10-5000 µg/L

The results obtained from the study for the month of October 2016, Net primary productivity, Chlorophyll-a, Phosphate, Nitrite and Silicate are well within prescribe standards for ecological parameters for Arabian Sea. However, the values of 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:

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 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.

5.0 Sewage Quality

As per Schedule VI of Environment (Protection) Third Amendment Rules, 1993, the quality of sewage effluent is within permissible limits for final disposal during August-October 2016.