Monitoring Protocol in Critically Polluted Areas

1. Monitoring Team

Monitoring shall be undertaken by reputed & recognized laboratories in consultation with concerned SPCBs, ZO-CPCB) and local Stake Holders**.**

2. Locations (Sampling locations shall be decided in consultation with concerning SPCBs so as to cover the entire area of impact zone)

Part I

(Monitoring Area for Ambient Air, Water and Ground Water Quality)

Sl. No.	Industrial Cluster/Area	Potential Impact Zones	Nos. of Air samples	Nos. of Water Samples*	
				SW	GW
1	**Tarapur (Maharashtra)**	MIDC Tarapur	4	4	4
2	**Patancheru- - Bollaram (Andhra Pradesh)**	Patancheru Industrial Area and Bollaram Industrial Area	4	4	4
3	**Coimbatore (Tamil Nadu)**	SIDCO, Kurichi Industrial Clusters	4	4	4
4	**Vapi (Gujarat)**	GIDC Vapi	4	4	4
5	**Mandi Gobind Garh (Punjab)**	Mandi Govindgarh –both side of GT Road(between khanna and sharhind canal)	4	4	4

*SW- Surface Water & GW- Ground Water

Part II

(Parameters for Monitoring)

A. Ambient Air Quality:

i. SO_2 , NO_2 , PM_{10} , $PM_{2.5,}$ Lead (for 24 hourly average monitoring values for at-least 2 days)

ii. O_3 , CO (for 1 hourly average and 8 hourly average for at least 2 days)

iii. Benzene, Benzo(O) Pyrene, Arsenic & Nickel (for 24 hourly average for at least 2 days)

B. Water Quality–

Prominent Sampling Locations:

i. Outfalls of CETPs, ETPs, FETP, treated effluent drainage and Surface Water bodies like rivers, canals, ponds, lakes and other water supply resources flowing through the area or flowing adjoining the CPA.

ii. **Ground Water** Quality data of prominent ground water resources such as observation wells of Central Ground Water Board, drinking water wells, hand pumps, bore wells and other such water supply resources located in the industrial cluster/ area under consideration or in the peripheral areas.

C. **Parameters for Water Quality Monitoring** (for surface water and ground water both)**:**

(i) Simple Parameters -

General Appearance, Colour, Smell, Transparency and Ecological parameters like presence of animals like fish, insects etc. only in case of surface water bodies.

(ii) Regular Monitoring Parameters

pH, DO (% saturation), COD in mg/l , BOD in mg/l, Electrical Conductivity in µmhos/cm, (NO_2+NO_3)-Nitrogen in mg/l, Suspended Solids in mg/l, Fecal Coliform (MPN/100 ml), Bio-assay (zebra fish)

(iii) Special Parameters

Total phosphorous, TKN, Total Ammonia(NH4+NH3)-Nitrogen, Phenols, Surface Active Agents, Organo-chlorine pesticides, PAH, PCB and PCT, Zinc, Nickel, Copper, Chromium (Total), Arsenic (Total), Lead, Cadmium, Mercury

D. **Frequency of Monitoring** : Thrice in a year (January – February, May – June and September – October)

Note :

- DO is not applicable in case of ground waters.
- DO in eutrophicated waters should include measurements for diurnal variations.
- SS limit is applicable only during non-monsoon period.
- Fecal Coliform values should meet for 90 % times.
- Static Bio-assay method may be adopted.