

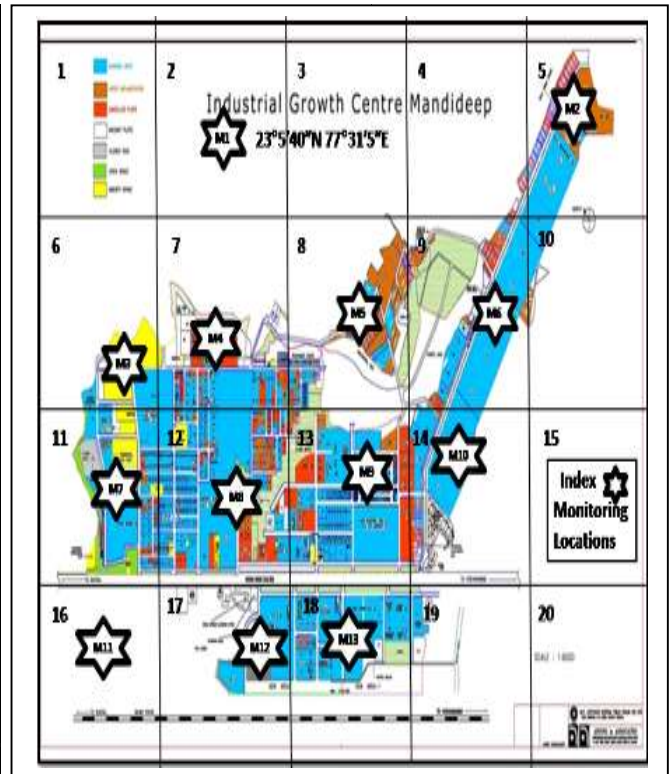
## Comprehensive Environmental Monitoring of Mandideep Industrial Area of M.P.

**Objective:** Industrial pollution has adversely affected biodiversity for the last two centuries and continues to increase globally. Therefore Environmental monitoring is important to knowing whether the quality of environment of industrial area is getting better or worse. The main objective of this study is to generate baseline data of environmental pollution and its impact on all around Mandideep industrial area during year 2017-19.

Mandideep industrial area were divided in to 20 Blocks in which 13 blocks were selected for this study and other 7 blocks have open area around. Total thirteen locations were selected for ambient air, noise, ground water and soil monitoring are depicted in table. Betwa river and Kaliyasot river around Mandideep industrial area were selected for surface water monitoring w.r.t general physicochemical parameters and phytoplankton study.

S.N	Code	Monitoring Locations	Monitoring Points
1	M 1	Block 2	St Chavara, H. S. School, New Satlapur Mandideep
2	M2	Block 5	Bansal Extraction & Exports Pvt, Ltd Mandideep
3	M 3	Block 6	Bhaskar Industry, Mandideep
4	M 4	Block 7	Proctor & Gamble, Mandideep
5	M 5	Block 8	Mahindra Steel Service Centre, Mandideep
6	M 6	Block 9	Dawat Food Industry, Mandideep
7	M 7	Block 11	Eicher Trectors, Mandideep
8	M 8	Block 12	HEG, Mandideep
9	M 9	Block 13	Lupin ltd, Mandideep
10	M 10	Block 14	Vardhman Yarns, Mandideep
11	M 11	Block 16	Lalit Gitanjali Hospital, Mandideep
12	M 12	Block 17	AKVN, Mandideep
13	M 13	Block 18	Crompton & Greves, Mandideep
14	M 14	Natural water	Upstream, Kaliyasot River, Mandideep
15	M 15	Natural water	Downstream, Kaliyasot River, Mandideep
16	M 16	Natural water	Upstream, Betwa River, Mandideep
17	M 17	Natural water	Downstream, Betwa River, Mandideep
18	M18	Natural water	Near Satlapur, Betwa River, Mandideep
19	M 19	Natural water	Near Road Bridge, Betwa River, Bhojpur

Remark -Block 1,3,4,10,15,19,20 are no monitoring zones



### Comprehensive Environmental Monitoring of Mandideep Industrial area

Central Laboratory



Picture: Ambient Air Monitoring : M/S HEG , Mandideep



Picture: Ambient Air Monitoring : M/S Crompton Greaves, Mandideep



Picture: BTX Monitoring : M/S Bansal Extraction & Exports Pvt, Ltd , Mandideep



Picture: Ambient sound Monitoring : M/S Dawat Food Industry, Mandideep



Picture: Ground water Monitoring : M/S, Mahindra Steel Service Centre, Mandideep



Picture: Ground water Monitoring : M/S. TAFE (Eicher) Tractors, Mandideep



Picture: Surface water Monitoring : Downstream, Kaliyasot River, Mandideep



Picture: Phytoplankton Monitoring : Upstream, Kaliyasot River, Mandideep



Picture: Soil Monitoring : New Satlapur, Mandideep

All samples were monitored and analyzed by as per standard methods and guidelines of Central Pollution Control Board. The environmental pollution status of study during year 2017-18 is as below:

<b>Comprehensive Environmental Pollution Status of Mandideep Industrial Area of M.P. during year 2017-18</b>	
<b>Air Environment</b>	<b>Ambient Air (w.r.t PM10 and PM2.5)</b> Block 12> Block13> Block 17> Block7 > Block16>Block5> Block14> Block18> Block2> Block 6> Block9>Block11> Block8
	<b>Noise (w.r.t Noise rule 2000)</b> Block 12> Block16> Block 14> Block13> Block7>Block17> Block2> Block6> Block18> Block11> Block 9> Block8>Block5
<b>Water Environment</b>	<b>Ground Water (w.r.t BIS 10500)</b> Block 11> Block6> Block 18> Block5 > Block2>Block16> Block13> Block7> Block17> Block 12> Block14>Block8> Block9
	<b>Surface Water (w.r.t BIS 2296)</b> Kaliasot river >Betwa River
<b>Biological Environment</b>	<b>Aquatic Phytoplankton (w.r.t polluted water species)</b> Kaliyot river >Betwa River
<b>Land Environment</b>	<b>Soil (w.r.t Fe, Mn,Pb, Cd Heavy metals concentration)</b> Block 12>Block11> Block 18> Block13 > Block8>Block2> Block5> Block7 > Block17 > Block 14> Block16>Block 6> Block 9

Air Quality Index was poor (235.10) at one location, Moderate (104.41-200) at eight locations and satisfactory (89-98) at four locations around Mandideep industrial area. Overall ambient Air Quality Index of Mandideep was observed to be moderate during year 2017-18. According to first year study, it concluded that high environmental pollution observed in Block 12. HEG industry, Highway NH12, HEG thermal power station, in front of Indira Nagar, Traffic, Transport, Vehicle and public activities are reasons of high pollution observed in Block 12 in comparison to other blocks. Least environmental pollution observed at two locations because of where farms and open area located. The environmental pollution status up to third quarter of study during year 2018-19 is as below:

<b>Comprehensive Environmental Pollution Status of Mandideep Industrial Area of M.P. during year 2018-19</b>	
<b>Air Environment</b>	<b>Ambient Air (w.r.t PM10 and PM2.5)</b> Block 17> Block12> Block 2> Block9 > Block7>Block13> Block18> Block14> Block5> Block 6> Block8>Block11
	<b>Noise (w.r.t Noise rule 2000)</b> Block 9> Block8> Block 6> Block17 > Block5>Block18> Block7> Block12> Block16> Block11> Block 2> Block13>Block14
<b>Water Environment</b>	<b>Ground Water (w.r.t BIS 10500)</b> Block 18> Block5> Block 11> Block4 > Block7>Block6> Block9> Block12> Block2 > Block 17> Block14>Block13> Block8
	<b>Surface Water (w.r.t BIS 2296)</b> Kaliasot river >Betwa River
<b>Biological Environment</b>	<b>Aquatic Phytoplankton (w.r.t polluted water species)</b> Kaliyot river >Betwa River
<b>Land Environment</b>	<b>Soil (w.r.t Fe, Mn,Pb, Cd Heavy metals concentration)</b> Block 5> Block18> Block 7> Block13 > Block16 >Block2> Block8 > Block9 > Block6 > Block 17> Block14>Block11> Block12

Air Quality Index was Moderate (102.82-196.48) at eleven locations and satisfactory (98.25-100) at two locations around Mandideep. Overall ambient Air Quality Index of Mandideep was observed to be moderate during year 2018-19. According to second year study, it concluded that high air pollution observed in Block 17. Highway NH12, Traffic, Transport, Vehicle and public activities are reasons of high air pollution observed in Block 17 in comparison to other blocks. Farms and open areas are reason of least environmental pollution observed locations.

**Summary:**

**No Significant change in concentration of studied environmental parameter is observed as compare to study year 2017-18 to 2018-19.**