

3.4.2. Ambient Air Quality Monitoring

The whole of Jonai subdivision is perennially short of power and this created quite a problem in collecting ambient air quality data. Despite the difficulties, 8 stations were finally selected for air quality monitoring. The locations of these stations are shown in Table 3.18.

Table 3.18: Ambient Air Quality Monitoring Stations in Jonai

S/N	Sampling Locations
1	Jonai Bazar
2	Ruwad Dolung
3	Ratke
4	Kuligaon
5	Ujani Bijaypur
6	Namani Bijaypur
7	Ratanpur
8	Mohmara

The results of ambient air quality at these locations with respect to TSPM, RSPM, SO₂, NO_x, CO and HC are presented in Tables 3.19 to 3. 26. The monitoring was conducted for the three month period of October, November and December 2007 for 8 weeks. All the results conform to the National Ambient Air Quality standards and therefore, they reflect the stress-free conditions of the ambient air in all the locations.

Volatile Organic Compounds (VOC) could not be detected in any of the above 8 sites.

Table 3.19. Ambient Air Quality at Jonai Bazar station [24 Hours Average]

S/N	Date	Parameters ($\mu\text{g}/\text{m}^3$, CO and HC mg/m^3)					
		TSPM	RPM	SO ₂	NO _x	CO	HC
1	05/10/2007	168.5	66.2	7.80	4.6	0.32	BDL
2	08/10/2007	116.4	51.2	8.80	BDL	BDL	0.07
3	12/10/2007	128.2	58.2	BDL	6.30	0.18	BDL
4	17/10/2007	86.4	67.5	5.70	BDL	BDL	0.08
5	21/10/2007	152.3	59.5	6.70	3.10	0.40	BDL
6	25/10/2007	150.7	68.9	7.10	BDL	BDL	BDL
7	28/10/2007	142.8	62.6	9.20	2.80	1.20	0.03
8	30/10/2007	149.2	54.2	6.30	3.10	BDL	0.07
9	03/11/2007	167.2	54.5	BDL	BDL	BDL	BDL
10	08/11/2007	162.2	46.6	8.20	BDL	0.70	0.03
11	11/11/2007	122.2	54.2	6.40	4.10	BDL	BDL
12	14/11/2007	122.4	24.4	BDL	BDL	BDL	BDL
13	17/11/2007	90.2	72.1	8.40	2.80	0.58	BDL
14	21/11/2007	126.3	38.2	BDL	3.80	BDL	BDL
15	Min	86.4	24.4	BDL	BDL	BDL	BDL
16	Max	168.5	72.1	9.2	6.3	1.2	0.08
17	Mean	134.6	55.5	7.4	3.8	0.56	0.05
18	SD	26.1	12.8	1.1	1.2	0.36	0.02

Table 3.20: Ambient Air Quality at Ruwad Dolung station [24 Hours Average]

S/N	Date	Parameters ($\mu\text{g}/\text{m}^3$, CO and HC mg/m^3)					
		TSPM	RPM	SO ₂	NO _x	CO	HC
1	05/10/2007	131.6	42.1	8.80	3.60	0.21	0.06
2	08/10/2007	145.6	66.2	6.50	BDL	BDL	BDL
3	12/10/2007	139.5	50.2	8.30	BDL	0.40	BDL
4	17/10/2007	115.2	64.2	BDL	3.60	BDL	BDL
5	21/10/2007	163.6	42.4	4.30	BDL	0.42	0.03
6	25/10/2007	118.9	44.8	3.20	3.20	BDL	BDL
7	28/10/2007	168.9	21.3	3.30	2.60	0.21	BDL
8	30/10/2007	88.4	70.4	BDL	3.10	BDL	0.03
9	03/11/2007	119.7	35.6	6.40	BDL	0.23	BDL
10	08/11/2007	124.3	38.2	8.40	BDL	BDL	BDL
11	11/11/2007	162.1	56.3	BDL	6.60	0.32	BDL
12	14/11/2007	112.3	45.5	3.40	BDL	BDL	0.06
13	17/11/2007	137.9	55.9	6.80	3.80	0.41	BDL
14	21/11/2007	116.3	41.2	BDL	3.60	BDL	BDL
15	Min	88.4	21.3	BDL	BDL	BDL	BDL
16	Max	168.9	70.4	8.8	6.6	0.41	0.06
17	Mean	131.7	48.2	5.9	3.7	0.31	0.04
18	SD	22.7	13.4	2.2	1.20	0.09	0.02

Table 3.21 : Ambient Air Quality at Ratke station [24 Hours Average]

S/N	Date	Parameters ($\mu\text{g}/\text{m}^3$, CO and HC mg/m^3)					
		TSPM	RPM	SO ₂	NO _x	CO	HC
1	03/10/2007	76.2	41.4	6.20	3.60	0.21	BDL
2	05/10/2007	74.2	32.2	4.20	BDL	BDL	BDL
3	08/10/2007	160.8	33.2	3.40	BDL	BDL	BDL
4	11/10/2007	164.2	48.3	BDL	2.60	BDL	BDL
5	14/10/2007	71.8	21.2	4.80	BDL	0.23	BDL
6	18/10/2007	113.0	56.2	4.30	1.20	BDL	BDL
7	21/10/2007	63.6	26.3	BDL	BDL	BDL	BDL
8	24/10/2007	102.7	36.4	3.30	4.10	BDL	BDL
9	27/10/2007	161.6	28.2	5.30	BDL	BDL	BDL
10	02/11/2007	72.1	35.4	6.40	4.60	BDL	BDL
11	05/11/2007	70.8	48.1	BDL	BDL	BDL	BDL
12	08/11/2007	157.7	32.3	5.20	BDL	BDL	BDL
13	12/11/2007	161.7	35.2	3.40	BDL	BDL	BDL
14	17/11/2007	136.2	31.4	2.20	1.60	0.21	BDL
15	Min	63.6	21.2	BDL	BDL	BDL	-
16	Max	164.2	56.2	6.4	4.6	0.23	-
17	Mean	113.3	36.1	4.4	2.9	0.21	-
18	SD	41.8	9.4	1.3	1.4	0.01	-

Table 3.22 : Ambient Air Quality at Kuligaon station [24 Hours Average]

S/N	Date	Parameters ($\mu\text{g}/\text{m}^3$, CO and HC mg/m^3)					
		TSPM	RPM	SO ₂	NO _x	CO	HC
1	03/10/2007	72.1	24.3	5.20	BDL	BDL	BDL
2	05/10/2007	110.1	28.4	BDL	1.70	BDL	BDL
3	08/10/2007	86.1	18.2	2.40	BDL	0.07	BDL
4	11/10/2007	84.6	32.2	BDL	3.60	BDL	BDL
5	14/10/2007	82.6	21.1	2.80	1.80	0.13	BDL
6	18/10/2007	114.5	22.2	1.30	1.20	BDL	BDL
7	21/10/2007	107.8	46.2	BDL	BDL	BDL	BDL
8	24/10/2007	78.2	41.6	5.30	4.20	0.08	BDL
9	27/10/2007	92.5	52.2	3.20	BDL	BDL	BDL
10	02/11/2007	82.1	16.2	2.40	3.60	BDL	BDL
11	05/11/2007	110.8	32.8	BDL	BDL	0.12	BDL
12	08/11/2007	127.7	20.6	4.20	2.80	BDL	BDL
13	12/11/2007	61.7	28.4	3.40	BDL	BDL	BDL
14	17/11/2007	76.2	16.2	2.10	2.60	BDL	BDL
15	Min	61.7	16.2	BDL	BDL	BDL	-
16	Max	127.7	52.2	5.3	4.2	0.13	-
17	Mean	91.9	28.6	3.2	2.6	0.1	-
18	SD	19.1	11.3	1.32	1.1	0.03	-

Table 3.23 : Ambient Air Quality at Ujani Bijaypur Station [24 Hours Average]

S/N	Date	Parameters ($\mu\text{g}/\text{m}^3$, CO and HC mg/m^3)					
		TSPM	RPM	SO ₂	NO _x	CO	HC
1	05/10/2007	164.2	36.5	7.30	3.80	BDL	BDL
2	08/10/2007	76.2	41.4	6.20	3.60	0.21	BDL
3	12/10/2007	74.2	32.2	4.20	BDL	BDL	BDL
4	17/10/2007	160.8	33.2	3.40	BDL	BDL	BDL
5	21/10/2007	164.2	48.3	BDL	2.60	BDL	BDL
6	25/10/2007	71.8	21.2	4.80	BDL	0.23	BDL
7	28/10/2007	113.0	56.2	4.30	1.20	BDL	BDL
8	30/10/2007	63.6	26.3	BDL	BDL	BDL	BDL
9	03/11/2007	102.7	36.4	3.30	4.10	BDL	BDL
10	08/11/2007	161.6	28.2	5.30	BDL	BDL	BDL
11	11/11/2007	72.1	35.4	6.40	4.60	BDL	BDL
12	14/11/2007	70.8	48.1	BDL	BDL	BDL	BDL
13	17/11/2007	157.7	32.3	5.20	BDL	BDL	BDL
14	21/11/2007	161.7	35.2	3.40	BDL	BDL	BDL
15	Min	63.6	21.2	BDL	BDL	BDL	-
16	Max	164.2	56.2	7.3	4.6	0.23	-
17	Mean	115.3	36.5	4.8	3.3	0.22	-
18	SD	43.6	9.4	1.3	1.2	0.01	-

Table 3.24: Ambient Air Quality at Namani Bijaypur Station [24 Hours Average]

S/N	Date	Parameters ($\mu\text{g}/\text{m}^3$, CO and HC mg/m^3)					
		TSPM	RPM	SO ₂	NO _x	CO	HC
1	18/10/2007	122.2	54.2	6.4	4.10	BDL	BDL
2	21/10/2007	122.4	24.4	11.7	BDL	BDL	BDL
3	25/10/2007	90.2	72.1	10.4	2.80	0.58	BDL
4	28/10/2007	126.3	38.2	BDL	3.80	BDL	BDL
5	30/10/2007	131.6	42.1	8.8	3.60	0.21	0.06
6	03/11/2007	145.6	66.2	6.5	BDL	BDL	BDL
7	08/11/2007	139.5	50.2	8.3	BDL	0.40	BDL
8	11/11/2007	115.2	64.2	BDL	3.60	BDL	BDL
9	14/11/2007	163.6	42.4	4.3	BDL	0.42	0.03
10	17/11/2007	118.9	44.8	3.2	3.20	BDL	BDL
11	21/11/2007	168.9	21.3	3.3	2.60	0.21	BDL
12	24/11/2007	88.4	70.4	BDL	3.10	BDL	0.03
13	27/11/2007	119.7	35.6	6.4	BDL	0.23	BDL
14	30/11/2007	124.3	38.2	8.4	BDL	BDL	BDL
15	Min	88.4	21.3	BDL	BDL	BDL	BDL
16	Max	168.9	72.1	11.7	4.1	0.6	0.1
17	Mean	126.9	47.5	5.6	1.9	0.1	--
18	SD	22.8	16.2	3.9	1.8	0.2	--

Table 3.25: Ambient Air Quality at Ratanpur Station [24 Hours Average]

S/N	Date	Parameters ($\mu\text{g}/\text{m}^3$, CO and HC mg/m^3)					
		TSPM	RPM	SO ₂	NO _x	CO	HC
1	18/10/2007	66.2	24.3	3.80	BDL	BDL	BDL
2	21/10/2007	101.2	52.4	3.20	1.60	0.06	BDL
3	25/10/2007	58.2	24.2	BDL	BDL	BDL	BDL
4	28/10/2007	97.5	38.2	6.80	1.80	0.07	BDL
5	30/10/2007	119.5	32.1	BDL	3.10	BDL	BDL
6	03/11/2007	68.9	38.2	3.30	BDL	BDL	BDL
7	08/11/2007	68.6	25.2	3.40	BDL	BDL	BDL
8	11/11/2007	154.2	30.6	BDL	2.10	BDL	BDL
9	14/11/2007	159.5	61.2	2.50	BDL	BDL	BDL
10	17/11/2007	78.2	21.2	BDL	2.80	BDL	BDL
11	21/11/2007	121.3	56.2	4.10	BDL	0.07	BDL
12	24/11/2007	68.3	26.3	BDL	3.20	BDL	BDL
13	27/11/2007	106.3	36.4	4.20	BDL	BDL	BDL
14	30/11/2007	114.2	28.2	3.80	BDL	BDL	BDL
15	Min	58.2	21.2	BDL	BDL	BDL	-
16	Max	159.5	61.2	6.80	3.20	0.07	-
17	Mean	98.7	35.3	3.90	2.40	0.06	-
18	SD	32.6	12.7	1.20	0.68	0.005	-

Table 3.26: Ambient Air Quality at Mohmara Station [24 Hours Average]

S/N	Date	Parameters ($\mu\text{g}/\text{m}^3$, CO and HC mg/m^3)					
		TSPM	RPM	SO ₂	NO _x	CO	HC
1	18/10/2007	88.20	24.2	1.80	BDL	BDL	BDL
2	21/10/2007	71.20	35.4	5.10	3.40	0.16	BDL
3	25/10/2007	116.2	38.1	BDL	BDL	BDL	BDL
4	28/10/2007	64.20	32.3	BDL	1.60	0.08	BDL
5	30/10/2007	104.2	65.2	2.80	2.60	BDL	BDL
6	03/11/2007	131.2	24.7	BDL	BDL	BDL	BDL
7	08/11/2007	71.30	55.8	BDL	2.20	BDL	BDL
8	11/11/2007	69.80	26.7	1.80	BDL	BDL	BDL
9	14/11/2007	128.2	39.1	BDL	4.10	BDL	BDL
10	17/11/2007	121.2	32.3	2.10	BDL	0.04	BDL
11	21/11/2007	63.60	38.3	2.30	BDL	BDL	BDL
12	24/11/2007	102.7	48.5	BDL	4.20	BDL	BDL
13	27/11/2007	131.6	32.1	4.10	BDL	0.06	BDL
14	30/11/2007	72.10	24.9	2.60	3.80	BDL	BDL
15	Min	63.6	24.2	BDL	BDL	BDL	BDL
16	Max	131.6	65.2	5.10	4.20	0.16	-
17	Mean	95.4	36.9	2.80	3.10	0.08	-
18	SD	26.7	12.2	1.18	1.007	0.05	-

3.4.3. Ambient Noise Quality

The ambient noise levels were measured at 10 different sites inside the study area. The results are given in Table 3.27 below. All the Sound Pressure Levels (SPL) and the Leq values agree with those recommended for residential zones both during day and night. Near the forests and also in other areas during the night, shrill noise created by crickets and other insects often disturb the silence. Vehicular traffic is present only in the main roads and the interior areas are almost undisturbed by vehicular noise. The night time is almost free from vehicular noise in almost all the areas.

Table 3.27: Noise Levels (dBA) in the study area (Day time from 6 a.m to 10 p.m.; Nighttime from 10 p.m. to 6 a.m.)

S/N	Noise Sampling Station	Daytime SPL (dBA)		Nighttime SPL (dBA)	
		Leq	Range	Leq	Range
1	Jonai Bazar	64.1	36 – 82	44.6	34 – 68
2	Jonai PWD Colony	58.6	38 – 78	38.6	32 - 52
3	Mohmara	49.6	36 – 68	38.2	24 - 46
4	Kuligaon	45.9	35 – 64	34.2	28 - 48
5	Bijaypur M.E. School	48.8	38 – 66	32.2	33 - 51
6	Maj Ratanpur	46.2	35 – 64	28.6	24 - 42
7	Near Gali Nadi	55.3	46 – 66	31.3	26 - 44
8	Near Rajakhana	44.3	43 – 67	28.2	28 - 42
9	Near Brahmaputra	42.6	36 – 63	37.2	34 - 51
10	Tinimile Forest	44.1	40 – 68	36.2	33 - 48
11	Minimum	42.6	-	28.2	-
12	Maximum	64.1	-	44.6	-
13	Mean	49.9	-	34.9	-

Field photographs



Air Sampling At Jonai Bazar

Air Sampling At Maj Ratanpur



Noise Sample Collection at Tinimile Forest