

Status of Ambient Air Quality at IGSC-Planetarium Patna

Sl. No	PARAMETERS	Annual Average Concentration								Standards for residential, Rural and other Areas
		2011	2012	2013	2014	2015	2016	2017	2018	
1.	PM ₁₀	186.09 µg/m ³	194.88 µg/m ³	225.78 µg/m ³	211.60 µg/m ³	199.23 µg/m ³	--	--	--	60 µg/m ³ Annual
2.	PM _{2.5}	----	112.86 µg/m ³	121.90 µg/m ³	-----	203.83 µg/m ³	122.51 µg/m ³	116.15 µg/m ³	118.16 µg/m ³	40 µg/m ³ Annual
3.	CO	2.35 mg/m ³	2.02 mg/m ³	1.98 mg/m ³	1.87 mg/m ³	1.67 mg/m ³	1.55 mg/m ³	1.49 mg/m ³	1.43 mg/m ³	02 mg/m ³ 8 hours 04 mg/m ³ 1 hour
4.	O ₃	47.89 µg/m ³	37.07 µg/m ³	27.50 µg/m ³	34.64 µg/m ³	21.86 µg/m ³	34.33 µg/m ³	24.63 µg/m ³	35.02 µg/m ³	100 µg/m ³ 8 hours 180 µg/m ³ 1 hour
5.	SO ₂	8.66 µg/m ³	14.17 µg/m ³	8.97 µg/m ³	22.65 µg/m ³	13.11 µg/m ³	6.80 µg/m ³	12.08 µg/m ³	14.51 µg/m ³	50 µg/m ³ Annual
6.	NO ₂	60.10 µg/m ³	71.69 µg/m ³	56.08 µg/m ³	29.00 µg/m ³	57.54 µg/m ³	45.10 µg/m ³	37.01 µg/m ³	24.39 µg/m ³	40 µg/m ³ Annual
7.	Benzene	4.04 µg/m ³	2.33 µg/m ³	0.99 µg/m ³	0.09 µg/m ³	1.65 µg/m ³	1.24 µg/m ³	0.46 µg/m ³	1.33 µg/m ³	05 µg/m ³ Annual

Status of Ambient Air Quality of IGSC Planetarium, Patna

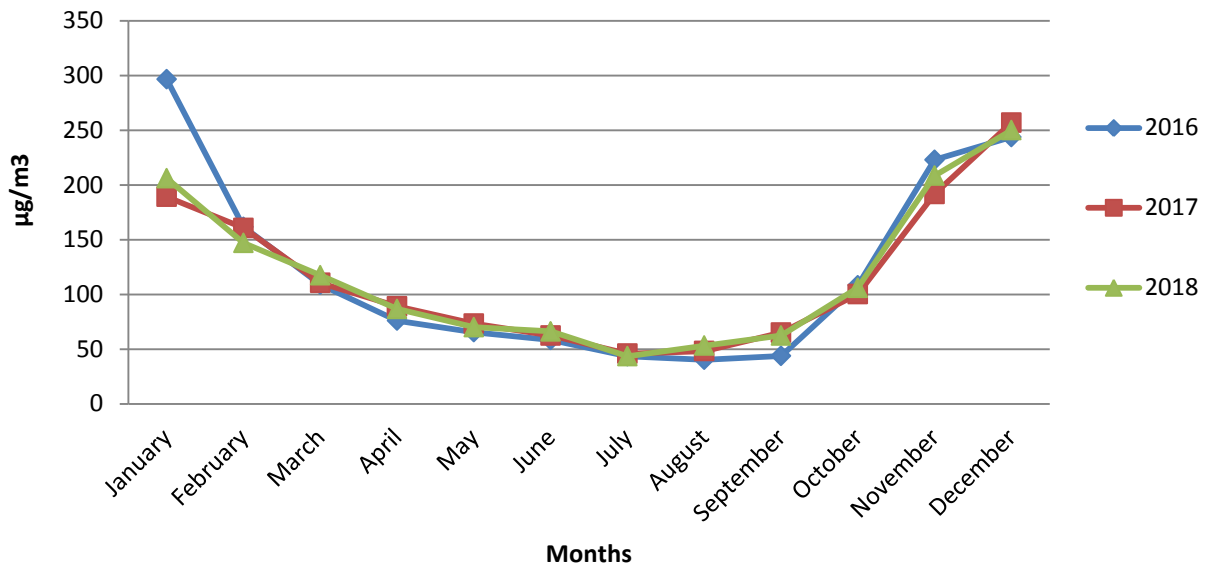
Main pollutants & BTX Parameters 2016, 2017 & 2018

Sl No.	Month	CO in mg/m ³		SO ₂ in µg/m ³			NO ₂ in µg/m ³			O ₃ in µg/m ³			PM _{2.5} in µg/m ³			Benzene in µg/m ³			
		Avg		Avg			Avg			Avg			Avg			Avg			
		2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
1	Jan.	2.79	2.13	2.33	9.7	11.5	18.6	76.6	80.6	28.4	31.7	18.4	19.2	296.7	189.3	206.2	2.65	1.09	0.28
2	Feb.	1.43	1.96	1.49	7.7	9.9	14.6	63.6	94.0	17.2	28.1	35.8	29.1	161.7	160.7	147.1	1.88	0.92	0.18
3	Mar.	1.37	1.48	1.46	8.3	8.5	17.1	49.6	13.2	18.9	47.8	33.2	41.5	109.0	110.6	117.5	1.36	0.76	0.40
4	April	1.25	1.14	1.09	10.4	13.2	19.5	21.4	8.0	16.0	53.2	32.3	42.3	76.1	89.1	86.7	1.13	0.41	0.10
5	May	1.23	0.99	0.99	6.1	15.0	16.5	33.4	8.3	25.8	54.2	32.7	42.4	65.5	73.3	70.1	1.04	0.38	3.45
6	June	1.18	0.93	0.84	5.3	16.5	14.4	44.2	8.3	38.7	36.7	20.7	37.3	58.4	62.4	66.2	0.91	0.31	2.36
7	July	1.09	0.86	0.87	6.3	12.5	18.1	41.0	14.5	36.4	20.0	10.6	30.4	43.5	45.9	43.6	0.75	0.26	1.39
8	Aug.	1.09	0.93	1.15	4.4	12.1	8.4	35.1	19.1	35.6	20.3	9.5	23.4	40.3	48.3	53.3	0.76	0.20	1.42
9	Sep.	1.16	1.37	0.74	6.5	12.2	9.7	37.9	47.8	30.0	23.4	21.4	34.8	43.8	65.1	62.4	0.82	0.24	1.27
10	Oct.	1.26	1.26	1.45	4.8	10.7	10.7	48.2	50.4	18.0	37.0	26.6	40.7	108.3	100.3	106.0	0.93	0.25	1.55
11	Nov.	2.02	2.01	2.22	7.5	8.3	13.0	69.8	65.0	9.2	42.7	33.9	50.3	223.0	191.8	208.6	1.26	0.35	1.86
12	Dec.	2.70	2.79	2.53	4.6	14.6	13.5	57.9	34.9	18.5	16.8	20.4	28.8	243.8	257.0	250.2	1.42	0.36	1.94
	Avg	1.55	1.49	1.43	6.80	12.08	14.51	48.23	37.01	24.39	34.33	24.63	35.02	122.51	116.15	118.16	1.24	0.46	1.33
	Standards	02 mg/m ³ 8hours 04 mg/m ³ 1 hours			50 µg/m ³ Annual			40 µg/m ³ Annual			100 µg/m ³ 8hours 180µg/m ³ 1 hours			40 µg/m ³ Annual			05 µg/m ³ Annual		

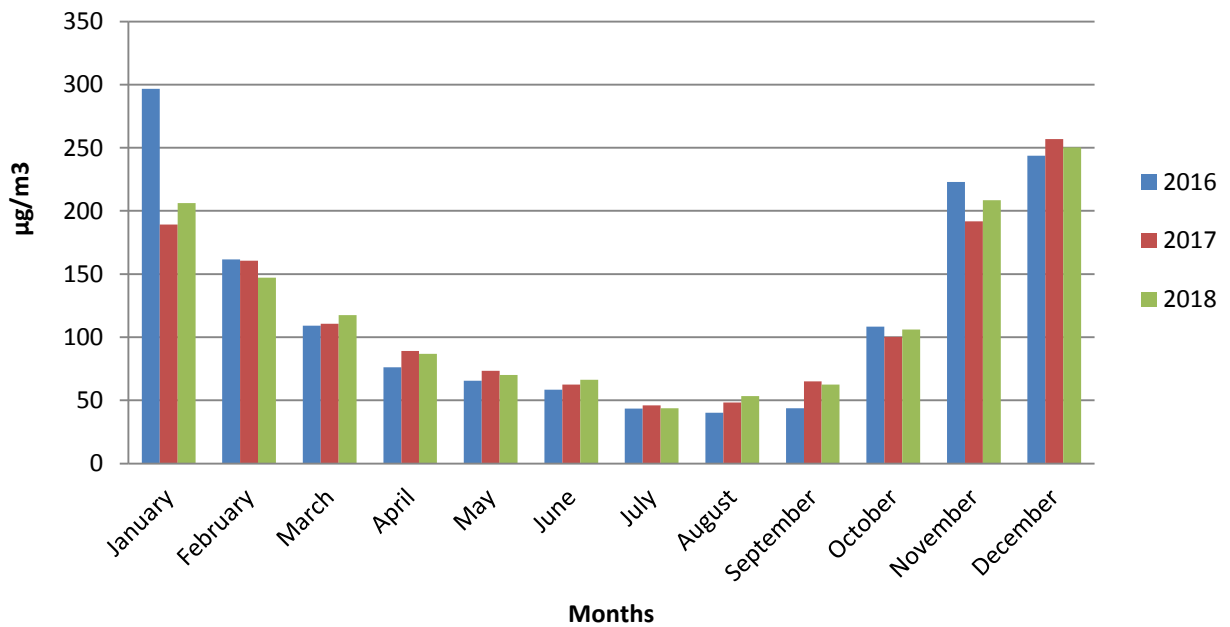
Air Quality Index of Patna in days during 2016, 2017 & 2018

Sl.No.	Month	Good			Satisfactory			Moderate			Poor			Very Poor			Severe		
		2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
1.	January	-	-	-	-	-	-	-	01	-	-	02	03	13	22	23	18	06	05
2.	February	-	-	-	-	-	-	02	03	01	07	07	07	18	15	20	01	03	-
3.	March	-	-	-	02	-	-	12	09	05	04	11	13	13	10	13	-	-	-
4.	April	-	-	-	04	03	01	20	11	18	05	13	10	01	02	01	-	-	-
5.	May	-	-	-	07	08	09	23	16	17	01	07	05	-	-	-	-	-	-
6.	June	-	-	-	14	11	10	16	19	19	-	-	01	-	-	-	-	-	-
7.	July	01	02	02	25	25	28	05	04	01	-	-	-	-	-	-	-	-	-
8.	August	01	-	-	26	14	18	04	03	13	-	-	-	-	-	-	-	-	-
9.	September	-	-	-	23	08	14	07	16	15	-	02	01	-	-	-	-	-	-
10.	October	01	-	-	02	08	01	10	09	06	07	02	15	10	12	09	-	-	-
11.	November	-	-	-	-	-	-	-	01	-	03	9	-	16	11	25	11	09	5
12.	December	-	-	-	-	-	-	-	-	-	-	-	-	21	13	17	10	18	14
	Total	3	02	02	103	77	81	99	92	95	27	53	55	92	85	108	40	36	24

Monthly variation of Particulate Matter (PM 2.5) at IGSC Planetarium Patna



Monthly variation of Particulate Matter (PM 2.5) at IGSC Planetarium Patna



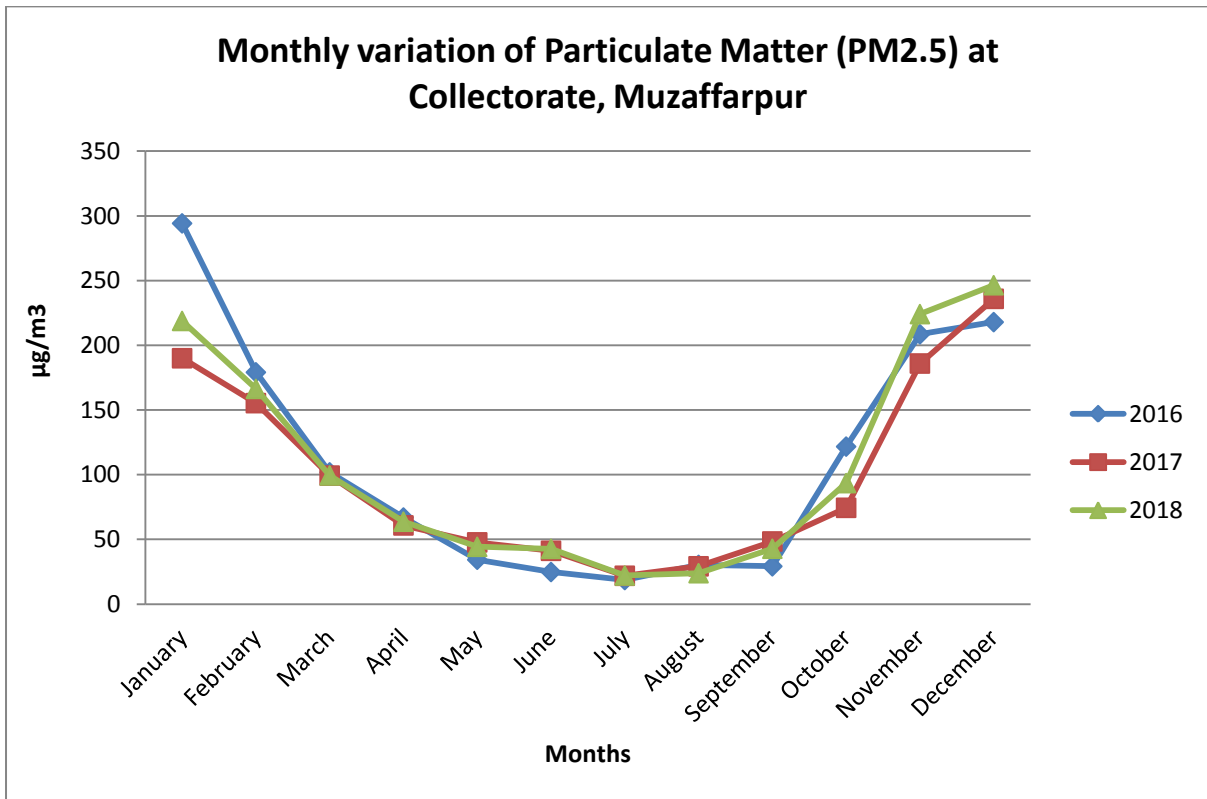
Status of Ambient Air Quality at Collectorate Campus Muzaffarpur

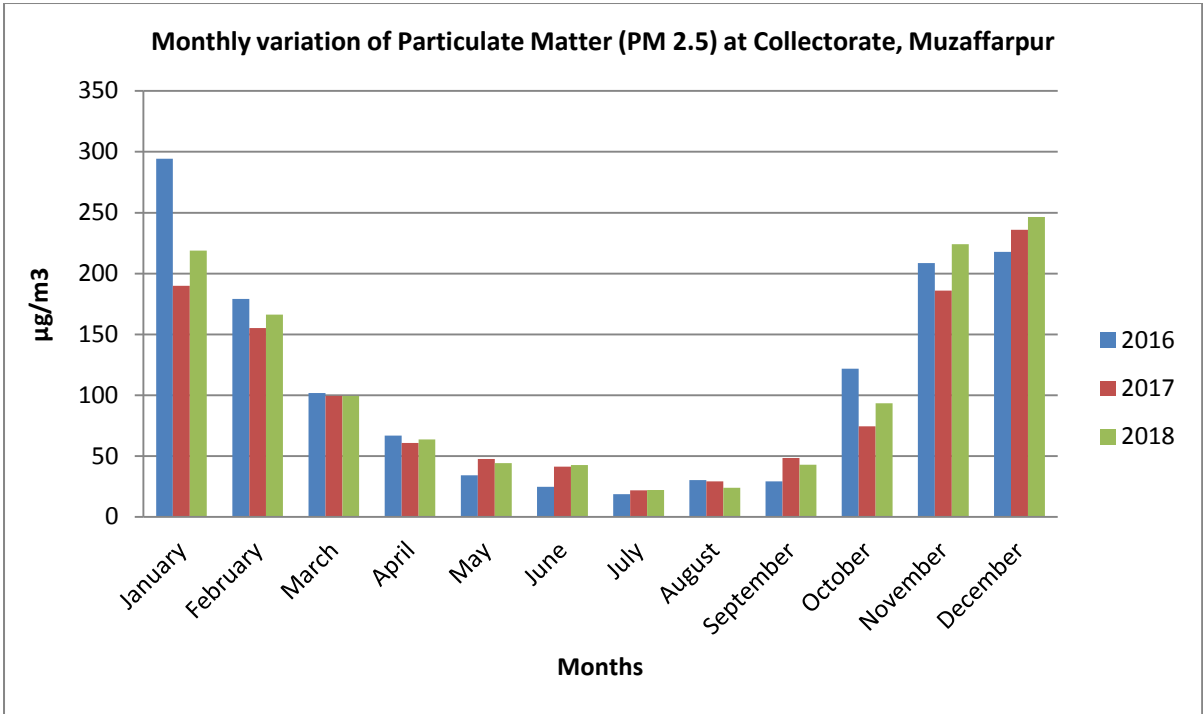
SI. No	PARAMETERS	Annual Average Concentration						Standards for residential, Rural and other Areas
		2013	2014	2015	2016	2017	2018	
1.	PM ₁₀	172.63 µg/m ³	179.19 g/m ³	156.0 µg/m ³	--	--	--	60 µg/m ³ Annual
2.	PM _{2.5}	-----	-----	189.5 µg/m ³	110.61µ g/m ³	99.17 µg/m ³	107.33 µg/m ³	40 µg/m ³ Annual
3.	CO	0.93 mg/m ³	2.14 mg/m ³	1.31 mg/m ³	1.46 mg/m ³	1.15 mg/m ³	1.23 mg/m ³	02 mg/m ³ 8 hours 04 mg/m ³ 1 hour
4.	O ₃	40.10 µg/m ³	47.11 µg/m ³	42.67 µg/m ³	25.80 µg/m ³	18.29 µg/m ³	37.05 µg/m ³	100 µg/m ³ 8 hours 180 µg/m ³ 1 hour
5.	SO ₂	7.67 µg/m ³	12.18 µg/m ³	9.23 µg/m ³	11.08 µg/m ³	10.80 µg/m ³	17.74 µg/m ³	50 µg/m ³ Annual
6.	NO ₂	21.62 µg/m ³	28.37 µg/m ³	31.25 µg/m ³	29.61 µg/m ³	42.64 µg/m ³	37.67 µg/m ³	40 µg/m ³ Annual
7.	Benzene	1.54 µg/m ³	1.28 µg/m ³	1.48 µg/m ³	0.58 µg/m ³	0.25 µg/m ³	1.41 µg/m ³	05 µg/m ³ Annual

Status of Ambient Air Quality of Collectorate, Muzaffarpur																			
Main pollutants & BTX Parameters 2016, 2017 & 2018																			
SI No	Month	CO in mg/m ³			SO ₂ in µg/m ³			NO ₂ in µg/m ³			O ₃ in µg/m ³			PM 2.5 in µg/m ³			Benzene in µg/m ³		
		Avg			Avg			Avg			Avg			Avg			Avg		
		2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
1	Jan.	1.81	1.84	1.82	20.1	9.6	11.1	5.5	59.8	47.7	41.4	16.6	17.1	294.2	190	218.8	1.69	0.45	0.25
2	Feb.	1.55	1.49	1.36	16.9	20.1	16.7	5	59.3	57.9	35	6.8	26.5	179.1	155.3	166.3	1	0.07	1.00
3	Mar.	1.27	1.18	1.72	11.2	12.7	14.0	24.5	44.9	53.8	39.8	20.8	52.0	101.8	99.3	99.4	0.52	0.07	..
4	April	1.33	1.18	1.21	5.2	9.1	43.4	30.6	48.5	33.7	29.1	35.4	61.8	66.9	60.8	63.7	0.44	0.06	..
5	May	1.27	1.19	0.59	10.3	8.8	45.0	7.3	35.2	25.8	30.8	26	65.4	34.3	47.7	44.3	0.33	0.16	3.09
6	June	1.27	0.88	0.54	13.3	9.2	35.6	20.9	31.1	29.7	9	11.8	62.2	24.8	41.2	42.7	0.29	0.19	2.00
7	July	1.41	1.06	1.16	6.4	7	9.2	39.8	27.2	34.1	14	8.2	35.3	18.6	21.9	22.1	0.24	0.1	1.47
8	Aug.	0.8	0.62	0.79	5.3	7.2	6.2	33	29.4	30.4	24	18.4	34.4	30.3	29.2	23.9	0.22	0.06	1.11
9	Sep.	1.16	0.74	0.99	7.1	8.8	6.5	27.3	31.8	44.4	18.4	18.2	32.1	29.2	48.4	42.8	0.26	0.35	1.33
10	Oct.	1.73	0.96	1.18	11.5	10	6.0	43.5	29.6	30.5	25.2	21.6	12.2	121.7	74.4	93.5	0.48	0.49	1.20
11	Nov.	1.97	1.5	2.29	12.9	14.7	10.6	60.8	56.9	41.3	20.4	20.7	15	208.5	185.9	224.1	0.7	0.63	1.29
12	Dec.	1.89	1.17	1.16	12.7	12.4	8.6	57.1	58	22.7	22.5	15	30.7	217.9	235.9	246.4	0.78	0.42	1.41
	Avg	1.46	1.15	1.23	11.08	10.80	17.74	29.61	42.64	37.67	25.8	18.29	37.05	110.61	99.17	107.33	0.58	0.25	1.41
Standards		02 mg/m ³ 8hours 04 mg/m ³ 1 hours			50 µg/m ³ Annual			40 µg/m ³ Annual			100 µg/m ³ 8hours 180µg/m ³ 1 hours			40 µg/m ³ Annual			05 µg/m ³ Annual		

Air Quality Index of Muzaffarpur in days during 2016, 2017 & 2018

Sl.No	Mon.	Good			Satisfactory			Moderate			Poor			Very Poor			Severe		
		2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
1	Jan.	..	..	..	..	1	..	..	..	..	..	1	..	11	25	24	20	4	7
2	Feb.	..	..	..	..	..	..	1	3	..	7	5	4	16	20	22	5	..	2
3	Mar.	..	..	..	2	3	1	13	11	12	6	9	11	10	8	7	..	..	..
4	April	..	..	..	17	14	9	7	16	16	5	..	4	1	..	..	..	..	..
5	May	3	1	..	24	23	23	4	6	8	..	1	..	..	..	..	..	..	..
6	June	1	4	..	29	25	24	..	1	6	..	..	..	..	..	..	..	..	..
7	July	..	9	1	26	22	23	5	..	1	..	..	..	..	..	..	..	..	..
8	Aug.	7	16	14	21	15	17	2	..	..	..	..	..	..	..	..	..	..	..
9	Sep.	3	6	3	26	14	20	1	10	7	..	..	..	..	..	..	..	..	..
10	Oct.	..	8	..	5	7	3	6	4	12	5	5	10	14	7	6	1	..	..
11	Nov.	..	..	..	..	..	..	1	5	..	3	5	1	18	10	20	8	9	9
12	Dec.	..	..	..	..	..	..	..	..	..	1	1	..	24	16	14	6	14	17
Total		14	44	18	150	124	120	40	56	60	27	27	30	94	86	93	40	27	35





Status of Ambient Air Quality at Collectorate Campus Gaya

Sl. No.	PARAMETERS	Annual Average Concentration					Standards for residential, Rural and other Areas
		2014	2015	2016	2017	2018	
1.	PM ₁₀	180.93 µg/m ³	76.85 µg/m ³	--	--	--	60 µg/m ³ Annual
2.	PM _{2.5}	---	181.6 µg/m ³	71.97 µg/m ³	71.85 µg/m ³	90.57 µg/m ³	40 µg/m ³ Annual
3.	CO	2.69 mg/m ³	2.01 mg/m ³	1.43 mg/m ³	1.08 mg/m ³	1.37 mg/m ³	02 mg/m ³ 8 hours 04 mg/m ³ 1 hour
4.	O ₃	23.80 µg/m ³	23.23 µg/m ³	14.05 µg/m ³	21.22 µg/m ³	70.97 µg/m ³	100 µg/m ³ 8 hours 180 µg/m ³ 1 hour
5.	SO ₂	6.10 µg/m ³	10.20 µg/m ³	7.48 µg/m ³	5.53 µg/m ³	6.92 µg/m ³	50 µg/m ³ Annual
6.	NO ₂	54.63 µg/m ³	20.95 µg/m ³	44.44 µg/m ³	19.21 µg/m ³	54.38 µg/m ³	40 µg/m ³ Annual
7.	Benzene	2.13 µg/m ³	2.21 µg/m ³	1.61 µg/m ³	0.70 µg/m ³	2.62 µg/m ³	05 µg/m ³ Annual

Status of Ambient Air Quality of Collectorate, Gaya

Main pollutants & BTX Parameters 2016, 2017 & 2018

Sl No.	Month	CO in mg/m ³			SO ₂ in µg/m ³			NO ₂ in µg/m ³			O ₃ in µg/m ³			PM 2.5 in µg/m ³			Benzene in µg/m ³		
		Avg			Avg			Avg			Avg			Avg			Avg		
		2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
1	Jan.	2.65	1.06	1.22	6.4	4	8.2	24	52.3	32.5	9.6	4.1	19.2	135.7	125.7	102.4	3.93	0.9	..
2	Feb.	1.56	1.02	1.87	7.1	4.4	7.2	16.1	14	81.4	15	10.5	92.1	73	115.3	100.4	1.95	0.81	..
3	Mar.	1.19	1.17	1.46	7.1	6.6	11.5	34.3	14.4	53.6	12.5	12.6	118.6	50.4	68.4	135.7	1.73	0.65	..
4	April	0.97	1.52	1.15	6	6.4	3.0	34.8	14.4	27.7	10.7	16	162.1	40.1	47.1	142.1	1.37	0.52	..
5	May	..	1.2	1.01	..	8.4	5.1	..	14.4	30.2	..	27.9	94.5	..	45	83.1	..	0.98	..
6	June	..	0.49	1.04	..	5.7	9.6	..	14.4	35.7	..	25.8	47.8	..	40.1	71.4	..	0.52	3.26
7	July	1.4	0.68	1.18	18.5	5.2	4.9	85.2	14.3	69.8	24.8	12.3	56.7	18.8	28.1	36.1	1.72	0.55	2.88
8	Aug.	0.73	..	1.12	5.9	..	2.6	71.9	..	77.6	16.5	..	39.8	19.5	..	36.7	1.35	..	3.08
9	Sep.	0.82	..	1.19	6.2	..	3.0	27.7	..	88.9	13.8	..	55.8	24.2	..	48.5	1.1	..	1.62
10	Oct.	1.2	1.01	1.51	6.5	2.9	5.2	18.4	15.3	75.2	17.7	36.7	52.8	100.8	57.7	76.2	1.01	..	1.88
11	Nov.	2.07	1.32	2.27	6.4	4.7	11.2	78.1	18.4	55.9	12.4	36.3	63	118.8	76.8	103.0	0.94	..	2.51
12	Dec.	1.67	1.35	1.45	4.7	7	11.6	53.9	20.2	24.1	7.5	30	49.3	138.4	114.3	151.3	1	..	3.15
	Avg	1.43	1.08	1.37	7.48	5.53	6.92	44.44	19.21	54.38	14.05	21.22	70.97	71.97	71.85	90.57	1.61	0.7	2.62
Stand.		02 mg/m³ 8hours 04 mg/m³ 1 hours			50 µg/m³ Annual			40 µg/m³ Annual			100 µg/m³ 8hours 180µg/m³ 1 hours			40 µg/m³ Annual			05 µg/m³ Annual		

Air Quality Index of Gaya in days during 2016, 2017 & 2018																			
Sl.No.	Month	Good			Satisfactory			Moderate			Poor			Very Poor			Severe		
		2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
1	Jan.	..	..	..	..	..	1	3	4	10	7	12	14	21	10	6	..	1	..
2	Feb.	..	1	..	7	..	..	13	3	7	9	5	19	..	8	2	..	..	..
3	Mar.	1	..	..	..	6	1	12	13	12	..	4	11	..	..	7	..	..	..
4	April	2	..	..	24	18	..	4	12	..	..	..	4	..	..	18	..	..	2
5	May	..	1	..	..	19	1	..	11	17	..	..	8	..	..	4	..	..	..
6	June	..	4	..	..	26	11	..	..	7	..	..	4	..	..	3	..	..	..
7	July	..	3	..	1	3	24	4	..	6	..	..	..	..	..	..	..	..	..
8	Aug.	3	..	..	6	..	21	22	..	10	..	..	..	..	..	..	..	..	..
9	Sep.	5	..	..	10	..	11	..	..	17	..	..	1	..	..	1	..	..	..
10	Oct.	..	..	..	..	1	6	9	1	18	2	..	7	3	..	..	..	..	..
11	Nov.	..	..	..	..	7	..	9	14	8	11	8	18	11	..	4	..	..	..
12	Dec.	..	..	..	..	..	..	1	3	..	10	16	3	19	12	28	1	..	..
Total		11	9	0	66	84	76	77	61	112	39	45	89	54	30	73	1	1	2

