# Ambient Air Quality Data of Delhi-NCR

For the Month of December, 2017



### AIR LABORATORY



केन्द्रीय प्रदूषण नियंत्रण बोर्ड पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार

### **CENTRAL POLLUTION CONTROL BOARD**

Website: http://www.cpcb.nic.in

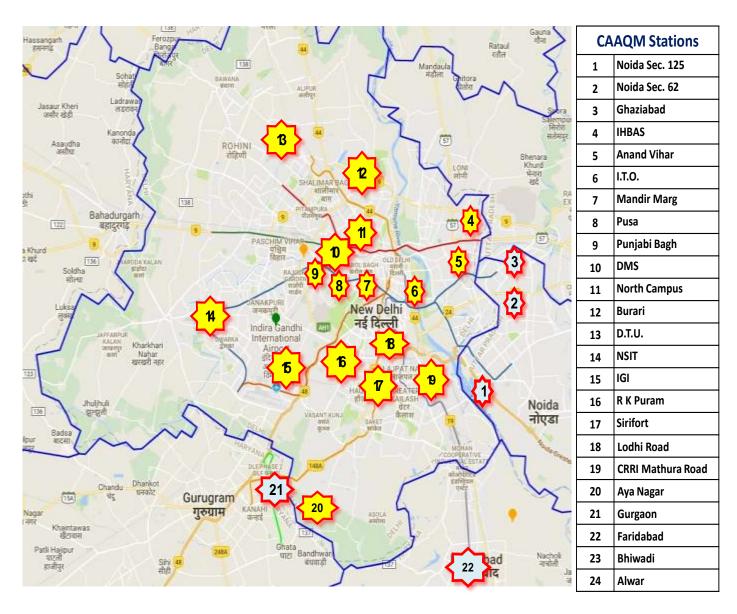
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### **Background: Ambient Air Quality of Delhi-NCR**

In compliance to the direction of Hon'ble National Green Tribunal, Principal Bench, New Delhi Dated: November 17, 2017 (in the matter of Vardhman Kaushik Vs. Union of India & Others vide OA No. 21/2014), the compiled ambient air quality data (of each monitored parameters) of Delhi-NCR with station wise daily average values of monitored parameters are compiled and presented in tabular format for the period of December 01, 2017 to December 31, 2017. It is mentioned that the monitoring activity in Delhi-NCR is shared by Central Pollution Control Board, Delhi Pollution Control Committee, India Meteorological Department /SAFAR, Haryana PCB, Uttar Pradesh PCB and Rajasthan PCB using Continuous Ambient Air Quality Monitoring Stations (CAAQMS), as under:

### **Spatial location of Stations**



# Parameter-wise data tables

# 1. Particulate Matter (in μg/m³):

i) PM<sub>10</sub>

Date/Stations	Noida , Sec-62	Noida , Sec-125	Ghaziabad	Anand Vihar	Mandir Marg	Punjabi Bagh	ITO	CRRI Mathura Road
					Residential	Industrial, Residential,	- ***	
Land-Use Pattern	Industrial	Industrial	Mixed	Commercial	Area+Commercial Area	Commercial area	Traffic intersection	Commercial
1-Dec-17	219	560	≥1000	669	332	NA	162	391
2-Dec-17	217	597	645	837	286	NA	166	467
3-Dec-17	190	708	715	757	360	NA	208	492
4-Dec-17	272	698	625	837	406	NA	NA	451
5-Dec-17	227	579	514	662	349	424	168	381
6-Dec-17	108	294	278	308	228	237	110	234
7-Dec-17	103	245	215	298	183	200	85	207
8-Dec-17	140	323	279	409	218	271	127	237
9-Dec-17	199	405	461	936	293	424	24	302
10-Dec-17	233	539	545	956	377	505	89	430
11-Dec-17	224	496	546	659	363	535	155	366
12-Dec-17	73	214	201	213	155	192	203	154
13-Dec-17	98	286	294	334	200	246	221	204
14-Dec-17	110	294	311	321	220	226	228	194
15-Dec-17	120	284	303	342	232	240	226	226
16-Dec-17	97	236	300	NA	NA	NA	199	188
17-Dec-17	87	232	258	332	189	214	179	183
18-Dec-17	112	260	308	346	233	238	215	206
19-Dec-17	162	404	456	489	283	356	289	276
20-Dec-17	153	608	789	701	492	574	440	450
21-Dec-17	276	910	868	654	438	517	460	509
22-Dec-17	280	874	709	383	259	314	252	292
23-Dec-17	193	953	678	368	192	251	201	249
24-Dec-17	NA	≥1000	812	890	294	413	336	452
25-Dec-17	NA	≥1000	797	825	376	575	383	483
26-Dec-17	457	855	845	847	356	394	360	391
27-Dec-17	457	496	926	870	324	485	321	377
28-Dec-17	459	497	840	602	381	510	360	506
29-Dec-17	382	459	512	610	363	430	333	472
30-Dec-17	486	587	620	876	419	552	360	493
31-Dec-17	NA	844	895	851	448	589	359	562
/laximum	486	≥1000	≥1000	956	492	589	460	562
Minimum	73	214	201	213	155	192	24	154
Average	219	508	552	606	308	381	241	349

Date/Stations	Burari crossing	North Campus	Pusa	Aya Nagar	R K Puram	Lodhi Road	IGI Airport Terminal-3	Bhiwadi ,RIICO Ind. Area III	Alwar, Moti Doongri
Land-Use Pattern	Residential + Commercial	Mixed area	Residential+Industrial	Industrial, Residential area	Residential	Residential Area	Commercial	Industrial area	Industrial, Residential area
1-Dec-17	214	281	242	263	436	279	266	NA	NA
2-Dec-17	272	354	222	270	458	254	274	NA	NA
3-Dec-17	308	305	283	300	527	356	304	NA	NA
4-Dec-17	314	390	310	379	566	393	329	NA	NA
5-Dec-17	276	357	282	NA	503	378	326	NA	NA
6-Dec-17	169	197	131	162	289	211	186	NA	NA
7-Dec-17	147	153	140	149	248	173	150	NA	NA
8-Dec-17	159	188	178	177	296	215	178	NA	NA
9-Dec-17	231	209	238	185	367	250	212	NA	NA
10-Dec-17	270	345	228	235	445	285	295	NA	NA
11-Dec-17	NA	313	256	265	353	327	244	NA	NA
12-Dec-17	NA	151	94	135	172	141	142	NA	NA
13-Dec-17	NA	174	111	101	226	231	176	NA	NA
14-Dec-17	NA	190	119	NA	228	198	57	NA	NA
15-Dec-17	NA	192	147	46	248	193	30	NA	NA
16-Dec-17	NA	142	127	73	NA	117	114	NA	NA
17-Dec-17	NA	129	126	90	200	186	149	NA	NA
18-Dec-17	114	143	152	143	220	150	165	NA	NA
19-Dec-17	158	228	208	196	345	210	242	NA	NA
20-Dec-17	284	410	335	359	511	402	334	392	94
21-Dec-17	281	316	325	370	529	442	347	371	100
22-Dec-17	133	98	187	142	313	228	223	287	78
23-Dec-17	106	58	136	70	266	168	178	240	75
24-Dec-17	217	93	189	102	420	270	276	343	84
25-Dec-17	139	93	282	171	440	336	321	366	82
26-Dec-17	228	94	266	137	382	301	258	307	118
27-Dec-17	254	248	248	125	402	270	283	326	164
28-Dec-17	249	263	276	152	482	376	348	463	197
29-Dec-17	205	331	273	256	446	293	391	469	209
30-Dec-17	257	≥1000	302	342	481	401	341	406	220
31-Dec-17	295	591	318	381	509	NA	358	373	236
Maximum	314	≥1000	335	381	566	442	391	469	236
Minimum	106	58	94	46	172	117	30	240	75
Average	220	234	217	199	377	268	242	362	138

### ii) PM<sub>2.5</sub>

Date/Stations	Noida , Sec-125	Noida , Sec-62	Ghaziabad	IHBAS	Anand Vihar	ITO	Mandir Marg	Pusa	Punjabi Bagh	DMS	North Campus	Burari crossing
Land-Use Pattern	Industrial	Industrial	Mixed	Residential +	Commercial	Traffic intersection	Residential	Residential+Industrial	Industrial, Residential, Commercial	Mixed area	Mixed area	
				Industrial			Area+Commerci		area			Residential + Commercial
1-Dec-17	307	174	329	138	300	160	198	122	NA	207	181	101
2-Dec-17	339	193	399	193	418	167	188	115	NA	214	224	80
3-Dec-17	421	180	429	165	425	212	240	152	NA	257	195	101
4-Dec-17	424	235	437	190	463	NA	267	162	NA	272	245	192
5-Dec-17	348	187	328	146	358	144	225	155	250	225	226	164
6-Dec-17	152	70	142	81	140	85	123	48	158	103	131	83
7-Dec-17	98	53	101	58	98	75	86	58	100	103	105	66
8-Dec-17	146	80	152	90	155	103	112	79	143	112	126	80
9-Dec-17	211	133	278	134	314	146	168	112	237	181	138	136
10-Dec-17	313	178	353	135	396	181	236	113	294	223	219	165
11-Dec-17	321	190	356	133	357	163	243	134	318	219	200	NA
12-Dec-17	167	72	163	70	145	154	121	61	145	88	104	NA
13-Dec-17	198	88	214	78	167	157	143	69	181	97	118	NA
14-Dec-17	195	99	214	83	185	153	136	66	153	92	127	NA
15-Dec-17	169	100	203	79	197	145	135	84	158	104	95	NA
16-Dec-17	152	75	204	78	NA	136	NA	71	NA	89	17	NA
17-Dec-17	142	57	156	76	119	124	106	63	126	74	16	NA
18-Dec-17	156	79	182	87	182	153	134	76	151	91	59	69
19-Dec-17	242	112	278	102	268	220	183	103	221	148	149	102
20-Dec-17	398	175	513	184	441	328	352	190	375	265	191	178
21-Dec-17	430	204	461	163	417	341	302	199	356	241	201	175
22-Dec-17	207	67	204	80	202	167	166	97	199	143	65	83
23-Dec-17	169	47	160	75	172	125	113	67	149	118	48	66
24-Dec-17	306	NA	387	139	359	247	197	107	258	204	69	135
25-Dec-17	759	NA	362	142	381	271	268	167	397	266	69	98
26-Dec-17	603	122	337	129	330	250	237	147	237	256	82	143
27-Dec-17	297	118	380	130	375	223	215	136	289	309	329	159
28-Dec-17	300	132	360	127	341	251	251	159	305	268	297	156
29-Dec-17	285	112	333	134	310	239	242	150	277	239	252	128
30-Dec-17	390	141	415	159	404	272	295	181	368	308	304	172
31-Dec-17	485	NA	593	195	532	269	326	199	410	362	323	184
Maximum	759	235	593	195	532	341	352	199	410	362	329	192
Minimum	98	47	101	58	98	75	86	48	100	74	16	66
Average	295	124	304	122	298	189	200	117	241	190	158	126

Date/Stations	DTU	NSIT	IGI Airport Terminal-3	R K Puram	Sirifort	Lodhi Road	CRRI Mathura Road	Aya Nagar	Gurgaon, Vikas Sadan	Faridabad, Sec-16A	Bhiwadi ,RIICO Ind. Area II	Alwar,Moti Doongri
Land Hea Datton	Residential &		,					, ,	<b>5</b> /	,	,	, ,
Land-Use Pattern	industrial	Residential	Commercial	Residential	Residential + Mix	Residential Area	Commercial	Industrial, Residential area	Industrial and Residential area	Industrial and Residential Area	Industrial area	Industrial, Residential area
1-Dec-17	304	204	154	249	187	166	211	158	175	151	NA	NA
2-Dec-17	317	192	152	273	194	151	271	162	182	176	NA	NA
3-Dec-17	397	266	170	314	234	216	295	180	173	210	NA	NA
4-Dec-17	372	287	197	323	268	235	252	227	203	243	NA	NA
5-Dec-17	333	249	196	279	247	230	218	NA	200	210	NA	NA
6-Dec-17	151	142	93	158	177	112	114	97	114	118	NA	NA
7-Dec-17	120	117	71	129	90	78	89	89	93	95	NA	NA
8-Dec-17	NA	132	83	169	130	102	111	106	106	115	NA	NA
9-Dec-17	277	161	106	226	164	136	156	111	143	149	NA	NA
10-Dec-17	340	204	150	264	229	147	221	141	192	240	NA	NA
11-Dec-17	374	197	134	215	207	188	214	125	162	174	NA	NA
12-Dec-17	151	104	84	120	143	101	101	47	88	316	NA	NA
13-Dec-17	214	135	99	152	175	144	109	61	96	93	NA	NA
14-Dec-17	160	117	92	143	162	116	107	NA	72	84	NA	NA
15-Dec-17	160	132	104	162	160	114	118	28	100	92	NA	NA
16-Dec-17	180	126	94	NA	140	94	101	44	93	78	NA	NA
17-Dec-17	180	114	73	106	125	141	95	54	66	59	NA	NA
18-Dec-17	182	138	85	138	133	106	113	86	83	266	NA	NA
19-Dec-17	292	178	127	204	196	160	156	116	126	104	NA	NA
20-Dec-17	460	239	192	293	338	313	292	215	169	186	199	62
21-Dec-17	406	253	190	300	361	262	354	222	163	173	188	93
22-Dec-17	259	179	111	172	201	77	182	85	116	176	140	58
23-Dec-17	211	159	75	161	138	47	178	42	98	81	104	55
24-Dec-17	336	176	67	254	200	149	297	61	176	134	188	67
25-Dec-17	369	298	47	280	262	226	321	102	238	144	184	67
26-Dec-17	395	211	106	226	196	193	253	82	139	130	159	91
27-Dec-17	335	207	167	227	215	172	237	75	205	131	171	103
28-Dec-17	323	291	205	291	240	248	295	91	233	237	250	85
29-Dec-17	283	287	234	249	NA	178	274	153	216	161	268	86
30-Dec-17	358	283	217	286	257	277	322	205	194	211	237	101
31-Dec-17	349	280	235	323	291		392	229	227	216	224	123
Maximum	460	298	235	323	361	313	392	229	238	316	268	123
Minimum	120	104	47	106	90	47	89	28	66	59	104	55
Average	286	195	133	223	202	163	208	117	150	160	193	83

# 2.SO<sub>2</sub> (in $\mu$ g/m<sup>3</sup>)

Date/Stations	Noida , Sec-125	Ghaziabad	IHBAS	Anand Vihar	Mandir Marg	Punjabi Bagh	DMS	R K Puram	NSIT	Gurgaon, Vikas Sadan	Faridabad, Sec-16A	Bhiwadi ,RIICO Ind. Area III	Alwar, Moti Doongri
Land-Use Pattern	Industrial	Mixed	Commercial	Residential	Residential + Industrial	Industrial, Residential, Commercial area	Mixed area	Residential	Residential	Industrial and Residential area	Industrial and Residential Area	Industrial area	Industrial, Residential area
1-Dec-17	37	64	18	18	13	NA	15	37	10	11	45	NA	NA
2-Dec-17	38	NA	34	15	14	NA	16	33	11	11	46	NA	NA
3-Dec-17	46	90	31	17	15	NA	16	32	14	10	41	NA	NA
4-Dec-17	40	61	37	19	15	NA	19	19	9	8	64	NA	NA
5-Dec-17	43	70	21	22	14	23	16	36	9	8	30	NA	NA
6-Dec-17	41	124	6	28	22	30	14	49	9	6	30	NA	NA
7-Dec-17	37	91	9	22	12	29	15	45	8	7	33	NA	NA
8-Dec-17	38	67	15	25	15	33	19	53	7	8	34	NA	NA
9-Dec-17	42	69	21	23	24	34	23	49	11	9	40	NA	NA
10-Dec-17	38	49	28	17	40	7	18	21	21	11	24	NA	NA
11-Dec-17	34	51	36	20	49	16	13	27	20	7	33	NA	NA
12-Dec-17	24	38	2	22	24	12	4	14	3	5	20	NA	NA
13-Dec-17	18	43	6	19.9	18	8	5	17	8	4	23	55	NA
14-Dec-17	22	47	3	19	17	8	5	14	8	4	30	36	NA
15-Dec-17	25	60	2	21	17	15	6	21	8	4	19	42	NA
16-Dec-17	25	41	2	NA	NA	NA	6	NA	8	5	3	52	NA
17-Dec-17	31	42	4	27	16	21	11	37	9	5	NA	46	NA
18-Dec-17	32	84	5	31	17	10	13	36	11	6	NA	50	NA
19-Dec-17	32	77	7	33	23	10	18	57	17	9	52	43	NA
20-Dec-17	41	64	24	24	30	8	12	57	21	5	36	77	9
21-Dec-17	54	65	11	30	28	7	10	19	20	4	19	67	11
22-Dec-17	33	47	7	27	22	10	12	21	17	4	39	54	5
23-Dec-17	32	45	4	28	21	7	18	21	15	5	25	31	5
24-Dec-17	37	41	13	26	33	8	21	18	18	5	23	13	5
25-Dec-17	34	46	12	24	39	7	15	12	28	4	30	55	6
26-Dec-17	36	42	10	29	28	10	13	21	20	7	23	37	7
27-Dec-17	36	43	10	25	37	9	17	20	17	12	22	52	5
28-Dec-17	39	72	11	29	39	11	16	49	20	12	44	49	10
29-Dec-17	55	82	7	36	17	60	20	27	19	9	25	63	10
30-Dec-17	40	58	18	22	16	13	17	13	24	8	11	35	10
31-Dec-17	34	79	22	23	9	11	15	17	21	9	7	24	8
Maximum	55	124	37	36	49	60	23	57	28	12	64	77	11
Minimum	18	38	2	15	9	7	4	12	3	4	3	13	5
Average	36	62	14	24	23	16	14	30	14	7	30	46	8

Maximum values are reported in RED for all respective stations & Minimum values are reported in GREEN for all respective stations

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# 3. NO2 (in $\mu g/m^3$ )

Date/Stations	Noida , Sec-125	Noida , Sec-62	Ghaziabad	IHBAS	Anand Vihar	ITO	Mandir Marg	Pusa	Punjabi Bagh	DMS	North Campus	Burari crossing	DTU
Land-Use Pattern	Industrial	Industrial	Mixed	Residential + Industrial	Commercial	Traffic intersection	Residential Area+Commercial Area	Residential+Indust rial	Industrial, Residential, Commercial area	Mixed area	Mixed area	Residential + Commercial	Residential & industrial
1-Dec-17	121	10	53	87	154	47	84	14	NA	31	27	25	57
2-Dec-17	150	11	44	125	195	70	109	4	NA	25	26	24	NA
3-Dec-17	159	11	74	119	151	NA	116	2	NA	25	26	26	NA
4-Dec-17	144	10	162	127	167	NA	107	5	NA	30	27	23	NA
5-Dec-17	145	10	134	104	110	41	98	5	144	44	27	24	52
6-Dec-17	99	12	81	58	88	17	75	4	88	55	27	24	46
7-Dec-17	94	12	81	57	89		58	23	84	54	27	25	45
8-Dec-17	89	12	84	65	114	42	73	2	87	62	27	63	98
9-Dec-17	114	11	118	71	149	49	86	2	137	74	27	73	44
10-Dec-17	140	10	118	52	138	59	110	2	205	77	27	70	NA
11-Dec-17	81	11	133	80	121	59	119	1	180	72	27	NA	NA
12-Dec-17	60	13	68	48	81	24	66	6	88	49	27	NA	NA
13-Dec-17	75	12	62	114	70	19	57	8	73	42	27	NA	NA
14-Dec-17	49	12	43	12	67	12	53	5	65	36	27	NA	NA
15-Dec-17	41	12	41	13	62	14	52	4	61	33	27	NA	46
16-Dec-17	35	12	51	19	NA	16	NA	2	101	29	27	NA	40
17-Dec-17	34	13	75	22	92	15	62	2	101	30	27	NA	34
18-Dec-17	21	12	70	29	98	23	66	2	106	30	26	48	41
19-Dec-17	22	11	91	30	124	32	75	2	120	42	27	64	NA
20-Dec-17	15	11	98	80	126	40	84	3	136	57	13	76	NA
21-Dec-17	44	10	82	29	117	32	82	4	134	50	NA	73	NA
22-Dec-17	71	10	66	23	99	20	72	4	110	42	NA	51	83
23-Dec-17	66	11	66	24	116	22	67	4	102	40	NA	46	76
24-Dec-17	85	NA	98	59	153	43	82	8	126	58	NA	66	56
25-Dec-17	102	NA	86	30	121	28	65	7	122	49	NA	114	51
26-Dec-17	90	9	93	34	164	30	66	12	134	50	NA	95	51
27-Dec-17	101	9	94	37	161	28	74	12	122	57	NA	72	46
28-Dec-17	104	9	100	55	142	45	78	10	131	68	NA	70	41
29-Dec-17	84	9	81	44	127	29	83	7	129	71	NA	70	41
30-Dec-17	134	9	84	53	134	39	84	8	118	82	NA	73	37
31-Dec-17	134	NA	96	58	132	36	65	7	122	70	NA	74	35
Maximum	159	13	162	127	195	70	119	23	205	82	27	114	98
Minimum	15	9	41	12	62	12	52	1	61	25	13	23	34
Average	87	11	85	57	122	33	79	6	116	49	26	57	51

Date/Stations	NSIT	IGI Airport Terminal-3	R K Puram	Sirifort	Lodhi Road	CRRI Mathura Road	Aya Nagar	Gurgaon, Vikas Sada	Faridabad, Sec-16A	wadi ,RIICO Ind. Are	Alwar,Moti Doongri
Land-Use Pattern	Residential	Commercial	Residential	Residential + Mix	Residential Area	Commercial	Industrial, Residential area	Industrial and Residential area	Industrial and Residential Area	Industrial area	Industrial, Residential area
1-Dec-17	44	23	124	45	19	31	17	17	75	NA	NA
2-Dec-17	43	23	128	40	22	33	17	12	93	NA	NA
3-Dec-17	50	24	155	52	22	35	16	13	98	NA	NA
4-Dec-17	49	24	135	58	24	31	17	18	110	NA	NA
5-Dec-17	43	23	149	68	20	31	NA	20	111	NA	NA
6-Dec-17	35	22	103	86	17	31	18	19	70	NA	NA
7-Dec-17	36	22	98	68	17	31	16	19	63	NA	NA
8-Dec-17	37	23	109	67	19	31	16	20	86	NA	NA
9-Dec-17	41	23	123	60	19	31	17	19	66	NA	NA
10-Dec-17	48	22	146	30	24	32	18	19	44	NA	NA
11-Dec-17	47	24	125	61	24	31	18	19	53	NA	NA
12-Dec-17	32	21	72	69	17	30	18	17	51	NA	NA
13-Dec-17	30	22	62	64	19	31	18	18	59	NA	NA
14-Dec-17	28	22	61	61	17	30	18.21	18	36	NA	NA
15-Dec-17	27	22	57	60	17	30	18	22	8	NA	NA
16-Dec-17	29	23	NA	57	16	30	17	23	NA	NA	NA
17-Dec-17	31	23	69	55	16	31	15	23	77	NA	NA
18-Dec-17	33	24	77	61	15	30	15	22	73	NA	NA
19-Dec-17	37	23	91	98	17	30	16	23	53	NA	NA
20-Dec-17	33	24	98	124	18	30	17	21	46	72	72
21-Dec-17	33	25	91	116	18	30	17	20	44	73	55
22-Dec-17	26	23	71	74	18	30	16	20	38	40	43
23-Dec-17	24	23	67	82	17	30	17	21	37	35	43
24-Dec-17	26	25	78	175	20	32	17	20	40	NA	44
25-Dec-17	26	25	74	175	20	37	17	20	40	NA	47
26-Dec-17	31	24	76	123	18	31	17	20	41	39	52
27-Dec-17	34	24	79	147	21	31	18	25	40	31	53
28-Dec-17	39	25	91	187	13	50	17	24	81	40	50
29-Dec-17	38	26	95	NA	8	32	17	20	108	50	53
30-Dec-17	20	25	86	153	6	32	17	22	111	56	51
31-Dec-17	17	25	74	171		32	17	23	106	43	47
Maximum	50	26	155	187	24	50	18	25	111	73	72
Minimum	17	21	57	30	6	30	15	12	8	31	43
Average	34	23	95	90	18	32	17	20	65	48	51

# **4.Benzene**(in μg/m³)

Date/Stations	Noida , Sec-125	Ghaziabad	Anand Vihar	Mandir Marg	Punjabi Bagh	orth Campus	DMS	NSIT	R K Puram	Gurgaon, Vikas Sadan	Faridabad, Sec-16A	vadi ,RIICO Ind. Ar	Alwar,Moti Doongri
Land-Use Pattern	Industrial	Mixed	Commercial	Residential Area+Commercial Area	Industrial, Residential, Commercial area	Mixed area	Mixed area	Residential	Residential	Industrial and Residential area	Industrial and Residential Area	Industrial area	Industrial, Residential area
1-Dec-17	2.47	0.98	11.6	5.4	NA	1.1	18.7	6.1	9.8	0.9	1.0	NA	NA
2-Dec-17	2.79	1.43	16.6	6.7	NA	1.1	21.2	7.0	11.5	1.0	1.3	NA	NA
3-Dec-17	3.24	1.20	15.0	6.0	NA	1.1	22.4	13.9	13.6	1.0	1.9	NA	NA
4-Dec-17	2.47	1.23	15.9	5.0	NA	1.1	19.8	9.6	11.6	0.9	1.3	NA	NA
5-Dec-17	1.79	0.90	12.0	4.0	3.3	1.1	9.9	5.4	10.4	1.1	0.9	NA	NA
6-Dec-17	1.21	0.40	5.2	3.7	1.0	1.0	2.7	3.1	7.7	1.0	0.6	NA	NA
7-Dec-17	1.21	0.31	3.6	2.3	5.2	1.1	4.5	2.6	5.8	1.1	0.4	NA	NA
8-Dec-17	1.19	0.42	5.7	2.7	4.2	1.0	6.7	3.0	6.0	1.1	0.4	NA	NA
9-Dec-17	1.63	0.86	9.9	5.1	8.4	1.1	20.9	5.4	9.2	1.0	0.7	NA	NA
10-Dec-17	2.70	1.12	16.0	6.4	5.2	1.1	18.3	5.6	12.3	1.2	0.7	NA	NA
11-Dec-17	2.41	0.93	6.9	5.5	5.6	1.1	15.0	2.0	10.1	1.3	0.8	NA	NA
12-Dec-17	0.78	0.28	2.6	1.8	1.5	1.1	3.2	1.9	5.2	1.5	0.4	NA	NA
13-Dec-17	1.18	0.35	4.9	2.0	1.5	1.0	4.5	2.5	5.4	1.6	0.4	NA	NA
14-Dec-17	1.21	0.32	4.6	1.7	1.0	1.1	2.7	2.0	5.7	1.6	0.4	NA	NA
15-Dec-17	1.13	0.30	2.9	1.1	0.9	1.1	2.6	2.1	5.3	1.5	0.4	NA	NA
16-Dec-17	1.14	0.32	NA	NA	NA	1.1	4.7	2.6	NA	1.5	0.3	NA	NA
17-Dec-17	0.89	0.27	3.9	1.1	1.4	1.1	2.6	2.2	4.4	1.6	0.2	NA	NA
18-Dec-17	1.04	0.33	3.9	1.8	4.3	1.1	4.3	2.5	4.6	1.7	0.3	NA	NA
19-Dec-17	1.82	0.53	6.6	1.8	5.3	1.1	10.9	4.7	7.9	1.7	0.4	NA	NA
20-Dec-17	2.39	0.81	8.0	3.2	3.9	0.5	10.5	5.4	10.4	1.7	0.7	1.0	2.7
21-Dec-17	2.77	0.57	6.5	4.2	3.4	5.9	8.3	5.4	10.9	1.8	0.8	1.5	2.2
22-Dec-17	1.36	0.34	4.1	2.5	5.3	NA	4.8	3.5	6.2	1.7	0.4	1.0	1.8
23-Dec-17	1.55	0.38	5.9	2.6	5.1	4.5	12.2	3.8	5.8	1.7	0.4	0.7	1.8
24-Dec-17	2.49	0.89	11.4	3.7	2.9		11.4	4.9	9.6	1.6	0.6	3.0	2.0
25-Dec-17	2.27	0.60	8.1	4.4	2.8	7.3	11.9	9.0	10.0	1.4	0.7	1.9	1.8
26-Dec-17	2.09	0.59	7.2	2.4	NA	5.7	16.4	5.7	7.3	1.5	0.5	1.6	2.9
27-Dec-17	2.19	0.77	10.6	4.6	6.5	NA	17.4	6.9	9.6	1.5	0.6	5.9	3.0
28-Dec-17	2.91	NA	9.4	6.2	5.9	NA	15.7	7.5	12.9	1.5	0.9	4.6	2.8
29-Dec-17	2.61	0.63	8.5	4.8	2.7	2.7	12.6	7.5	12.1	1.4	0.9	2.6	2.9
30-Dec-17	3.27	0.73	10.3	5.3	5.0	7.6	19.4	9.6	9.9	1.4	0.9	2.5	2.7
31-Dec-17	3.35	0.94	12.3	5.2	3.1	5.4	15.4	8.1	8.8	1.4	1.1	1.9	3.4
Maximum	3.4	1.4	16.6	6.7	8.4	7.6	22.4	13.9	13.6	1.8	1.9	5.9	3.4
Minimum	0.8	0.3	2.6	1.1	0.9	0.5	2.6	1.9	4.4	0.9	0.2	0.7	1.8
Average	2.0	0.7	8.3	3.8	3.8	2.2	11.3	5.2	8.7	1.4	0.7	2.3	2.5

# 5.CO(in mg/m<sup>3</sup>)

1-Dec-17 2-Dec-17 3-Dec-17 4-Dec-17 5-Dec-17 6-Dec-17 7-Dec-17 8-Dec-17 10-Dec-17 11-Dec-17 12-Dec-17	Industrial  3.74 5.28 5.32 4.45 2.67 0.93 0.94 0.99 1.68 3.30 3.41 1.18 0.54	0.91 1.03 0.98 1.01 0.96 0.80 0.73 0.73 0.83 0.97 0.98	Mixed  3.55 3.28 3.64 5.72 4.15 1.58 1.38 1.58 2.10 3.49 3.96	1.67 3.04 2.41 3.32 1.59 1.39 0.69 1.56 1.54 2.02	Residential Area+Commerci al Area 1.73 3.95 3.78 3.47 2.61 1.90 1.74 2.54	2.6 3.1 3.6 4.1 4.1 3.5 2.9 2.7	Industrial, Residential, Commercial area  NA  NA  NA  NA  2.5  1.3  1.8	2.3 2.4 3.1 2.7 1.9 0.7	1.9 1.9 1.9 1.9 1.9 1.9 1.9	Residential + Industrial  1.76  1.78  1.74  1.8  1.78  1.76  1.77
2-Dec-17 3-Dec-17 4-Dec-17 5-Dec-17 6-Dec-17 7-Dec-17 8-Dec-17 9-Dec-17 10-Dec-17	5.28 5.32 4.45 2.67 0.93 0.94 0.99 1.68 3.30 3.41 1.18	1.03 0.98 1.01 0.96 0.80 0.73 0.73 0.83 0.97 0.98	3.28 3.64 5.72 4.15 1.58 1.38 1.58 2.10 3.49	3.04 2.41 3.32 1.59 1.39 0.69 1.56	3.95 3.78 3.47 2.61 1.90 1.74 2.54	3.1 3.6 4.1 4.1 3.5 2.9	NA NA NA 2.5 1.3	2.4 3.1 2.7 1.9 0.7 0.7	1.9 1.9 1.9 1.9 1.9	1.78 1.74 1.8 1.78 1.76
3-Dec-17 4-Dec-17 5-Dec-17 6-Dec-17 7-Dec-17 8-Dec-17 9-Dec-17 10-Dec-17	5.32 4.45 2.67 0.93 0.94 0.99 1.68 3.30 3.41 1.18	0.98 1.01 0.96 0.80 0.73 0.73 0.83 0.97	3.64 5.72 4.15 1.58 1.38 1.58 2.10 3.49	2.41 3.32 1.59 1.39 0.69 1.56 1.54	3.78 3.47 2.61 1.90 1.74 2.54	3.6 4.1 4.1 3.5 2.9	NA NA 2.5 1.3	3.1 2.7 1.9 0.7 0.7	1.9 1.9 1.9 1.9	1.74 1.8 1.78 1.76
4-Dec-17 5-Dec-17 6-Dec-17 7-Dec-17 8-Dec-17 9-Dec-17 10-Dec-17	4.45 2.67 0.93 0.94 0.99 1.68 3.30 3.41 1.18	1.01 0.96 0.80 0.73 0.73 0.83 0.97	5.72 4.15 1.58 1.38 1.58 2.10 3.49	3.32 1.59 1.39 0.69 1.56 1.54	3.47 2.61 1.90 1.74 2.54	4.1 4.1 3.5 2.9	NA 2.5 1.3 1.3	2.7 1.9 0.7 0.7	1.9 1.9 1.9	1.8 1.78 1.76
5-Dec-17 6-Dec-17 7-Dec-17 8-Dec-17 9-Dec-17 10-Dec-17 11-Dec-17	2.67 0.93 0.94 0.99 1.68 3.30 3.41 1.18	0.96 0.80 0.73 0.73 0.83 0.97 0.98	4.15 1.58 1.38 1.58 2.10 3.49	1.59 1.39 0.69 1.56 1.54	2.61 1.90 1.74 2.54	4.1 3.5 2.9	2.5 1.3 1.3	1.9 0.7 0.7	1.9 1.9	1.78 1.76
6-Dec-17 7-Dec-17 8-Dec-17 9-Dec-17 10-Dec-17 11-Dec-17	0.93 0.94 0.99 1.68 3.30 3.41 1.18	0.80 0.73 0.73 0.83 0.97 0.98	1.58 1.38 1.58 2.10 3.49	1.39 0.69 1.56 1.54	1.90 1.74 2.54	3.5 2.9	1.3 1.3	0.7 0.7	1.9	1.76
7-Dec-17 8-Dec-17 9-Dec-17 10-Dec-17 11-Dec-17	0.94 0.99 1.68 3.30 3.41 1.18	0.73 0.73 0.83 0.97 0.98	1.38 1.58 2.10 3.49	0.69 1.56 1.54	1.74 2.54	2.9	1.3	0.7		
8-Dec-17 9-Dec-17 10-Dec-17 11-Dec-17	0.99 1.68 3.30 3.41 1.18	0.73 0.83 0.97 0.98	1.58 2.10 3.49	1.56 1.54	2.54				1.9	1.74
9-Dec-17 10-Dec-17 11-Dec-17	1.68 3.30 3.41 1.18	0.83 0.97 0.98	2.10 3.49	1.54		2.7	1 2	0.0		
10-Dec-17 11-Dec-17	3.30 3.41 1.18	0.97 0.98	3.49		2 24		1.0	0.6	1.9	1.19
11-Dec-17	3.41 1.18	0.98		2.02	3.21	3.1	2.2	2.9	1.9	1.04
	1.18		2.06	2.02	4.03	5.2	2.2	2.1	1.9	1.11
12-Dec-17		0.78	5.30	2.39	3.87	5.1	3.0	1.4	1.9	NA
	0.54	0.70	1.51	1.07	2.91	2.2	1.4	0.9	1.9	NA
13-Dec-17	0.54	0.73	1.70	0.71	2.00	1.7	1.2	0.8	1.9	NA
14-Dec-17	0.28	0.71	1.25	0.39	2.22	1.6	1.2	0.8	2.0	NA
15-Dec-17	0.81	0.70	1.13	0.38	1.99	2.0	1.0	0.6	1.9	NA
16-Dec-17	0.91	0.70	1.31	0.38	NA	2.1	NA	0.8	1.9	NA
17-Dec-17	0.87	0.71	1.40	0.37	2.00	2.1	1.2	0.6	1.9	NA
18-Dec-17	1.02	0.73	1.38	0.52	2.77	2.2	1.3	0.9	2.0	0.93
19-Dec-17	1.64	0.77	2.98	0.85	3.04	2.5	2.3	1.7	1.91	0.76
20-Dec-17	2.06	0.87	3.09	1.17	3.64	3.1	3.0	1.6	0.9	0.66
21-Dec-17	2.01	0.85	2.18	0.48	2.24	3.4	2.2	0.6	NA	0.68
22-Dec-17	0.75	0.78	1.44	0.78	2.14	3.1	1.4	0.4	NA	0.94
23-Dec-17	1.37	0.72	1.81	1.06	2.56	2.7	2.2	0.7	NA	0.97
24-Dec-17	2.38	NA	3.51	1.05	3.77	2.9	4.2	0.9	NA	0.72
25-Dec-17	2.58	NA	2.26	0.70	2.49	3.6	3.1	0.9	NA	0.54
26-Dec-17	2.12	0.88	2.42	0.73	2.24	3.7	3.7	1.4	NA	0.63
27-Dec-17	2.38	0.90	3.01	0.49	2.13	3.6	2.5	2.5	NA	0.68
28-Dec-17	3.36	0.85	3.06	0.92	3.29	4.5	3	1.9	NA	0.70
29-Dec-17	2.77	0.79	2.28	1.27	3.34	4.2	3.3	1.95	NA	0.7
30-Dec-17	3.22	0.77	2.96	1.42	4.45	4.8	3.9	2.55	NA	0.68
31-Dec-17	4.91	NA	4.07	1.78	4.29	4.8	3.9	1.83	NA	0.68
Maximum	5.3	1.0	5.7	3.3		5.2	4.2	3.1		1.8
Minimum	0.3	0.7	1.1	0.4		1.6	1.0	0.4		0.5
Average	2.3	0.8	2.6	1.2		3.2	2.3	1.4		1.1

Date/Stations	NSIT	IGI Airport Terminal-3	R K Puram	Lodhi Road	CRRI Mathura Road	Aya Nagar	Gurgaon, Vikas Sadan	Faridabad, Sec-16A	Bhiwadi ,RIICO Ind. Area III	Alwar, Moti Doongri
Land-Use Pattern	Residential	Commercial	Residential	Residential Area	Commercial	Industrial, Residential area	Industrial and Residential area	Industrial and Residential Area	Industrial area	Industrial, Residential area
1-Dec-17	1.37	1.6	2.34	2.45	1.1	1.1	2.02	2.4	NA	NA
2-Dec-17	1.44	1.5	3.35	3.09	1.0	1.1	1.98	3.1	NA	NA
3-Dec-17	1.85	1.4	3.88	NA	0.8	0.9	2.00	3.7	NA	NA
4-Dec-17	1.79	1.4	4.29	NA	1.2	1.1	2.31	3.2	NA	NA
5-Dec-17	1.19	1.5	3.78	1.81	1.2	NA	2.53	2.4	NA	NA
6-Dec-17	0.97	1.6	2.05	0.28	1.2	1.2	1.68	1.3	NA	NA
7-Dec-17	1.03	1.6	1.70	0.22	1.2	1.0	1.92	0.9	NA	NA
8-Dec-17	0.99	1.6	2.31	0.26	1.2	1.0	2.38	1.5	NA	NA
9-Dec-17	1.49	1.6	2.41	0.47	1.2	1.1	2.09	1.9	NA	NA
10-Dec-17	1.65	1.7	3.69	1.23	1.1	1.1	2.23	2.2	NA	NA
11-Dec-17	1.53	1.5	4.41	1.07	1.2	1.1	1.30	2.3	NA	NA
12-Dec-17	1.21	1.8	2.68	NA	1.3	1.2	1.55	1.2	NA	NA
13-Dec-17	0.91	1.6	2.20	0.58	1.2	1.1	1.79	1.2	NA	NA
14-Dec-17	1.18	1.7	2.00	0.64	1.3	1.2	1.60	1.4	NA	NA
15-Dec-17	1.06	1.7	0.56	0.52	1.3	1.2	1.76	1.1	NA	NA
16-Dec-17	0.91	1.6	NA	0.48	1.3	1.1	1.52	1.1	NA	NA
17-Dec-17	0.90	1.5	3.36	0.30	1.2	0.9	1.93	0.9	NA	NA
18-Dec-17	1.04	1.5	1.41	1	1.3	0.9	1.75	0.6	NA	NA
19-Dec-17	1.45	1.5	2.02		1.3	1.0	2.27	1.3	NA	NA
20-Dec-17	1.30	1.4	2.43	7	1.3	1.1	1.95	2.5	1.17	0.93
21-Dec-17	1.22	1.4	2.22	1	0.8	1.0	1.00	2.3	1.16	0.58
22-Dec-17	0.81	1.5	NA	1	0.5	1.0	1.04	0.8	0.55	0.55
23-Dec-17	0.90	1.5	2.98	1	0.5	1.0	1.20	1.3	0.45	0.55
24-Dec-17	1.13	1.3	2.17	2	0.5	1.1	1.40	2.4	0.52	0.59
25-Dec-17	1.43	1.3	3.09	2	0.7	1.1	0.91	2.3	0.55	0.59
26-Dec-17	1.46	1.4	2.56	NA	0.7	1.1	1.27	1.7	0.65	0.84
27-Dec-17	1.04	1.4	2.35	NA	0.6	1.2	1.36	2.0	2.48	0.76
28-Dec-17	0.89	1.3	3.17	NA	0.9	1.1	1.32	3.0	3.78	0.74
29-Dec-17	1.02	1.2	2.13	1	NA	1.04	1.43	2.74	1.2	0.72
30-Dec-17	1.12	1.3	2.86	4	NA	1.03	1.16	3.86	1.2	0.69
31-Dec-17	0.86	1.3	2.97	NA	NA	1.05	1.25	4.13	1.2	0.85
Maximum	1.9	1.8	4.4	6.7	1.3	1.2	2.5	4.1	3.8	
Minimum	0.8	1.2	0.6	0.2	0.5	0.9	0.9	0.6	0.5	
Average	1.2	1.5	2.7	1.5	1.0	1.1	1.7	2.0	1.2	0.7

# 6. Ozone(in $\mu$ g/m<sup>3</sup>)

Date/Stations	Noida , Sec-125	Noida , Sec-62	Ghaziabad	Anand Vihar	Mandir Marg	Pusa	Punjabi Bagh	DMS	North Campus	NSIT
Land-Use Pattern	Industrial	Industrial	Mixed	Commercial	Residential Area+Commercial Area	Residential+Industrial	Industrial, Residential,	Mixed area	Mixed area	Residential
1-Dec-17	57	27	149	61	17	21	NA	21	27	25
2-Dec-17	63	38	183	72	51	22	NA	20	27	23
3-Dec-17	NA	48	136	60	29	19	NA	16	27	28
4-Dec-17	44	50	118	59	31	21	NA	16	27	23
5-Dec-17	45	42	140	38	11	17	19	15	27	18
6-Dec-17	48	18	157	26	21	10	25	22	28	21
7-Dec-17	56	22	68	26	115	15	12	27	28	24
8-Dec-17	73	21	33	25	139	18	33	37	28	28
9-Dec-17	63	18	42	36	151	13	54	30	27	26
10-Dec-17	75	17	59	50	15	9	41	25	27	25
11-Dec-17	48	17	39	46	12	5	39	10	27	20
12-Dec-17	50	15	29	30	14	12	53	10	28	15
13-Dec-17	51	18	41	28	18	14	57	16	28	16
14-Dec-17	40	27	39	25	18	18	35	15	27	19
15-Dec-17	36	19	55	24	17	17	37	13	27	16
16-Dec-17	53	15	28	NA	NA	19	NA	17	27	18
17-Dec-17	63	16	24	29	27	22	39	23	27	23
18-Dec-17	69	17	73	20	25	23	41	23	27	24
19-Dec-17	52	16	58	17	16	20	41	16	27	18
20-Dec-17	45	22	73	73	16	32	47	13	26	14
21-Dec-17	68	19	37	19	12	30	45	21	20	17
22-Dec-17	41	15	23	16	17	43	37	14	15	18
23-Dec-17	45	16	24	19	21	39	41	16	14	22
24-Dec-17	51	NA	45	22	14	34	53	13	13	24
25-Dec-17	44	NA	26	19	18	28	55	13	13	18
26-Dec-17	43	NA	22	20	25	11	50	12	14	18
27-Dec-17	41	NA	36	23	17	9	45	12	21	17
28-Dec-17	41	174	65	20	24	25	45	10	21	11
29-Dec-17	47	109	68	19	62	27	48	10	21	18
30-Dec-17	53	152	38	17	26	133	63	8	22	15
31-Dec-17	51	NA	52	20	26	169	61	10	22	14
Maximum	75	174	183	73	151	169	63	37	28	28
Minimum	36		22	16	11	į.	12	8	13	
Average	52	37	64	32	34	29	43	17	24	20

Date/Stations	IGI Airport Terminal-3	R K Puram	Lodhi Road	CRRI Mathura Road	Aya Nagar	Gurgaon, Vikas Sadan	Faridabad, Sec-16A	Bhiwadi ,RIICO Ind. Area III	Alwar, Moti Doongri
Land-Use Pattern	Commercial	Residential	Residential Area	Commercial	Industrial, Residential area	Industrial and Residential area	Industrial and Residential Area	Industrial area	Industrial, Residential area
1-Dec-17	32	26	19	28	43	24	31	NA	NA
2-Dec-17	33	21	19	35	46	18	30	NA	NA
3-Dec-17	37	22	20	53	54	21	30	NA	NA
4-Dec-17	36	18	16	26	46	18	28	NA	NA
5-Dec-17	33	20	17	26	NA	15	18	NA	NA
6-Dec-17	29	24	18	26	35	20	29	NA	NA
7-Dec-17	30	27	20	25	45	26	38	NA	NA
8-Dec-17	33	36	23	25	49	31	51	NA	NA
9-Dec-17	32	33	23	26	43	26	67	NA	NA
10-Dec-17	28	25	12	30	37	26	15	NA	NA
11-Dec-17	35	20	14	28	41	16	49	NA	NA
12-Dec-17	24	18	14	24	31	20	28	NA	NA
13-Dec-17	27	28	20	26	34	22	32	NA	NA
14-Dec-17	27	26	16	24	32	26	92	NA	NA
15-Dec-17	26	None	15	12	32	28	150	NA	NA
16-Dec-17	32	NA	17	17	38	32	139	NA	NA
17-Dec-17	32	NA	13	24	49	44	44	NA	NA
18-Dec-17	34	10	20	24	52	47	114	NA	NA
19-Dec-17	33	10	16	22	45	33	131	NA	NA
20-Dec-17	36	13	13	13	38	15	117	18	19
21-Dec-17	37	12	18	11	43	29	154	21	22
22-Dec-17	32	10	17	7	43	32	156	21	20
23-Dec-17	33	12	18	8	46	41	160	20	20
24-Dec-17	38	12	19	12	41	14	151	5	16
25-Dec-17	39	11	18	8	41	14	150	7	16
26-Dec-17	34	11	17	8	41	16	151	45	33
27-Dec-17	35	9	17	12	36	11	138	59	36
28-Dec-17	41	15	19	28	43	21	85	20	32
29-Dec-17	42	15	12	34	41	21	25	17	30
30-Dec-17	39	15	18	42	41	21	6	16	33
31-Dec-17	38	11	NA	45	40	17	5	19	32
Maximum	42	36	23	53	54	47	160	59	36
Minimum	24	9	12	7	31	11	5	5	16
Average	34	18	17	24			78	22	

# $7.NH_3$ (in µg/m<sup>3</sup>)

Date/Stations	Noida , Sec-125	Ghaziabad	Anand Vihar	IHBAS	ITO	Mandir Marg	Punjabi Bagh	DTU	R K Puram	Sirifort	Bhiwadi ,RIICO Ind. Area III	Alwar, Moti Doongri
Land-Use Pattern	Industrial	Mixed	Commercial	Residential + Industrial	Traffic intersection	Residential Area+Commercial Area	Industrial, Residential, Commercial area	Residential & industrial	Residential	Residential + Mix	Industrial area	Industrial, Residential area
1-Dec-17	128	24	106	62	53	22	None	41	42	123	None	None
2-Dec-17	160	16	119	107	60	18	None	None	43	176	None	None
3-Dec-17	161	86	120	76	NA	22	None	None	52	159	None	None
4-Dec-17	149	89	123	96	NA	24	None	None	56	142	None	None
5-Dec-17	129	73	64	91	32	25	90	27	59	96	None	None
6-Dec-17	78	49	69	40	25	46	55	19	39	48	None	None
7-Dec-17	71	40	52	36	28	17	60	21	31	46	None	None
8-Dec-17	68	39	56	42	34	20	55	10	33	48	None	None
9-Dec-17	96	49	76	50	62	23	75	10	38	93	None	None
10-Dec-17	114	62	91	48	85	26	106	None	47	141	None	None
11-Dec-17	72	71	113	86	83	27	106	None	48	132	None	None
12-Dec-17	95	55	104	43	30	29	52	None	52	40	None	None
13-Dec-17	86	49	78	44	26	30	61	None	47	36	None	None
14-Dec-17	73	41	79	30	24	28	52	None	44	33	None	None
15-Dec-17	69	35	58	27	25	26	46	175	41	33	None	None
16-Dec-17	65	38	NA	27	24	NA	NA	188	NA	30	None	None
17-Dec-17	4	41	61	24	22	23	49	206	28	27	None	None
18-Dec-17	NA	44	70	32	25	27	55	240	35	31	None	None
19-Dec-17	1	54	94	37	43	30	68	None	40	68	None	None
20-Dec-17	2	66	135	93	39	40	98	None	55	78	29	59
21-Dec-17	15	71	120	38	34	44	100	None	59	66	27	43
22-Dec-17	46	48	79	28	24	32	70	154	40	40	23	42
23-Dec-17	42	44	69	31	32	28	59	87	33	45	26	40
24-Dec-17	63	60	121	77	62	29	67	40	38	108	None	41
25-Dec-17	66	55	109	46	58	32	86	56	43	99	None	41
26-Dec-17	57	51	119	47	47	44	70	56	41	73	49	49
27-Dec-17	60	50	146	53	41	29	70	56	35	88	35	51
28-Dec-17	53	57	149	76	100	30	70	56	40	120	20	50
29-Dec-17	33	54	139	60	82	34	72	56	47	NA	2	55
30-Dec-17	102	61	153	75	67	37	82	55	49	95	3	54
31-Dec-17	122	66	146	85	132	37	87	56	48	114	3	50
Maximum	161	89	153	107	132	46	106	240	59	176	49	59
Minimum	1	16	52	24	22	17	46	10	28	27	2	40
Average	76	53	101	55	48	29	72	80	43	81	22	48

Maximum values are reported in RED for all respective stations & Minimum values are reported in GREEN for all respective stations

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### Daily meteorological data Vs. PM2.5 Profile - December 2017

### PM<sub>2.5</sub> Concentration in Delhi at different Air Quality Monitoring Stations with meteorological data (3:00 PM to 3:00 PM) PM<sub>2.5</sub> Concentration (µg/m<sup>3</sup>) (01-02) December 17 (02-03) December 17 (03-04) December 17 (04-05) December 17 (05-06) December 17 (06-07) December 17 (07-08) December 17 S.No. Station **IHBAS** DMS NSIT ITO DTU Sirifort **Anand Vihar** Mandir Marg) R K puram Punjabi Bagh **Burari Crossing** CRRI Mathura Road North Campus Pusa Ava Nagar Lodhi Road Pitampura **IGI Airport Terminal-3** Average PM2.5 Conc. (µg/m³) Meteorological parameters (01-02) December 17 (02-03) December 17 (03-04) December 17 (04-05) December 17 (05-06) December 17 (06-07) December 17 (07-08) December 17 Mixing Height (m) Wind Speed (m/s) 1.1 1.0 1.3 2.5 3.4 1.1 3.2 Temperature (OC) 19.7 19.2 19.5 19.7 18.6 19.4 18.9 Relative Humidity(%) 46.3 46.9 51.2 52.1 48.0 30.6 32.9 \*Inadequate data/Data not available No. of stations with adequate data on (05-06) December 17 (3 PM-3 PM) is less than 12 Daily mean values are compared with the previous value

# PM<sub>2.5</sub> Concentration in Delhi at different Air Quality Monitoring Stations with meteorological data (3:00 PM to 3:00PM)

			With meteo	Tological data	13.0011010	3.001 1417		
					Concentration (μg			
S.No.	Station	(08-09) December 17	(09-10) December 17	(10-11) December 17	(11-12) December 17	(12-13) December 17	(13-14) December 17	(14-15) December 17
1	IHBAS	114	152	134	*	77	83	89
2	DMS	166	221	240	99	97	96	106
3	NSIT	144	208	220	102	124	117	*
4	ITO	136	175	174	141	159	168	153
5	DTU	*	344	407	*	203	176	169
6	Sirifort	154	223	225	119	172	172	170
7	Anand Vihar	281	382	421	129	168	*	205
8	Mandir Marg)	165	228	253	104	146	*	140
9	R K puram	185	264	270	103	148	*	158
10	Punjabi Bagh	223	297	347	111	186	*	161
11	Burari Crossing	122	*	*	*	*	*	*
12	CRRI Mathura Road	141	*	256	92	112	119	113
13	North Campus	158	*	222	108	113	124	141
14	Pusa	105	*	151	61	75	*	*
15	Aya Nagar	119	*	160	92	98	*	*
16	Lodhi Road	127	*	207	90	*	127	117
17	Pitampura	*	*	*	*	*	*	*
18	IGI Airport Terminal-3	94	*	147	76	97	91	108
Average	PM2.5 Conc. (μg/m <sup>3</sup> )	152	249 🔨	240 🗸	102 🗸	132 1	127 🗸	141 🔨
0.0		(00 00) December 17	(00 10) December 17	(40.44) De se usb s : 47	/44 42\ Danambar 47	(42, 42) December 47	(42.44) Danasahas 47	(44.45) December 4
	rological parameters		(09-10) December 17		<u> </u>	1		
	xing Height (m)	516	478 <b>↓</b> *	399 <b>↓</b> *	880 1	714 🗸	720	650 🗸
	nd Speed (m/s)	1.9	<b>A</b>		1.7	2.4	2.5	3.1
Temperature ( <sup>o</sup> C)		19.6	20.0	19.5	17.8	16.2	14.8	12.5
Relat	Relative Humidity(%) 39.5		44.6 🏌	47.6	74.4	80.6 个	80.4	79.8 🗸
*Inadequ	uate data/Data not a	vailable						
No. of s	tations with adequat	e data on (09-10) a	nd (13-14) Decembe	er 17 (3 PM-3 PM) i	s less than 12			
Daily me	an values are compa	red with the previo	us value					

### PM<sub>2.5</sub> Concentration in Delhi at different Air Quality Monitoring Stations with meteorological data (3:00 PM to 3:00 PM) PM<sub>2.5</sub> Concentration (µg/m<sup>3</sup>) S.No. Station (15-16) December 17 (16-17) December 17 (17-18) December 17 (18-19) December 17 (19-20) December 17 (20-21) December 17 (21-22) December 17 **IHBAS** DMS **NSIT** ITO DTU Sirifort **Anand Vihar** Mandir Marg) R K puram Punjabi Bagh **Burari Crossing** CRRI Mathura Road North Campus Pusa Aya Nagar Lodhi Road Pitampura **IGI** Airport Terminal-3 Average PM2.5 Conc. (µg/m³) (15-16) December 17 (16-17) December 17 (17-18) December 17 (18-19) December 17 (19-20) December 17 (20-21) December 17 (21-22) December 17 **Meteorological parameters** Mixing Height (m) Wind Speed (m/s) 3.7 3.4 2.8 1.8 1.8 3.5 3.4 Temperature (°C) 16.8 18.5 13.1 14.8 17.5 17.8 18.7 Relative Humidity(%) 72.4 53.3 46.2 51.4 57.2 73.1 57.8 \*Inadequate data/Data not available No. of stations with adequate data on (15-16), (16-17) and (20-21) December 17 (3 PM-3 PM) are less than 12

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Daily mean values are compared with the previous value

### PM<sub>2.5</sub> Concentration in Delhi at different Air Quality Monitoring Stations

### with meteorological data (3:00 PM to 3:00 PM)

			PM <sub>2.5</sub> Concentration (µg/m³)							
S.No.	Station	(22-23) December 17	(23-24) December 17	(24-25) December 17	(25-26) December 17	(26-27) December 17	(27-28) December 17	(28-29) December 17	(30-31) December 17	31 December 17-1 January 18
1	IHBAS	70	115	151	127	127	130	130	171	192
2	DMS	94	172	279	247	304	283	215	327	343
3	NSIT	153	160	291	219	182	295	269	272	278
4	ITO	115	193	315	240	221	264	234	251	238
5	DTU	177	338	343	388	360	349	265	334	271
6	Sirifort	134	*	*	*	229	235	*	298	300
7	Anand Vihar	137	310	333	325	356	379	291	475	525
8	Mandir Marg)	111	149	287	239	221	245	242	312	343
9	R K puram	150	201	*	218	218	280	271	274	360
10	Punjabi Bagh	127	248	323	*	284	329	260	407	392
11	Burari Crossing	*	*	*	*	159	160	125	191	138
12	CRRI Mathura Road	131	235	354	238	247	291	269	368	372
13	North Campus	90	126	138	135	*	*	296	318	257
14	Pusa	66	81	172	144	143	163	139	183	198
15	Aya Nagar	72	109	203	162	161	156	155	209	217
16	Lodhi Road	90	136	246	179	184	216	*	*	*
17	Pitampura	*	*	*	*	*	*	*	*	*
18	IGI Airport Terminal-3	76	*	*	*	196	187	228	225	234
Average	PM2.5 Conc. (μg/m³)	112	184 \uparrow	264	220 🗸	224 1	248 1	226	289 1	291 ^
Meteo	rological parameters	(22-23) December 17	(23-24) December 17	(24-25) December 17	(25-26) December 17	(26-27) December 17	(27-28) December 17	(28-29) December 17	(30-31) December 17	(31 December 17-1 January 18
	xing Height (m)	601	510	467	505 ^	480 ↓	442 ↓	547	*	*
	ind Speed (m/s)	3.5	1.6	2.0	2.3	1.8	1.6	1.9	1.4	1.3
	mperature (°C)	18.5	18.3	17.3	17.3	17.8	18.6	18.3	16.2	14.4
	tive Humidity(%)	47.8	50.7	59.0	59.4	58.6	55.1	54.5	72.4	78.2
noid		17.0	50.7	55.0	33.1	30.0	33.1 🔻	3 11.3 ¥	74.1	70.2
*Inadequ	uate data/Data not a	vailable								
Daily mean values are compared with the previous value										
July IIIC	an values are compa	ica with the previo	us value							

### **Meteorological data summary 2017**

Monthly average mixing height was 542 meters with maximum daily average of 880 meters on 11<sup>th</sup> December and minimum of 286 meters on 1<sup>st</sup> December. Monthly average wind speed was 2.4 m/s with maximum daily average 3.7 m/s on 15<sup>th</sup> December and minimum was 1.0 m/s on 03<sup>rd</sup> December. Monthly average temperature was 17.4 °C with maximum daily average 20°C on 9<sup>th</sup> December and minimum 12.5 °C on 14<sup>th</sup> November. Monthly average relative humidity was 57.3 % with maximum daily average 80.6 % on 12<sup>th</sup> December and minimum 30.6 % on 06<sup>th</sup> December. Prominent wind direction in December 2017 was east followed by North-west.

# Monthly AQI values (May 2015 to December 31, 2017)

### i) Delhi

Months	Good	Satisfactory	Moderate	Poor	Very Poor	Severe	Average AQI
Months	(0-50)	(51–100)	(101–200)	(201–300)	(301–400)	(>401)	Values
May-15	*	1	5	18	6	*	242
Jun-15	*	3	13	8	1	*	192
Jul-15	*	11	17	2	1	*	138
Aug-15	*	3	25	2	*	*	147
Sep-15	*	4	12	13	1	*	194
Oct-15	*	1	2	17	9	*	264
Nov-15	*	*	*	2	20	8	360
Dec-15	*	*	3	11	16	*	293
Jan-16	*	*	*	2	23	6	370
Feb-16	*	*	1	13	15	*	293
Mar-16	*	*	7	16	4	*	238
Apr-16	*	*	*	25	5	*	271
May-16	*	*	7	19	5	*	246
Jun-16	*	*	15	12	*	2	208
Jul-16	*	6	15	4	*	*	146
Aug-16	*	17	13	*	*	*	105
Sep-16	*	1	24	5	*	*	163
Oct-16	*	*	4	20	4	3	271
Nov-16	*	*	*	3	17	10	374
Dec-16	*	*	*	1	24	6	365
Jan-17	*	*	2	9	20	*	304
Feb-17	*	*	2	22	4	*	267
Mar-17	*	*	*	13	18	*	213
Apr-17	*	*	13	12	5	*	227
May-17	*	*	7	17	7	*	273
Jun-17	*	2	18	10	*	*	173
Jul-17	2	17	12	*	*	*	98
Aug-17	*	18	13	*	*	*	103
Sep-17	*	9	18	3	*	*	139
Oct-17	*	*	5	10	14	1	285
Nov-17	*	*	*	3	20	7	361
Dec-17	*	*	2	10	18	1	316

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### ii) Gurugram

Months	Good	Satisfactory	Moderate	Poor	Very Poor	Severe	Average
IVIOTILITS	(0–50)	(51–100)	(101–200)	(201–300)	(301–400)	(>401)	AQI Values
Feb-16	*	*	1	2	4	*	301
Mar-16	*	*	1	1	4	*	292
Apr-16	1	*	3	5	2	*	230
May-16	2	2	12	8	4	*	189
Jun-16	*	1	10	3	*	*	169
Jul-16	3	7	2	*	*	*	68
Aug-16	10	13	1	*	*	*	60
Sep-16	1	8	7	2	*	*	106
Oct-16	*	5	8	8	1	*	176
Nov-16	*	*	6	8	7	7	295
Dec-16	*	*	*	4	15	8	354
Jan-17	*	*	*	2	14	7	371
Feb-17	1	*	1	9	11	1	292
Mar-17	*	3	10	11	1	*	198
Apr-17	*	*	3	9	13	3	295
May-17	*	1	*	2	9	1	312
Jun-17	5	2	2	6	6	2	220
Jul-17	5	4	8	7	2	1	148
Aug-17	4	16	6	2	*	*	95
Sep-17	*	9	15	5	*	*	138
Oct-17	*	*	7	8	10	*	266
Nov-17	*	*	*	2	21	6	358
Dec-17	*	*	3	9	15	*	290

### iii) FARIDABAD

Months	Good	Satisfactory	Moderate	Poor	Very Poor	Severe	Average
Months	(0–50)	(51–100)	(101–200)	(201–300)	(301–400)	(>401)	AQI Values
May-15	*	2	9	8	6	3	239
Jun-15	1	9	13	4	*	*	136
Jul-15	10	12	5	3	1	*	100
Aug-15	4	19	3	4	*	*	100
Sep-15	1	13	10	*	*	*	100
Oct-15	*	*	12	13	5	*	222
Nov-15	*	*	1	6	17	6	350
Dec-15	*	*	*	5	19	4	345
Jan-16	*	*	*	*	4	15	413
Feb-16	*	*	1	16	7	*	271
Mar-16	*	2	5	6	*	*	186
Apr-16	*	*	7	9	2	1	228
May-16	*	4	16	6	2	2	192
Jun-16	*	9	16	4	*	*	134
Jul-16	*	17	7	*	*	*	91
Aug-16	1	21	6	*	1	*	88
Sep-16	1	12	13	4	*	*	127
Oct-16	*	1	2	12	4	4	292
Nov-16	1	*	2	3	9	15	375
Dec-16	*	1	1	1	14	10	361
Jan-17	*	1	*	4	18	4	345
Feb-17	*	*	6	13	7	*	250
Mar-17	*	2	16	11	*	*	180
Apr-17	*	2	14	7	3	*	190
May-17	*	*	4	13	7	1	274
Jun-17	*	13	10	6	6	2	98
Jul-17	5	16	5	*	*	*	72
Aug-17	4	9	4	*	*	*	85
Sep-17	1	4	8	4	*	*	143
Oct-17	*	*	2	6	5	3	298
Nov-17	*	*	*	10	13	6	331
Dec-17	*	*	4	11	13	*	273

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## iv)Ghaziabad

Months	Good	Satisfactory	Moderate	Poor	Very Poor	Severe	Average
IVIOITLIIS	(0–50)	(51–100)	(101–200)	(201–300)	(301–400)	(>401)	AQI Values
May-17	*	1	5	10	12	1	268
Jun-17	1	1	10	9	7	*	209
Jul-17	*	14	13	2	*	*	110
Aug-17	*	13	17	1	*	*	118
Sep-17	*	4	13	10	2	*	192
Oct-17	*	*	1	8	12	9	345
Nov-17	*	*	*	*	10	19	421
Dec-17	*	*	*	4	9	18	401

### v) Noida

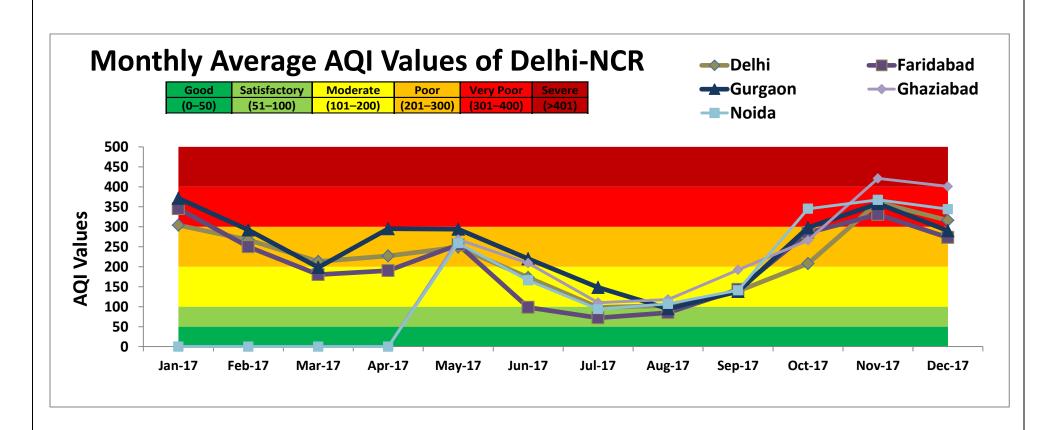
Months	Good	Satisfactory	Moderate	Poor	Very Poor	Severe	Average AQI
IVIOITIIS	(0–50)	(51–100)	(101–200)	(201–300)	(301–400)	(>401)	Values
May-17	*	1	5	11	9	*	259
Jun-17	*	4	9	5	1	*	166
Jul-17	*	20	10	*	*	*	94
Aug-17	*	12	12	1	*	*	107
Sep-17	2	6	20	1	1	*	141
Oct-17	*	3	10	4	10	2	246
Nov-17	*	*	*	6	14	10	367
Dec-17	*	*	2	9	10	10	344

# Daily AQI values of Delhi-NCR (Dec, 2017)

Date/Cities	Delhi	<b>Faridabad</b>	Ghaziabad	Gurugram	Noida	Bhiwadi	Alwar
1-Dec-17	343	289	455	318	372	NA	NA
2-Dec-17	331	309	442	344	365	NA	NA
3-Dec-17	351	328	458	320	381	NA	NA
4-Dec-17	390	394	467	323	415	NA	NA
5-Dec-17	378	375	462	<b>369</b>	411	NA	NA
6-Dec-17	282	310	347	294	303	NA	NA
7-Dec-17	194	222	209	212	143	NA	NA
8-Dec-17	217	53	280	208	191	NA	NA
9-Dec-17	305	267	381	278	326	NA	NA
10-Dec-17	377	312	448	332	415	NA	NA
11-Dec-17	361	323	463	<b>31</b> 9	408	NA	NA
12-Dec-17	219	229	290	192	224	NA	NA
13-Dec-17	270	190	<b>35</b> 9	228	264	NA	NA
14-Dec-17	265	177	380	150	293	NA	275
15-Dec-17	272	215	<b>37</b> 9	219	299	NA	NA
16-Dec-17	218	166	344	228	227	NA	NA
17- Dec -17	198	NA	314	NA	216	NA	NA
18- Dec -17	234	NA	<b>32</b> 6	NA	220	NA	NA
19- Dec -17	300	NA	<b>38</b> 9	NA	300	NA	124
20- Dec -17	359	297	473	322	<b>378</b>	NA	194
21- Dec -17	469	358	500	346	500	<b>356</b>	181
22- Dec -17	336	242	401	286	<b>356</b>	<b>32</b> 6	173
23- Dec -17	228	145	288	182	228	258	123
24- Dec -17	305	250	403	304	391	265	148
25 Dec -17	372	307	465	360	<b>47</b> 6	NA	146
26- Dec -17	335	272	445	268	476	330	175
27- Dec -17	363	277	454	342	408	326	219
28- Dec -17	378	314	445	349	412	380	174
29- Dec -17	364	307	436	373	369	<b>391</b>	187
30- Dec -17	395	333	447	366	399	393	215
31- Dec -17	398	377	488	NA	486	<b>36</b> 6	232
		Note: NA	indicates Data	is not Availak	ole		

Good	Satisfactory	Moderate	Poor	Very Poor	Severe
(0–50)	(51–100)	(101–200)	(201–300)	(301–400)	(>401)

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### NATIONAL AMBIENT AIR QUALITY STANDARD (2009)

			Conc	entration in Ambient Air
Pollutant	Time Weighted Average	Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
CO/r=3	Annual*	50	20	Improved West and Gaeke
SO <sub>2</sub> , μg/m <sup>3</sup>	24 hours**	80	80	Ultraviolet fluorescence
	Annual*	40	30	Madified Leach Olleabhaires (No Associta)
NO <sub>2</sub> , μg/m <sup>3</sup>	24 hours**	80	80	<ul> <li>Modified Jacob &amp; Hochheiser (Na-Arsenite)</li> <li>Chemiluminescence</li> </ul>
	Annual*	60	60	Gravimetric
PM <sub>10</sub> , μg/m <sup>3</sup>	24 hours**	100	100	TOEM     Beta attenuation
	Annual*	40	40	Gravimetric
PM <sub>2.5</sub> , μg/m <sup>3</sup>	24 hours**	60	60	TOEM     Beta attenuation
	8 hours**	100	100	UV photometric
O <sub>3</sub> , μg/m <sup>3</sup>	1 hour**	180	180	Chemiluminescence     Chemical Method
	Annual*	0.50	0.50	AAS/ICP method after sampling on EMP 2000 or
Lead (Pb), µg/m <sup>3</sup>	24 hours**	1	1	equivalent filter paper  ED-XRF using Teflon filter
	8 hours**	2	2	
CO, mg/m <sup>3</sup>	1 hour**	4	4	Non Dispersive Infra Red (NDIR) spectrosopy
	Annual*	100	100	
Ammonia (NH <sub>3</sub> ) μg/m <sup>3</sup>	24 hours**	400	400	<ul><li>Chemiluminescence</li><li>Indophenol blue method</li></ul>
Benzene	Annual*	5	5	<ul> <li>Gas chromatography based on continuous analyzer</li> <li>Adsorption and Desorption followed by GC analysis</li> </ul>
Benzopyrene (BaP) - particulate phase only, ng/m³	Annual*	1	1	Solvent extraction followed by HPLC/GC analysis
Arsenic (As), ng/m <sup>3</sup>	Annual*	6	6	AAS/ICP method after sampling on EMP 2000 or equivalent filter paper
Nickel (Ni), ng/m <sup>3</sup>	Annual*	20	20	AAS/ICP method after sampling on EMP 2000 or equivalent filter paper

<sup>\*</sup> Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

\*\* 24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be compiled with 98% of the time in a year. 2% of the time, theymay exceed the limits but not on two consecutive days of monitoring.

**Note** - Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

### **ANNEXURE -II**

### **Delhi CAAQM Stations**

S. No.	State	No. of stations at each State	Stations	(CPCB/SPCBs)	Parameters Monitored
	Delhi		Income Tax Office	CPCB Delhi	NO2, PM2.5, NH3
			DCE	CPCB Delhi	NO2, PM2.5, NH3
			Shadipur	CPCB Delhi (O&M)	SO2, NO2, PM2.5, CO, O3, Benzene
			IHBAS	CPCB Delhi (O&M)	SO2, NO2, PM2.5, NH3, CO
			NSIT Dwarka	CPCB Delhi (O&M)	SO2, NO2, PM2.5, CO, O3
			Sirifort	CPCB Delhi	NO2, PM2.5, NH3
			MandirMarg	DPCC Delhi	PM10, SO2, NO2, PM2.5, NH3, CO, O3, Benzene
			AnandVihar	DPCC Delhi	PM10, SO2, NO2, PM2.5, O3, Benzene
		17	R. K. Puram	DPCC Delhi	PM10, SO2, NO2, PM2.5, NH3, CO, O3, Benzene
1.			Punjabi Bagh	DPCC Delhi	PM10, SO2, NO2, PM2.5, NH3, CO, O3, Benzene
			Burari Crossing	SAFAR/IMD Delhi	NO <sub>2</sub> , CO, O <sub>3</sub> , PM <sub>2.5</sub> , PM <sub>10</sub>
			CRRI Mathura Road	SAFAR/IMD Delhi	NO <sub>2</sub> , CO, O <sub>3</sub> , PM <sub>2.5</sub> , PM <sub>10</sub>
			North Campus	SAFAR/IMD Delhi	NO <sub>2</sub> , CO, O <sub>3</sub> , PM <sub>2.5</sub> , PM <sub>10</sub> , Benzene
			Pusa	SAFAR/IMD Delhi	NO <sub>2</sub> , CO, O <sub>3</sub> , PM <sub>2.5</sub> , PM <sub>10</sub>
			Aya Nagar	SAFAR/IMD Delhi	NO <sub>2</sub> , CO, O <sub>3</sub> , PM <sub>2.5</sub> , PM <sub>10</sub>
			Lodhi Road	SAFAR/IMD Delhi	NO <sub>2</sub> , CO, O <sub>3</sub> , PM <sub>2.5</sub> , PM <sub>10</sub>
			IGI Airport	SAFAR/IMD Delhi	NO <sub>2</sub> , CO, O <sub>3</sub> , PM <sub>2.5</sub> , PM <sub>10</sub>
			Terminal-3		

### **ANNEXURE -III**

### **Delhi-NCR CAAQM Stations**

S. No.	States	Cities	No. of stations at each State	Stations	(CPCB/SPCBs)	Parameters Monitored
1.	Uttar Pradesh	Noida	2	Sector-62	IMD	PM10, NO2, PM2.5, CO, O3
				Sector-125	UPPCB	PM10, SO2, NO2, PM2.5, NH3, CO, O3, Benzene
		Ghaziabad	1	Vasundhara	UPPCB	PM10, SO2, NO2, PM2.5, NH3, CO, O3, Benzene
2.	Harayana	Gurugram	1	Vikas Sadan	НРРСВ	SO2, NO2, PM2.5, CO, O3, Benzene
		Faridabad	1	Sector-16 A	НРРСВ	SO2, NO2, PM2.5, NH3, CO, O3, Benzene
3.	Rajasthan	Alwar	1	Moti Dungri	RSPCB	PM10, SO2, NO2, PM2.5, NH3, CO, O3, Benzene
		Bhiwadi	1	RICO Industrial Area III	RSPCB	PM10, SO2, NO2, PM2.5, NH3, CO, O3 Benzene