

BEFORE THE NATIONAL GREEN TRIBUNAL,
PRINCIPAL BENCH, NEW DELHI
ORIGINAL APPLICATION NO 21 OF 2015
AND
ORIGINAL APPLICATION NO 95 O 2014
AND
ORIGINAL APPLICATION NO 303 OF 2015

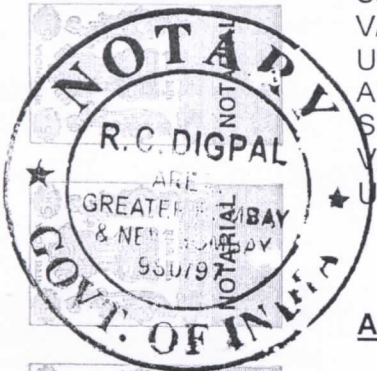
Vardhaman Kaushik

....Applicant

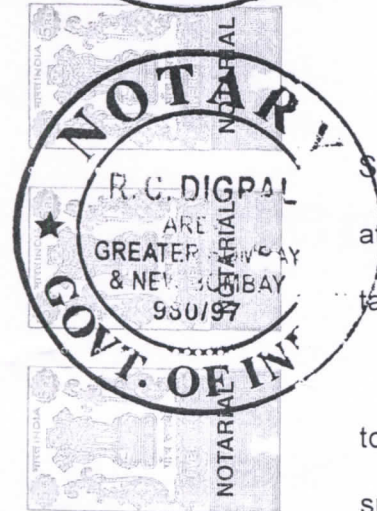
V/s
Union of India and Others
AND

Sanjay Kulshrestha
V/s
Union of India and Others
AND
Supreme Court Women Lawyers Association
V/s
Union of India and Others

... Respondents



Affidavit in reply on behalf of Maharashtra State:-



I, S. D. Aher, aged about 49 years, Occupation :- Service, Dy. Secretary, Environment Department, Govt of Maharashtra having my office at New Administrative Building, Mantralaya, Mumbai- 400 032 do hereby take oath and state on solemn affirmation as under :-

I am filing this Affidavit on behalf of Maharashtra State pursuant to this Hon'ble National Green Tribunal order dated 31/5/2016, I am submitting detail information collected from the concerned departments on the 12 major points indicated in the said order.

1. I say and submit that the Maharashtra Pollution Control Board is monitoring Ambient Air Quality at 71 locations, which comprised 62 locations under the National Ambient Air Quality Monitoring Programme(NAMP), 4 locations under State Ambient Monitoring Programme(SAMP). MPCB is also installed 5 nos of continuous Ambient Air Quality Monitoring Stations (CAAQMS). The Ambient Air quality parameters like SO₂ (Sulfur Dioxide), NO₂ (Oxides of Nitrogen) and RSPM (PM10) Particulate matters are being monitored



by all the Monitoring Stations. The list of monitoring stations established in the Maharashtra is enclosed at **Annexure "A"**.

2. I say and submit that, Air Quality Index (AQI) is tool developed by Central Pollution Control Board (CPCB) for effective communication on the status of Air Quality prevailing in the Ambient. As per the AQI system developed by CPCB, National Air Quality Index categorized 6 type of ratings namely good, satisfactory, moderate, poor, very poor and severe. The details of AQI and its impact is enclosed at **Annexure "B"**.

3. I say and submit that recent monitoring data of 2015-2016 indicates that, Annual Average Concentration with respect to SO₂ concentration is well within the Annual Standard i.e. 50 ug/m³ prescribed by CPCB. A copy of tabular statement is enclosed and marked as an **Annexure "C"**.

4. I say and submit that, the parameter Oxides of Nitrogen (NO₂) was monitored at 71 selected locations across the State of Maharashtra. The monitoring data indicates No₂ concentration slightly exceeds annual avg. standard (40ug/m³) at Aurangabad City (43, 44 ug/m³), Bandra- Mumbai- 49ug/m³, Navi Mumbai (41ug/m³) Panvel (43ug/m³). However, NO₂ concentration marginally exceedance was observed at Sion-Mumbai (81ug/m³), Pune City exceedance range between 49-66ug/m³. All other remaining location No₂ was observed within Annual Avg. standard. A copy of tabular statement is enclosed and marked as an **Annexure "D"**.

It is observed from the enclosed table Annexure "D" that NO_x level exceedance at Sion-Mumbai location is being Kurb Side (traffic junction / circle) Monitoring Locations. Hence, these values do not clearly indicate Ambient Air Quality of that area. Other monitoring location at Pune indicates slightly increase in NO_x concentration due to traffic conjunction and owing to completion/or under repair of major roads in these locations.

5. I say and submit that the concentration of RSPM observed in the range between 138-212 ug/m³ during 2015-2016. The maximum concentration of PM₁₀ was recorded at Nanded Industrial Area, CIDCO (212ug/m³). However, all monitoring stations in the State of Maharashtra recorded exceedance of PM₁₀ concentration when compared with annual



avg. PM10 Standard (60 ug/m³). The increased PM10 concentration is mainly due to road dust, rapid urbanization and other infrastructure development etc. **A copy of tabular statement is enclosed and marked as an Annexure "E".**

6. I say and submit that, the trend analysis for the last 5 years compiled and it is evident from the monitoring data that the Maharashtra State has been clean for SO₂ (Sulfur Dioxide) pollutant when compared with the annual air quality standards of 2009 (50 ug/m³). The tabular statement as well as graphical representation of trend analysis for SO₂ parameter is **enclosed and marked as an Annexure "F".**

7. Regarding trend of NO₂ parameter, monitored data indicates the trend concentration fluctuating one across various Regions in the State of Maharashtra. The NO₂ levels observed for Aurangabad, Kolhapur, Nashik, Chandrapur, Amravati and Nagpur are below the CPCB standards whereas at one location in Mumbai at Sion and Kalyan are exceeding the NO₂ (i.e. 40ug/m³) standard. However, overall trend indicates decline curve in NO₂ concentration for Mumbai city can be observed from past three years. However, the NO₂ concentration in Kalyan & Pune Cities is observed slightly increased trend in the year 2015-2016. The increased levels at these locations are may be due to increase in no of CNG vehicles plying on the roads particularly, switchover of public transportations to CNG from Diesel Fuel to CNG. **A copy of tabular statement alongwith graphical representation is enclosed and marked as an Annexure "G".** But this needs to be confirmed from conducting source apportionment study. MPC Board has already initiated action regarding conduction source apportionment study through reputed IIT(B), Mumbai and NEERI, Mumbai. **The work order in this regard enclosed and marked as an "H".**

8. I say and submit that, the trend analysis with respect to concentration of PM10 parameter, the exceedance was observed across all the regions in the State of Maharashtra when compared with annual standards (60ug/m³) for most of the years. The increasing trend was observed for Aurangabad, Pune and Kalyan cities over the past three years. However, Raigad monitoring station has recorded drastic decline in its concentration of RSPM level (137ug/m³) compared to its concentration level in the year 2013-2014



i.e 203ug/m³. CPCB vide reference No.A-18013/42011-Mon-7481, dated 16/12/2013 had identified 10 cities in the state of Maharashtra namely, Amravati, Aurangabad, Chandrapur, Kolhapur, Pune, Mumbai, Nagpur, Nashik, Navi Mumbai and Solapur identified as non attainment cities with reference to Ambient Air Quality parameter PM₁₀. **The copy of letter is enclosed and marked as Annex- I (A) and statement of tabular data representing trend of PM 10 is enclosed as an Annex-I (B) .**

9. I say and submit that the compilation of data was also done for Air Quality Index during 2015-2016 observed in the State of Maharashtra. Total 8504 observations have been recorded across Air Quality Monitoring Station in the State of Maharashtra. It is observed from monitoring data that 43% of the Air Quality is in Moderate category while 41% and 12% of the observations were belonging to satisfactory and good category respectively. Only 5% of the observations were classified as Poor quality due to sporadic incidence of rising parameters such as NO₂ and RSPM levels are observed at different monitoring locations. Hence, the most polluted cities in the State of Maharashtra with respect to more than one parameter is not observed. A Graphical representation showing %share of Air Quality Index(AQI) for Ambient Air Quality across Maharashtra during 2015-2016 **is enclosed and marked as an Annexure "J"**.

10. I say and submit that the sources of Air Pollution in urban area is mainly from the natural dust particularly come from rapid urbanization, city infrastructure development, construction activity, bad road conditions, sporadic incidence of burning of municipal solid wastes etc. are main source of dust contribution to Ambient Air. However, the SO₂ contribution is mainly from fossil fuel burning from industries, bakeries and vehicles. The sources of NO₂ are mainly from combustion processes such as heating, power generation and vehicles. I say and submit that the % of contribution from different sources needs to be assessed by conducting a scientific study of source apportionment. In this regard MPCB has undertaken Air Quality Monitoring, Emission, Inventory and Source Apportionments Studies for 10 non-attainment cities in respect of Particulate matter parameter with IIT, Bombay and NEERI, Mumbai for Mumbai, Pune, Nagpur, Nashik, Aurangabad, Amravati, Chandrapur, Navi Mumbai and Solapur Cities. This



project is aimed to assess contribution from different sources to Ambient Air. Outcome of this study shall clearly indicate major percent share of pollution contribution from various sources. This will enable to prepare suitable and effective action plans for control of Ambient Air Pollution in urban area. Based on the final report, MPCB is planning short term and long term action plans to improve the overall Ambient Air Quality in the State of Maharashtra & work on advance stage.

11. I say and submit that in respect of Kurb side pollution due to the vehicles congestion, NEERI and IIT(B) has developed air purifying system for air pollution control at traffic intersections and same will be installed by MPCB to improve the ambient air quality at traffic intersections.. **The work order of pilot project is enclosed and marked as an Annexure "K" & work of installation is in advance stage.**

12. I say and submit that after receipt of order passed by this Hon'ble Tribunal dated 31.5.2016, the Respondent had communicated to the Transport Commissioner, Govt of Maharashtra with a request to submit the information on point no 2, 3, 4, 6, 7 & 8 of Hon'ble NGT order dated 31/05/2016 which are concern with their department vide letter dated 3.6.2016.

In this regard, Dy Transport Commissioner (Inspection), Mumbai has submitted details on the following points as per the said order.

- i) District-wise and category wise no of Registered Motor Vehicles as on 31.3.2015
- ii) Category-wise vehicle population as on 31.3.2015 in million plus cities.
- iii) District wise and category wise no of Registered Motor vehicles as on 31.3.2015
- iv) Category/fuel-wise vehicle population as on 31.3.2015
- v) Office-wise & category-wise no of diesel, petrol, LPG and CNG used motor Vehicles, newly Registered as on 31.3.2015 (Grater Mumbai Corporation). A copy of said communication dated 9.6.2016 along with the statement on (i) to (v) are enclosed and marked **as an Annexure "L"**.

I say and submit that, it is observed from monitoring data of Air Quality in the State of Maharashtra that, 43% of the Air Quality is in Moderate category while 41% and 12% of the observations were belonging to satisfactory and



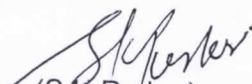
good category respectively. Only 5% of the observations were classified as Poor quality due to sporadic incidence of rising parameters such as NO₂ and RSPM levels are observed at different monitoring locations.

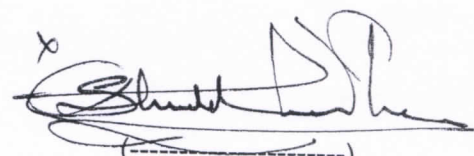
I say and submit that the 5% observations indicated as per Air Quality Index (AQI) as a poor with respect to RSPM (PM₁₀) at different locations cities in Maharashtra :- C.A.D.A. Officer, Ganeshnagar (Aurangabad), Ghughus (Chandrapur), Badlapur, Sion (Mumbai), MIDC, Hingna (Nagpur), Municipal Corporation Office Nashik (Nashik), Nerul, Kharghar and Taloja (Navi Mumbai), Pimpri Chinchwad, Swargate, Karve Road (Pune) & Kopri, Balkum (Thane) mainly due to natural dust, dust arising from infrastructure development, construction activity, bad road condition and sporadic incidence of solid waste burning. Maharashtra Pollution Control Board is in process of preparing action plans for improvement of air quality in these cities.

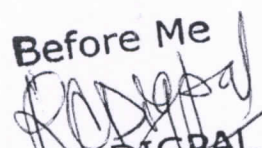
Solemnly affirmed on ^{21st} day of June 2016 at Mumbai.

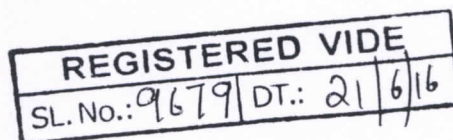
Identified by,

For and on behalf of Maharashtra State


(S K Purkar)
Law Officer


()
Deputy Secretary
Environment Department, Govt. of Maharashtra

Before Me

R.C. DIGPAL
ADVOCATE & NOTARY
MUMBAI 21/6/16



Annexure - 'A'
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Table: 1 LIST OF MONITORING STATIONS MPCB REGIONAL OFFICE WISE.

MPCB RO	Commercial	Industrial	Residential	Rural and other areas	Total
Amravati	1	2	2	1	6
Aurangabad	1	3	6	1	11
Chandrapur	-	3	3	-	6
Kalyan	2	2	-	5	9
Kolhapur	-	2	4	2	8
Mumbai	-	-	2	-	2
Nagpur	-	1	2	1	4
Nashik	-	2	5	-	7
Navi Mumbai	-	3	2	1	6
Pune	-	1	6	1	8
Raigad	-	-	1	-	1
Thane	-	1	1	1	3
Grand Total	4	20	33	13	71

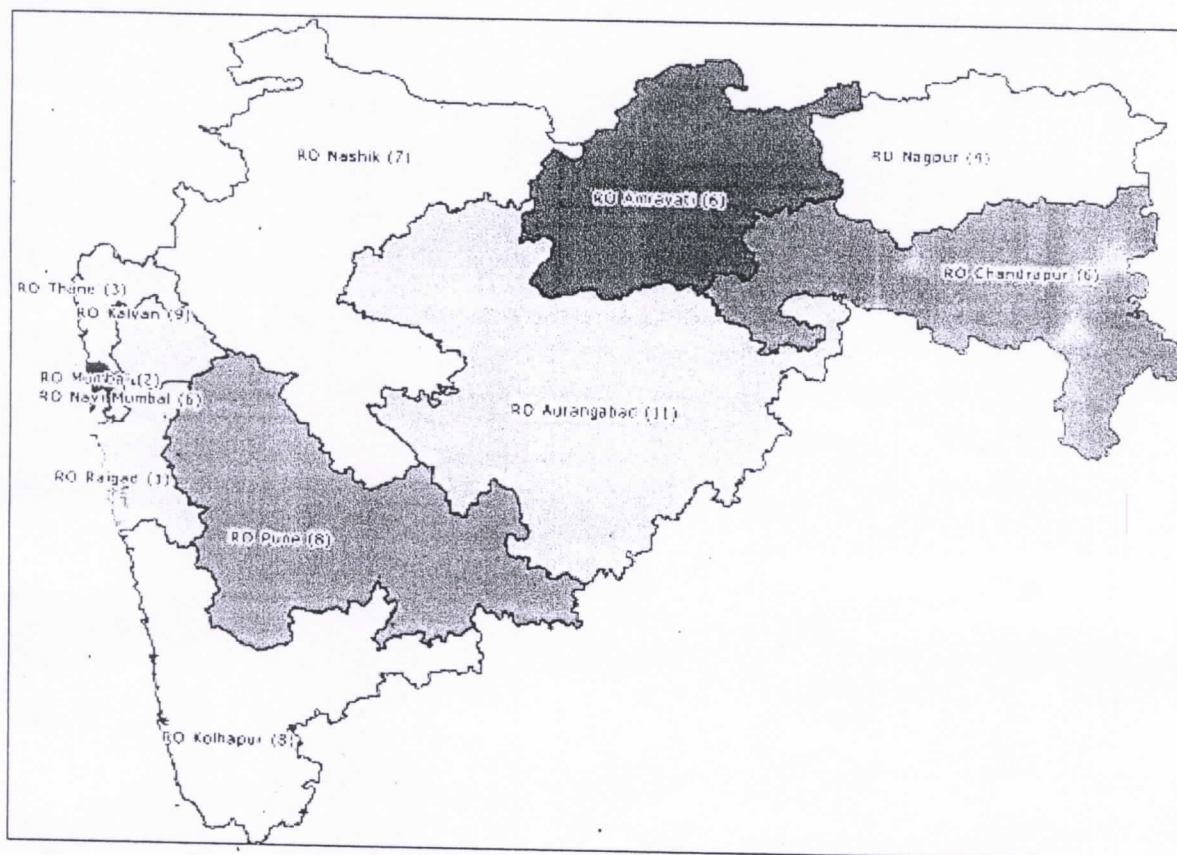
Source: MPCB, Monitoring network,



Figure: 1 MAP SHOWING AAQMS IN EACH MPCB REGIONAL OFFICE

Annexure - 4

page 2/2



Source: MPCB



Annexure B

Page $\frac{1}{2}$

National Air Quality Index

Air Quality Index (AQI) is a tool for effective communication on the status of the air quality to people. AQI transforms complex air quality data of various pollutants into a single index value, which are easy to understand. The categories of the AQI usually are expressed in terms of the air quality being Good, Bad, Poor or Very Poor based on the concentrations of various pollutants and their health impacts at various concentrations. The AQI is useful for reporting daily air quality and to gauge the pollution load. Most of the AQI developed by various agencies are within a range of 0 to 500 and higher value of AQI indicates high level of pollution. Depending upon 'doses of exposure' AQI is further divided into different classes of AQI, which present different health concerns. To make it easy to understand, the categories of AQI are assigned color codes. Various international environmental agencies such as US- EPA have developed their own set of mathematical algorithms to determine AQI, which are based on human exposure dose of air pollutants. In order to develop a calculation of AQI specific to India, CPCB in consultation with IIT (Indian Institute of Technology) Kanpur, devised an AQI system after conducting a literature review, understanding the air quality monitoring procedures and protocols, INAQS (Indian National Air Quality Standards), and dose-response relationships of pollutants. In October 2014 CPCB published the report titled National Air Quality Index²² and has elaborated the procedure of calculation and the subsequent categories of the AQI. There are six AQI categories, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe associated to various health adversaries (Table No. 2).

Source: CPCB website

Table No. 2 : Health advisories for various range of Air Quality Indices and respective colour codes

AQI	AQI Associated Health Impacts
Satisfactory (51-100)	Minor breathing discomfort to sensitive people.
Moderate (101-200)	Breathing discomfort to the people with lung disease such as asthma and discomfort to people with heart disease, children and older adults.
Very Poor (301-400)	Respiratory illness to the people on prolonged exposure specially in people with lung and heart diseases.
Severe (401-500)	Respiratory effects even on healthy people and serious health impacts on people with lung/heart diseases. The health impacts may be experienced even during light physical activity.

Source : CPCB, website

Annexure - C

Quality Status of Maharashtra, 2015-16

Table No. 9: Data for SO₂ recorded at AAQMS representing residential area (2015-16)

RO	Station name	Station code	Max of SO ₂ conc	98 th percentile SO ₂ conc	Average of SO ₂ conc	Min of SO ₂ conc
CPCB standards			50	80	25	10
AMR	Govt. College of Engineering	548	14	14	11	5
	LRT Commerce College	700	10	9	7	5
AUR	C.A.D.A. Office	513	28	27	15	9
	Collector Office, Aurangabad	512	21	19	12	7
	Ganeshnagar	703	30	29	27	22
	Jalna- Bachat Bhavan	706	26	17	11	5
	SBES College	511	32	29	16	9
	Shyam Nagar-Kshewraj Vidyalaya	642	13	7	5	4
	Ballarshah	639	13	6	4	1
CDP	Chandrapur - SRO MPCB	396	21	9	4	2
	Ghuggus	267	32	7	4	4
	Chiplun - MIDC Chalkewadi	489	12	12	11	11
KOP	Mahadwar Road	510	30	30	21	10
	Shivaji University Campus	508	18	18	13	7
	Terrace of Udyog Bhavan	574	16	15	10	4
MUM	Bandra	-	54	44	18	2
	Sion	-	41	30	14	2
NGP	Civil lines Nagpur	711	42	14	9	6
	IOE North Ambazari road	287	16	15	10	6
	Girna Water Tank	645	19	18	13	9
NHK	NMC Nashik	280	29	26	15	3
	Old B. J. Market	644	22	21	14	11
	RTO Colony	259	30	29	14	3
	SRO Office Nashik	710	29	27	15	3
NVM	Kharghar - CIDCO Nodal Office	494	27	26	17	8
	Nerul - DY Patil	492	36	27	17	9
	Karve Road - CAAQMS	-	50	43	25	4
	Pimpri-Chinchwad - BOB Building	708	44	63	27	9
PUN	Saat Rasta- Chithale Clinic	300	42	15	13	9
	Solapur	0	36	18	13	7
	Swargate, Pune	381	55	45	21	6
	WIT Campus	299	15	15	13	12
RGD	Panvel- Water Supply Plant	495	43	30	18	8
TNA	Kopri	303	36	34	27	19

Source: Data Source: MPCB, Monitoring data

Units: µg/m³

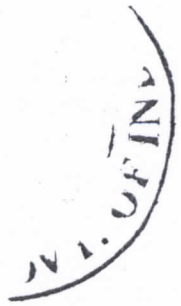
Table: 4.

NO_x concentrations in residential areasTable No. 15: Data for NO_x recorded at AAQMS representing residential areas (2015-16)

RO	Station code	Station name	Max of NO _x conc	98th percentile NO _x conc	Average of NO _x conc	Min of NO _x conc
	<i>CPCB Standard</i>		80	80	40	30
AMR		Govt. College of Engineering	548	15	15	12
		LRT Commerce College	700	10	10	7
		C.A.D.A. Office	513	60	58	34
		Collector Office, Aurangabad	512	49	48	35
AUR		Ganeshnagar	703	30	28	28
		Jalna- Bachat Bhavan	706	38	38	29
		SBES College	511	63	59	35
		Shyam Nagar-Kshewraj Vidyalaya	642	36	31	15
CDP		Ballarshah	639	162	97	28
		Chandrapur - SRO MPCB	396	51	43	20
		Ghuggus	267	56	29	17
		Chiplun - MIDC Chalkewadi	489	12	12	12
KOP		Mahadwar Road	510	72	70	40
		Shivaji University Campus	508	38	36	23
		Terrace of SRO-Sangli, Udyog Bhavan	574	82	68	38
		Bandra	-	185	110	49
MUM		Sion	-	155	128	81
NGP		Civil lines Nagpur	711	62	53	29
		IOE North Ambazari, road	287	60	55	31
		Girna Water Tank	645	43	43	33
NHK		NMC Nashik	280	48	37	24
		Old B. J. Market	644	49	48	38
		RTO Colony	259	46	39	23
		SRO Office Nashik	710	46	39	24
NVM		Kharghar - CIDCO Nodal Office	494	57	57	41
		Nerul - DY Patil	492	80	56	41
		Karve Road - CAAQMS	-	193	100	57
PUN		Pimpri-Chinchwad - BOB Building	708	136	102	51
		Saat Rasta- Chithale Clinic	300	193	49	37
		Solapur	0	232	70	40
		Swargate, Pune	381	142	133	66
		WIT Campus	299	39	38	35
		Panvel- Water Supply Plant	495	90	57	43
RGD		Kopri	303	82	81	62
TNA						29

Data source: MPCB monitoring data

Units: µg/m³



Quality Status of Maharashtra, 2015-16

Annexure - E

Table : 5
RSPM concentrations in residential areas

Table No. 21: Data for RSPM recorded at AAQMS representing residential areas (2015-16)

RO	Station name	Station code	Max of RSPM conc	98 th percentile RSPM conc	Average of RSPM conc	Min of RSPM conc
AMR	PCB Standard		100	100	60	100
	Govt. College of Engineering	548	97	93	73	38
	LRT Commerce College	700	158	146	115	98
	C.A.D.A. Office	513	169	155	75	21
AUR	Collector Office, Aurangabad	512	139	126	73	10
	Ganeshnagar	703	133	121	117	100
	Jalna- Bachat Bhavan	706	406	183	111	48
	SBES College	511	206	191	111	28
CDP	Shyam Nagar-Kshewraj Vidyalaya	642	236	175	85	16
	Ballarshah	639	274	233	123	29
	Chandrapur - SRO MPCB	396	180	150	70	5
	Ghuggus	267	359	309	180	45
KOP	Chiplun - MIDC Chalkewadi	489	220	212	170	10
	Mahadwar Road	510	158	150	106	61
	Shivaji University Campus	508	81	77	63	35
	Terrace of SRO-Sangli, Udyog Bhavan	574	289	186	82	20
MUM	Bandra	-	239	229	97	39
	Sion	-	374	297	148	23
NGP	Civil lines Nagpur	711	144	80	54	36
NHK	IOE North Ambazari road	287	305	166	101	7
	Girna Water Tank	645	151	124	103	63
	NMC Nashik	280	359	219	94	22
	Old B. J. Market	644	173	144	108	69
NVM	RTO Colony	259	147	145	73	16
	SRO Office Nashik	710	280	159	76	14
	Kharghar - CIDCO Nodal Office	494	267	230	116	16
	Nerul - DY Patil	492	272	225	136	17
PUN	Karve Road - CAAQMS	-	680	277	138	43
	Pimpri-Chinchwad - BOB Building	708	234	207	101	20
	Saat Rasta- Chithale Clinic	300	229	137	78	52
	Solapur	0	279	187	100	29
RGD	Swargate, Pune	381	286	235	106	18
	WIT Campus	299	89	88	76	59
	Panvel- Water Supply Plant	495	230	203	137	63
TNA	Kopri	303	321	290	136	40

Data source: MPCB Monitoring data

Units: $\mu\text{g}/\text{m}^3$

SECRET

Annex - F

Table No. C : MPCB RO-wise annual average concentrations of SO₂

FY	AMR	AUR	CDP	KYN	KOP	MUM	NGP	NHK	NVM	PUN	RGD	TNA
06-07	12	9	34	25	14	30	12	23	37	22	14	12
07-08	9	12	34	31	13	24	11	25	28	17	12	12
08-09	10	8	31	33	18	20	13	23	22	21	14	12
09-10	11	7	43	51	18	18	11	19	20	23	12	13
10-11	10	6	20	32	19	17	9	20	22	19	15	13
11-12	10	13	18	31	15	17	9	22	16	20	15	14
12-13	10	16	11	36	16	15	10	23	20	19	16	20
13-14	10	15	11	31	15	15	10	25	22	21	16	16
14-15	10	19	8	29	15	12	10	22	17	17	17	21
15-16	9	21	5	26	15	16	10	15	21	21	18	26

Source: MPCB, Monitoring data

Figure : 2

Trend in sulphur dioxide concentrations in Maharashtra

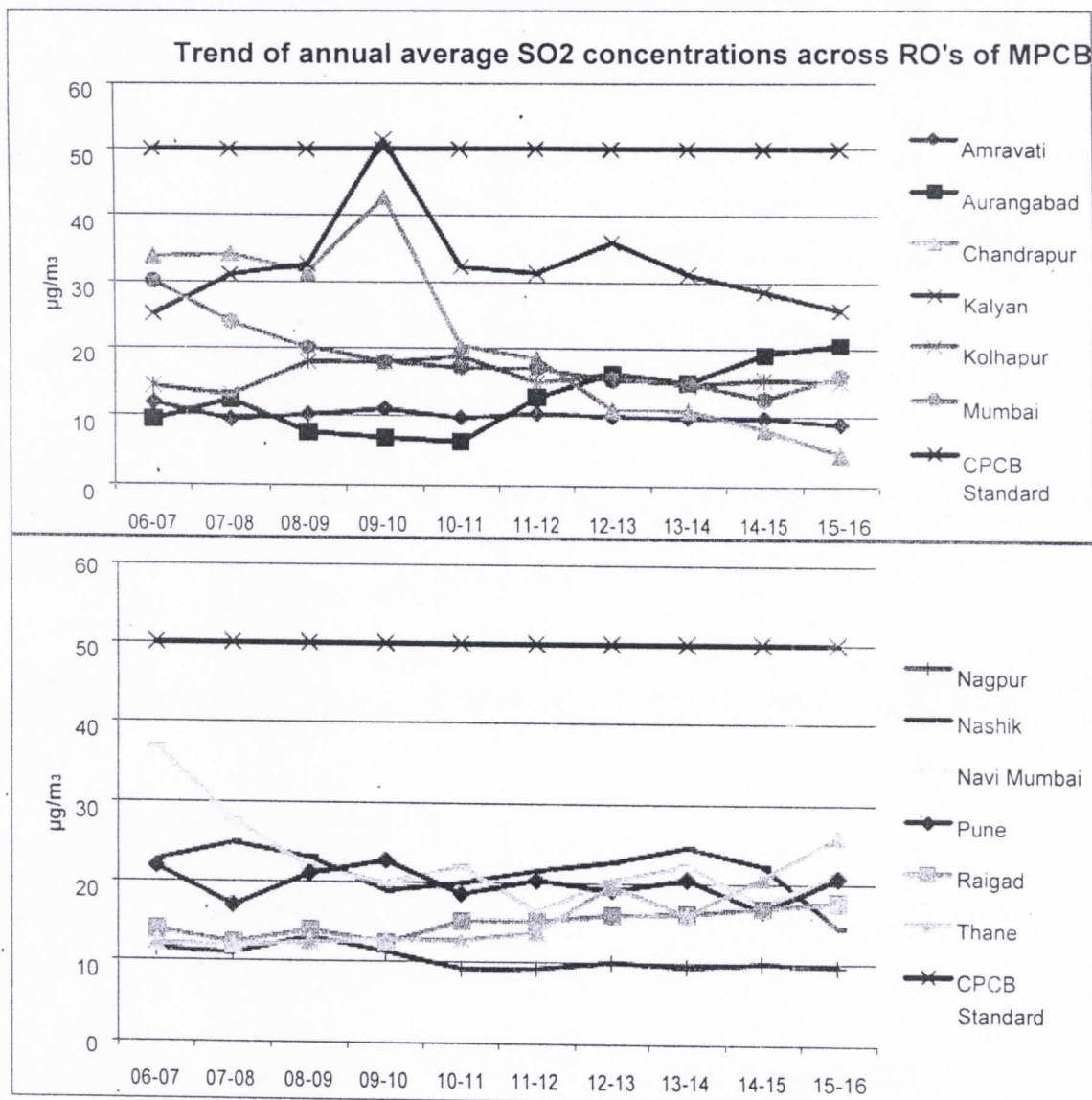
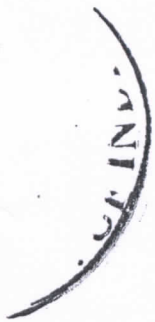


Figure No. : Trend in annual SO₂ concentrations across different regions

*Note: Considers annual average of all the active AAQMS in that RO under MPCB

Source : MPCB Monitoring data



Annex - G
page 1/2

Table No. 7 : MPCB RO-wise annual average concentrations of NO_x

FY	AMR	AJR	CDP	KYN	KOP	MUM	NGP	NHK	NVM	PUN	RGD	TNA
06-07	16	20	40	41	18	91	27	27	44	41	35	10
07-08	12	27	50	40	18	103	26	28	39	39	37	11
08-09	13	22	51	66	20	67	30	31	50	37	40	17
09-10	12	24	31	83	22	98	35	35	59	38	42	18
10-11	10	21	25	68	26	77	30	32	49	41	35	12
11-12	12	26	25	52	29	66	30	34	53	48	42	10
12-13	11	29	17	62	37	72	34	33	46	49	42	15
13-14	9	28	26	50	31	75	27	33	46	47	41	40
14-15	10	33	22	51	34	70	30	33	35	40	38	61
15-16	11	34	21	55	38	63	31	29	42	52	43	61

Source: MPCB Monitoring data

Trend in concentrations of oxides of nitrogen in Maharashtra

Figure-3

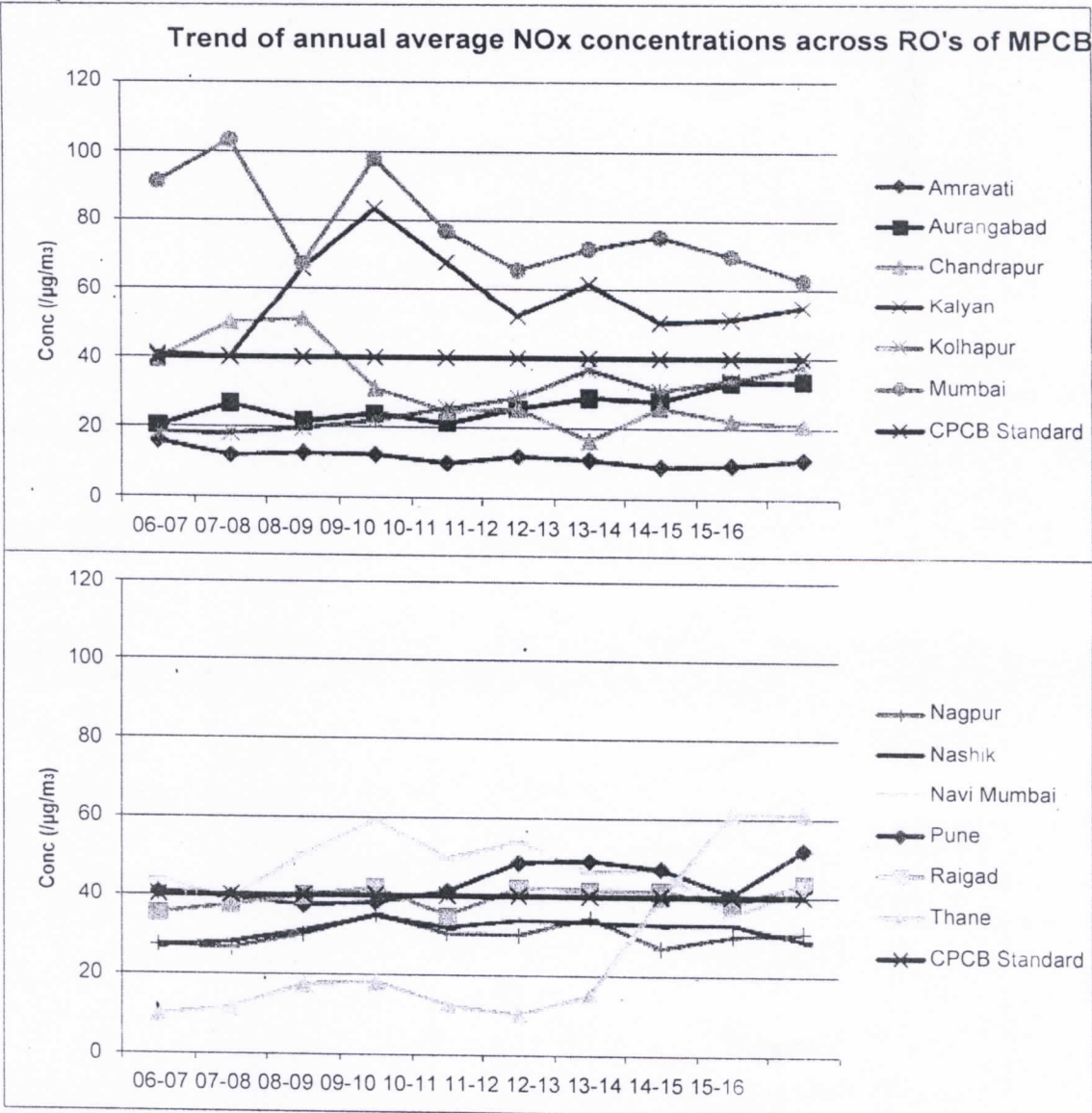


Figure No. : Trend in annual NOx concentrations across different regions

*Note: Considers annual average of all the active AAQMS in that RO under MPCB

MAHARASHTRA POLLUTION CONTROL BOARD

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2nd , 3rd & 4th floor,
Opp. Cineplanet,
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Mumbai - 400 022.

No: MPCB/APC/SAS/WO/B-1178
To,
Prof. Virendra Sethi
Centre for Environmental Science and Engineering
IIT (B), Mumbai,
Powai, Mumbai-400076.

Date : 17/03/2016

Dr. Rakesh Kumar,
Chief Scientist, NEERI
89-b, Mumbai Zonal Lab,
Dr Annie Besant Road,
Worli, Mumbai, Maharashtra 400018

Sub : Work Order for the Project "Air Quality Monitoring and Emission source apportionment studies for 10 cities" in the state of Maharashtra.

Ref : 1. CPCB letter dtd : 28/01/2015.
2. Approval in 164th board meeting held on 25/03/2015.
3. proposal received from IIT(B), Mumbai & NEERI Mumbai.

Sir

With reference to above, MPCB is pleased to accept above proposal (ref.3) for conducting source apportionment study to be carried out in 10 cities in Maharashtra, namely: Mumbai, Pune, Nagpur at the rate of Rs.75 lakhs/city and Nashik, Amravati, Aurangabad, Chandrapur, Kolhapur, Navi Mumbai & Solpaur cities at the Rate of Rs.50 lakhs/city.

The cost of the project for 10 cities shall be Rs. 225 lakhs + 350 Lakhs = Rs. 575 lakhs (Five crore seventy five lakhs only) and applicable taxes shall be extra payable by the Board.

The Objectives, Scope of the project, Methodology and Deliverables, Other Terms and conditions shall be as per the TOR terms & conditions are given below:

1. Objectives: Main objectives of the proposed study are:

- To measure baseline air pollutants (Particulate Matter) in different parts of the city this includes "hot spots" on curbside as well.
- To inventories the various pollutants in the city.
- To conduct source apportionment study for PM.
- Suggest Action Plan based on various options delineated in Six City Study of MOEFCC or any relevant workable options.





2. Scope of Work:

- To undertake the project for Air Quality Monitoring, Emission Inventory and Sources Apportionment Studies for the respective cities. The detail scope of the project is as per the Terms of Reference (TOR) enclosed at Annexure I.

3. Methodology & Deliverable

The methodology regarding Air monitoring at selected sites as per requirement, Data acquisition, shall be as per the TOR enclosed at Annexure I.

4. Data interpretation : Analysis, Modelling, & Apportionment shall be as per Annexure I.

5. Time period:

- Air Quality Monitoring and source apportionment studies in the city shall be conducted over a period of 6 months and the project shall be completed within 12 months from the date of start of the project.
- The project time period shall be in two parts 1. Short term study (3 months) 2. Long term study (Total 12 months). The total project shall be completed within 12 months.

6. Report Submission:-

- The final Short Term study report & proposed action plan shall be submitted within 03 months.
- The final Long Term study report & proposed action plan shall be submitted within 12 months.
- Thus, the total study period shall not exceed more than 12 months.

7. Project Management :

The execution of project will be monitored by the technical committee formulated by MPCB. The separate order in this regard shall be communicated to IIT (B) & NEERI.

The technical committee is drawn from all participating organizations; In addition, eminent experts from other organizations shall be co-opted or invited for specific meetings as and when necessary.

8. Cost of the project :

The cost of the project will range between 50-75 lakhs + Applicable Service Tax. This cost includes the cost of tests and cost of equipment and consumables for undertaking project in each of the cities

1. Mumbai, Pune, Nashik Cities: Rs. 75 Lakhs each * 3	Rs. 225 (in lakhs)
2. Nashik, Amravati, Aurangabad, Chandrapur, Kolhapur, Navi Mumbai & Solpaur Cities:Rs. 50 Lakhs each * 7	Rs. 350(in lakhs)
Total	= Rs. 575 Lakhs
	(+Applicable taxes extra)



The studies shall be carried out in consultancy mode as per rules at NEERI Mumbai and IIT Bombay (Dean (R&D)). 20% overhead for agency are included in the above costs. NEERI and IIT together has samplers and facilities for many analysers and instruments which need not be purchased for the project (approximate cost Rs. 3.50 crores).

8. Payments Terms : MPC Board shall released the payment as mentioned below on receipt of recommendations from project monitoring committee constituted as per TOR.

A. First Installment:

- a. 100% of all equipment cost
- b. 70% of all remaining costs.

B. Second Instalment: 20% of the remaining cost (after the field study, all secondary data based EI)

C. Third installment: Last 10% after the submission of final draft report.

IIT Bombay will bear 70% of the work of project and NEERI Mumbai will bear 30% of the project work. However, completion of the entire project work shall be with IIT(B) and NEERI, Mumbai jointly. The IIT(B) & NEERI shall submit monthly progress report to MPCB. The draft report of each above mentioned city shall be presented to respective city stake holders before submitting final drafts to MPCB. (Including short term & long term action plans)

9. Separate Memorandum Of Understanding (MoU) shall be sign between MPCB, IIT (B) Mumbai & NEERI in reference to developing partnership among the institutes and MPCB for timely execution of above said project as per TOR.

10. MPCB will take the review of project on monthly basis.

11. IIT (B)/ NEERI shall submit the revised timeline for 10 cities Air Quality Study program including short term & long term measures.

You are requested to acknowledge the acceptance of above work order and submit the same to this office for further necessary action, preferably within 7 days.

DA: As above

Yours faithfully,

(Dr. P. Anbalagan, IAS)
Member Secretary

Copy submitted to: Hon'ble Chairperson, MPCB, Sion, Mumbai for information please

- Copy to :
- 1. Chief Accounts Officer, MPCB, Sion, Mumbai for necessary action as stated above
 - 2. Joint Director (APC), MPCB, Sion, Mumbai-For information & necessary follow in the matter.
 - 3. Regional Officer, MPCB- Mumbai / Amravati / Aurangabad / Chandrapur / Kolhapur / Pune / Nagpur / Nashik / Navi Mumbai / Solapur : They are directed to extend the necessary co-operation in conducting the study and providing necessary data required for preparing action plans



**BEFORE THE NATIONAL GREEN TRIBUNAL,
PRINCIPAL BENCH, NEW DELHI**

M.A. No. 284 of 2015

In

Original Application No. 21/2014

And

Original Application No. 21/2014

(M.A NO. 155/2015, M.A NO. 394/2015, M.A NO. 412/2015 TO M.A NO. 414/2015, M.A NO. 420/2015, M.A NO. 502/2015, M.A NO. 618/2015, M.A NO. 631/2015, M.A NO. 683/2015, M.A. NO. 778/2015, M.A. NO. 812/2015, M.A. NO. 1014/2015, M.A. NO. 1015/2015, M.A. NO. 1029/2015, M.A. NO. 1086/2015, M.A. NO. 1313/2015, M.A. NO. 125/2016, M.A. NO. 172/2016, M.A. NO. 211/2016, M.A. NO. 232/2016, M.A. NO. 253/2016, M.A. NO. 268/2016, M.A. NO. 273/2016, M.A. NO. 317/2016, M.A. NO. 358/2016, M.A. NO. 360/2016, M.A. NO. 406/2016, M.A. NO. 432/2016, M.A. NO. 449/2016, M.A. NO. 475/2016, M.A. NO. 476/2016, M.A. NO. 516/2016, M.A. NO. 521/2016, M.A. NO. 523/2016, M.A. NO. 553/2016, M.A. NO. 564/2016 & M.A. NO. 567/2016)

And

Original Application No. 95/2014

And

Original Application No. 303/2015

IN THE MATTER OF :

**Vardhaman Kaushik Vs. Union of India & Ors.
And**

**Vardhaman Kaushik Vs. Union of India & Ors.
And**

**Sanjay Kulshrestha Vs. Union of India & Ors.
And**

Supreme Court Women Lawyers Association Vs. Union of India & Ors.

**CORAM : HON'BLE MR. JUSTICE SWATANTER KUMAR, CHAIRPERSON
HON'BLE MR. JUSTICE M.S. NAMBIAR, JUDICIAL MEMBER
HON'BLE MR. JUSTICE RAGHUVENDRA S. RATHORE, JUDICIAL MEMBER
HON'BLE PROF. A.R. YOUSUF, EXPERT MEMBER
HON'BLE MR. BIKRAM SINGH SAJWAN, EXPERT MEMBER**

**Present: Applicant: Mr. Sanjay Upadhyay and Mr. Salik Shafique, ,
Advs.
Respondent No. 1: Mr. Pushkar Sood, Adv. IA 449/2016
Ms. Panchajanya Batra Singh, Advs. For MoEF &
CC
Mr. Rajiv Bansal, Mr. Kush Sharma and Mr. Sagar Mehrotra, Advs.
Ms. Guneet Khehar for Mr. Tarunvir Singh Khehar,
Advs. for Transport and GNCTD
Mr. Pradeep Misra and Mr. Daleep Dhyani, Adv. for
UPPCB
Mr. Naushan Ahmed Khan and Ms. Neelam Kholiya, Advs. for Delhi Transport Corp.
Mr. Om Prakash, Adv. for Ministry of Railways
Ms. Sakshi Popli, Adv. for NDMC
Mr. Ataur T. For Mr. Sarfaraz Khan, Adv.**

Mr. Subramonium Prasad, AAG with Mr. R. Rakesh Sharma, Mr. Maruthasamy and Mr. S. Anand, Advs. for State of Tamil Nadu & TNPCB
Mr. Abhishek Yadav, Adv. for State of U.P.
Mr. Taruna A. Prasad, Adv. for MoEF
Mr. Ashish Negi and Mr. Rohit Kaul, Advs. for PPCB and State of Punjab
Mr. D. Rajeshwar Rao and Mr. Charanjeet Singh, Adv. for PWD, Delhi Police and Transport Dept.
Mr. K. Sunil, Adv. for Hemant Jain
Mr. Devraj Ashok, Adv. for State of Karnataka
Mr. Ashok Kumar Singh, Senior Advocate with Ms. Mona Tomar, Adv. for Impleader Toyota
Mr. Ardhendumauli Kumar Prasad and Mr. Panshul Chandrachud, Advs.
Anil Grover, AAG and Mr. Rahul Khurana and Ms. Divya Jain, Advs. for State of Haryana
Shiv Mangal Sharma, AAG with Mr. Saurabh Rajpal and Mr. Adhiraj Singh, Adv.
Ms. Palwai Venkat Reddy and Mr. Prashant Tyagi, Advs. for State of Telangana
Mr. Trideep Ansha Verma, Adv. for DDSIL
Ms. Mithilesh Kumar and Mr. Dinesh Jindal, LO, DPCC for Mr. Narender Pal Singh, Adv.
Mr. Pradyuman Dubey, Adv. for HPCL, BPCL & IOCL
Ms. Puja Kalra, Adv. for North and South MCD
Mr. Dileep Poolakkot, Adv. for State of Goa
Mr. Jogy Scaria and Ms. Beena Victor, Advs.
Ms. Asha Nayar Basu and Mr. Amit Agarwal, Advs.
Mr. Joydeep Mazumdar and Ms. Parijat Sinha, Advs. For State of West Bengal
Mr. Alpana Poddar, Adv. with Mr. Bhupender Kumar, LA, CPCB
Mr. Balendu Shekhar and Mr. Akshay Abrol, Advs.
Mr. Pinky Anand, ASG with Ms. Somya Rathore, Adv. Dept of Heavy Inds. Along with Mr. Rajesh Ranjan, Adv. and Mrr. Balendu Shekhar, for MoRTH, NHAI, CONCOR
Ms. Nandini Gore, Mr. Aryan Sharma and Ms. Khushboo Basi, Advs. for Tata Motors Ltd.
Dr. A.M. Singhvi, Sr. Adv. with Mr. Sandeep Narain, Mr. A.. Singhvi and Ms. Madhavi Khanna, Advs. for Society of Indian Automobile Manufacturer.
MR. Edward Belho, Mr. K. Luikang Michael and Elix Gangmei, Advs.
Mr. Anil Shrivastav, Mr. Pranav Rishi and Ms. Sanyam Saxena, Advs. for Arunachal Pradesh and Pollution Control Board
Mr. Pragyan Sharma and Mr. Ravi Kant, Advs. for State of Mizoram and Mizoram SPCB
Mr. Gopal Singh and Ms. Varsha Poddar, Advs.
Mr. Jayesh Gaurav, Adv. for JSPCB
Mr. Sapam Biswajit Meitei and Mr. S. Vijayanand, Advs. for State of Manipur & KSPCB
Ms. Aruna Mathur and Ms. Avneesh Arputham, Advs. for State of Sikkim

Mr. Vikas Malhotra, Adv. for MoEF
Mr. Suryanarayan Singh, Sr. Addl. AG
Mr. Vivek O. Paul and Mr. Simranjeet Singh, Adv. for NHAI
Mr. Gopal Jain, Sr. Adv. with Mr. Vijay K. Sandhi and Ms. Cauveri Birbal and Ms. Avantika, Advs.
Mr. Ashish Negi, Ms. Richa Kapoor and Ms. Rishi Kapur, Adv. for Punjab PPCB
Ms. Priyanka Sinha and Mr. Shridhara Sawrup, Advs. for State of Jharkhand
Mr. Guntur Prabhakar, Mr. Guntur Pramod Kumar and Mr. Prashant Mathur, Advs. for State of A.P.
Mr. Rajul Shrivastav, Adv. for MPPCB
Mr. Rudreshwar Singh and Mr. Gautam Singh, Advs. for State of Bihar and Bihar SPCB

	Date and Remarks	Orders of the Tribunal
	<p>Item No. 43 to 46</p> <p>May 31, 2016</p>	<p><u>M.A. No. 567 of 2016</u></p> <p>Issue Notice to all the respondents. Copy be furnished to all Learned Counsels appearing in this case. Reply be filed within three weeks from today. Rejoinder(s) thereto, if any, be filed by the next date of hearing.</p> <p>List this M.A. (No. 567 of 2016) for hearing on 11th July, 2016.</p> <p>In the meanwhile we direct all the States particularly the 11 States which have been indicated in our previous order, to furnish an affidavit through the Secretary of the State Government, primarily indicating:-</p> <ol style="list-style-type: none"> Names of two or more most polluted cities in the States. Population of the two cities. Road densities in the cities. Vehicular population in the two cities/districts. Source of pollution particularly dust emission, emission by burning of various materials and vehicular and industrial pollution.

	<div>6. Total number of vehicles diesel and petrol, separately.</div> <div>7. Number of heavy and light vehicles.</div> <div>8. Number of Two wheelers and three wheelers.</div> <div>9. Ambient air quality of the two districts/cities.</div> <div>10. Details and effects of industrial and mining pollution upon the ambient air quality of the districts.</div> <div>11. The source apportionment of dust and other emission/pollution.</div> <div>12. Pollution affecting the joining States.</div> <div>Let the affidavit be positively filed within three weeks from today, with copies to all the Learned Counsels appearing in this case. Respective States Government would be at liberty to put their affidavits on their website so as to make it convenient to all the learned counsels to draw copies from it.</div> <div>List this matter for arguments and on that date we will pass appropriate directions. On the said date the States Governments shall also state whether it has any mechanism for condemning the vehicles of ten years of age.</div> <div>List this matter on 11th and 12th July, 2016, as date of 11th July, 2016 has already fixed.</div> <div><u>M.A. No. 125 of 2016 and M.A. No. 317 of 2016</u></div> <div>In the case of North Delhi Municipal Corporation which is using diesel vehicles for carrying, transportation and dumping of wastes, they are permitted to replace the existing diesel vehicles of more than 10 years, by new</div>
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	<p>vehicles. If such new vehicles are purchased by them, the same may be registered subject to further orders in this application. However, the new diesel vehicles would be registered strictly and only for the purpose of transportation of municipal wastes and allied wastes to the dumping sites and only when certificate of condemnation and scrapping of vehicles is placed before the competent authority/registration authority, ensuring that old vehicles of the equal number have been dismantled and condemned. All the vehicles would be of BS-IV compliance. Unless these three conditions are satisfied, registration will not be permitted and the vehicle would not be allowed to be plied on the road. Online GPS system should be installed in the vehicles. Registration would be done by the Registrar who shall be personally responsible for compliance of these directions.</p> <p>With the above directions the M.A. No. 125 of 2016 and M.A. No. 317 of 2016 stands disposed of without any order as to cost.</p> <p><u>M.A. No. 273 of 2016</u></p> <p>North Delhi Municipal Corporation would be permitted 7 (Seven) new vehicles of BS-IV compliance provided that they produce certificate of condemnation and dismantle of 7 (Seven) old diesel vehicles. They will be permitted to use only for the purpose of Municipal Solid Wastes and allied wastes. The vehicle will be fixed with GPS system and records would be maintained.</p> <p>With the above directions the M.A. No. 273 of 2016 stands disposed of without any order as to cost.</p>
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	<p><u>M.A. No. 553 of 2016</u></p> <p>IGL Company is also permitted to register its vehicle 1 (one) which is Emergency Response Diesel vehicle. It should be BS-IV compliance which would be strictly for Emergency Response Purposes.</p> <p>With the above directions the M.A. No. 553 of 2016 stands disposed of without any order as to cost.</p> <p><u>M.A. No. 232 of 2016</u></p> <p>East Delhi Municipal Corporation is also permitted to get their 45 (forty five) diesel vehicles registered. They will first provide condemnation certificate and proof of 4 (Four) old vehicles to the registration authority. They will use those vehicles which are BS-IV compliance only for the purpose of transportation of Municipal Wastes and other allied wastes to the dumping site.</p> <p>With the above directions the M.A. No. 232 of 2016 stands disposed of without any order as to cost.</p> <p>All the above shall be further subject to conditions laid down supra, before registration. Vehicles would be fixed with GPS gadgets and records thereto would be provided before the Tribunal.</p> <p><u>M.A. No. 432 of 2016</u></p> <p>The Dakshin Dilli Swachh Initiatives Ltd. (DDSIL) who is working for South Delhi Municipal Corporation would be permitted to get their 45 (Forty five) vehicles registered which would be BS-IV compliance and would be used strictly for and on behalf of the Corporation for Transportation of Municipal and other allied wastes to the</p>
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	<p>dumping sites. The company will not be permitted to use such vehicles for any of the business activity other then carrying of wastes.</p> <p>With the above directions the M.A. No. 432 of 2016 stands disposed of without any order as to cost.</p> <p><u>M.A. No. 516 of 2016 and M.A. No. 449 of 2016</u></p> <p>These applications are allowed. The applicant are permitted to get 2 (Two) vehicles and 1 (One) vehicle respectively registered in their names, provided vehicles are BS-IV compliances and are used for oil tankers in carrying petroleum products from Depot to Petrol Pumps. These vehicles will not be used for any other purpose. In the event of violation the vehicle would be liable to be seized and each one of them would be liable to pay environmental compensation.</p> <p>With the above directions the M.A. No. 516 of 2016 and 449 of 2016 stand disposed of without any order as to cost.</p> <p><u>Main matter</u></p> <p>List all these matters on 11th and 12th July, 2016.</p> <p>.....,CP (Swatanter Kumar)</p> <p>.....,JM (M.S. Nambiar)</p> <p>.....,JM (Raghuvendra S. Rathore)</p>
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