Madhya Pradesh Pollution Control Board

Environment Surveillance Centre
Paryawaran Parisar, E-5, Arera Colony, Bhopal -462 016 (M.P.)
Ph : 0755-2469180 ; **Fax** : 0755-2463742 **E-mail** : ercmppcb@nic.in ; **Web** : www.erc.mp.gov.in

19/01/202

1
To,

The Occupier of the Industry
(As per the enclosed list)
Madhya Pradesh

Sub: Connectivity and integration of Continuous Ambient Air Quality Monitoring Stations on a Single Government Portal/Database - reg.

Ref. : CPCB, Delhi letter no. A-18011/63/2010/Part II/Mon-7915, dated 01.10.2020

Vide aforesaid subject the CPCB, Delhi intends to make use of monitoring data of CAAQMS installed at your industry premises or industry's township/residential area for publishing Air Quality Index (AQI) on the national portal. In view of this you are requested to connect the CAAQMS with the Central Server at CPCB and transfer the online data in the prescribed format attached herewith as Annex.-1, alongwith an integration format as per Annex.-2, furnishing details of CAAQM stations.

A manual CSV file is required to be prepared as per CPCB CAAQM Protocol for each station and be forwarded to the CPCB with station integration format, acknowledging a copy of the same to the Environment Surveillance Centre, MPPCB at Bhopal. All the CAAQM stations are required to follow the prescribed calibration and data quality protocol. In case of any technical support Dr. Rajendra Chaturvedi, Scientist may be contacted on mobile no. 8989879758 or through mail on Id supporterc@mp.gov.in.

Encl. : A/a.

Achyut Anand Mishra

(A.A. Mishra)

Member Secretary

Copy to :

1. The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi – 110032 for favour of information please.
2. All the Regional Officers, M.P. Pollution Control Board, for information and early necessary action.

3. The concerned Unit Head, M.P. Pollution Control Board, Bhopal for information and necessary action.

(A.A.Mishra)

Member Secretary

CAAQMS Stations in Central Server Software

Sr No.	Industry Name	Category	District	RO	CAAQMS
1	ACC Ltd.	Cement	Katni	Katni	2
2	Amarkantak Thermal Power Station	Power Plant	Anuppur	Shahdol	2
3	Amlohri Open Cast Mine	Mining	Singrauli	Singrauli	1
4	Barloecher India (P) Limited	Manufacturing	Dewas	Dewas	1
5	Bharat Oman Refineries Ltd	Oil Refinery	Sagar	Sagar	4
6	Bhilai Jaypee Cement Ltd	Cement	Satna	Satna	2
7	Bina Project NCL	Mining	Singrauli	Singrauli	1
8	Birla Corporation Limited	Cement	Satna	Satna	4
9	BLA Power (P) Ltd.	Power Plant	Narsingapur	Jabalpur	1
10	Block-B Project NCL	Mining	Singrauli	Singrauli	1
11	Bridgestone India Private Limite	Manufacturing	Dhar	Pithampur	1
12	Diamond Cements (Clinker Division)	Cement	Damoh	Sagar	4
13	Dudhichua Northern Coalfields Limited (NCL)	Mining	Singrauli	Singrauli	1
14	ESSAR POWER MP LTD	Power Plant	Singrauli	Singrauli	4
15	Gadarwara Super Thermal Power Station NTPC	Power Plant	Narsingapur	Jabalpur	4
16	Gas Authority of India Limited (GAIL)	Petrochemical	Guna	Guna	2
17	Glenmark Pharmaceuticals Ltd	Pharmaceuticals	Dhar	Pithampur	1
18	Grasim Industries Ltd Staple Fibre Division	Textile	Ujjain	Ujjain	3
19	HEG Ltd	Power Plant	Raisen	Mandideep	1
20	Hindalco Industries Limited (Captive power unit)	Power Plant	Singrauli	Singrauli	1
21	Hindalco Industries Ltd.(Mahan Aluminium Project)	Aluminium	Singrauli	Singrauli	3
22	IPCA Laboratories Ltd.	Pharmaceuticals	Ratlam	Ujjain	2
23	IPCA Laboratories Ltd.	Pharmaceuticals	Indore	Indore	1
24	Jaiprakash Power Ventures LTD (North) Coal Mine	Mining	Singrauli	Singrauli	3
25	Jaiprakash Power Vntures Ltd.(Jaypee Bina Thermal Power Plant)	Power Plant	Sagar	Sagar	4
26	Jaypee Power Ventures Limited	Power Plant	Singrauli	Singrauli	4
27	Jaypee Rewa Cement Plant Unit of Jaiprakash Associates Ltd.	Cement	Rewa	Rewa	2
28	Jhabua Power	Power Plant	Seoni	Jabalpur	1
29	Jhingurda Northern Coal Mines	Mining	Singrauli	Singrauli	1
30	Kedia Great Galleon Ltd.	Distillery	Dhar	Dhar	1
31	KJS Cement Limited	Cement	Satna	Satna	3
32	Lanxess India Private Limited	Chemical	Ujjain	Ujjain	1

33	MB Power (Madhya Pradesh) Limited	Power Plant	Anuppur	Shahdol	4
34	Mondelez India Foods Private Limited	Food Dairy Beverages	Bhind	Gwalior	1
35	Mylan Laboratories	Pharmaceuticals	Indore	Indore	1
36	NCL Jayant Project	Mining	Singrauli	Singrauli	1
37	Nigahi Project NCL	Mining	Singrauli	Singrauli	1
38	NTPC Ltd Khargone Super Thermal Power Project	Power Plant	Khargone	Indore	4
39	Orient Paper mills Ltd	Pulp & Paper	Shahdol	Shahdol	4
40	Prism Cement Plant	Cement	Satna	Satna	3
41	Reliance Cement Co Pvt Ltd	Cement	Satna	Satna	2
42	Sanjay Gandhi Thermal Power Station	Power Plant	Umaria	Shahdol	2
43	Sasan Mines	Mining	Singrauli	Singrauli	1
44	Sasan Power Ltd.	Power Plant	Singrauli	Singrauli	3
45	Satpura Thermal Power Station M P power Generation Co Ltd	Power Plant	Betul	Chhindwara	4
46	Shree Singaji Thermal Power Plant	Power Plant	Khandwa	Indore	3
47	Sidhi Cement Works (Unit of UltraTech Cement Ltd.)	Cement	Sidhi	Rewa	2
48	Srf Limited	Textile	Bhind	Gwalior	2
49	Trimula Industries Ltd	Iron & Steel	Singrauli	Singrauli	2
50	Ultratech Cement Limited - Bela Cement Works	Cement	Rewa	Rewa	2
51	Ultratech Cement Limited (Unit-Maihar Cement Works)	Cement	Satna	Satna	2
52	UltraTech Cement Ltd. Unit: Vikram Cement Works-Khor	Cement	Neemuch	Ujjain	2
53	Ultratech Cement Ltd_Dhar	Cement	Dhar	Dhar	4
54	Vardhman Fabrics	Power Plant	Sehore	Bhopal	1
55	Vardhman Yarns	Textile	Raisen	Mandideep	1
56	Vindhyachal Super Thermal Power Station N.T.P.C.	Power Plant	Singrauli	Singrauli	4
57	Wonder Cement Limited.	Cement	Dhar	Dhar	2
Total »					125

Annexure - I

Registration form for uploading the data of manual station on EAQDES

A. TO BE USED FOR STATE PROGRAMME / ULBs / OTHER AGENCIES

Information of ambient air quality monitoring stations under State Programme / ULBs / other agencies

Sl. No.	Location / address of the station	City	District	Latitude & longitude & altitude above sea level	Type of area (Residential / Industrial / Commercial / Rural / others)	Monitoring agency	Station operational since (Year)	Height above ground where instrument is located and distance from nearest road	Weather sampling site has free flow of air or any obstruction is present	Major Sources of Air Pollutants near the monitoring site	Remarks, if any
1.											
2.											
3.											
4.											

Note: all fields are mandatory

Details of Nodal Officer for Registration in Environmental Air Quality Data Entry System (EAQDES)

S. No.	Name of the State	Name of the Nodal Officer with Designation	Contact address of Nodal Officer	Contact Numbers		E-mail ID
				Mobile	Landline	

Note: all fields are mandatory

A. TO BE USED FOR INDUSTRIES / INDUSTRIAL TOWNSHIP

Information of ambient air quality monitoring stations in Industries / Industrial Township

Sl. No.	Location / address of the station	Name of the industry	Type of industry	City	District	Latitude & longitude & altitude above sea level	Monitoring agency	Station operational since (Year)	Height above ground where instrument is located and distance from nearest road	Weather sampling site has free flow of air or any obstruction is present	Major Sources of Air Pollutants near the monitoring site	Remarks, if any
1												
2												
3												
4												

Details of Nodal Officer for Registration in Environmental Air Quality Data Entry System (EAQDES)

S. No.	Name of the State	Name of the Nodal Officer with Designation	Contact address of Nodal Officer	Contact Numbers		E-mail ID
				Mobile	Landline	

Note: all fields are mandatory

ANNEXURE - II

CPCB IT Division

30.04.2015

Protocol for Data Transmission from CAAQM Stations Existing as on Date

1. Data Format

- Data file on real time basis having 15 minutes average values in a prescribed format attached at Annexure-I should be generated at the station for which Instrument Supplier is responsible.
- File should be updated after every 15 minutes.
- Data intervals like 00:15, 00:30, 00:45, 01:00 should be fixed at the station.
- Station file name should be exactly as the name of the station to be displayed on the web portal. i.e. Sanathnagar, NehruNagar. Here precaution is to be taken that no space between words should be given or no special characters should be used.
- File should be recorded in a folder c:\data\sanathnagardata.txt
- File should allow data appending sequentially.
- Date of last file record appended in the file should be recorded and data afterwards be placed in the data file.
- File appending should continue subject to max 97 lines. First in First out mechanism shall be followed in keeping file size to 97 lines.
- Hence, in the specified folder c:\Data\ there will be a single file which will keep appending as per format attached.
- Duplicate entry of any data should not be made in the file.
- System should have capability to create previous record data file for which user will give the date. This is required to have lost data makeup in the final database, if any.

2. Data Mapping

- Protocol for each parameter is fixed as below:
    1. 15 Minutes average value will be provided by the operator of the CAAQMS
    2. Each SPCB will have the parameter as mentioned in the table only. Not even a small gap or space is provided other than the mentioned table is acceptable.

3. Standard Parameter Naming Protocol and Conversion factors Table

Parameters Name	Parameter Abbreviations	Unit	Conversion factors at 25°C
Rack Temperature	Temp	°C	
Carbon Monoxide	CO	mg/m^3	1ppm=1.145mg/m^3
Sulphur Dioxide	SO2	µg/m^3	1ppb=2.62µg/m^3
Nitric Oxide	NO	µg/m^3	1ppb=1.23µg/m^3
Nitrogen dioxide	NO2	µg/m^3	1ppb=1.88µg/m^3
Oxides of Nitrogen	NOx	ppb	--
Ozone	Ozone	µg/m^3	1ppb=1.96 µg/m^3
Particulate Matter less than	PM_{10}	µg/m^3	--

IT Div

10 Micron size			
Wind Speed	WS	m/s	--
Wind Direcction	WD	deg	--
Ambient Temperature	AT	°C	--
Relative Humidity	RH	%	--
Barometric Pressure	BP	mmHg	--
Solar Radiation	SR	W/mt^2	--
Rain Fall	RF	mm	--
Vertical Wind Speed	VWS	degree	--
Particulate Matter less than 2.5 micron size	$PM_{2.5}$	$\mu g/m^3$	--
Benzene	Benzene	$\mu g/m^3$	$1ppb=3.19\mu g/m^3$
Toluene	Toluene	$\mu g/m^3$	$1ppb=3.77\mu g/m^3$
Xylene	Xylene	$\mu g/m^3$	$1ppb=4.34\mu g/m^3$
Ethyl Benzene	Eth-Benzene		$1ppb=4.34\mu g/m^3$
M+P_Xylene	MP-Xylene		$1ppb=4.34\mu g/m^3$
Methane	CH_4	$\mu g/m^3$	$1ppb=0.65\mu g/m^3$
Ammonia	NH_3	$\mu g/m^3$	$1ppb=0.70\mu g/m^3$
Formaldehyde	HCHO	$\mu g/m^3$	$1ppb=1.23\mu g/m^3$
Mercury	Hg	$\mu g/m^3$	$1ppb=8.20\mu g/m^3$

Note: 1. Any other parameter can be added with the prior approval of IT Division ONLY.

4. **Internet Connectivity**

- Internet connectivity should be available on 24X7 basis for data transmission with an uptime of 99.9%. For this purpose every CAAQM station should have two kinds of connection:
  i) Leased Line Circuit of at least 01 Mbps capacity
  ii) Broad Band connectivity through telephone line. Both facilities should be configured in ready to use condition. If possible auto failover should be created.

Note: Connectivity through Datacard is not acceptable except in any special circumstances, where both of these types of connectivities are not available. For such case CPCB IT Division shall be consulted before taking a final decision.

5. **Other Information:**
   1. Area Map showing station location
   2. Latitude, Longitude and altitude of the station
   3. Photo of station along with nearby areas
   4. One page write-up about the station activities in the vicinity of station including major pollution sources like nearby road, rail, restaurants, generator sets, etc.

Annexure – I

File Name: sanathnagar

1,2,3,4,5,6,7,8,
Station name, Parameter, Date from, Date to, Value,calibrationflag,maint flag,Remark,
Sanathnagar,CO,27-04-2015 13:00,27-04-2015 13:15,0.2497,0,0,analyserfaulty,
Sanathnagar,CO,27-04-2015 13:15,27-04-2015 13:30,0.2470,0,0,analyserfaulty,
Sanathnagar,CO,27-04-2015 13:30,27-04-2015 13:45,0.2470,0,0,analyserfaulty,
Sanathnagar,CO,27-04-2015 13:45,27-04-2015 14:00,0.2470,0,0,analyserfaulty,
Sanathnagar,Ozone,27-04-2015 13:00,27-04-2015 13:15,59.6710,0,0,flowproblem,
Sanathnagar,Ozone,27-04-2015 13:15,27-04-2015 13:30,59.5960,0,0,analyserfaulty,
Sanathnagar,Ozone,27-04-2015 13:30,27-04-2015 13:45,59.5960,0,0,analyserfaulty,
Sanathnagar,Ozone,27-04-2015 13:45,27-04-2015 14:00,59.5960,0,0,analyserfaulty,
Sanathnagar,NO,27-04-2015 13:00,27-04-2015 13:15,0.5922,0,0,analyserfaulty,
Sanathnagar,NO,27-04-2015 13:15,27-04-2015 13:30,0.4435,0,0,0,
Sanathnagar,NO,27-04-2015 13:30,27-04-2015 13:45,0.4435,0,0,0,
Sanathnagar,NO,27-04-2015 13:45,27-04-2015 14:00,0.4435,0,0,0,
Sanathnagar,So2,27-04-2015 13:00,27-04-2015 13:15,3.5233,0,0,0,
Sanathnagar,So2,27-04-2015 13:15,27-04-2015 13:30,3.7278,0,0,0,
Sanathnagar,So2,27-04-2015 13:30,27-04-2015 13:45,3.5233,0,0,0,
Sanathnagar,So2,27-04-2015 13:45,27-04-2015 14:00,3.7278,0,0,0,
Sanathnagar,RT,27-04-2015 13:15,27-04-2015 13:30,33.2260,0,0,0,
Sanathnagar,RT,27-04-2015 13:30,27-04-2015 13:45,33.2240,0,0,0,
Sanathnagar,AT,27-04-2015 13:45,27-04-2015 14:00,33.0960,0,0,0,
Sanathnagar,AT,27-04-2015 14:15,27-04-2015 14:30,33.3740,0,0,0,
Sanathnagar,RH,27-04-2015 13:15,27-04-2015 13:30,41.3080,0,0,0,
Sanathnagar,PM10,27-04-2015 13:15,27-04-2015 13:30,30.3000,0,1,analyserfaulty,
Sanathnagar,PM10,27-04-2015 13:30,27-04-2015 13:45,30.3000,1,0,analyserfaulty,

---

Please note:

Here 0-zero stand for normal operation of instruments in calibration flag status

1- Stands for calibration mode ON and data will not be considered for averaging purpose. Same is true for Maintenance mode where 0-normal and 1-mintenance mode ON

(Abhijit Sharma)
IT Div

NATIONAL AMBIENT AIR QUALITY STANDARDS

CENTRAL POLLUTION CONTROL BOARD

NOTIFICATION

New Delhi, the 18th November, 2009

No. B-29016/20/90/PCI-I.—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), and in supersession of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual*	50	20	- Improved West and Gaeke
		24 hours**	80	80	-Ultraviolet fluorescence
2	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual*	40	30	- Modified Jacob & Hochheiser (Na-Arsenite)
		24 hours**	80	80	- Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM_{10} $\mu g/m^3$	Annual*	60	60	- Gravimetric - TOEM
		24 hours**	100	100	- Beta attenuation
4	Particulate Matter (size less than 2.5µm) or $PM_{2.5}$ $\mu g/m^3$	Annual*	40	40	- Gravimetric - TOEM
		24 hours**	60	60	- Beta attenuation
5	Ozone (O_3) $\mu g/m^3$	8 hours**	100	100	- UV photometric - Chemilminescence
		1 hour**	180	180	- Chemical Method
6	Lead (Pb) $\mu g/m^3$	Annual*	0.50	0.50	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
		24 hours**	1.0	1.0	
7	Carbon Monoxide (CO) mg/m^3	8 hours**	02	02	- Non Dispersive Infra Red (NDIR) spectroscopy
		1 hour**	04	04	
8	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence -Indophenol blue method
		24 hours**	400	400	

(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C_6H_6) $\mu g/m^3$	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m^3	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m^3	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m^3	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

* 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 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may 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.

SANT PRASAD GAUTAM, Chairman
[ADVT-III/4/184/09/Exty.]

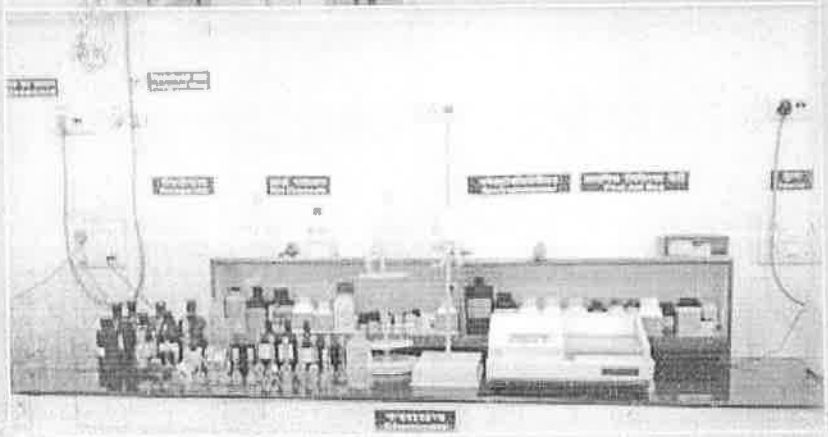
Note: The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998.

Printed by the Manager, Government of India Press, Ring Road, Mayapuri, New Delhi-110064
and Published by the Controller of Publications, Delhi-110054.

Guidelines for the Measurement of Ambient Air Pollutants

Volume-I

Guidelines for Manual Sampling & Analyses

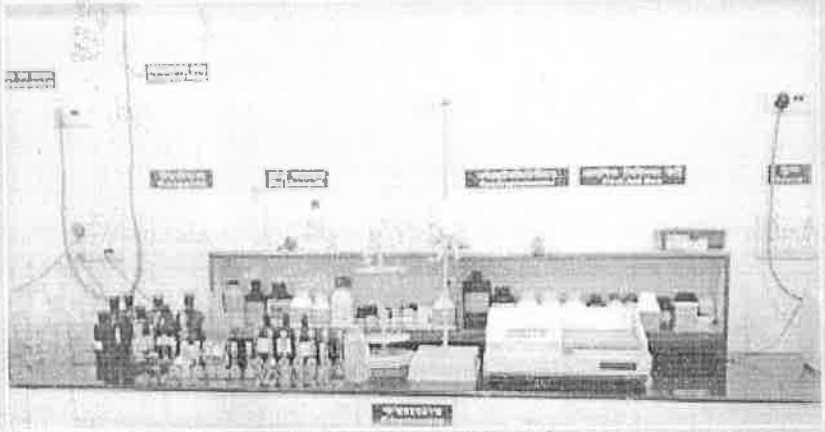


CENTRAL POLLUTION CONTROL BOARD
Ministry of Environment & Forests
Website: http://www.cpcb.nic.in

Guidelines for the Measurement of Ambient Air Pollutants

Volume-II

Guidelines for Real Time Sampling & Analyses



CENTRAL POLLUTION CONTROL BOARD
Ministry of Environment & Forests
Website: http://www.cpcb.nic.in

ANNEXURE - III

Central Pollution Control Board, Delhi
IT Division

DETAILS OF CAAQM STATIONS FOR INTEGRATION – v2

S. No.	Description	Details
a	**Meta Data:**	
a.01	Station Code#	
a.02	Name of the Station	
a.03	City	
a.04	District	
a.05	State	
a.06	Complete Address (Land mark)	
a.07	Pin Code	
a.08	Station Category (put ✓)	Capital( ) Million+ City( ) CPA$( ) Other( )
a.09	Latitude	
a.10	Longitude	
a.11	Internet Connectivity	Leased Line( ) Broadband( ) Other( )
a.12	Photo Attached (Yes/No)	
a.13	Station location Area	Industrial ( ) Residential( ) Rural( ) Urban ( ) Ecological Sensitive Area( ) Others( )
a.14	Major Pollution Source near to Station	
B	**Admin. Details:**	
b.1	Station Owned by	
b.2	Station Supervised By	
b.3	Name of the Supervisor	Official (concerned)
b.4	Contact Number	Mob.: Landline:
b.5	Email ID	
C	**Operator's Details:**	
c.1	Instrument Supplier	
c.2	AMC Firm	
c.3	Names of the Technicians	1) 2)
c.4	Contact Number	1) 2)
c.5	Email ID	1) 2)
d	**Integration Details**	
d.1	Computer's OS	
d.2	System User Name	
d.3	System Password	
d.4	Team Viewer ID	
d.5	Team Viewer Password	

CPCB Protocol Confirmation:

1. Is the single CSV file available at C:\Data\ with station name.txt? (Yes/No)
2. Is the CSV file updating with 15Minutes average data, after every 15 minutes? (Yes/No)
3. Is the maximum number of lines in CSV file restricted for 96? (Yes/No)
4. Is nomenclature of all the parameters are as per CPCB Protocol? (Yes/No)
5. Is write-up on nearby areas alongwith photos of the station submitted? (Yes/No)

P.T.O.

Parameter Details:

S. No.	Parameter	Analyser Make	Analyser Model No	Analyser Serial Number	Certified Agency (Ex: TUV/CE)	Analyser Installation Date	Measurement Range (Ex: 0-1000)	Measurement Unit (Ex: ppb, µg/m³)	Analyser to PC Connection Type (RJ45/ RS232/ RS485/ Modbus/ 4-20mA/ 0-10V)	Last Calibration Date
1	NO_2*									
2	SO_2									
3	CO									
4	Ozone									
5	$PM_{2.5}$									
6	PM_{10}									
7	Ammonia									
8	Methane									
9	Benzene**									
10	Mercury									
11	Formaldehyde									
12	Rack Temp.									
13	Ambient Temp.									
14	Wind Speed									
15	Vertical Wind Speed									
16	Wind Direction									
17	Relative Humidity									
18	Barometric Pressure									
19	Solar Radiation									
20	Rain Fall									
21										
22										

will be assigned by IT Div., CPCB. $^{\$}$CPA - Critically Polluted Area. *Assumed NO, NO_2 & NO_x will be from same instrument. **Assumed Benzene, Toluene, Xylene, Eth-Benzene and MP- Xylene will be from same instrument.

Note: Add extra sheets, if required.