CENTRAL POLLUTION CONTROL BOARD

NATIONAL AIR QUALITY MONITORING PROGRAME (NAMP)

Air Quality Monitoring Station Inspection Report

PART A: GENERAL	
1. Name of the State	**GOA**
2. Name of the city/town	**PONDA**
3. Name and address of State Pollution Control Board/Pollution Control Committee / Other Agency :	**Bhagavathi Ana Labs Pvt. Ltd., Ghanekar Compound, Tisk, PONDA-GOA**
e-mail address	**Ball_goa@rediffmail.com**
Website address	
Telephone no;	**0832-2315706**
Fax no.	**0832-2315706**
4. Name and designation of Regional Officer/ Contact person	**Mr. Surendra Bangale**
5. Name and designation of Station Incharge Contact telephone no., e-mail and fax	**Mr. Surendra Bangale**

PART B: EVALUATION OF MONITORING STATION:-	
1 Name and detail address of the monitoring station	**(A) Honda, Ajoba temple**
2. Type of Area Residential, rural and other areas/ Industrial/ Sensitive	**Residential /** **Traffic intersection area**
In case of other areas, please specify whether traffic intersection, commercial area etc.	
In case of sensitive area, please specify details for declaring the area sensitive	
3. Whether any obstacles are present near the site/location such trees, buildings etc. if yes	**No**
i) distance from site	
ii) Type of obstacle	
In no, whether the site is open from all Sides/or three sides (indicate yes/no)	**Site is open from all side**
4. Type and sources of pollution :	**Vehicular emission,**
a. Industrial Sources	
(i) Point source such as stack of any Industry mention the details and distance of point source from the site.	**No**
(ii) Aerial distance of any industrial estate from the existing site	**No**
(iii) If there is industrial area within the radius of 1km the details there off:	**No**
- Type of industries	**No**
- Product Manufactured	**No**
- Raw Materials/ fuel used	**No**
- Expected quantity of emissions	**No**

- Whether DG sets used (give details)	**No**
b. Vehicular Sources:	
(a) Sources such as vehicular traffic or traffic interactions etc. Mention the details and distance of source from the site.	**(i) Vehicular traffic and traffic intersection.** **(ii) This site is near to 4 roads junction, traffic intersection.**
(b) Source of natural dust from Road, resuspenson of dust/or other activity mention the details and distance from existing site	**(i) Natural dust and traffic intersection.**
(c) Whether any kind of open burning takes place near the site (indicate yes or no and give details)	**No**
(d) Any other source such as engine gensets or information regarding sources of pollution	**No**
5. Description of the nearby locality including: existing site	**Residential & transport vehicular emission.**
(a) If there is commercial area within the radius of 1 km, the details may be furnished;	**Yes**
➢ Type of shops	**Mixed shops**
➢ Whether they use and kind of fuel & their quality	**Diesel, and LPG**
➢ Whether they use any generator sets etc.	**Yes**
(b) If there is any sensitive area due to following reasons (indicate yes or no and specify reason)	**NO**
➢ 10 kms all around the periphery of health resorts that are notified	**(i)**
➢ 10 kms all around the periphery of biosphere reserves, sanctuaries and national parks, that are notified	**NO**
➢ 5 kms all around the periphery of an archeological monument declared to be of national importance or otherwise that are notified	**(i) NO**
➢ Areas which are delicate or sensitive to air pollution in terms of important agricultural / horticultural crops grown in that area and accordingly notified	**No**

➢ 5 kms around the periphery of centers of tourism and/or pilgrim due to their religious, historical, scenic or other attractions, that are notified	**(i) NO**
6. Height of instrument above ground level (in m)	**About 4 mtr above ground level**
7. Position of Monitoring Instrument/Equipment at the present site (kindly indicate whether the instrument is on building terrace/ on any kind of substrate /On any House Balcony /On any confined place etc.)	**Open area**
8. Whether any obstacle/or trees present near the present site that are above the height of sampling devices (such as HVS/RDS etc.) Kindly indicate Yes/No, if yes mention the details.	**No**
9. Whether the distance of the instrument to any air flow obstacle i.e. buildings, is more than two times the height of the obstacle above the sampler. (kindly indicate yes or no)	**No**
10. Whether the sampling equipment is provided with proper safety and security against loss or tampering (kindly indicate Yes or No, if yes give details)	**Yes**
11. Whether the sampler is 20 m away from trees (kindly indicate yes or no)	**Yes**
12. Whether there is unrestricted airflow in three of four quadrants (kindly indicate yes or no)	**Yes**
13. Whether there are any nearby furnace or incinerator fumes. (kindly indicate yes or no)	**No**
14. Whether the station/location is away at-least 25 meter from domestic chimneys particularly if the chimneys are lower than the sampling point/stations (Kindly indicate yes or no).	**Yes**
15. Whether the station is away from absorbing surface. (Kindly indicate Yes or No)	**Yes**
16. Whether the present site is the representative of the area selected Yes/No, if no provide details	**Yes**

17. Whether the station is established in the area where considerable rebuilding or land use. Changes are foreseen in the near future. Yes/No., If yes provide details.	**No**
18. Whether the present site is fulfilling one or more of the following physical requirements (Kindly indicate yes or no)	
(i) Available for a long period;	**Yes**
(ii) Accessible any time through out the year Including rainy season	**Yes**
(iii) Electrical power of sufficient rating and their full availability.	**Yes (some time power failure)**
(iv) Vandal Proof.	**Yes**
(v) Protected from extreme of temperature especially in summer season	**No**
19. Whether the topographical and Micro Meteorological data of area should be taken into consideration for determining the distance of the sampler from the stack: (kindly indicate NA / Yes / No, if yes provide details.	**Not Applicable**
20. Whether ten stack heights is being used as a guideline distance in case of elevated sources on a flat terrain. (kindly indicate NA / Yes / No) , If yes please elaborate	**Not Applicable**
21. Whether the station is fulfilling the meteorological and topographical considerations?	
a) Station very close to topographic features- (kindly indicate Mountails / valleys / Rivers / Terrain / lakes / and oceans/or none of these)	**NO**
b) Whether the possibility of Katabatic (upslope) and anabatic (down slope) winds affecting the station due to Mountainous/ Rolling/just slightly terrain etc.? (Kindly indicate yes or no)	**No**
c) if yes sketch out the station with Mountain/terrain etc. including distance of station with these topographical features?	

22. Whether the winds causing day time heating and night time cooling depending upon terrain and the time of onset and intensity of these winds are existing at the station? If yes, please elaborate the statement made above to justify the possibility of local winds into a preferred direction flow, which may cause mountain gap wind? If not the situation above then state not applicable (NA): Statement by the observer, if yes:-	**Not Applicable**
23. Whether the land-sea breeze circulation exists in the present station which dominates the local wind patterns and possibility of the same polluted air re-circulates over an area more than once either from the sea breeze circulation cell or from any wind changes occurring due to a combination of the Meteorological features? Not applicable/Yes/No., if yes please elaborate?	**Not Applicable**
24. Whether the station having nearby Mountaneous/ or hilly terrain which can cause mesoscale precipitation patterns and may affect local pollution concentration through washout? If such situation exists, State the predictable patterns?	**No**
25. Whether the station in URBAN/sub urban/or Rural environs. In addition to this, whether the station is purely in residential/Industrial/ commercial and sensitive area? Please elaborate below:-	**Residential area**

PART C: FIELD INSTRUMENTS AND FACILITIES EVALUATION:

1. Type of available instrument, at site whether HVS/RDS etc. and their number (including stand by)

HVS	-	nos (working)
HVS	-	nos (standby)
RDS	02	nos (working)
FPS	02	nos (standby)

2. Type of available instrument, at laboratory whether HVS/ RDS etc. and their number (including stand by)

RDS	01	nos (standby)
FPS	01	nos (standby)

3. Defective equipment

HVS	-	nos
RDS	-	nos

4. High Volume Sampler : Not available

Make	Model	Year of Purchase	Performance (Satisfactory/ unsatisfactory)	Numbers available

5. Respirable Dust Sampler /Fine Particulate Sampler :

Make	Model	Year of Purchase	Performance (Satisfactory/ unsatisfactory)	Numbers available
Envirotech	**APM 460BL**	**2012**	**Satisfactory**	**03**
Envirotech	**APM 550**	**2012**	**Satisfactory**	**03**

6. Calibration status of each RDS/HVS/ and other equip./Inst. used:

(a) Calibration of Orifice **:** **Calibration done by supplier when supplied**

RDS/HVS (Mention make and model)	Agency that carried out calibration	Date of Calibration (DD/MM/YY)	Method of Calibration	Frequency of Calibration	Whether calibration equipment certified against primary standard (Mention primary standard)
Envirotech	**Envirotech**	21.10.2013	21.10.2014	YEARLY	FCRI, Palakkad

For calibration attach copy of graph, certificate and details.

➢ Whether calibration done when Equipment is transported to a new location and in different climatic condition (Kindly indicate Yes or No)	**No**
➢ Calibration done when equipment is operated after interruption of several months: (Kindly indicate Yes or No)	**No**
➢ Calibration done when equipment is newly installed: (Whether factory calibrated) (Kindly indicate Yes or No)	**No**

(b) Calibration of Time Totaliser : Calibration done by supplier when supplied

RDS (Mention make and model)	Agency that carried out calibration	Date of Calibration (DD/MM/YY)	Method of Calibration	Frequency of Calibration	Whether calibration equipment certified against primary standard (Mention primary standard)
Envirotech APM 460BL	**Envirotech**	09.07.2013		YEARLY	FCRI, Palakkad

For calibration attach copy of graph, certificate and details.

a. Calibration of Rotameter : Calibration done when instrument was supplied

Rotameter	Agency that carried out calibration	Date of Calibration (DD/MM/YY)	Method of Calibration	Frequency of Calibration	Whether calibration equipment certified against primary standard (Mention primary standard)
	Envirotech	11.07.2013		YEARLY	FCRI, Palakkad

For calibration attach copy of graph, certificate and details.

(d) Meteorological Instrument: **Meteorological Instrument Not available.**

Parameter	Detail of Instrument available	Make and Model	Year of Purchase	Performance (Satisfactory/ unsatisfactory)	Numbers available	Calibrated on (DD/MM/YY)
Wind speed Wind direction Relative Humidity, Temperature	DAVIS	MOEL NO 6510 USB	NOV 2013	satisfactory	1	

7. Trouble shooting details: Regular troubleshooting encountered such as: (Kindly indicate Yes or No)

➢ Neon lamp fails to glow	**No**
➢ Vaccum pump fails	**No**
➢ Blower speed is erratic indicated by varying flow rate.	**No**
➢ Odd sound of the blower	**No**
➢ Frequent fuse blow out	**No**
➢ Frequent brush Wear out	**Not applicable**
➢ Times of timer and timer totatizer do not tally	**No**
➢ Carbon brush is not going freely inside the brush holder	**Not applicable**
➢ Flow meter does not show flow when connected to inlet of impinger having visible Air bubble	**No**
➢ Whether flow is 1232 lpm	**Yes**
➢ Whether flow varies drastically	**No**

In case above mentioned problems are encountered then also kindly indicate the remedies taken to prevent above mentioned problems.	
Whether sampling is carried out for 8 –hours for SPM and RSPM and 4-hours for SO_2 and NO_2. If No then kindly mention reasons	**Yes**
8 Whether reagent storage in field (Proper or improper)	**Properly stored in ice-box.**
9. In case reagent storage in field is improper then mention details	**No**
10. Whether on-site analysis is being done or samples were transported to the Central laboratory?	**Samples were transported to the laboratory.**
11. In case on site analysis is done mention facilities present on site	**No facilities present at site.**
12. In case samples transported to laboratory then mention following details.	**Yes**
(a)Distance of site to laboratory	**(i) About 26 km.**
(b) Whether ice box available (kindly indicate yes or no)	**Yes**
(c) Whether vehicle available to transport samples (kindly indicate yes or no)	**Yes**
(d) Whether samples are kept at site in ice box after sampling	**Yes**
13. Filter paper	
(a) Whether filter paper used is of good quality (having better mechanical stability, chemical stability, particle sampling efficiency, flow resistance, cost and availability etc.) (Kindly indicate yes or no)	**Yes**
(b) Make of filter paper	**Whatman (GF/A)**
(c) Whether Filter is mounted properly on the support screen with the rough side of the filter facing upwards. (Kindly indicate yes or no)	**Yes**

(d) Whether the wing nuts are tightened properly to avoid any leakage. (Kindly indicate yes or no)	**Yes**
Whether the wing nuts are tightened properly to avoid any leakage	**Yes**
(e) Whether filter paper is preweighed after conditioning in dessicator for 24 hrs (Kindly indicate yes or no) *Filter paper should not be oven dried as volatile matter will be lost	**Yes**
(f) Whether distilled water is used in manometer tube and water is changed every fortnightly and zero level is checked every time. (Kindly indicate yes or no)	**Yes**
(g) Whether Ice is kept in the sampling tray during sampling (Kindly indicate yes or no)	**Yes**

PART D : LABORATORY EQUIPMENTS EVALUATION

1. Balance

Type (Single pan/double pan/digital/others)	Accuracy & Precision	Readibility (gm/mg)	Make and model, Year of Purchase	Performance (Satisfactory/unsatisfactory)	Last Calibration done	Numbers Available
Semi-micro Single pan digital	**0.00001 gm**	**0.00001 gm**	**Sartorious R-3005 1998**	**Satisfactory**	**07.03.2014**	**01**
Micro balance Single pan digital	**0.000001 gm**	**0.000001 gm**	**Sartorious MSE3-6P-000-DM**	**Satisfactory**	**07.03.2014**	**01**

2. Spectrophotometer

Make and model	Year of Purchase	Display (Analog/ digital/ others)	Performance (Satisfactory/unsatisfactory)	Last Calibration done	Numbers Available
(1 systronics166	**2009**	**Digital**	**Satisfactory**	**07/03/2014**	**01**
(2) systronics104	**2013**	**Digital**	**Satisfactory**		**01**

3. Hot Air Oven

Make and model	Year of Purchase	Temperature Range	Performance (Satisfactory/unsatisfactory)	Last Temp. Calibration done	Numbers Available
142	**2009**	**0-250^{o}C**	**Satisfactory**	**07.03.2014**	**01**

4. Refrigerator

Make and model, Year of Purchase	Capacity	Cooling Status (inner chamber/freezer) (Satisfactory/unsatisfactory)	Performance (Satisfactory/ unsatisfactory)	Numbers Available
Whirlpool,shakti, 2009	**160 ltr**	**Satisfactory**	**Satisfactory**	**01**

5. Dessicator

Make and model, Year of Purchase	Type (Glass/propylene/others)	Dessicant Used	Performance (Satisfactory/ unsatisfactory)	Frequency of changing the dessicant	Numbers Available
Borosil (1906E),2010	**Glass**	**Silica gel**	**Satisfactory**	**Once in a month**	**01**

6. Availability of Distilled water briefly: (kindly indicate yes or no)	Yes
(a) Purchased from outside (kindly indicate yes or no)	yes
➢ Electrical conductivity	(…<3……umhos/cm…..)
(b) Produced through own distillation assembly (Kindly indicate yes or no)	**Yes**
➢ Electrical conductivity	**(less than 03 umhos/cm.)**
➢ Produced through (Kindly indicate Single/Double distilled)	**Double and Triple Distilled**
7. Analytical Methods used :	
a) Sulphur dioxide (SO_2)	
Whether Modified West and Gaeke Method Is used (Kindly indicate yes or no) Others (please specify)	**Yes**
b) Nitrogen dioxide (SO_2)	
Whether Sodium Arsenite Method Is used (Kindly indicate yes or no) Others (please specify)	**Yes**
c) Respirable Suspended Particulate Matter (RSPM)	

Whether Cyclonic Flow Technique Is used (Kindly indicate yes or no) Others (please specify)	**Yes**
d) Suspended Particulate Matter (SPM)	**Not Applicable**
Whether High Volume Sampling Method (Gravimetric) Is used (Kindly indicate yes or no) Others (please specify)	
8. Kindly indicate yes or NO or as the case may be for following items:	
➢ Availability of all chemical	**Yes**
➢ Availability of Absorbing Media	**Yes**
➢ Please state date of preparation (AM)	**Yes weekly basis**
➢ Please state Assay performed if any for required chemicals	**Yes**
➢ Whether prepared absorbing Media Properly stored or not	**Yes**
➢ Whether stock solutions prepared? State their date of preparation	**Yes, weekly basis**
➢ Whether working solutions prepared, state their date of preparation	**Yes, weekly basis**
➢ Whether silica gel bottle is kept in weighing chamber to avoid error while weighing.	**Yes**
➢ Whether properly clean glassware are used.	**Yes**
➢ Whether one set of glassware are calibrated as per requirement.	**No**
➢ Whether all critical chemicals must are of analytical Grade	**Yes**
➢ Whether double distilled or nanopure water is used for preparation of reagents and analysis	**Yes**
➢ Whether glassware and storage bottles are rinsed with distilled water and chemicals respectively.	**Yes**
➢ Whether reagent bottles are properly marked by name, strength and date of preparation, expiry date and initial of chemist who has prepared the reagent.	**Yes**
➢ Whether desiccant in the dessicator are changed as per requirements	**Yes**
➢ Whether the chemicals whose strength changes with time are standardized before use.	**Yes**
➢ Whether calibration graphs are made every time a new stock solution is prepared.	**Yes**
➢ Whether reagent bottles are made air tight before storage	**Yes**
➢ Whether key reagents are prepared fresh on the date of analysis.	**Yes**
➢ Whether storage of chemicals are done as per recommendations like away from sunlight etc.	**Yes**

➢ Whether the analytical balance has sensitivity of 0.1 mg or better.	**Yes**
➢ Whether sample are preserved during sampling	**Yes**
➢ Whether sample are preserved during transport	**Yes**
➢ Whether sample are preserved after receiving in laboratory.	**Yes**
➢ Whether immediate analysis after transportation is being done.	**Yes**
If all above points not followed, please give your comment briefly	
9. IF RSPM is not being measured, please state briefly reasons	
10. Data generation, calculation and reporting as per Forms (A) to (E)	**Yes**
(a) Whether data calculations is correct (Kindly indicate yes or no)	**Yes**
Whether 104 observations is being generated in a year if not state reasons briefly and average observations in a week	**Yes**
b) Whether data reporting is correct (if improper, State reasons regarding delay etc)	**Yes**
➢ Whether the values are reported above the detection limit as per the method.	**Yes**
➢ Whether SPM/RSPM values which are very high are reported in round figures (without decimal place).	**Yes**
➢ Whether any outlier values found are checked for contamination of sample, sudden change of environmental conditions in the vicinity of the monitoring site etc. and discarded if necessary.	**Yes**
➢ Whether Bills as per Form E are sent alongwith data	**No**
c) Attached recent data sheets: (Photocopy)	**Yes**
d) Computer and Other Facilities	
➢ Whether calculations are performed using computer	**yes**
➢ Whether computer is available in the laboratory mention make and model	**Model - CQ33301X** **Make - compaq**
➢ Whether internet and e-mail facility exist in the office	**Yes**
➢ Whether software of CPCB for data entry exist and data sent via e-mail mention e-mail add and website address	
➢ Whether data entry operator is there for entering into computer	**By analyst**
➢ Is data sent to Head Office and then to CPCB or directly to CPCB	**Goa State Pollution Control Board**

➢ Whether data is entered using online entry in the software Environmental Data Bank of CPCB. If not then kindly mention reasons	
➢ **In case above mentioned facilities of computer, internet, e-mail etc. are not available then kindly mention details**	**-**

E MANPOWER AND ADMINISTRATIVE EVALUATION

(1) Sampling

Name and designation	Qualifications	Salary	Experience in sampling	Experience in Analysis	Whether Competent (indicate yes or no)
Mr. Gajanan Chari, Field Assistant	**10th**	**--**	**2 years**	**-**	**Yes**
Shri Deepak Deshbhandari Field Assistant	**B.A**	**--**	**6 years**	**-**	**Yes**

(2) Analysis, Data Reporting, Data Checking and Validation

Name and designation	Qualifications	Salary	Experience in sampling	Experience in Analysis	Whether Competent (indicate yes or no)
Miss. ASHWINI SAMANT, Chemist	**M.Sc.**	**-**	**1 years**	**1 years**	**Yes**
Mrs. Sambhavi Prabhu Gaonkar	**B.Sc**	-	**2years**	**2 years**	**Yes**

➢ During above assessment do you feel that personnel require further training on ambient air quality monitoring; please name the person with details and which areas of monitoring the training is required?	**NO**
3. Do you feel any other problem with persons involved in Ambient Air Quality Monitoring work, please comment briefly:	**NO**
4. Other administrative problem at Ambient Air Quality Monitoring Stations? Please state briefly para wise as mentioned below	NO

(i) Whether funds are received on time? Whether there is shortage of Funds, Whether SPCB is contributing its share as applicable. Mention problems if any.	**YES**
(ii) Whether purchasing of chemicals etc is done centrally or by Regional Office Mention problems if any	**No problem**
(iii) In case purchasing is done by head office, then whether filter paper, chemical are received on time? Mention problems if any	**No problem**
5) Whether any defective instrument/equipment need to be replaced?	**NO**
6) Whether you feel it is necessary to provide any more number of equipments? No, out of RDS, All are used for NAMP purpose	**NO**
7) Whether there is delay in procurement of spare parts etc. repairing of instrument?	**No**
8) Any other problems, remarks/ comments?	**NO**