Details of Work Assigned to GUIDE, Bhuj for on Nomination basis "Monitoring of Ambient Air Quality in the Port Area of Deendayal Port Authority through Continuous Ambient Air Quality Monitoring System (CAAQMS) for a period of 3 years"

| **Sr. No.** | **Details of Work Awarded to GUIDE, Bhuj** | **Amount** | **Brief Reason** |
|---|---|---|---|
| **1** | Monitoring of Ambient Air Quality in the Port Area of Deendayal Port Authority through Continuous Ambient Air Quality Monitoring System (CAAQMS) for a period of 3 years | Rs. 9,27,63,504 + applicable GST<br><br>Work order issued vide letter no **Civil Engineering/Civil Engineering/4778/CAAQMS /2025/27** dated 24 /06/2025. | In order to comply with the Specific Conditions, "PP shall install a continuous automatic ambient air quality monitoring system (24 x 7) for all relevant parameters at two locations to monitor the ambient air quality status of the project area. Data should be transferred online to CPCB and SPCB websites of the EC&CRZ Clearance dated 19/12/2016 and 18/02/2020 |

# DEENDAYAL PORT AUTHORITY
## (Erstwhile: DEENDAYAL PORT TRUST)

ISO 9001-2015 &
ISO 14001-2015 Certified Port

Administrative Office Building
Post Box NO. 50
GANDHIDHAM (Kutch).
Gujarat: 370 201.
Fax: (02836) 220050
Ph.: (02836) 220038

www.deendayalport.gov.in

CivilEng./Pipeline/4778/CAAQMS/2025/27 Dated:24/06/2025

To,
The Gujarat Institute of Desert Ecology (GUIDE),
P.O.Box No. 83,
Opp. Changleshwar Temple, Mundra Road,
Bhuj (Kachchh)-370 001,
**Gujarat (India).**
E-mail: desert_ecology@yahoo.com

**Kind Attention: Dr. V. Vijay Kumar, Director, M/s GUIDE, Bhuj.**

**Sub: "Monitoring of Ambient Air Quality in the Port Area of Deendayal Port Authority through Continuous Ambient Air Quality Monitoring System (CAAQMS)"-Work Order reg.**

**Ref:** GUIDE, Bhuj proposal vide letter No. GUIDE/DPA/CAAQMS/450/2024-25 dated 21/05/2025

Sir,

The proposal submitted by GUIDE, Bhuj for the subject work vide above referred letter dated 21/05/2025 (**copy Attached-Annexure A**) for the work "**Monitoring of Ambient Air Quality in the Port Area of Deendayal Port Authority through Continuous Ambient Air Quality Monitoring System (CAAQMS)**" amounting to **Rs. 9,27,63,504.00 plus applicable GST (Rupees Nine Crores Twenty-Seven Lakhs Sixty-Three Thousand Five Hundred and Four Only)** for the scope of work, time period, including all terms & conditions mentioned in the proposal, has been accepted by the Competent Authority of DPA.

1) **Brief Scope of work**:
   a) To conduct site suitability assessment for installation of two CAAQMS including civil work, power supply, data connectivity in consultation with DPA.
   b) To Install Two CAAQMS at identified locations by DPA with all related components comprising of sensors, analysers, data acquisition system at identified locations, ensuring proper positioning for Accurate Air Quality Monitoring.
   c) To establish a real-time data transmission system to integrate with Pollution Control Boards for continuous remote monitoring.
   d) To conduct routine maintenance schedules and periodic calibrations to ensure uninterrupted operations of the equipment's.
   e) To formulate a detailed inception plan comprising of relevant technical specifications of the equipment's, monitoring frequency, proposed site details for installation of equipment's, connectivity with/to Pollution Control Boards.
   f) To document the monitored data on monthly basis.

g) Data will be transmitted to State and Central Pollution Control Boards
h) Broad Scope of work is as per **Annexure A**

**2) Payment terms:**

* 25% of contract price against submission of Inception Report and successful installation & commissioning of two CAAQMS System at identified Location.
* Balance 75% of contract Price: Monthly payment on Pro Rata basis for a period of 36 months

**3) Deliverables:**

- Inception report comprising of relevant technical specifications of the equipment's, monitoring frequency, proposed site details for installation of equipment's, connectivity with/to Pollution Control Boards.
- Installation of two (2) CAAQMS at proposed site
- Operations and maintenance of two installed CAAQMS for a period of 36 months
- Monthly submission of reports for a period of three years depicting the operations and output of online Continuous Ambient Air Quality Monitoring System including Wind Rose plot.

**4) Time Period:**

1. **For submission of Inception report & successful installation & commissioning of Two CAAQMS system at DPA: –** 60 days from the date of receipt of Work Order

2. **Operations & Maintenance of two CAAQMS:** 36 months after successful commissioning of CAAQMS.

3. Kindly sent the acceptance of this work order & start the work w.e.f 01/07/2025

Kindly send the acknowledgment of this Work Order.

Thanking you.

Yours faithfully,

24/6/25

**Dy. Chief Engineer & EMC(I/c)**
**Deendayal Port Authority**

**Annexure A**

**Dr. V. Vijay Kumar**
**Director**

# Gujarat Institute of Desert Ecology

**GUIDE/DPA/CAAQMS/ 087 /2025**
**21.05.2025**

**To**

Sh. Rajendraprasad Bethi,
The Deputy Chief Engineer and EMC (I/c),
Deendayal Port Authority,
Gandhidham – 370201, Dist: Kachchh
Gujarat

**Sub:** Revised Proposal for "Monitoring of Ambient Air Quality in the Port Area of Deendayal Port Authority through Continuous Ambient Air Quality Monitoring System (CAAQMS)".

Dear Sir,

With reference to the above-mentioned Proposal submitted to DPA, Gandhidham on 14th April 2025 on the subject matter. In this regard, certain queries from the EMC, DPA was received on the Proposal.

In this regard, GUIDE has addressed all the queries raised and herewith submitting the Revised proposal for "**Monitoring of Ambient Air Quality in the Port Area of Deendayal Port Authority through Continuous Ambient Air Quality Monitoring System (CAAQMS)**" as per the queries received from the EMC. The proposal delineates the technical specifications along with the terms and conditions and budgetary estimate for providing two CAAQMS including operations and its comprehensive maintenance including submission of monthly report for a period of three years.

This is for your kind consideration.

Thanking you,

Yours' Sincerely,

Gujarat Institute of Desert Ecology Bhuj

**V. Vijay Kumar**
DIRECTOR
Gujarat Institute of Desert Ecology
Bhuj - Kachchh.

**Project Proposal**

# Monitoring of Ambient Air Quality in the Port Area of Deendayal Port Authority through Continuous Ambient Air Quality Monitoring System (CAAQMS)

***Submitted to***

**The Deputy Chief Engineer and EMC (i/c)**
**Deendayal Port Authority**
**Administrative Office Building**
**Gandhidham- 370201**
**Kachchh, Gujarat**

***Submitted by***

**Gujarat Institute of Desert Ecology**
**P.O Box No. #83,**
**Opp. Changleshwar Temple,**
**Mundra Road Bhuj - 370001**
**Gujarat - India**

**May, 2025**

## A. Introduction

Deendayal Port Authority (DPA), one of the Major Ports of India, is a seaport located on the Gulf of Kuchchh in the Gujarat State. DPA has been at the forefront of Indian maritime trade and is constantly gearing up by augmenting its cargo handling capacity with private sector participation to adapt to the global challenging demands. Currently, DPA has sixteen (16) multi-purpose cargo berths, seven (8) Oil jetties, two (2) Smart Industrial Port City (SIPC under development), storage facilities comprising of various liquid cargo terminals, godowns (inside custom Bonded area as well as outside custom bonded area) and open areas within the Custom Bonded Area at Kandla; Off-shore terminal with three (3) Single Bouy Moorings at Vadinar, and RoRo/RoPax services operating at Hazira, Ghoga and Ro Ro/Ro Pax facility at Muldwarka and Pipavav under planning/development stage. The total Custom Bonded Area of the Port inside the custom fencing is 253 Ha. Under PM Gati Shakti, Sagarmala, Maritime India Vision (MIV) 2030 and National Infrastructure Pipeline (NIP), DPA has successfully completed various similar mega infrastructure projects including construction of ROB 236. Recently, the Hon'ble Prime Minister of India has virtually laid the foundation stone for development of the new Next-Gen Mega-Container Terminal at Tuna Tekra, DPA.

DPA's dedication to port sustainability and environmental protection has established it as the first Indian Major Port to install a wind power project. In line with Harit Sagar-Green Port Guidelines and Maritime India Vision 2030, DPA has undertaken / proposed various green port initiatives towards greenbelt development, waste management, water conservation, carbon and water neutrality, energy efficiency, and port equipment electrification. Moreover, DPA is developing Green Hydrogen Hub under the National Hydrogen Mission, GoI and has undertaken a flag-ship initiative of "Clean Gandhidham-Kandla" as a part of "Swachh Bharat Abhiyan" with Gandhidham Municipality under CSR activity.

Over the years of achieving continuous milestones, DPA has emerged to be the largest port by volume of cargo handled and has retained the position of India's No. 1 Major port in terms of traffic volume for the 16$^{th}$ consecutive year. Further, DPA has handled 132.3MMTPA cargo in the year 2023-24. The strategic location of DPA being a sheltered harbour situated in a creek and the only Indian major port nearest to the Middle east and Europe favored by the tropical and dry climatic conditions ensures DPA to provide uninterrupted and smooth port operations throughout the year. Further, as Deendayal Port Authority has been augmenting its operational capacity by undertaking various mega infrastructure projects under the National Maritime Development Programme (NMDP) and is further likely to prosper under Sagarmala Programme, a flagship initiative of the Ministry of Ports, Shipping and Waterways, GoI, complying to the environmental statutory conditions are essential for implementation of these projects.

One of the statutory conditions directed by Ministry of Environment, Forest & Climate Change, GoI is to install an online Continuous Ambient Air Quality Monitoring Systems in the project boundary. Moreover, Ministry of Ports, Shipping and Waterways in its Harit Sagar Guidelines has directed all Ports to make suitable efforts to install the real time Continuous Ambient Air Quality Monitoring Stations (CAAQMS) with digital dashboard.

In view of the above, Deendayal Port Authority (DPA) consulted Gujarat Institute of Desert

Ecology (GUIDE), Bhuj for providing of online Continuous Ambient Air Monitoring Systems (CAAQMS) including operations and maintenance for a period of three years for day-to-day monitoring of ambient air quality in the port area of Deendayal Port Authority. Accordingly, the technical specifications of CAAQMS is attached herewith as **Annexure I.**

## A. Objective

Monitoring of Ambient Air Quality in the Port Area of Deendayal Port Authority through Continuous Ambient Air Quality Monitoring System (CAAQMS), in order to comply with the specific condition of the EC & CRZ Clearances accorded by the MoEF&CC, GoI to DPA (EC & CRZ Clearance dated 19/12/2016 – Dev. Of 7 Integrated Facility and EC & CRZ Clearance dated 18/2/2020 – Dev 0f 3 remaining facilities (Stage I).

## B. Scope Of Work

The scope of the work is delineated as under;

- To conduct site suitability assessment for installation of two CAAQMS including civil work, power supply, data connectivity in consultation with DPA
- To install two CAAQMS at identified locations by DPA with all related components comprising of sensors, analysers, data acquisition system at identified locations, ensuring proper positioning for accurate air quality monitoring
- To establish a real-time data transmission system to integrate with Pollution Control Boards for continuous remote monitoring
- To conduct routine maintenance schedules and periodic calibrations to ensure uninterrupted operations of the equipments.
- To formulate a detailed inception plan comprising of relevant technical specifications of the equipments, monitoring frequency, proposed site details for installation of equipments, connectivity with/to Pollution Control Boards
- To document the monitored data on monthly basis
- Data will be transmitted to State and Central Pollution Control Boards

## C. Deliverables

- Inception report comprising of relevant technical specifications of the equipments, monitoring frequency, proposed site details for installation of equipments, connectivity with/to Pollution Control Boards.

- Installation of two (2) CAAQMS at proposed site

- Operations and maintenance of two installed CAAQMS for a period of 36 months

- Monthly submission of reports for a period of three years depicting the operations and output of online Continuous Ambient Air Quality Monitoring System including Wind Rose plot.

## D. Time Period :

1. **For submission of Inception report & successful installation & commissioning of Two CAAQMS system at DPA : –** 60 days from the date of receipt of Work Order

2. **Operations & Maintenance of two CAAQMS :** 36 months after successful commissioning of CAAQMS.

## E. Commercial Offer

| Sr. No. | Service Description | Project Rate per year | Total Budget for 3 years |
|---|---|---|---|
| 1 | Monitoring of Ambient Air Quality in the Port Area of Deendayal Port Authority through Continuous Ambient Air Quality Monitoring System (CAAQMS) | Rs. 3,09,21,168.00 | Rs. 9,27,63,504.00<br><br>(Break Up of cost attached as **Annexure II**) |
| | | **Total Cost (In Rs.)** | **9,27,63,504.00** |
| Rupees Nine Crores Twenty-Seven Lakhs Sixty-Three Thousand Five Hundred and Four Only | | | |
| GST will be charged extra as per prevailing Government Norms | | | |
| Note: Item wise rate are given in Annexure II: Budget estimate | | | |

## F. Payment Terms

***** 25% of contract price against submission of Inception Report and successful installation & commissioning of two CAAQMS System at identified Location.

* Balance 75% of contract Price : Monthly payment on Pro Rata basis for a period of 36 months

## G. Scope of DPA

- The team will work in close association with the DPA officials and carry out technical discussions as and when required.
- DPA shall provide necessary permits/ authorization letters including entry permits into the port premises, if needed, for installation of equipments including operations and maintenance pertaining to the proposed study
- DPA shall provide all relevant data, maps, documents to GUIDE as required for the project
- DPA shall ensure uninterrupted supply of electricity for operations of the equipments.
- DPA shall provide necessary space for office set-up. However, GUIDE will bear all the cost

towards establishment of office set up.

## H. **GUIDE Recognitions/Accreditations:**

1. Recognized as SIRO-DSIR, Ministry of Science and Technology, New Delhi.
2. Recognized as Schedule I- Environmental Auditors by GPCB, Gandhinagar.
3. Recognized as "State Air and Water Laboratory" by GPCB, Gandhinagar (2010-2017).

Date &Place : Signature

## Annexure I : TECHNICAL SPECIFICATION OF CAAQMS

| S. No. | Items |
|---|---|
| 1. | **Continuous Ambient Air Quality Monitoring Stations (CAAQMS)**<br>**Make: - Thermo Fisher: $PM_{2.5}$, $PM_{10}$**<br>**USEPA Certified**<br>**Make: Horiba Gas, $SO_2$, NOX, CO, $O_3$, $NH_3$**<br>**Parameter:**<br>▪ $PM_{10}$<br>▪ $PM_{2.5}$<br>▪ $SO_2$<br>▪ $NO_X$<br>▪ CO<br>▪ $NH_3$<br>▪ $O_3$ |
| | **Multipoint, Multi-Gas Calibrator, suitable for 230V AC, 50 Hz. With the following:**<br>▪ Mass Flow Controller based for Dilution air & Span Gas<br>▪ Inlet ports for external span gases<br>▪ RS 232 interface<br>▪ In built Zero air generator |
| | **Automatic Weather Monitoring Station**<br>**GSM or Wi-Fi Based**<br>**Advance Model**<br>**Make: - Engineering and Environmental Solutions Pvt Ltd**<br>**Model No – EE-WMS-03**<br>**Monitors 6 parameters**<br>▪ Wind speed,<br>▪ Wind direction,<br>▪ Temperature,<br>▪ Relative humidity,<br>▪ Rainfall,<br>▪ Solar radiation,<br>**Sensor Specification;**<br><br>**Wind speed:**<br>▪ Range -0 to 60 m/s<br>▪ resolution - around 1 m/s<br>▪ Accuracy - positive /negative 3% full scale<br>**Wind direction:**<br>▪ Range- 0 to 359 deg;<br>▪ Resolution - 1 deg<br>**Air temperature:**<br>▪ Range- negative 50 degrees Celsius to +70 degree Celsius<br>▪ Accuracy - positive / negative 0.3 degree Celsius<br>**Relative Humidity**<br>▪ Range - 0 to 100%;<br>▪ Accuracy - positive / negative 3%<br>**Rainfall Sensor**<br>▪ Range: 0 – 200 mm/h<br>▪ Accuracy: 5 % maximum depending upon the variation of precipitation type and intensity<br>▪ Resolution: 0.2 mm or better<br>**Solar Radiation Sensor:**<br>▪ Range 1 to 1500 $W/m^2$ |

| S. No. | Items |
|---|---|
| | ▪ Accuracy ± 5%<br>▪ Resolution 1 W/m$^2$<br>**Specifications:**<br>▪ Powered by Solar Panel<br>▪ 12-volt batteries<br>▪ Micro controller-based system<br>▪ 20 characters X 4 lines display<br>▪ Automatic GPRS based data transfer system to office from site<br>▪ Data logging through data shuttle also included<br>▪ Weather proof enclosure<br>▪ Tripod tower 6 feet<br>▪ Real time clock provided<br>▪ Logging interval 1 minute to 24 hours<br>▪ Easy to use |
| | **Digital Display System DMD Display Board Environmental Monitoring for Public Awareness View with Line Display Board Display Size 4 Feet X 6 Feet, Visibility 80-100 meters. Readability up-to 70 meters Dust Proof & Water Proof facility Provided. Data capture from software GPRS base.**<br>**Dust Proof Casing and Water Proof Panel Computer is needed**<br>**Warranty: 1 year**<br>**Make: Engineering and Environmental Solutions Pvt Ltd.**<br><br>**The following data will display.**<br>**The details of the Environment Display Board**<br>▪ P-10-line outdoor display with Minimum 8 Lines<br>▪ The display board body is in black color<br>▪ Displaying Color is red<br>▪ Power Supply 230VAC, 50Hz<br>▪ Display through the P.C base.<br>▪ all data will send through standard<br>▪ software/technology.<br>▪ The display board is Water and dustproof.<br>▪ Letter clear visible distance up to 100 meters in Day & Night.<br>▪ Character Size programmable 80MM (Min).<br>▪ Display board ambient temp is 55 °C<br>▪ Provision of computer<br>▪ Supply of Proper Earthing<br>▪ Supply of Internet/LAN Connection<br><br>**SCOPE OF CLIENT**<br>▪ **Supply of Stabilized Power**<br>  |

| S. No. | Items |
|---|---|
| | |
| | **CAAQM STATION – HOUSING/CONTAINER**<br>Housing/Container for Continuous Ambient Air Quality Monitoring (CAAQM) Station including sampling system, internal fittings, instrument racks, electrical and gas line fittings, tools (electrical & mechanical), etc.<br>**Dimensions:**<br>▪ Inside length: 4200 mm<br>▪ Inside width: 3500 mm<br>▪ Inside height: 2500 mm |
| | **Local Data Logger**<br>PC based Data Acquisition System with SAM WI License Software suitable for Storing (1 year), Logging, Reporting, Printing data from above offered Analysers. PC with specifications as under: i7 Processor, 8GB RAM, 1TB HDD, CD/DVD Combo Drive, 21" TFT Monitor, USB, LAN ports, Standard WINDOWS Operating System, standard keyboard, mouse with pad & Color Laser printer.<br>(All the Software upgradation related to Data Acquisition & Data Storage) |
| | **Online Data transmission to SPCB & CPCB server (minimum 92% data availability)**<br>Data Transfer for parameters- $PM_{10}$, $PM_{2.5}$, $SO_2$, $NO_x$, CO, $NH_3$, $O_3$, VOCs |
| | ▪ Installation & Commissioning of all the equipment, filter paper and 100% connectivity<br>▪ Maintenance of all the equipment, Calibration of the analysers certificate should be maintained as per norms<br>▪ Fooding, Lodging & Transportation will be in Supplier Scope<br>▪ Service Engineer Visit should be on Emergency basis whenever required |
| 2 | **VOC:**<br>**EXPEC-2000-210 BTEX series VOC analyzer adopts Chromatographic Separation Technology; it is mainly used to monitor the ambient air of benzene series and other characteristic factors in the air.**<br>▪ Measurement Components: BTEX<br>▪ Principles: Flame Ionization Detector (FID)<br>▪ Range: (0~1) mg/m³(300nmol/mol), (The range can be further expanded according to demand) (Includes Propane and Butane)<br>▪ Detection Limit: Benzene 0.7μg/m³(0.2nmol/mol) Others (0.4~1) μg/m³<br>▪ Repeatability: RSD ≤3%, 2nmol/mol (Benzene)<br>▪ Response Time: <60s<br>▪ Gas Source Requirement: Carrier gas: high purity nitrogen or zero level air (>99.999%)<br>▪ Gas: high purity hydrogen (>99.999%)<br>▪ Combustion-supporting gas: zero-level air<br>▪ Digital Communication: 4~20mA, RS485, RS232, Ethernet<br>▪ Power Supply: ＜240VA, 220V AC/50Hz<br>▪ **Humidity:**<br>▪ Range - 0 to 100%;<br>▪ Accuracy: ±3% RH<br>▪ **Air Temperature:**<br>▪ Range: -40°F to +158°F (-40°C to +70°C)<br>▪ Accuracy: ±0.3%<br>▪ **Environmental:**<br>▪ Operating Temperature 5~40°C<br>▪ Ambient Humidity 0~90% RH, non-condensing<br>▪ Ambient Pressure 86~116 kPa<br>▪ **Physical and Electrical:**<br>▪ Power Supply 220±10% VAC, 50±1 Hz |

| S. No. | Items |
|---|---|
| | ▪ Power Consumption 350W with pump & heater<br>▪ **Communication:**<br>▪ Communication Port RS232, RS485<br>▪ Digital I/O Two-digit input, four-digit output<br>▪ Analog I/O Two (4~20) mA, 1~5V/0~5V output<br>▪ Two (4~20) mA input<br>▪ Another Optional serial printer and GPRS |
| 3 | Civil Work for the porta cabin installation of CAAQMS |
| 4 | Online UPS 10 KVA, capacity (Three Phase I/P and Single-Phase O/P, with 01 hrs. backup) (for Air Conditioner) |
| 5 | Online UPS 10 KVA, capacity (Three Phase I/P and Single-Phase O/P, with 01 hrs. backup) (for Air Conditioner) |
| 6 | Online UPS 5 kVA, capacity (Single Phase I/P & Single-phase O/P, with 02 hrs. backup) (01 for Analysers & 01 for Server at Central Station) |
| 7 | Split Air Conditioner (2 Ton Capacity) |
| 8 | Split Air Conditioner (1 Ton Capacity) |

**Annexure II : BUDGET ESTIMATE**

# Cost Break up for Monitoring of Ambient Air Quality in the Port Area of Deendayal Port Authority through Continuous Ambient Air Quality Monitoring System (CAAQMS) for a period of 3 years :

| S. No. | Items | Rate [INR] per item | Nos | Amount [INR] |
|---|---|---|---|---|
| 1. | Continuous Ambient Air Quality Monitoring Stations (CAAQMS) with Display boards<br>Parameter: PM10, PM2.5, SO2, NOX, CO, NH3, O3 | 2,31,24,802.00 | 2 | 4,62,49,604.00 |
| | VOC analyzer :<br>EXPEC-2000-210 BTEX series VOC analyzer adopts Chromatographic Separation Technology; it is mainly used to monitor the ambient air of benzene series and other characteristic factors in the air. | 1,07,70,625.00 | 2 | 2,15,41,250.00 |
| 2. | Civil Work for the porta cabin installation of CAAQMS | 1,50,000.00 | 2 | 3,00,000.00 |
| 3. | Online UPS 10 KVA, capacity (Three Phase I/P and Single-Phase O/P, with 01 hrs. backup) (for Air Conditioner) | 95,000.00 | 2 | 1,90,000.00 |
| 4. | Online UPS 10 KVA, capacity (Three Phase I/P and Single-Phase O/P, with 01 hrs. backup) (for Air Conditioner) | 95,000.00 | 2 | 1,90,000.00 |
| 5. | Online UPS 5 kVA, capacity (Single Phase I/P & Single-phase O/P, with 02 hrs. backup) (01 for Analysers& 01 for Server at Central Station) | 65,000.00 | 2 | 1,30,000.00 |
| 6. | Split Air Conditioner (2 Ton Capacity) | 45,000.00 | 2 | 90,000.00 |
| 7. | Split Air Conditioner (1 Ton Capacity) | 36,000.00 | 2 | 72,000.00 |
| 8. | One-time Installation charges | 49,000.00 | 2 | 98,000.00 |
| 9. | Engineer Salary (x 2 Nos.) | | | 50,77,000.00 |
| 10. | Spare Part/ Replacement | | | 70,09,538.00 |
| 11. | CPCB/ SPCB Data sever Connectivity | | | 5,67,283.00 |
| 12. | Inter net fee | | | 2,52,126.00 |
| 13. | A/C and Battery UPS | | | 11,68,055.00 |
| 14. | Calibration | | | 16,51,860.00 |
| 15. | Cylinders refill | | | 35,04,568.00 |
| 16. | Filter Paper Rolls 30 mm | | | 46,72,220.00 |
| **Grand Total** | | | | **9,27,63,504.00** |