

**BIDDING DOCUMENT FOR DISTRIBUTION SYSTEM FOR 24*7 WATER SUPPLY
SCHEME**

FOR MOR RAIPUR CITY CENTER AREA



REQUEST FOR PROPOSAL

For

Work for 24 x 7 Water Supply System under Smart City Mission in Mor Raipur City Centre Area of Raipur Municipal Corporation including Refurbishment of existing network in ABD and Outer Area including all work of Mechanical, Electrical, SCADA, Household Connections, Consumer Water Meter Fittings work with three months trial run and post completion Management of 24 x 7 Water Supply in Smart City for a period of 5 years including 5 years defect liability period

on

DESIGN, BUILD AND OPERATE BASIS

VOLUME – II B

Operation and Maintenance conditions

**GENERAL INSTRUCTIONS FOR THE
TENDERERS AND SCOPE OF WORK
CONDITIONS OF
CONTRACT
FOR OPERATION AND
MAINTENANCE**

**I - ADMINISTRATIVE
PROVISIONS**

The following additional clauses shall apply only during the Operation and Maintenance period.

1. DEFINITIONS AND INTERPRETATION

1.1. Definitions

In these Conditions of Contract ("Conditions") the following words and expressions shall have the meanings hereby assigned to them, except where the context otherwise requires.

1. "Applicable Law" means all national (or State) legislation, statutes, ordinances and other Laws and regulations and by laws of any legally constituted public authority.
2. "Contract" means the contract agreement, these conditions, the employer's requirements, the Tender and the further documents (if any) which are listed in the contract agreement.
3. "Contractor's Equipment" shall mean all equipment, instruments, tools, machinery and other appliances and things of the Contractor at the Site required for the fulfilment of the obligations of the Contractor under these Conditions.
4. "Contractor's Personnel" means the contractor's representative and all personal whom the contractor utilizes on site, who may include the staff, labour, & other employees of the contractor and of each sub-contractor & any other personnel assisting the contractor in the execution of the work.
5. "Dispute" shall have the meaning given to it in Clause 15 of these Conditions.
6. "Employer's Risk" shall include the risks mentioned as employers risks in the General Conditions and shall include any negligence or misconduct on the part of the Employer and also any event of Force Majeure as provided in Clause 12 of these Conditions.
7. "Employer's Personnel" means the Employer's Representative, the assistants and all other staff, labour and other employees of the employer and of the Employer's representative, and any other personnel notified to the contractor, by the employer or the employer's representative, as employer's personnel.
8. "Employer's Requirements" means the document entitled employer's requirements, as included in the contract, and any additions and modifications to such document in accordance with the contract. Such document specifies the purpose, scope, and / or design and / or other technical criteria, for the works.

9. "Facility" shall mean the entire system to be designed and constructed including the equipments, buildings, structures, ramps, pits, pipes, fencing, lighting, testing and analysis equipment, tools, computers, software programs, safety equipment, plant machinery, supplies, instruments and inventory incorporated therein, as well as all open areas within the Site, and including any additions, modifications, alterations, replacement and repairs as may be made thereto from time to time.
10. "Force Majeure" shall mean those events mentioned in Clause 12 of these Conditions.
11. "General Conditions" shall mean the conditions of tender issued by RSCL for O&M works of projects.
12. "Good Operating Practices" means the standards, practices, methods and procedures as practiced internationally and in India conforming to all Applicable Law and that degree of skill, diligence, prudence and foresight which would reasonably be expected from a skilled and experienced contractor engaged in India in the same type of undertaking under the same or similar circumstances as the Contractor pursuant to these Conditions.
13. "O & M Contract" shall mean the contract or part of any other contract having scope of Operation and Maintenance of facilities entered in between the Employer and the Contractor pursuant to these Conditions.
14. "O & M Completion Certificate" shall mean the certificate to be issued by the Employer on the completion of all the obligations of the Contractor under these Conditions.
15. "O&M Services" shall mean those services specified in Schedule [1] which the Contractor is obligated to perform under these Conditions.
16. "O & M Standard" shall mean the standards:
 - a) As set forth in the O & M Manual as accepted by the Employer, b) As required pursuant to Applicable Law;
 - c) Set out in the Performance Guarantee; and
 - d) For the functioning of the Facility as required in accordance with the Contract including such requirements as may be mentioned in the Employer's Requirements.
 - e) For the functioning of the Facilities set forth in these Conditions.
17. "O & M Manual" shall have the meaning for manual of Operation and Maintenance.
18. "O & M Period" shall have the meaning set out in Clause.
19. "O & M Price" shall mean the amount stated in Price Schedule.
20. "Party" shall mean each of the Contractor and the Employer and Parties shall mean both of them together.
21. "Performance Guarantees shall mean the guarantee that the Facility shall be operated continually satisfying the minimum performance parameters set out in Schedule.
22. "Successor Contractor" shall have the meaning given to it in Clause.

23. "Site" shall mean that specific area specified in the bid documents & shall include any other places as may be specifically designed by the employer from the time to time as forming part of the site.
24. "Taking Over Date" shall mean the date of issue of the taking over certificate at the end of the Operation and Maintenance period.
25. "Taking Over Certificate" means the certificate to be issued by RSCL to the contractor at the successful completion of the Operation and Maintenance period.
26. "Termination" shall have the meaning given to it in Clause [13] of these Conditions.

1.2. Interpretation

In these Conditions, except where the context requires otherwise. a) words indicating one gender include all genders,

- b) words indicating the singular also include the plural and words indicating the plural also include the singular,
- c) Provisions including the word 'agree', 'agreed' or 'agreement' require the agreement to be recorded in writing;
- d) 'written' or 'in writing' means hand-written, type-written, printed or electronically made, and resulting in a permanent record;
- e) The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions;
- f) The words 'include,' 'includes' and 'including' are not limiting;
- g) As used in these Conditions, all defined terms include the plural as well as the singular;
- h) Any agreement, document or drawing defined or referred to in these Conditions shall include amendment, modification and supplement thereto and waiver thereof as may become effective from time to time, except where otherwise indicated;
- i) Any reference to any Clause or Sub-Clause shall unless specified otherwise mean a Clause or Sub- Clause of these Conditions; and
- j) Any rights of the Employer to make any inspections or to review any document shall not create any obligation on the Employer to conduct such inspections or reviews to detect any errors, inaccuracies, ambiguities or other potential problems. No inspection or approval by or on behalf of the Employer shall operate as a waiver of any provision of these Conditions, any obligation of Contractor under these Conditions, or any of the rights of the Employer hereunder, except as expressly agreed in writing by the Employer.

1.3. Commencement and Duration of O & M part of contract

- 1.3.1. "The O & M Period" shall commence from the date of issue of Certificate of successful commissioning of the facilities and shall continue for a period of 5 years there from. The Employer may propose an extension to the O & M Period by giving 90 days prior notice to the Contractor.

- 1.3.2. The O & M period may then be extended subject to mutual consent and on terms and conditions agreed to by both the Parties.

1.4. Applicable Law

- 1.4.1. The Contractor shall comply with all Applicable Law relevant to the Contractor's Personnel, including Applicable Law relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.
- 1.4.2. The Contractor shall require his employees to obey all Applicable Laws, including those concerning safety at work.
- 1.4.3. In the event Employer becomes liable to any Employers Personnel, any Governmental authority (including but not limited to any fines or penalties levied by or payable to such authority) or to any other third party under the provisions of any Applicable Law resulting from Contractor's failure to comply with such Applicable Law, Contractor shall reimburse Employer for all payments required to be made by Employer to such Employers Personnel, governmental authority or any other third party, plus the actual expenses that Employer may incur in investigating, settling or defending any litigation or threatened litigation..

1.5. Assignment

The Contractor will not be entitled to sub-contract any part of his obligation under these Conditions to any third party without prior approval of the Employer. Neither party may assign their rights and obligations under these Conditions without the consent of the other Party. However the Employer may assign any rights under these Conditions to any financial institution from whom any financial assistance/credit facilities have been availed by the Employer.

1.6. Safety

1.6.1. Emergencies

In the event of an emergency endangering any life or property, the Contractor shall immediately take such action as may be necessary to prevent, avoid or mitigate injury, damage or loss and shall, as soon as possible, report any such incidents, including his response thereto to the Employer.

1.6.2. Contractor Action

The Contractor shall utilize his personnel to take such action as may be necessary in accordance with Good Operating Practices in the event of an emergency. Notwithstanding anything to the contrary herein, the Contractor may incur any expenditure or take any other operating actions as the Contractor deems to be necessary (in accordance with Good operating practices) in the case of emergencies affecting the Facilities or the operation of the Facilities to counteract the effects where the Contractor considers immediate action is required to safeguard lives or property. In case such emergency was caused due to an Employer's Risk then the Employer shall reimburse such reasonable expenses that might have been incurred by the Contractor in relation thereto acting in accordance with Good Industry Practices.

1.7. Notification

- 1.7.1. In the event of an emergency the Contractor shall forthwith notify the Employer of the emergency, the expenditures made and the operating actions taken.
- 1.7.2. If the Employer considers that an emergency has arisen in relation to the Facilities, the Employer may give written notice to the Contractor specifying the nature of the emergency which it has identified and the manner in which it requests such emergency to be rectified. The Contractor shall rectify such defect with all due diligence. If such emergency is on account of an Employer's Risk then the Contractor shall be reimbursed all costs and expenses reasonably incurred by the Contractor for any actions taken by it pursuant to such direction or notice. If the Contractor fails to comply with such direction or notice promptly, the Employer shall be entitled to procure that it or any third party takes such actions as may be necessary to remedy such breach by the Contractor. Any costs that may be incurred by the Employer in this regard shall be reimbursed to him in full by the Contractor and shall be a debt due to him from the Contractor.

1.8. Inspections

Notwithstanding any provisions of these Conditions and without prejudice to any of the other rights vested by the Contractor under these Conditions, The Employer shall have the right at all times to inspect the Facilities and the Contractor shall co-operate in every manner with the representatives of the Employer inspecting the Facilities and allow them access to every part of the Facilities and produce any records requested.

2. OPERATION OF THE FACILITIES

2.1. Operation of the Facilities

- 2.1.1. On Employer appointing the Contractor to perform and undertake the O & M Services and all other obligations set out and in accordance with these Conditions during the O&M Period. The Contractor shall accept the appointment and acknowledges a duty to perform such obligations.
- 2.1.2. The Contractor shall be in complete charge of and have custody and control over and responsibility for the Facilities, and the Contractor shall perform or cause to be performed on behalf of the Employer all O & M Services for the Facilities and shall supply or cause to be supplied all materials required there for in accordance with the O & M Standard.
- 2.1.3. The Contractor shall also acknowledge that the Employer and the Employer's Personnel and other contractors may be carrying out work at the Facilities and shall endeavour to fully co-operate and work in a manner so as not to cause any obstruction or hindrance to them.
- 2.1.4. The Contractor shall remain an independent Contractor and not an agent, employee and nothing in these Conditions or the O & M part of contract shall be deemed to create a Joint Venture between the Employer and the Contractor.

2.2. Responsibility of the Contractor

The Contractor shall be solely and exclusively responsible for:

- 2.2.1. Obtaining all necessary permits and consents required by Applicable Law or any Governmental authority for the Contractor to carry out the O & M Services;
- 2.2.2. The procurement of all goods and services necessary to ensure compliance with his obligations under these Conditions,
- 2.2.3. Making available suitably qualified and trained personnel to perform the O & M Services;

- 2.2.4. Perform the O & M Services in accordance with the O & M Manuals prepared by the contractor and as approved by Raipur Smart City Limited., and maintain the Facilities in good repair and condition and ensure that the Facilities are well and suitably maintained at all times in accordance with Good Operating Practices and in accordance with these Conditions;
- 2.2.5. Procuring and administering all chemicals and other consumables, tools, equipment, spare parts and other materials (which shall be of good quality and unused) necessary for the operation and maintenance of the Facilities;
- 2.2.6. Maintaining a system of records to identify all inventories related to the Facilities and preparing and providing to the Employer a complete accounting of such inventory for every fiscal quarter;
- 2.2.7. Arranging for the testing and recalibration of all scales, meters, gauges and other measuring devices at the Facilities on an annual basis and maintain the Calibration certificates as records unless otherwise stated in the O & M part of contract; and
- 2.2.8. for providing any and all relevant information required by the Employer.

3. DUTY OF CARE BY THE OPERATOR AND PERFORMANCE STANDARDS

3.1. Duty of Care

- 3.1.1. The Contractor shall manage, operate and maintain the Facilities in accordance with Good Operating Practices and in accordance with the O & M Standard so that the Facilities are capable of meeting the outputs and specifications set out in the Contract.
- 3.1.2. The Contractor shall take full responsibility for the care of the Facility from the date of start of O&M period, till the end of the O & M Period.
- 3.1.3. If any loss or damage happens to the Facility, during the O & M Period due to any breach by the Contractor of any of his obligations under these Conditions including any wilful misconduct, negligence and non-conformity with Good Operating Practices then the Contractor shall, at his own cost, rectify such loss or damage so that the Facility conforms in every respect with the provisions of these Conditions.
- 3.1.4. The Employer shall be liable only in case of any damage caused due to any Employer's Risk.

4. OBLIGATIONS AND RESPONSIBILITIES OF THE EMPLOYER

The Employer shall employ the Contractor to provide the O & M Services and shall:

- 4.1. following the issue of Certificate of Successful commissioning, hand- over the custody of the Facilities to the Contractor for its intended use during the O & M Period; and
- 4.2. Pay the Contractor all sums required to be paid in accordance with the terms of these Conditions. Notwithstanding anything else herein contained the Employer may set off any sums owed by the Contractor under the Contract for money owed to the Contractor by the Employer under these Conditions or as a debt due from the Contractor.

5. REPRESENTATIONS AND WARRANTIES OF THE CONTRACTOR

The Contractor hereby represents for the benefit of the Employer as follows:

5.1. Performance of O & M Services

- 5.1.1. that the Contractor has the required skills and capability to perform, and shall diligently perform,

the O&M Services in a high quality, timely and professional manner utilizing sound engineering principles and project management procedures in accordance with Good Industry Practices;

- 5.1.2. that the Contractor shall perform his obligations hereunder in accordance with the requirements of these Conditions and shall meet the Performance Guarantee; and
- 5.1.3. that it shall not use any spare parts or material that are not new and which shall be of a quality that is in accordance with Good Industry Practices.

5.2. Knowledge of Adverse Information

- 5.2.1. As of the Commencement Date, Contractor is not aware of any facts, conditions or events which would affect the ability of Contractor to provide the O & M Services in accordance with these Conditions.
- 5.2.2. Contractor has familiarized himself with the nature and extent of the O & M Services required to be provided under these Conditions and with all other requirements under Applicable Law

5.3. Organization, Standing and Qualification

Contractor is validly existing and in good standing under Applicable Law and has all necessary power and authority to carry on its business as presently conducted and to perform its obligations under these Conditions. Contractor is, or will be prior to the date on which the O & M Services are to be commenced duly qualified or licensed to provide these services.

5.4. Due Authorization

- 5.4.1. Each of the execution, delivery and performance by the Contractor of all contracts entered into pursuant to these Conditions shall be duly authorized by all necessary action on the part of Contractor.
- 5.4.2. Neither the execution and delivery by Contractor of the O&M Contract, nor the consummation by Contractor of any of the transactions contemplated hereby, requires the consent or approval of, the giving of notice to, the registration with, the recording or filing of any document with, or the taking of any other action in respect of, any Governmental authority or agency, except:
 - a) Such as have been duly obtained, given, registered, recorded, filed or taken and are in full force and effect or are not yet required; and
 - b) Filings and recordings expressly required pursuant to the O & M part of contract. Contractor holds, or will obtain, any and all licenses, permits and approvals on a timely basis. Contractor has no reason to believe that any of those not yet required will not be readily obtainable or done in the ordinary course of business upon due application there for

5.5. Litigation

In the aggregate, there are no pending or, to the knowledge of Contractor, threatened actions, investigations or proceedings before any court, Governmental authority or arbitrator, which would have material adverse effect on the ability of

Contractor to perform its obligations under these Conditions

6. INSURANCE

6.1. General Conditions

- 6.1.1. Without limiting the Contractor's obligations, responsibilities and liabilities under these Conditions, the Contractor shall be required to provide and maintain in full force and effect, at his expense the insurance coverage's specified in Schedule [5] throughout for the O&M Period. Any deductibles on the insurance shall be to the account of the Contractor.
- 6.1.2. Maintenance of insurance shall not relieve the obligation of the Contractor to remedy or repair any damage to the Facility in case such damage is caused due to the fraud, negligence, wilful misconduct or breach of any obligations of the Contractor under these Conditions (including failure to perform the O & M Services in accordance with Good Operating Practices) at the Contractors cost promptly and regardless of the extent of settlement of claims by the underwriters or the time taken for settlement of claims. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor to the extent any such liability or damage is caused due any breach of any obligations of these Conditions (including failure of the Contractor to perform the O & M Services in accordance with the Good Operating Practices) by the Contractor or any wilful misconduct, negligence on the part of the Contractor.
- 6.1.3. The terms of the Insurance shall be approved by the Employer.
- 6.1.4. The Contractor within the 14 days from work order shall submit to the Employer evidence that the insurances required under Schedule [5] of these Conditions has been obtained as approved by the Employer.
- 6.1.5. The Contractor shall not make any alteration to the terms of any insurance without the prior approval of the Employer. If the Contractor fails to effect and keep in force any of the insurance it is required to effect and maintain under these Conditions, or fails to provide satisfactory evidence and copies of policies in accordance with this Sub- Clause, the Employer may effect insurance for the relevant coverage and pay the premiums due and may claim the same from the Contractor.

The insurances shall:

- a) shall be in the name of the Employer and the Employer shall be the sole loss payee,
 - b) shall be extended to cover liability for all loss and damage to the Employer's property arising out of the Contractor's performance of his obligations or failure to do so under these Conditions and any fraud, gross negligence or wilful misconduct on his part, and
- 6.1.6. If the Contractor fails to effect and keep in force insurance which is required to be maintained under these Conditions, and the Employer neither approves the omission nor effects insurance for the coverage relevant to this default, any moneys which would have been recoverable pursuant to such insurance shall be paid by the Contractor.
- 6.1.7. The insurance shall cover all the electrical items, mechanical items, Instrumentation & automation items, all civil works, Storage structures etc. The insurance for the work of transmission main is optional. Since the responsibility of safety of all work lies with contractor, contractor may prefer to take the insurance of optional item also if deemed fit.

7. INDEMNIFICATION**7.1. Loss or Damage to Facilities**

The Contractor shall at its own expense make good any physical loss or damage to the Facilities occasioned by it in the course of the performance of its obligations under these Conditions if and to the extent such loss or damage is caused by the negligence, wilful default or breach of statutory duty or failure to follow Good Industry Practices by the Contractor

7.2. Other Loss or Damage

7.2.1. Except as otherwise stated in this Clause 7.2 or covered by Clause 7.3, the Contractor shall indemnify, defend and hold harmless the Employer against any and all liabilities, losses, damages and claims of whatever kind and nature, including all related costs and expenses incurred in connection therewith, in respect of personal injury to or death of third parties or any employee of the Employer or the in respect of loss of or damage to any third party property or property belonging to employee of the Employer by:

- i) any breach by the Contractor of its obligations hereunder and
- ii) any negligence, wilful default or breach of statutory duty on the part of Contractor

7.2.2. Except as otherwise stated in this Clause 7.2 or covered by Clause 7.3, the Employer shall indemnify, defend and hold harmless the Contractor for all claims and losses of whatever kind and nature, including all related costs and expenses incurred in connection therewith, in respect of personal injury to or death of third parties or of any person employed by the Contractor in respect of loss of or damage to any third party property or property belonging to any person employed by the Contractor to the extent that the same arises out of any Employer's Risk

7.3. Accidents or Injury to Workmen

7.3.1. The Contractor shall indemnify, defend and hold harmless the Employer or any Employer's Personnel against any and all claims for loss, damage and expense of whatever kind and nature (including all related costs and expenses) in respect of the death of or injury to any person employed by the Contractor in connection with the performance of the O&M Services and obligations hereunder except to the extent that such death or injury is caused by an Employer's Risk.

7.3.2. Neither Party shall be liable to the other Party for loss of use of the Facilities, loss of profit, loss of any contract or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with the Contract, other than under Sub- Clause [13] and this Clause [7].

7.3.3. The total liability of the Contractor to the Employer, under or in connection with these Conditions other than as provided in Clause 7.3.2 & 14 shall not exceed the sum of the O & M Price and the Delay Damages payable under the these Conditions.

7.3.4. This Sub- Clause shall not limit liability of the Contractor in case of fraud wilful default, gross negligence and liabilities arising due to breach of Applicable Law and the liability under any

other Clause of these Conditions that might impose a greater liability on the Contractor

8. INSPECTION

8.1. General Provisions

- 8.1.1. The Employer may check the operation of the Facilities or designate an organization of his choice to carry out inspections regularly. The Employer or the organization appointed by him shall check that the Contractor is performing the tasks for which he is responsible with due diligence. The Contractor shall at his cost provide all the assistance the Employer requires to complete these inspections
- 8.1.2. Before any inspection, the Employer shall give prior notice to the Contractor, indicating the name(s) of the person(s) empowered to carry out such inspection in the name of the Employer

8.2. Measurement and Analysis

- 8.2.1. The Employer has the right to perform any analysis or inspection he deems necessary. Before any inspection, the Employer shall give a prior written notice to the Contractor.
- 8.2.2. The water quantity, for any such test, analysis or inspection shall be measured by flow- meters installed at the Facility, which are acceptable to the Employer, provided they are maintained and calibrated as per requirements of this contract.
- 8.2.3. Other parameters like Pressure temperature and speed shall be measured by certified calibrated meters provided by the contractor and, which are acceptable to the Employer
- 8.2.4. The flow meters shall be inspected and certified upon their availability by the Employer and the Contractor. Thereafter, the said meters shall be tested and their accuracy verified once in every six (6) months by the Contractor. After each inspection, the flow- meters shall both be sealed in the presence of representatives of the Employer and the Contractor in a manner that is adequate to prevent the tampering of said meters by any person.
- 8.2.5. The Contractor shall be responsible for the security and protection of flow- meters at the designated point. If there is any malfunctioning of the meters, it should be repaired at the Contractor's cost, as per manufacturer's technical recommendations.

8.3. Plant Complex Visits

- 8.3.1. At the end of each month, or at the initiative of the Employer, a visit shall be organized so that both Parties can check the condition of the installations at the Facilities.
- 8.3.2. A report shall be drawn up to record the opinions of both Parties. The Employer reserves the right to call in equipment manufacturers or specialized technicians for these visits.
- 8.3.3. These visits shall provide an opportunity for examining maintenance programs and operating procedures and improvements requiring additional investments.
- 8.3.4. Any test, visit, analysis or inspection and any approval thereof shall not in any way alter/modify or dilute the responsibility of the Contractor to fulfil his obligations under these Conditions.

9. RECORDS AND REPORTS

9.1. Operating Records and Data

The Contractor shall:

- 9.1.1. Prepare and maintain, on a current basis and in accordance with generally accepted Indian accounting principles, proper, accurate and complete books and records and accounts of all transactions related to the Facilities including a log book at the site which shall contain inter alia the following details
 - a) Reading from the different meters, indicators and recorders (including but not limited to consumption of energy, volume of water conveyed, operating times of the different items of equipment etc which may be updated on a daily basis); and
 - b) Report of visits by persons other than those of the Employer and the Contractor to the Facility
- 9.1.2. Establish and maintain a weekly and monthly reporting system to provide storage and ready retrieval of operating data relating to the Facilities, including such information necessary to verify calculations made pursuant to these Conditions or the O & M part of contract and provide the same to the Employer on a monthly basis
- 9.1.3. Provide to the Employer or such persons notified by it access to the Facilities and to data in relation to the Facilities, at all times.
- 9.1.4. At the Employer's request, at the end of every month, make a copy of the system performance data for that month as recorded by the instrument and control system on CDs / DVDs and printed document there from and deliver the same to the Employer with one week.
- 9.1.5. Provide support to the Employer to meet the data requirements of all competent authorities and under Applicable Law

9.2. Reports

- 9.2.1. The Contractor shall submit the reports mentioned in Schedule [4] at times indicated in the said Schedule.
- 9.2.2. The Contractor shall also provide the Employer with such reports as are required by the Employer and shall comply with all reporting requirements prescribed under these Conditions and the O & M part of contract. In addition the Contractor shall submit the following information to the Employer.
- 9.2.3. Upon obtaining knowledge thereof, shall submit prompt written notice of:
 - i) Any litigation or material claims, disputes or actions, threatened or filed, concerning the Facilities or the services to be performed hereunder;
 - ii) Any refusal or threatened refusal to grant, renew or extend or any action pending or threatened that might affect the granting, renewal or extension of any clearance, permit or license;
 - iii) Notwithstanding the aforementioned materiality, all penalties or notices of violation issued by any authority under Applicable Law;
- 9.3. The Contractor shall promptly submit to the Employer any material information concerning new or significant aspects of the operations of the Facilities, any material complaint about the Facilities from any person or entity with a bonafide complaint who complains directly to the Contractor and, upon Employer's request, shall promptly submit any other information concerning the Facilities or the services performed by the Contractor.

- 9.3.1. The Employer may from time to time specify any changes to be made to any of the format of any report or plan required hereunder.
- 9.3.2. If the Contractor is required by any Applicable Law to produce any projection, report or any other document relating to the provision of the O & M Services of the Facilities or the Employer requests a report regarding other information relating to the Facilities, the Contractor shall prepare a draft of such document at the request of the Employer, as soon as practicable and in any event within any time limit prescribed by Applicable Law.
- 9.3.3. If the Contractor is required by any Applicable Law to produce any projection, report or any other document, it shall prepare such report diligently and submit the same to the Employer as soon as possible thereafter. Wherever practicable, such reports shall be submitted to the Employer for review seven days before the same is issued. The Contractor shall take into account any comments or revisions proposed by the Employer thereon.

9.4. Procurement

- 9.4.1. The Contractor is responsible for the procurement of all goods and services necessary to ensure compliance with its obligations under these Conditions.
- 9.4.2. The Contractor shall procure and keep in readiness spare parts required for urgent repairs, materials, supplies and other consumable items, and maintains an adequate inventory thereof Facilities.
- 9.4.3. The Contractor shall submit a report for every fiscal quarter to the Employer reflecting the status of the inventory for spare parts, materials and other consumable items.
- 9.4.4. Deleted

10. PAYMENT

- 10.1. The Contractor's request(s) for payment shall be made in writing, accompanied by invoice(s) along with presence sheet of personnel of particular month duly certified by our Engineer on site, claims etc. as appreciate.
- 10.2. Payment shall be made by **Raipur Smart City Limited** as per prevailing procedure subsequent to the submission of such invoice(s) / claim(s) by the Contractor.
- 10.3. **Raipur Smart City Limited** will deduct from the amount payable to the Contractor, any amount paid by Raipur Smart City Limited on behalf of the Contractor (e.g. telephone bills, C S P D C L penalty for Power factor or any other dues and liquidated damages as per clause and, as per tender terms and condition. Any telephone bills submitted by telephone department, the payment of telephone bills will be made by Contractor.) Raipur Smart City Limited will provide telephone facilities on site.
- 10.4. The contractor will get O & M work payment only for the deployed staff and insurances During the period of defect liability of works. The base for payment will be approved estimated rate

11. LIQUIDATED DAMAGES

11.1. For Quantity of water reaching entry of Sump/WTP

DELETED

11.2. Leakages in pipeline.

The contractor shall ensure that leakages from Distribution Network, faulty air release valves, scour valves, joints, damage to pipeline are urgently attended. (Contractor's obligation for maintenance shall be only for components constructed/ installed in this project.)

11.3. Deleted

11.4. For Higher power consumption, due to lower pump efficiency.-DELETED

1.5. For delay in Restoration

The Restoration Period shall be subject to the following liquidated damages & penalties for its failure to carry out.

Sr. No.	Type of work Restoration	Period
1	Replacement of sluice valve/Sluice Gate	1 Day
2	Minor Breakdown /Repairing	12 Hrs
3	Replacement of M.S./ DI/HDPE /PVC pipe of all diameter	2 Days
4	Replacement of Valves / Specials	1 Days
5	Pressure Gauge / Water meter for all dia and all types of meter	1 Days

In case of non compliance to the restoration period as above, the recovery / deduction at the rate of Rs. 250/- per Hour shall be made from the payment due for first two hours delayed and their after Rs.5000/- per hours shall be made from the payment due

11.6. For the non-compliance of employment of key personnel

If the successful bidder does not recruit/ depute key personnel identified as per schedule, then liquidated damages will be deducted at double the rate of applicable scale of RSCL or the rate quoted, whichever is higher.

12. FORCE MAJEURE

In this Clause, 'Force Majeure' shall mean an event or circumstance, which materially and adversely affects the ability of the affected Party to perform its obligations.

- i) which is beyond a Party's control,
- ii) which such Party could not reasonably have provided against before entering into the O & M part of contract;
- iii) which, having arisen, such Party could not reasonably have avoided or overcome, and
- iv) which is not attributable to the other Party

Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:

- v) war, hostilities (whether war be declared or not), invasion, act of foreign enemies)

- vi) rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war,
- vii) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel and other employees of the Contractor;
- viii) As result of war, explosive materials, harmful radiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio- activity, and
- ix) Natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity. Heavy rainfall, cyclone, strike and lockout.

12.1. Notice of Force Majeure

12.1.1. If a Party is or will be prevented from performing any of its obligations under these Conditions by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 7 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure.

12.1.2. The Party shall, having given notice, be excused performance of such obligations for so long as such Force Majeure prevents it from performing them.

12.1.3. Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.

12.2. Duty to Minimize Delay

12.2.1. Each Party shall at all times use all reasonable endeavours to minimize any delay in the performance of the Contract as a result of Force Majeure.

12.2.2. A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.

12.2.3. Notwithstanding anything else herein contained the Employer may terminate the O & M part of contract if the Force Majeure event continues for more than a period of 90 days.

13. TERMINATION

Termination shall mean the termination of the O&M part of Contract by the Employer or the Contractor in accordance with Clause 13.1 or 13.2 respectively.

13.1. Termination by Employer

The Employer may terminate the O & M part of Contract by notice on:

- i) the dissolution or insolvency of the Contractor, pursuant to an order of a court or the bankruptcy of the Contractor; or;
- ii) if 45 days having passed since the Contractor is in material breach of his obligations under these Conditions, or
- iii) if the Contractor ceases to carry on its business; or
- iv) abandonment;
- v) the subsisting Force Majeure event as provided in Clause 12.2.3 above.

13.2. Payments upon Termination

- 13.2.1. Upon termination or as soon as practicable thereafter an account shall be taken of the net amount owing from the Employer to the Contractor or from the Contractor to the Employer (as the case may be). The Employer shall forthwith pay to the Contractor (if the balance is due to the Contractor) all moneys due to the Contractor. If the account shows a balance due to the Employer from the Contractor, the Contractor shall forthwith pay any such balance to the Employer;
- 13.2.2. As part of the calculation made pursuant to clause 13.1 of the amounts due to the Contractor on Termination, the following amount shall be taken into account.
- 13.2.2.1. the portion of the O & M Price outstanding and payable by the Employer for the period prior to the Termination;
 - 13.2.2.2. any Delay Damages or indemnities for which the Contractor would be liable under these Conditions upto the date of Termination;
 - 13.2.2.3. any other amounts due to the Employer under these Conditions by the Employer including return of any amount of the O & M Price paid in advance by the Employer to the Contractor under Clause [10].
- 13.3. In case of a Termination by the Employer in accordance with Clause 13.1 the Employer may recover other than the amounts due to him under Clause 13.2.2.2, any costs incurred by him in finding any replacement contractor

13.4. Successor to the Contractor Upon Termination:

- 13.4.1. The Contractor shall use all endeavours to facilitate the appointment and commencement of duties of any person to be appointed by the Employer to operate and maintain the facilities (the "Successor Contractor") so as not to disrupt the normal Operation & Maintenance of the Facilities and shall provide full access to the Facilities and to all relevant information, data and records relating thereto by the Successor Contractor and its representatives and accede to all reasonable requests made by such persons in connection with preparing for taking over the Operation & Maintenance of the Facilities;
- 13.4.2. Promptly after Termination, the Contractor, shall deliver to (and shall, with effect from Termination, hold on trust for and to the order of) the Employer or (if so required by the Employer by written notice) to the Successor Contractor all property in its possession or under its control owned by the Employer or leased or licensed to the Employer;
- 13.4.3. The Contractor shall transfer to the Successor Contractor, as from the date of Termination, its rights as the Contractor under all contracts entered into by it in the performance of its obligations under these Conditions or relating to the Operation & Maintenance of its obligations under these Conditions or relating to the Operation & Maintenance of the Facilities. Pending such transfer, the Contractor shall hold its rights and interests there under for the account and to the order of the Successor Contractor.
- 13.4.4. The Employer shall be reimbursed any cost and expenses incurred by the Employer due to default of the Contractor in discharging its obligations under this Clause [13].
- 13.4.5. The Contractor shall, upon Termination of the O & M part of Contract, co- operate with the Employer and the Successor Contractor and comply with all reasonable requests thereof, including the execution of documents etc.

- 13.4.6. Upon Termination of the O & M part of Contract on expiry of the terms of the O & M part of Contract, the Parties agree that:-
- 13.4.7. The Contractor will use reasonable efforts to ensure a transition to the next Contractor that will avoid operating difficulties for the Facilities.
- 13.4.8. For a six (6) month period after Termination or six (6) months prior to the expiration of the O & M part of Contract, the Contractor shall, at his expense, provide sufficient assistance to the Employer in the hiring and training of replacement personnel for those Facilities.
- 13.5. Notwithstanding anything else herein contained the Employer shall be entitled to terminate the O & M part of Contract, at any time at the Employer's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 28 days after issuance of the notice of termination.
- 13.5.1. On the expiry of the O & M part of Contract or Termination of the O & M part of Contract, all the installations, works and equipment placed under the Contractor's responsibility shall be handed over to the Employer, at no cost, in good working order, except for normal wear and tear. The Employer may perform any inspections, tests or expert appraisals he shall consider necessary with a view to checking that the property is in good working order. The Contractor shall also hand over any unutilized spares, consumables etc. purchased for the Facilities.
- 13.5.2. At the end of O & M Period, the Contractor shall be entitled to receive an O & M Completion Certificate within thirty (30) days
- 13.5.3. The delivery of such O & M Completion Certificate will relieve the Contractor from his responsibility as regard to the operation & maintenance of the Facilities and confirm that the Contractor has fulfilled all of his obligations under these Conditions.

14. CONFIDENTIALITY AND INTELLECTUAL PROPERTY RIGHTS

14.1. Confidential Information

Subject to Clause [14.2], the Contractor shall at all times during the O & M Period and for a period of five years after that:

- 14.1.1. use all efforts to keep all information regarding the terms and conditions and any data or information acquired under or pursuant to these Conditions confidential and accordingly shall not disclose the same to any other person; and
- 14.1.2. not use any document or other information (whether technical or commercial) obtained by them it by virtue of these Conditions or the Contract concerning the Employer's undertaking for any purpose other than performance of the its obligations under these Conditions;

Provided that the provisions of this Clause 14.1 shall not apply to information, which at the time of disclosure was in the public domain other than by breach at the foregoing obligations of confidentiality.

14.2. Disclosure of Confidential Information

The Contractor shall not be entitled to disclose the terms and conditions of these Conditions

and any data or information acquired by it under or pursuant to these Conditions without the prior written consent of the Employer unless such disclosure is made in good faith:

- 14.2.1. to any outside consultants engaged by or on behalf of the Contractor and acting in that capacity, having made them aware of the requirements of this Clause [14].
- 14.2.2. to the lenders, any security trustee, any bank or other financial institution and its advisers from which the Contractor is seeking or obtaining finance, having made them aware of the requirements of this Clause [14].
- 14.2.3. to the extent required by Applicable Law;
- 14.2.4. to any insurer under a policy of insurance; or
- 14.2.5. to the Contractor's Personnel having made them aware of the requirements of this Clause [14];

14.3. Information

The Contractor shall:

- 14.3.1. make available to the Employer without charge such materials, documents and data of any nature (except any materials documents and data protected by legal privilege or which is subject to any duty of confidentiality to any third party) acquired or brought into existence in any manner whatsoever by it as the Employer may request for the purposes of exercising its rights or carrying out its duties in respect of the Facilities or exercising its rights under or performing its obligations under these Conditions.
- 14.3.2. make available to the Employer other such materials and documents and data acquired or brought into existence by third parties as the Employer may request for the purposes referred to in sub- paragraph (i) above

14.4. Third Party Intellectual Property

The Contractor shall:

- 14.4.1. procure that any intellectual property owned or developed by third parties and utilized by the Contractor in connection with the performance of its obligations under these Conditions is licensed to the Contractor for the purposes of the Operation & Maintenance or repair of the Facilities and otherwise for the purposes of the Facility; and
- 14.4.2. ensure that the Contractor shall have the right to sub- license that intellectual property to the Employer and any Successor Contractor for use in connection with the operation, maintenance and repair of the Facilities. These licenses should survive termination under these Conditions. The Contractor shall grant all such sub- licenses. If any fee is payable to the licensor in consideration of any such sub- license, the Contractor shall pay such amount during the O & M Period and each such license shall be irrevocable.
- 14.4.3. indemnify and hold harmless the Employer against any action, claims, damages, losses caused to the Employer by the owner of the Intellectual Property due to the allegedly unauthorized or improper use of this intellectual property by the Contractor for the fulfilment of his obligations under these Conditions.

14.5. Successor Contractor

If the licenses and sub- licenses of intellectual property granted under this Clause respectively shall survive termination of the O & M part of contract in accordance with the terms of this Clause, the Employer shall be permitted to grant sub- licenses of intellectual property licensed to it there under to any Successor Contractor of the Facilities for use only in connection with the operation, maintenance and repair of the Facilities provided that such Successor Contractor concludes an agreement with the Contractor or, as the case may be, the licensor of any such intellectual property on terms which it may reasonably require any payment in connection with those sub- licenses. Where intellectual property has been sub- licensed to the Employer under this Clause and such sub- license is not subject to revocation by the Contractor there under, the Contractor shall take such actions as the Employer may request in connection with the grant of licenses to any Successor Contractor for the purposes set out above.

15. ARBITRATION AND DISPUTE RESOLUTION**A) SETTLEMENTS OF DISPUTES:**

- i. If any dispute of any kind whatsoever may arise between the Employer and the Contractor in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing any question regarding its existence validity or termination, or the execution of the works whether during the progress of the work or before or after the termination, abandonment or breach of the contract, the either parties shall have to raise/ refer their disputes/ differences / claims in writing to the other party, within a period of 30 days on occurrence of such events, to resolve any such dispute or difference.
- ii. The contractor shall have to refer their disputes to the concerned Superintending Engineer. After receipt of the dispute from the contractor under this clause, the Superintending Engineer In-charge of works shall have to submit their report to the Chief Engineer within a period of 90 (Ninety) days. The Chief Engineer shall offer an opportunity to the contractor to be heard and to furnish evidence in support of their disputes within 30 (Thirty) days after the receipt of the disputes duly compiled by Superintending Engineer. After hearing the contractor regarding their disputes along with their documentary support and the concern Superintending Engineer & Executive Engineer in charge of the work, the Chief Engineer shall give decision within a period of 120 (One Hundred Twenty) days or the contractor is dissatisfied with the decision within 120 (One Hundred Twenty) days after the contractor has been heard. If The Chief Engineer does not give decision within 120 (One Hundred Twenty) days or the contractor is dissatisfied with the decision of the Chief Engineer, the contractor shall within 30 (thirty) days after receiving the instruction or decision, appeal to the Managing Director Raipur Smart City Limited . After hearing both the parties the Managing Director Raipur Smart City Limited will give reasonable decision within 180 (One Hundred Eighty) days from the date of receipt of appeal by the contractor. The decision of Managing Director Raipur Smart City Limited shall be final and binding on both the parties. If the Managing Director Raipur Smart City Limited does not give decision within 180 (One Hundred Eighty) days after the date of appeal by the contractor, the contractor will have right to refer the dispute to arbitration tribunal as per

provision of clause "Arbitration".

B) ARBITRATION: Provision of ARBRITATION should be considered deleted wherever written in the whole tender.

16. GOVERNING LAW AND JURISDICTION

These Conditions and the O & M Part of Contract shall be governed in accordance with Indian Law.

The Contractor agrees that any legal action or proceedings arising out of these Conditions may be brought in the courts or tribunals at Raipur in India and irrevocably submits themselves to the jurisdiction of such courts or tribunals. The Employer may, however, in its absolute discretion commence any legal action or proceedings arising out of these Conditions in any other court, tribunal or other appropriate forum, and the Contractor hereby consents to such jurisdiction.

17. MATERIAL, TOOLS AND TEST EQUIPMENTS:

All materials required for the O&M of the project shall be new and of best quality and suitable for the purpose intended. These shall be got approved from the Engineer in charge before use.

17.1. Electricity Supply:

Contractor shall keep good liaison with concerned Electric Authority for power supply in case of electric power failure (break down/shut down) it shall be the responsibility of the agency to inform all the concerns as well as to contact concern authorities to restore the power supply. The contractor shall keep good liaison with concern substation for Voltage Up & Down and restore the power. The vehicle kept at site by the contractor shall be provided for this purpose along with operation and maintenance staff in case of requirement as per direction of Engineer in charge or his representative without any extra claims.

17.2. Work Order Book

A bound half sheet size work order book shall be provided by the contractor and handed over to the owner for maintaining at the work site. This shall be a permanent record. The contractor or his Resident engineer shall sign against instructions & orders recorded by the Engineer in charge or his representative for the maintenance work. He may take out a copy thereof if necessary. He shall take prompt action as per the instruction/orders of the owner and necessary compliance shall be recorded against each instruction/order

17.3. Electrical Installations

All electrical work shall be carried out as per the provisions of Indian Electricity Act, Indian Electricity Rules, Instructions and requirement of authority/authorities i.e. Electrical Inspector and Chhattisgarh State Power Distribution Company Limited or as mentioned in the Volume of General Condition for contract.

17.4. Accident on the works

The contractor shall be fully responsible for any accident that may occur to the labour on his work on duty and report the same to the Engineer in charge and concerned Govt. labour department authority and shall pay all necessary compensation as per rules. Contractor shall

also be fully responsible for any loss to any individual or public property occurred due to him or his workers negligence under the scope of this contract.

17.5. Use of site

The contractor shall not unreasonably encroach the site with materials and equipment. The contractor shall not use land for any private purpose.

17.6. Compliance

The contractor shall be bound by all ordinance acts, codes, rules, regulations and orders of which in any way affects conduct of works, or workmen engaged for the work. The contractor shall be responsible for any violation of any govt. rules & regulations. It shall be the responsibility of the contractor against any claim or liability arising from violation of above.

17.7. Accommodation for Staff

Contractor shall provide necessary accommodation to their labours & engineers at his own cost. However, owner shall give vacant staff quarters available at each head works, sub head works or available in the jurisdiction at the rate prescribed by the owner.

17.8. Transportation

Contractor shall have to make his own arrangements for conveyance of his staff at his cost. No facility will be provided by the owner.

17.9. Medical

Contractor shall provide medical facility to his staff at his cost.

18. CONTRACTOR'S STAFF & THEIR CONDUCT ETC.:

18.1. Nationality & Address

All employees shall be Indian Nationality and it shall be contractor's responsibility to give temporary and permanent address: Convicted or penalized person shall not be employed.

18.2. Salary to Employees

Contractor shall strictly follow labour laws and shall also ensure regular monthly salary payment to his staff. The owner will not take any liability of any of his employees appointed for operation and maintenance under this contract. Contractor shall submit monthly certificate for full payment to his staff on or before 10th of every month. Owner reserves the right to conform the contents of the certificate from contractor's employee for their last pay. The owner will not be responsible for any delayed payment/ compensation/ overtime or any other claims by employees of contractor during the tender period and even after the tender period.

18.3. Identification Dress Code with Badge/ Identity Card

Contractor shall have to provide special dress code with identification badge with name plate strip to be displayed on front pocket to each staff as approved by Engineer in charge along with Identity Card etc.

18.4. Holidays and Leave

Holidays and leaves shall be given to staff as per relevant labour rules. During holidays/ causal leave/earned leaves etc. and contractor shall arrange for the substitute. The owner shall not make any separate payment of overtime for these substitutes provided by the

contractor during above periods.

18.5. Conduct

All employees of the contractor shall follow the instruction of Engineer in charge. If any employee misbehaves with Engineer in charge he/she shall be immediately removed from duty and substitute for that shall be employed by the contractor. If contractor fails to do so, non-refundable penalty of Rs.200/- (Rupees Two hundred only) per day per such case will be levied, this amount shall be recovered from the bill or any due amount of agency.

18.6. Visitors

It is expected that all staff and Engineers be present and follow the directives of Engineer in charge.

SCHEDULE 1

Operation and Maintenance Services

The Contractor shall be required to perform the following services under these Conditions:

The Contractor shall be responsible for corrective and preventive maintenance of civil, hydraulic, mechanical, electrical and computing equipment as well as miscellaneous equipment.

The Contractor shall be responsible for carrying out regular servicing and lubrication of rotary machines, complying with maintenance instructions as defined in the Operation and Maintenance Manual and ensuring that electromechanical equipment and motors operate correctly at all times.

The Contractor shall ensure that all measurement systems are calibrated, within the valid period of certification and operate correctly at all times.

The Contractor shall be responsible for maintenance of civil structures, workshops, garages, etc.

The Contractor will operate and maintain in a state of continuous operational readiness all plant and systems to meet the flow requirements. It shall remain the Contractor's responsibility to ensure that plant systems are at all times able to operate to the maximum capacity of the installed duty plant.

Provided here are certain standard services that Raipur Smart City Limited could require. However Raipur Smart City Limited may wish to review this and make changes depending on the exact nature of services they require from the Contractor.

The Contractor shall be entitled to appoint a representative who shall together with Employer's Representative on the last day of each month or if such day is not a working day on the following day, jointly carry out a reading of water meters and jointly certify the record of such readings.

For the duration of the O & M period, the Contractor will be responsible for the supply and control of lubricants, spare parts and consumable materials only excluding Electrical Power, necessary for the continuous operation of the works.

The Contractor will manage the consumables and utilities services to ensure their most economic consumption and to minimize wastage.

The quantities of all the unutilized spare parts and consumable materials will be fully handed-over to the Employer at the end of the O&M period.

The stores inventory, the issuing and recording of spare parts will be the responsibility of the Contractor.

The Contractor is also responsible for providing spare parts and material required for the operation and maintenance during the operation period, and shall bear the cost for the same, including the cost of storing and safeguarding.

The Contractor will make all necessary arrangements to ensure the continuous supply of spare parts and material for the works; and the rate of advance supply of these materials shall be in such quantities and amounts as would ensure uninterrupted operation.

All the furniture and administrative office equipment etc. required shall be furnished by the Contractor. Costs of operating administrative office and supplies shall be borne by the Contractor.

The Contractor shall take out subscriptions for standard telephone lines/ wireless sets. Running cost for the telephone / wireless sets will be borne by the Contractor.

Cost of operation and maintenance and housekeeping of housing complexes including domestic water supply and drainage, roads, gardens, electrical installations, etc. will be borne by the contractor.

The Contractor will provide staff personnel for the full term of O & M as per schedule of establishment given in Annexure- I.

Contractor has to do painting to Every Civil Structures, Valves, pipeline etc. with the same quality of paint used while construction of the structures or as directed by Executive at an regular interval of every two and half years.

SCHEDULE - 2
Performance Guarantees

DELETED

SCHEDULE- 3
O & M Price

The Contractor shall be paid at the quoted rates per month. The amount withheld against the O & M from the bill of the main contract shall be released by end of each year.

SCHEDULE- 4 REPORTS

MONTHLY REPORT

The monthly report shall include but not be limited to:

Volume of water conveyed, to each consumers off- take point end.

All the problem areas in the facility,

O & M works carried out during the month.

Electricity consumed totally.

Monthly materials consumption statement

SEMI- ANNUAL REPORT

A semi- annual report shall include the measurement of noise level at the site boundary at plant, to be the indicated by the Employer.

ANNUAL REPORT

The Contractor shall provide the Employer by March 31 of the current year (n) with an annual report for the preceding year (n- 1). This report shall include:

*All technical statistics related to plant operation as supplied by the operation;

*A statement of works carried out during the preceding year n- 1 in connection with the contractor's obligations under these conditions.

NOTE: The Employer may consider if it requires these reports or requires reports and provide for the same. This will need to be looked at in the light of reporting requirements in these Conditions. The Employer will also need to determine what information is required in these reports

SCHEDULE- 5**Insurances**

Insurance against Injury to Persons and Damage to Property :

The Contractor shall insure against each liability for any loss, damage, death or bodily injury which may occur to any physical property (mechanical, electrical, automation work, all civil works, Storage etc. excluding pipe line) or to any person which may arise out of the Contractor's performance of his obligations under these Conditions during the O & M Period.

This insurance shall be for a limit of per occurrence of not less than the amount of Rs. 5 lakh, with no limit on the number of occurrences.

Insurance for Contractor's Personnel

The Contractor shall effect and maintain insurance against liability for arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel.

The Employer shall also be indemnified under the policy of insurance, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Employer or of the Employer's Personnel.

Contractor shall have to take insurance for Electrical, Mechanical and instrumentation equipment under this packages. This General Insurance for the work will be in the name of Raipur Smart City Limited. The depreciated value is to be considered for the purpose of insurance for respective year. The insurance for skilled, semi- skilled and unskilled labour is compulsory. The same should be taken by agency as per labour act laws in force.

SECTION B
SPECIAL TERMS AND CONDITIONS

**SECTION B: SPECIAL CONDITIONS OF CONTRACT
FOR OPERATION & MAINTENANCE
PART- 1: Technical Conditions**

The Contractor shall have the following obligations:

- a) Prepare & implement operating and maintenance manuals, spare parts lists, recommended spares , warranty period from equipment suppliers and connected matters;
- b) Identifying and procuring workshop equipment and capital spares for repairs as may be required, at his cost.
- c) Select suitably qualified Suppliers of Spares, Consumables, and the external Contractors required during Operations.
- d) Set up a fully functional office with computers, personnel, equipment, furniture and communications and at locations / space provided or suggested by RMC/ engineer. Customer service front office shall be managed by RMC, while support staff for resolving the complaints or repairs shall be provided by Contractor. The Customer Service Center shall function between 8am to 8pm during all working days and between 8am to 1pm during public holidays including Sundays.
- e) The Contractor shall assist the RMC in evaluating and verifying the reasonableness of the Operations and Maintenance Plan and answer all queries, explain the assumptions, projections, calculations etc. and shall make available all the concerned staff who had prepared the respective plans.

1 Notwithstanding the above obligations the Contractor shall have the following obligations during Operation & Maintenance

- (a) Provide prudent management, operation and maintenance services as per the prescribed-standards of performance for existing as well as new assets created under this contract;
- (b) Undertake efficient demand management and meet the entire demand for water as required during the time of operation;
- (c) Co-ordinate with RMC for ensured Bulk Supply volume at WDS inlet
- (d) Contract management;

- (e) Connections, reporting defaulters, reconnecting as per the general conditions of contract.
- (f) Manage and maintain the Integrated Management Information System (IMIS) to ensure efficient and transparent information, record keeping, and decision making. Under IMIS, set up a robust integrated information system comprising of the following areas:
 - (i) technical services such as service levels of NRW, water quality, consumption, pressure, losses, monthly real time water balance, SCADA etc.;
 - (ii) business services comprising, procurement, inventory management and human resource management;
 - (iii) Hydraulic network Modelling:- A hydraulic network model representing the water supply system for selected area of RMC shall be developed using suitable software such as Water GEMS. The model shall be calibrated, reconciled and established and fully functional for continuous updating for management of the system;
 - (iv) Asset Management Program including covering each type and category of asset, its servicing schedule, replacement frequency, etc. for all assets in water system including but not limited to:-
 - (A) Valve inspections
 - (B) Tank inspections
 - (C) Pipeline inspections
 - (D) Leak detection process.
 - (E) Leak repairs
 - (F) SCADA & Preventive maintenance of all existing and new mechanical, electrical and instrumentation equipment
 - (v) Set up operating and maintenance procedures for each of the unit operation including Standard Operating Procedures, Standard Maintenance Procedures, Emergency Procedures, Health and Safety Procedures etc incorporating Original Construction Contractor's Operating and Maintenance Manuals;
- (g) Maintain effective and efficient customer complaints redressal system, the prescribed performance standards including awareness program, campaigns, trainings etc.;
- (h) Undertake timely and cost effective asset management program;
- (i) Maintain the automated water quality surveillance system;
- (j) Operate and maintain all mechanical, electrical, instrumentation , SCADA Server & Monitoring and information technology installations, equipment, machinery etc as per the respective standard operating and maintenance procedures;
- (k) Undertake preventive and breakdown maintenance for all pipelines, valves, appurtenances, mechanical, electrical and instrumentation equipment in relation to the above referred Facilities, along with appropriate documentation to facilitate warranty and insurance claims, if required; (Contractor's obligation will be limited to maintenance for components

constructed/ installed in this project.)

- (l) Ensure effective and efficient planning, procurement and inventory management for all spares, equipments, consumables, instrumentations and PLC/SCADA system etc;
- (m) Provide robust security arrangements for all the facilities within the scope of this project, including restriction of entry of unauthorised persons;
- (n) Manage and maintain the water distribution management system (WDMS) for the water supply in the project area, including all, water storage facilities, flow measurement, pressure measurement and quality surveillance systems etc. complete;
- (o) Comply with all relevant local laws including environmental, industrial and labour laws;
- (p) Maintain healthy working relations with all stakeholders including the Water resources department, RMC, NHAI, PWD, State Pollution Control Board, and power utilities; etc.
- (q) Maintain detailed documentation and prepare periodical reports including monthly, quarterly and yearly reports for submission to RMC including data on water balance, leakage levels, flow and pressure of water at designated check points, Import / Export point flow details, water loss / NRW level, service level, etc. complete as set out in.
- (r) Training of the operating personnel from RMC or any other designated authority for taking over the system at the end of Contract Term;
- (s) To undertake emergency chlorination measures at times of outbreak of epidemics and any such emergency situations on behalf of RMC;
- (t) Rectify all defects attributable to the Contractor and notify the RMC of defects, developed within defect liability period of the commissioned components or equipments of Water supply system;
- (u) Follow all reporting requirements as specified by Engineer;
- (v) Maintain the Performance Indicators, Quality Assurance, Standard & Safe Operation Procedures (SOPS);
- (w) To summarize, the services provided by the Contractor shall include the following:
 - Operation of Facilities from inlet of service reservoir upto consumer end;
 - Provision for 24 hours a day operation and emergency cover;
 - Ground and buildings maintenance;
 - Unscheduled and emergency maintenance;
 - New service connection surveys and estimates as per instructions of RMC;
 - Making new service connections as per instructions of RMC;

- Investigation of illegal connections, install meter & measure and necessary reporting as per instructions of RMC;
 - Quality surveillance programme;
 - Data collection and reporting;
 - Holding emergency exercises;
 - Incident management;
 - Safety inspections;
 - Supervision of subcontractors ,enforcement of specifications;
 - Operational liaison;
 - Updating of the IMIS/ Computerized water management software system;
 - SCADA system operations / cloud facility
 - Preparation of all plans, procedures and budgets relating to operational matters, as required within the Contract.
 - Consumer awareness program, campaign, training, meetings, media interaction etc.
 - Any other work necessary to ensure the continued operation and availability of the system.
- (x) All instruments shall be maintained, checked, calibrated and serviced periodically and will always be kept in operating condition. The calibration shall be checked whenever necessary and corrected. Calibration data shall be submitted to the RMC for approval. As a minimum, all instruments shall be calibrated once per year.
- (y) For the purpose of complying with the requirements of this contract, the Contractor will need to provide.:
- i) An adequate and skilled workforce, supervisors, managers and technical support staff;
 - ii) Administrative and financial support staff and computer and business support systems;
 - iii) All necessary mobile plant and equipment, vehicles and incidental equipment;
 - iv) Health and Safety equipment and staff protective clothing as well as traffic and footpath barriers and signs;
 - v) Necessary chemicals and fuel;
 - vi) Stores suitably stocked with adequate spare parts and replenished within a store policy that recognizes frequency of use and delivery periods;
 - vii) Suitable depot and office premises.
- (z) The Contractor shall carry out the complete cleaning & disinfection of service reservoirs, master balancing reservoirs etc. once in a year.
- (aa) All SCADA and monitoring data shall be maintained and available on internet through application software.

2. Standard Operating Procedures (SOP)

- 2.1 Operating Instructions and Standard & Safe Operating Procedures (SOP) shall be formulated for each Site comprising of process equipment schedules, operation & maintenance data, sampling and analysis with frequencies etc. The operating parameters shall be optimised based on the data

collected on commissioning of the facilities. All the activities in the preventive maintenance schedule shall be followed without any lapse. Indicative functions that are expected to be performed at each site are given below:

Water Supply Network

- (a) Take all relevant meter, flow and pressure readings
- (b) Check operation of all equipment
- (c) Periodically check water meters and cross check readings
- (d) Check for Chlorine residual, flow and pressure at the Critical Measurement Points (CMPs)
- (e) Checking SCADA operations & monitoring

Water pumping stations/ and transmission main

- (a) Check operation of all pumps
- (b) Take all relevant meter readings
- (c) To ensure compliance with agreed withdrawals and to bring to notice of the DMA any excess or short withdrawal
- (d) Check operation of all valves along the transmission main
- (e) Flow and pressure measurement
- (f) Checking operations of electrical & mechanical equipment
- (g) Check the power factor and power consumption

Elevated Service Reservoir (ESR)

- (a) Check operation of valves
- (b) Checking SCADA operations & monitoring

2.2 Maintenance and Repairs (Mechanical, Electrical and Instrumentation) A]

Management and Maintenance Plan

2.3 A properly designed water system shall be capable of delivering desired output at all times. Considering that every mechanical system shall have to be given a downtime for maintenance purposes, the Contractor shall schedule a downtime of one hundred twenty hours, on a cumulative basis in a year for the water components or project facilities in consultation with the RMC so as to minimise disruption in services.

- (A) Routine inspection and maintenance of all equipment;
- (B) Planned and scheduled maintenance (preventive);
- (C) Unscheduled maintenance (breakdown);

B] Routine Inspection and Maintenance of Equipment

The Contractor shall carry out routine monitoring of the equipment and ensure that the equipment is properly maintained to meet the desired output. Typical tasks that shall be undertaken are:

- (A) Mechanical
 - (a) Checking the lubrication and necessary follow-up
 - (b) Replacing of glands that are leaking

- (c) Servicing as per supplier's instructions
 - (d) Checking for unusual vibrations and noise
- (B) Electrical
- (a) Checking electrical contacts and wiring
 - (b) Assessing efficiency of electrical equipment
- (C) Instrumentation
- (a) Cleaning and calibration of probe / sensors
 - (b) Fault diagnosis
 - (c) SCADA, PLC, RTU, Cables, Display Unit etc.

These maintenance tasks shall be issued on a weekly basis through computer aided management system and the Contractor shall incorporate it in operating work schedule. All observations shall be recorded in the properly designed record system and would be analysed for initiating corrective actions, if any.

D] Planned and Scheduled Maintenance (Preventive)

A work schedule chart listing identification of critical equipment, work assignment, timing shall be prepared. Critical equipment is defined as those items where failure would adversely affect the quality and quantity of output or those that risk the safety of employees or customers. The schedule shall identify the responsible person / agency who shall be intended to complete the task e.g. in - house technician or specialist contractor etc.

The overall yearly plan schedule shall be issued to all parties to enable forward planning of anticipated manpower requirement and equipment down time. The indicative maintenance schedule is provided further in the following table. This shall be finalised during the preparation of the Operation and Maintenance Plan.

D] Breakdown Maintenance

The aim of routine and preventive maintenance is to keep breakdown to minimum for items of critical equipment which shall directly affect the performance of treatment processes. However certain breakdown may occur in spite of proper maintenance. The Contractor shall take the breakdown maintenance on top priority to keep disruption to the systems at a minimum level.

The Contractor shall have an option to call other available staff and also the services of the local skilled contractors should the breakdown occur.

E] Spare Parts

The Contractor shall store spares of all the critical equipment on respective sites and the inventory shall be assessed according to anticipated usage and in conformity with Annual

Operating and Maintenance Plan.

The Contractor shall obtain consumable items required for maintenance e.g. grease, gaskets etc. from local suppliers, as and when required.

F] Maintenance Report

As part smart management of the maintenance activities, a Computer Aided Maintenance Management (Camm) shall be implemented by the Contractor which shall be integrated with the IMIS system i.e. WDMS with the help of GIS. Appropriate proprietary Camm packages shall be utilised by the Contractor for maintenance purposes. This package shall incorporate features such as Facility details, maintenance history records, and scheduling of maintenance activities and updated regularly in GIS database. The use of such package shall allow the Contractor to predict when the maintenance activities need to be carried out.

Record of maintenance jobs carried out shall be reported in the record system, which shall provide the RMC the past history, time and cost involved for each category.

SECTION C
TECHNICAL SPECIFICATION AND
SCOPE OF SERVICES

SECTION C: TECHNICAL SPECIFICATIONS & SCOPE OF SERVICES O & M Work**SCOPE OF SERVICES**

The Scope of work / service to be done / provided by the contractor under this bid will be as under :

Operation and maintenance Scope :

- 1) The scope of work further includes an Operation and Maintenance period of five years for ABD area of Mor Raipur City Center Area only in which the Contractor is required to carry out the following activities as provided in brief.
 - Day to Day Operation & Maintenance of the system including Valve operations, leak repairs, assistance to customer complaints.
 - Intensive maintenance training to minimum two of purchaser's personnel shall be given at bidder's facility for a period of 2months. Operation and maintenance training at site shall also be given.
 - Contractor shall arrange minimum 2 training programs per year to benefit its employee and the RSCL staff on good engineering practices and development in water supply and O&M.
 - Operation shall include training to RSCL nominated Staff in.
 - a. Installation of metering equipments
 - b) Programming of meters and data loggers
 - c) Meter reading practices
 - d) Download of data from data loggers
 - e) Operation & Maintenance of portable download devices
 - f) Analysis of the data
 - g) Operation & Maintenance of the online calibration validation equipment
 - h) Planned Preventive Maintenance of meters and other accessories
 - i) Remote monitoring setup by GSM/GPRS technology.
 - j) Public awareness by presentations, meetings, etc.
- 2) Contractor shall arrange minimum one public program every six months on WATER CONSERVATION AND AWARENESS either by arranging exhibitions or school competitions, publications of news articles, brochures, and holdings.
- 3) Customer billing shall be done on monthly basis and the soft copies of all the bills shall be submitted to the RSCL.
- 4) Contractor shall establish customer care centre within the zone. The customer care centre shall prominently display information to the customer. The contact details shall be printed on the bill.
- 5) The water audit is also under the scope of bidder only in order to predict the real losses of water. The bidder shall prepare the Water balance and submit the same with monthly reports of O&M.

- 6) The operator shall arrange a minimum of seven meetings with stake holders (Citizens and representatives) on behalf of RSCL during the project and minimum two meetings during first year of the execution of project
- 7) Laboratory Testing facilities for All water Meters and repairs facilities:
 - Operator shall provide and maintain a complete of laboratory for testing of All water meters which are found to be out of order and then repairing the same.
 - If found impossible to repair, the water meter shall be replaced by the operator on his own cost.
- 8) Monitoring and maintaining the system using necessary inventory with proper storage and required staff :
 - The operator shall monitor the system using necessary number and required diameter of clamp on flow meters as well as other inventory and transportation facility to check the problematic areas or for general maintenance.
 - This inventory shall be in the custody of operator/bidder and stored properly. The operator shall provide his staff and the inventory as and when required or proposed by the RSCL.
- 9) The Contractor will also be responsible for the replacement of any theft/stolen of Bulk Flow Meters.

A. WATER AUDIT:

Water, audit shall be done for a thorough accounting of all water into and out of a utility as well as an in-depth record and field examination of the distribution system that carries the water, with the intent to determine the operational efficiency of the system and identify sources of water loss and revenue loss.

For conducting water audit, System maps shall be prepared based on the design of network finalised.

For it, the water distribution pipe network is divided into a number of sectors (Zones)

Process to Conduct a Water Audit:

Water audit can be done using appropriate licensed software or Liemberger's free software

WBEasyCalc (www.liemberger.cc) can be used to compute NRW of the zones.

Task-1: Measure the supply: The bulk flow meters are installed at the entry points of all Zones and at the outlet of ESR-GSR. Daily readings of such meters are taken. Annual system input volume shall be shown in Table format as given below.

System input volume.

ESR-GSR (m3) Error Margin

DMA (m3) Error Margin

Task-2: Measure authorized metered use: i.e. billed metered consumption

Billed Metered Consumption: Manual billing operations shall be used to generate bills. Bills are raised monthly. Volume of water that is billed is worked out from the billing data and shall be shown in Table format as given below.

Billed meter consumption:

Zone	Volume (m3)
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Task-3: Measure Water Losses: Water losses comprise of two parts: First is the apparent losses and second is the real losses.

(i) Apparent Losses: It consists of two parts- Unauthorized connections and customer metering inaccuracies.

a) Unauthorized connections: Unauthorized connections are domestic and other than domestic connections. In addition to this, losses are due to meter tampering and the meter bypassing etc. Losses due to all unenthused consumption shall be shown in Table format as given below.
Unauthorized Consumption (m3)

Description Estimate	Number	Error Margin (+/-%)	Consumption (liters/person/days)	Total (m3)

b) Customer Metering Inaccuracies: Losses due to customer metering inaccuracies shall be shown in Table format as given below. Customer Meter inaccuracies and Data Handling Errors

Description	Total (m3)	Meter under registration	Total (m3)	Error Margin (+/-%)

(ii) Real Losses: Real losses are- leakage on distribution network, leakage and overflows at storage tanks and leakage on service connections up to point of customer meter which shall be computed using difference in reading of Bulk flow meter and domestic water meters of the concerned Zones and through experience using portable flow meters. i.e. The bulk meters shall be installed at source i.e. near outlet of ESR-GSR, at the entry point of each operational zone and at the entry point of each Zones. The readings of these bulk flow meters shall be cross checked with the total of the Domestic meter readings (taken manually). Portable flow meters shall be placed at concerned nodes to check whether the design flow and pressure is obtained. The readings shall not match on pipe with leakages or thefts.

The operator shall produce the NRW obtained as reports in the format of table below:

NRW of operational zones and Zones

Sr. Operation Zone	Zones	Present population	Total Consumer Connections	Bulk meters installed	Water input Zone mld. in	Water Supply in lpcd	Billed Water in mld.	Total NRW in %

After conducting water audit, clear picture of the behavior of the distribution system is known. The operator shall prepare WATER BALANCE and submit the same with monthly reports of O and M. All efforts are focused in that Zone to curb NRW. Reducing Physical Losses, i. e. losses in distribution network pipeline and house service connection pipelines shall save lot of losses. If the bidder is planning to use some other methodology for Water audit, water balance and leak detection program, the bidder shall give complete methodology for carrying out periodic water audit, water balance and leak detection program to RSCL along with the DRAFT

1) PROPOSAL FOR EXECUTION.

Contractor shall install a meter complete with House Service Connection as per the instruction of Engineer in charge for all the existing connection provided by RSCL and shall produce the bill and submit it to RSCL water works dept.

If installed water meter is damaged or altered by the customer, the operator shall inform RSCL for punitive action against the customer.

In case of metering connection is not allowed by customer, appropriate help/security shall be provided by RSCL for effective installation of water meters. Developing and agreeing a Planned Preventive Maintenance (PPM) program for all the bulk meters and other accessories supplied & installed as part of this contract. Supply of labour, materials, tools & equipment to carry out the agreed PPM, including supply of all consumables & spare parts. The Contractor shall attend for an emergency breakdown immediately (within 48 hrs). On receipt of the orders from RSCL regarding replacing of any domestic meter, the representative of the Contractor should go to the site of work with all spares, tested meter (provided by RSCL) and remove the Defective meter and replace the same with tested working meter.

On receipt of the complaint regarding bulk flow meters, the representative of the firms should go to the site of work with all spares, tested meter and remove the Defective meter and replace the same with tested working meter.

On the inspection of the bulk flow meter, if the impeller is not damaged and only the totalizer is found damaged or strainer is missing then the firm shall inform the RSCL to replace only the totalizer or strainer at site and furnish the initial reading of the new totalizer to customer and RSCL.

The defective domestic meter should be reported to RSCL by the Contractor immediately and working meter (provided by RSCL) should be installed immediately within 3 days after intimation by CCC representative or RSCL. However, the upper limit should not be more than

seven days. The contractor may take defective meters to RSCL to rectify the defects by the supplier and calibrated for subsequent use.

The defective bulk flow meter should be replaced with working meter immediately within 3 days after intimation by CCC representative or RSCL. However, the upper limit should not be more than seven days. The operator may take defective meters to his laboratory to rectify the defects and calibrated for subsequent use.

Complaints regarding normal / subnormal reading will also be treated as defective meters. The contractor has to inform RSCL to arrange for repair the same in case of domestic water meter and replace the meter in case of bulk flow meters.

Theft of meter shall be instructed through FIR to the nearest police station, intimation to RSCL for its timely replacement and payment. The cost of recovery for such stolen individual domestic water meter shall be done from the customer.

If the factory seal of the company is tampered then the signature of the departmental personal and the customer should be obtained on the complaint sheet and cost of such repairs will be charged to the customer. Any tampering in the customer meter shall be immediately reported to RSCL and water supply shall be disconnected after informing to ward office. The digital photograph shall be kept in record.

All safety precaution with lighting protection shall be provided to all the flow meters.

All maintenance charges should be all inclusive and shall be mentioned in the price bid year wise (in the column of O and M). The electric power consumed during O and M period shall be paid by the RSCL. Contractor shall deposit a copy of the bills generated for all the customer within 24 hours in the RSCL office and shall collect the counter receipt of the same from RSCL. The tariff details and serial number issued to the customer shall be given by RSCL. The bills generation record as per serial number shall be submitted to RSCL every day. The failure of submission of bills generated to customers will be liable for penalty of 1 % of O and M cost.

Logging of customer complaint receipts shall be kept at central location with one soft copy to ward office of RSCL by email. Weekly report of complaint receipt and attended shall be given to the ward office and monthly report shall be submitted to the RMC office. No bill of the operator shall be paid without submission of customer complaint status report. The digital photograph of each customer complaint and its solution shall be submitted before and after solution provided to the customer on behalf of operator (in case of works reqd.)

Water meters and House Service connections in the Price bid are considered only for the present population. Contractor shall provide the new connections within 72 hours after receipt of approval letter from RSCL. Rates for fixing of requested additional domestic water meter and supply and fixing of house service connection (during O and M period) with all the accessories as per relevant item of Price bid shall be paid from RSCL funds:

- As per rate quoted in the tender till 2 years of O and M
- With 5 % escalation/year over the quoted rates for next 3 years of O and M period.

The responsibility of reporting of non measurement of water consumption due to non working of customer meter shall be with operator. The operator is expected to procure extra water meters as and when required from the RSCL.

The scope of works of operation and maintenance also includes;

- 1) The works shall include Operation & Maintenance of, Pumping machinery & other ancillary works etc for five years.

Scope of work includes operation, maintenance, repairing & replacement of spare parts of following Mechanical Electrical, Instrumentation & Civil equipment.
- 2) Operation and maintenance of following structure for the period of 60 months from the start of O&M period.
All civil structures like staff quarters, Command Control Building, compound wall etc of the works should be maintained for their excellent serviceability and shall be painted once in every Two and half years, during contract period with the same type of paint originally applied at the time of construction of the structure. All the flooring and finishing of all the building shall be maintained and replacement of the same shall be done by of the flooring of same type, specification and colour. The repairs shall be carried out in such a manner that it should fully merge with the original flooring without any noticeable variation at the repaired locations.
All the plumbing fixtures like taps, cocks, valves, hoses, showers, faucets, pipes shall be maintained in good working condition and replacements, if any, shall be made with the same type and style so that the repairs are not noticeable. (Contractor's obligation will be limited to maintenance of components constructed/ installed in this project.)
- 3) DELETED
- 4) DELETED
- 5) Maintenance of Electrical and electrical equipments at head/ Sub head works including emergency brake down works with cost thereof.
- 6) Supply of all type of consumables material excluding material to be supplied by Raipur Smart City Limited as mentioned in Schedule – A of this Tender and also re-carting the un-serviceable or serviceable material to the departmental store.
- 7) All type of spare parts for Electrical / Mechanical equipment. All electrical/mechanical works including repairs shall be done under supervision of mechanical wing of Raipur Smart City Limited and a certificate shall be produced at the end of each month regarding satisfactory maintenance of electrical/mechanical equipments carried out during that month.
- 8) Submission of daily / weekly / monthly report to Raipur Smart City Limited.
- 9) Submission of running bills along with all required evidence and documents.
- 10) Two coats of oil paints / cement paint of approved make to all metallic and wooden structures including over exposed piping arrangement are under scope of agency. The scope covers painting of all building's exterior with Cement paint and inside with lime/distemper point in first six months of taking over of O&M.
- 11) Deleted.

- 12) All necessary safety provision for the security and safety of labours, Public properties etc. as per prevailing rules and regulations shall be followed during maintenance period.
- 13) Maintenance of Garden/ Trees / Plantation within the premises of work site.
- 14) Deleted
- 15) In short, this tender includes cost of all civil, mechanical & electrical works including cost of consumables excluding electricity & irrigation charges but including routine & emergency brake down works with cost of material, labour etc.
- 16) Contractor has to depute one responsible person with mobile telephone facility at concerned all the working days for attending the complain regarding prompt repairing and leakages and quantity of water receiving at all the faced works which are under scope of the works.
- 17) DELETED
- 18) Regional Water Supply Scheme(RWSS) as described in the specification are proposed to be supplied with water. The agency has to quote rates for demand of RWSS only. Due to addition/ subtraction of villages, increase/decrease in quantum of water supply may happen. Any increase/decrease in excess of 10% shall be paid/ deducted @ rates quoted by the agency on actual supply at tail end on pro-rata basis. No payment/deduction shall be made till 10% deviations.
- 19) The details of current establishment enclosed are of indicative nature only. The agency is at liberty to provide less/more staff for smooth O&M of the scheme. The primary objective of Raipur Smart City Limited is to provide safe and reliable network for drinking water to villages and no compromise on this shall be made.
- 20) Scope of work of Raipur Smart City Limited. :
 - a) Supervision of entire Maintenance of the work and scrutinizing / running account bills submitted by the agency and payment of passed bill as per the availability of funds.
 - b) Payment of Electric consumption bill to Electric Utility Company shall be made by Raipur Smart City Limited. However, as bills are received at site, contractor shall have to make arrangements for its submission to Raipur Smart City Limited within 4 days of its receipt to enable office to make payment in time. In case of delay in Submission of Bill, Penalty as imposed by CSPDCL will have to be borne by the contractor.
 - c) Payment to irrigation authority for usage of raw-water shall be made by Raipur Smart City Limited Penalty, if any, imposed by Irrigation dept for non working of water meter shall be borne by Contractor.
 - d) Supply of DI / M.S. pipe free of cost in case of major break down in DI / MS pipeline. However necessary bend, tee, tapes etc. shall be prepared on site with this pipe and pipe shall be carted by contractor at this cost and for the remaining materials and condition will be as per Schedule A. (Contractor's obligation will be limited to maintenance of components constructed/ installed in this project.)

Scope of work includes operation, maintenance, repairing & replacement of spare parts of following Mechanical Electrical, Instrumentation & Civil equipment.

- 21) The contractor would be responsible for smooth, efficient & satisfactory operation & maintenance and repairing, replacement of spares, any works related to pipelines and Meters Installed on the round clock basis for the period of 60 calendar months from the date of contract of plant shortly described as above.
- 22) The scope of work of contractor includes operation, maintenance and repair of each & every structures, all pipeline, Electro- mechanical and instrumentation and control systems constructed / installed under the said project.
- 23) Each & Every structure as mentioned above like, Air valve C.C. pillar, Air valve, Sluice valve, riser pipe air valve, Zero velocity valve, Butter fly valve, bypass arrangement, for different type of valve chamber, store, godowns, CCC Building should be coloured by Oil Paint / Acrylic emulsion paint / black japan as per the instruction of Engineer-in-charge (Once in three year period) at his own cost as under :
 - a. Exterior paint shall be Acrylic Emulsion Paint colour (like APEX) : Air valve C.C. pillar, chamber for different type of valve etc.
 - b. Oil Paint colour : All type of Doors, Windows, Ventilation, Shutter, Pump, Motor, All valves & equipment in side pump house, Transformer yard, D.P. structure, Transformer etc.
 - c. Black Japan Colour : Air valve, Sluice valve, Riser pipe of air valve, Zero velocity valve, Butter fly valve (outdoor), bypass arrangement etc.
- 24) Water sump & suction structure shall be cleaned every three months or earliest if required. The floating debris of articles if any shall also be required regularly to be removed from the sump for cleaning purpose.
- 25) The scope of the contractor includes operation, maintenance & replacement of spares.
- 26) The scope of work also includes providing necessary tools and tackles for day-to-day O&M routine maintenance, preventive maintenance and breaking down maintenance.
- 27) Also minor and major repairs to the equipment involved in the plant have to be carried out by the contractors during O&M period.
- 28) The scope also includes cleaning of sump, removing of foreign materials like debris, sand, fish, frogs or any other dead or live animals and also cleaning of strainers of each pump quarterly so that 24 hrs. required quantity of water is made available from the sump.
- 29) The disposal of the foreign particles like sand, dead or alive animals etc. from sump to suitable place as shown by Raipur Smart City Limited will be in the scope of contractor.
- 30) Repairing & replacement of damage strainer of each pump set, repairing of dewatering pump motor sets, chain pulley block etc. as well as any items to be

procured for replacement will be in the scope of contractor.

- 31) The scope of works also includes the calibration of all meters e.g. pressure gauge, Ammeter, voltmeter, relay, trivector meter, Energy meters, temp scanners, flow meters etc. for measurement of accurate readings once in a year or as and when required.
- 32) All these capacitor panel must be kept in working condition to keep CSPDCL power factor more than 0.95 by the contractor. If any additional capacitors irrespective of rating required to maintain the power factor for rebate shall be procured and fitted in HT or LT panels at his own cost. No spares for capacitor panel & LT capacitor panel in any circumstances will be provided by Raipur Smart City Limited. Any penalty levied by concern CSPDCL on account of poor power factor (i.e. less than 0.9) will be recovered from the contractor from his monthly O&M bill.
- 33) Daily record about the incoming flow & outgoing flow at each & every sump of all head work site should be maintained by the Contractor as per the Performa is to be supplied by the Raipur Smart City Limited and will be send day to day directly to EIC.
- 34) Hourly record of raw water analysis and treated water analysis at all Treatment Plants should be maintained by the Contractor as per the Performa is to be supplied by the Department and will be send day to day directly to EIC.
- 35) Contractor shall have to carry out Relay testing, Scheme testing & primary injection tests once in three years maintenance period at his own cost by specialised personnel in power system protection to ensure system operational stability & reliability for pumping station. For specialised testing of this job, contractor shall have to take the approval from Raipur Smart City Limited for carrying out job by specialised personnel.
- 36) The scope of work also includes attending of all types of cable faults for pump motor set, street light etc.
- 37) Drawal of raw water from Sump, transfer of raw water to WTP and pumping and transfer of Treated water by means of system, control and operation of plant.
- 38) Routine maintenance of all buildings, transmission main, installation and equipment and area lighting, gardening.
- 39) Management of the plant in administrative and financial operations connected to the plant management.
- 40) All sluice valve/B.F. Valves/Air Valves/Zero velocity valves/Air cushion valve to be kept under working condition.
- 41) Area lighting – The premises of various works are provided with mercury/sodium vapor lamps, fluorescent tubes and also ceiling fans/exhaust fans inside the various structures. Daily on/ off operation and routine cleaning of all type of electric fixtures. Replacement of lamps/ Tubes/ Fans in case of failure at contractors cost.
- 42) Maintenance of garden – Normally watering the trees once a day or more if required. Grass cutting, removal of shrubs, weeds, around tree to be done as directed.

Remarking the ponds around the tree after loosening with soil with supply of additional earth if required. Cutting of branches if required, for straight growth of tree/plant and development of garden

- 43) Roads to be kept neat and clean.
- 44) All buildings, bathroom, toilet to be kept cleaned washed daily. Consumable requirement for cleaning such as acid, harpic, phenyl, air freshener, washing powder, brooms, wire brushes, duster, bamboos, toilet shop, lotion waste, kharata shall be provided and used as required. All ventilators, windows/ doors to be clean and good condition.
- 45) To keep watch on overflowing of sump. If such overflow take place the agency shall have to bear the damages caused to surrounding properties.
- 46) Maintaining rising and gravity transmission main. If any leakage breaking of pipe found, same shall have to be rectified within 12 hrs. All materials equipments and labour shall have to be employed by the agency to attend such repairs. (Contractor's obligation will be limited to maintenance of components constructed/ installed in this project.)
- 47) All air valves shall be repainted every year and numbered with radium paint.

DOCUMENTS RECORDS / LOG BOOK

- The contractor will be responsible for keeping up to date records of documents including History Card for equipment and maintaining every day log book relating to various analysis performed and to prepare and submit a daily report of Pumping Station performance. The contractor shall maintain an updated log book and details of operational parameters like pumping hours, Amperes, Flow meter reading, H.T. Voltage, Power Factor, energy meter reading, pressure and other reading required are recorded in every shift at regular interval e.g. hourly or as agreed mutually (by Raipur Smart City Limited).
- Printing of log sheets, registers and all necessary stationery required for maintaining records of operations and maintenance has to be arranged by the Contractor at his cost. Format of log sheets, registers will be made available to the successful tenderer by Raipur Smart City Limited.
- The scope of work also includes attending of all HT & LT cable faults including end terminations of cables, changing of lugs or changing HT/LT cables.

ADDITIONAL SCOPE OF WORK

- For additional work, if any, which is not included in the scope at present shall be executed by the contractor on authorization in writing from Raipur Smart City Limited..
- The rate of such additional work will be worked out by the Contractor based on the cost of materials and labour and shall be furnished to Raipur Smart City Limited.. The contractor shall be entitled for full cost of materials, direct labour and cost of operation of equipment/machinery etc. required to execute the work.

- For such additional work, the contractor shall maintain time sheets of personnel engaged and equipment/machinery used for the execution of work. Only such labour and other costs based on the above records shall be applicable to the rates payable for above additional work.

NOTICE BOARD / DISPLAY BOARD

The contractor shall provide a Notice Board/Display Board at appropriate locations detailing precautions to be taken by operation and maintenance personnel in work conformity with Industries and Labour Regulations and Department of Explosives.

GENERAL ROUTINE MAINTENANCE

General routine preventive maintenance schedule for various equipment shall be adopted from O&M Manual. However the general routine maintenance to be carried out by the Contractor's personnel will include but not limited to the following:

- a) If it is observed that power consumption per MLD of water pumped is increased, the contractor has to trace out the fault and rectify the same to bring to the standard Value.
- b) De- weeding and cleaning of the Transformer yard and other places.
- c) Drying and refilling of silica gel in the breather of the transformer
- d) Regular watering on the earth- pits.
- e) Check for any oil leak in the transformer and intimating and repairing of the same.
- f) Air blowing of motors, H.T & L.T. panel etc.
- g) Check for any loose connection in all electrical equipment and rectification of the same.
- h) Replacement of gland packing for the pump, sluice valves etc. whenever required.
- i) Greasing of bearing and lubricating all moving parts as per the schedule.
- j) Tightening of all loose nut- bolts and other fasteners.
- k) Cleaning of sump and strainer of each pump at regular intervals.
- l) Lubricating and test operation of the valves.
- m) General cleaning of all equipments and building.
- n) Checking and replacement of bulbs, tubes, chokes, starters, switches, control etc. thorough out plant and including street and head lights.

- o) Watering of plants and tree.

PREVENTIVE MAINTENANCE CHECKS:

The contractor shall adopt a preventive maintenance check's schedule as per original equipment manufacturer O & M schedule under intimation to the Employer. The preventive maintenance checks and their tasks frequencies will not be limited to the following:

Checks to be performed daily

- a) Vibration in the pump sets, moving assemblies etc.
- b) Tightness
- c) Check condition of oil & grease & replace if necessary
- d) Rise in temperature of bearings in motor, in moving parts and other units etc.
- e) Working of gauges and other measuring devices.
- f) Observations on water quality.

Checks to be performed weekly

- i. Pipeline leakages
- ii. Tightness of all electrical connections
- iii. Tightness of all cable connections
- iv. Temperature rise due t loose connections
- v. Watering of earthing pits
- vi. Operation of all sluice and butterfly valves, scour and pressure relief valves, gates and air valves.
- vii. Contractor shall be equipped with dewatering pump of capacity of pumping water equal to 5 kilometre length of pipe line in 24 hours , the unit shall also consist of power generating set. One such set is required every 25 kilometre of pipe line section.
- viii. All parts of the machinery and electrical equipments liable to wear and tear shall be replaced by the contractor every 6 months
- ix. Current and voltages in all electrical equipments.

Checks to be performed monthly

- a) Gland packing
- b) Wear and tear of moving parts.
- c) Adoption of electrical energy conservation consumption methods.
- d) Electrical contacts
- e) Motors
- f) Metering of electrical equipment

- g) Maintenance of Valve actuator, Battery, etc. shall be carried out as approved by the Engineer-in-charge.

Checks to be Performed Quarterly

- a) Relay testing and calibration if possible of meters, gauges, instruments, flow meters, flow indicator units, Level gauges and flow meters signals.
- b) Speed of motors

Checks to be performed bi- annually

- a) Cleaning, checking/tightening of HT and LT circuit/panel
- b) Tightening of PMCC
- c) Auxiliary DB, Capacitor bank
- d) Battery and Battery charger

Checks to be performed annually

- a) Overhauling requirement of all equipment
- b) Improvement required if any in operation of plant
- c) Testing and calibration of all instruments
- d) 11 KV VCB cleaning, testing.
- e) Transformer cleaning, checking silica gel, oil checking filtering/ replacing.

MINOR REPAIR GENERALLY ENCOUNTERED IN THE PLANT

Electrical works

- a) For H.T. Installations
- i. Replacement of jumpers
 - ii. Replacement of insulator (Porcelain)
 - iii. Replacement of Air- Break Switch
- b) For Both H.T. & L.T. Installations
- i. Replacement of no- volt coil for VCB
 - ii. Replacement of Cable lugs including terminations
 - iii. Replacement of burnt out HRC fuses
 - iv. Replacement of moving and fixed contacts or contractors
 - v. Repairs to isolators and switch fuse units and replacement of it and fuse base units.
- c) Pump sets

- i. Replacement of coupling bolt and nuts including rubber bushes
- ii. Replacement of worn out impeller nut
- iii. Replacement of spindle nut in the sluice valve.
- iv. Replacement of terminal plate in the motor
- v. Replacement of faulty/dead spares in the battery charger and battery control panel.
- vi. Replacement of gland packing, graphite packing from the pump sets.

COMPUTER MONTHLY REPORT

The contractor has to provide at site one computer with printer to keep all the records, data maintenance schedules, spares available for the plant. Monthly statements for electricity consumed, total hours of pump operation, total qty. of pumping in MLD, average power factor, monthly consumable and repair maintenance during the month shall be furnished by the contractor.

ANNEXURE -I

The contractor shall employ the minimum staff for each package as under with qualification and experience stated below, Contractor may employ additional staff over and above minimum prescribed as per his requirement in order to run the system efficiently. The staff mention below its obligatory.

No.	Position	Nos.	Min Qualification	Experience In Similar Works [years]	Relevant Experience
During O&M					
1	NRW Expert in Urban Water Supply Project	1	B.E Civil	15	Should have worked in atleast three similar projects involving reduction of NRW losses & conducting water audit.
2	Engineer – M&E	1	B.E (Mechanical)	10	Should have worked in atleast two similar projects involving O&M of water supply distribution network.
3	Engineer – Civil	1	B.E Civil	10	Should have worked in atleast two similar projects involving O&M of water supply distribution network.
4	Valve Operators	1	ITI	7	Should have worked in atleast two similar projects involving O&M of water supply distribution network.
5	Fitter	5	ITI	5	Should have worked in atleast two similar projects involving O&M of water supply distribution network.
6	Helper	10	ITI	2	Should have Relevant experience.
7	SCADA & Instrumentation Expert	1	B.E (Instrumentation)	7	Should have worked in atleast one similar project involving O&M of SCADA Center & Metering.
8	Supervisor & Billing Officer	1	B.E (IT) or Equivalent	10	Should have worked in atleast one similar project involving bulk bill generation & billing software.
9	Computer Operator	5	Any Graduate/ ITI	4	Should have Relevant experience.
10	Meter Technician	2	ITI	5	Should have Relevant experience.

Note:

The above staff shall be required minimum as per mutual agreement between contractor & Raipur Smart City Limited.. The arrangement of reliever for weekly off/all holidays etc. shall be made by the contractor separately.

The above mentioned requirement is indicative. However adequate staff are required for normal operation & maintenance. The contractor has to call respective engineer for rectification of fault at any time of the day, during contract period. The contractor shall have to provide additional manpower for maintenance and repair on as and when require basis. No extra payment shall be made for hiring services of additional manpower.

However Senior Manager may give relaxation in qualification and experience for suitable cases and necessary recovery if any, will be made accordingly.

ANNEXURE- II
SCHEDULE OF ROUTINE CHECKING OF PUMPS AND VALVES

A) Daily in each shift:

- 1) Leakages through gland packing and tightening, loosening to ensure that extent of leakages is in drip form.
- 2) Bearing temperature If highly check up cause and take remedial action.
- 3) Noise & Vibration :If undue check up cause and take remedial action.
- 4) Pressure : If high or low, check up cause.
- 5) Check oil level for bearing lubricant and topping up if necessary.
- 6) Clean and remove dust from pumps, piping and valves etc.

B) Weekly:

- 1) Greasing to the stuffing boxes. Greasing to valve actuator gear

C) Monthly:

- 1) Check tightness of all nut bolts. Check coupling bushes for wear.
- 2) Checking and replacing gland packing if necessary (Pump & valve)
- 3) Check oil in air compressor. Check valve actuator bushes.

D) Quarterly:

- 1) Inspection of gland packing and replacing if necessary. Cleaning and oiling of gland bolts.
- 2) Checking and lubrication of all bearings.

E) Half Yearly:

- 1) Removing plant packing and checking wear on line shaft at gland portion.
- 2) Replacing gland packing.
- 3) Cleaning and examination of all bearings for flaws and checking and play. Replace oil/grease of bearing.
- 4) Replacing gland packing of sluice valves.

ANNEXURE- III**LIST OF THE TOOLS AND TACKLES TO BE PROVIDED AT EACH PUMPING STATION, TREATMENT PLANT & PUMPING STATION FOR OPERATION AND MAINTENANCE.**

Sr. No.	Item	Quantity
1.	For spanner set size 6 mm to 22 mm	1 set.
2.	Fix Spanner set size 6 mm to 52 mm	1 set
3.	Ring spanner set size 6 mm to 22 mm	1 set
4.	Ring Spanner set size 7 mm to 52 mm	1 set
5.	Box spanner set size 6 mm to 38 mm	1 set
6.	Pipe wrench size 36"	1 No.
7.	Pipe wrench size 24"	2 Nos.
8.	Screw driver size 6", 9"and 12" (2 Nos. of each size)	6 Nos.
9.	Insulated pliers size 12"	6 Nos.
10.	Long Nose Pliers 8"	3 Nos.
11.	Adjustable screw spanner size 12"	3 Nos.
12.	Hammer 1 Lb x 2 Lb	2 Nos.
13.	Testers	6 Nos.
14.	Chisels 12" x 6" (2 Nos. of each size)	4 Nos.
15.	Hack Saw Frame	6 Nos.
16.	Hack saw Blade	6 packets.
17.	Hand gloves suitable for 33 KV	2 Pairs.
18.	Phawada	2 Nos.
19.	Ghamela	4 Nos.
20.	Tikam	2 Nos.
21.	Kaichin (For Gardening)	2 Nos.
22.	Vile (For Gardening)	3 Nos.
23.	Plastic Bucket 10 Litres	2 Nos.
24.	Rope 1/2'	30 meter
25.	Torch/Battery	2 Nos.

SECTION – D**Periodical Statements**

**The contractor shall have to submit the periodical statements
(1 to 11) as per annexure attached here with.**

STATEMENT 1	Weekly report of attendance of Raw & Treated Water mains for O & M Work
STATEMENT 2	Monthly report of material consumed for O & M.
STATEMENT 3	Quarterly Report of inventory of materials for O & M work.
STATEMENT 4	Quarterly Report for calibration of instruments installed in equipment
STATEMENT 5	Monthly report for vehicles deployed in O & M work
STATEMENT 6	Monthly report for staff deployed in O & M work.
STATEMENT 7	Monthly report for maintenance.
STATEMENT 8	Monthly report for pumping.
STATEMENT 9	Daily Pumping Report
STATEMENT 10	Daily Treated Water Quality Report
STATEMENT 11	Monthly Treated Water Quality Report
STATEMENT 12	Monthly water supply report

Statement- 1**Name of Project:****Period:** Week**Weekly report of attendance of Raw & Treated Water mains for O & M work**

Sr. No.	Date of Visit	Air Valve no.	Status of air valve	Action taken for repairing	Vehicle used with No.	Remarks
1	2	3	4	5	6	7
1						
2						
3						
4						
5						
6						
7						

Signature of Contractor

Statement- 2

Name of Project:

Period: Month

Monthly report of material consumed for O & M

Sr. No.	Materials Used	Qty.	Average Cost	Issued/ Purchase by	Remarks
1	2	3	4	5	7
1					
2					
3					
4					
5					
6					
7					

Signature of Contractor

Statement- 3

Name of Project:

Period: Quarterly

Quarterly report of material consumed for O & M

Sr. No.	Material	Part No (if any)	Qty.	Average Cost	Remarks
1	2	3	4	5	6
1					
2					
3					
4					
5					
6					
7					

Signature of Contractor

Statement- 4**Name of Project:****Period:** Quarterly**Quarterly report of material for calibration of Instruments installed**

Sr. No.	Name of Instrument (Pressure Gauge, Flow meter, Relay, Voltmeter, Ammeter etc.)	Instrument No. (if any)	Qty.	Date of calibration	Remarks
1	2	3	4	5	6
1					
2					
3					
4					
5					
6					
7					

Signature of Contractor

Note: Calibration report shall be submitted along with calibration report.

Statement- 5**Name of Project:****Period:** Month**Monthly report of Vehicles deployed for O & M work**

Sr. No.	Type of Vehicle	Model & Year of manufacture.	Registration no.	Working condition	Remarks
1	2	3	4	5	7
1					
2					
3					
4					
5					
6					
7					

Signature of Contractor

Statement- 6

Name of Project:

Period: Month

Monthly report of Staff deployed for O & M work

Sr. No.	Name of Person	Designation	Age	Qualification	Experience.	Remarks
1	2	3	4	5	6	7
1						
2						
3						
4						
5						
6						
7						

Signature of Contractor

Statement- 7

Name of Project:

Period: Month

Monthly report of maintenance work

Sr. No.	Date	Nature of work attended	Remarks
1	2	3	4
1			
2			
3			
4			
5			
6			
7			

Signature of Contractor

Statement- 8

Name of Project:

Period: Month

Monthly report for Pumping

Sr. No.	Date	Pumping Set				Total in Hrs.	Incoming Flow MLD.	Outgoing Flow MLD.	Remarks
		P- 1 Hrs.	P- 2 Hrs.	P- 3 Hrs.	P- 4 Hrs.				
1	2	3				4	5	6	7
1									
2									
3									
4									
5									
6									
7									

Signature of Contractor

Statement- 9

DELETED

Statement- 10

DELETED

Statement- 11
DELETED

Statement- 12

Name of Project:

Month:

Monthly Water supply Report

Date	Sign	Date	Sign
1		16	
2		17	
3		18	
4		19	
5		20	
6		21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	
		31	
TOTAL No's of Days Water supply			

Signature of Contractor

Signature of Work Charge

Signature of Assistant Engineer

Signature Of DEE