Gujarat Industries Power Company Limited
(GIPCL)

TENDER DOCUMENT

for

1. **EPC Contract for Supply, Testing, Erecting & Commissioning of 5.00 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work**

2. **Operation and Maintenance of the proposed treatment facility for Three (3) Years after commissioning the entire system**

at

Surat Lignite Power Plant (SLPP)
Gujarat Industries Power Company Limited
At & P.O. Village: Nani Naroli, Taluka Mangrol,
Dist. Surat-394 112, Gujarat

TENDER NO: GIPCL /MANGROL/WTP/2025-26

NOTICE INVITING TENDER

Offers are invited from the Bidders for the work of:

- **EPC contract for Supply, testing, erecting & commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical, Electrical & Instrumentation work at Surat Lignite Power Plant (SLPP), Mangrol.**
- **Providing Operation and maintenance of the proposed treatment facility for Three (3) years, after commissioning the entire system and conducting three months successful trial run including defect liability.**
- EMD: **Rs. 4,40,000.00 (Rs. Four Lakh and Forty Thousand only)**
- Tender document fees: **Rs. 5,900.00 (Rs. Five Thousand and Nine Hundred Only)**
- O&M Contract period: **Three (03) Years** from **after commissioning**.
- Last date of online submission of entire offer / complete Bid in all two parts on https://tender.nprocure.com: **06/08/2025 up to 17.00 hrs.**

Tender Bid Documents can be downloaded from Website https://www.tender.nprocure.com ; (For view, download and online submission) and from GIPCL websites www.gipcl.com (For view & download only).

For details of Pre-Qualification Criteria & other terms and conditions visit us on https://tender.nprocure.com or contact General Manager (Mines) / Deputy General Manager (P&P) at below said address. Keep visiting https://tender.nprocure.com website till last date for updated information, if any.

Tender fee & EMD shall be paid along with submission of tender documents. After online submission of the bid at https:// www.tender.nprocure.com, all the relevant documents of tenders / offers shall be submitted physically by Registered Post A.D. or Speed Post or Courier or Hand Delivery superscripting the envelope with Tender No. and Description of tender, Name of Bidder, contact numbers etc addressed to:

General Manager (Mines),
Gujarat Industries Power Company Limited
Surat Lignite Power Plant (SLPP),
Nani Naroli, Mangrol, Surat-394112
Email: cgmminesoffice@gipcl.com

DETAILED NOTICE INVITING TENDER

Techno-Commercial Bid & Price Bid are invited from reputed and experienced bidders for (1) EPC contract for Supply, testing, erecting & commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical, Electrical & Instrumentation work at Surat Lignite Power Plant (SLPP), Mangrol. and (2) Providing Operation and maintenance of the proposed treatment facility for Three (3) years, after commissioning the entire system and conducting three months successful trial run including defect liability.

Tender No.	**GIPCL /MANGROL/WTP/2025-26**
Brief Description of Work:	1. EPC contract for Supply, testing, erecting & commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical, Electrical & Instrumentation work at Surat Lignite Power Plant (SLPP), Mangrol. **2.** Providing Operation and maintenance of the proposed treatment facility for Three (3) years, after commissioning the entire system and conducting three months successful trial run including defect liability.
Places of work:	Mangrol Lignite Mine, Surat Lignite Power Plant, Nani Naroli, Taluka Mangrol, District Surat (GJ) 394112
Period of Contract:	**1.** EPC contract for Supply, testing, erecting & commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical, Electrical & Instrumentation work at Surat Lignite Power Plant (SLPP), Mangrol – **6 Months** 2. Providing Operation and maintenance of the proposed treatment after commissioning the entire system and conducting three months successful trial run including defect liability- **3 Years**
Tender Fees Amount (Non-Refundable)	Rs. 5,900.00 (Rs. Five Thousand and Nine Hundred Only) (nonrefundable, inclusive of 18% GST) through online payment gateway of company's website: www.gipcl.com (online Payment form) as per details mentioned **@ Annexure- 1** or by RTGS/NEFT/IFT only in favor of GIPCL as per details below: - 1. **Name of Account Holder:** Gujarat Industries Power Co. Ltd. 2. **A/c. No**.: 33514692834

	3. **Name of Bank**: State Bank of India 4. **Address of Bank**: Utility Building, Nani Naroli, Taluka Mangrol, Dist. Surat. Pin 394 112 5. **IFSC code**: SBIN0013423 6. **MICR Code**: 394002513 **Note: Tender fee will be accepted through online mode only.**
Earnest Money Deposit Amount	Rs. 4,40,000.00 (Rs. Four Lakh and Forty Thousand only) by way of demand draft drawn in favor of Gujarat Industries Power Co. Ltd., payable at SBI - Nani Naroli Branch (IFS Branch Code-SBIN0013423) or Bank of Baroda - Mosali Branch (IFS Branch Code-BARB0MOSALI), Dist. Surat or through online payment gateway of company's website: www.gipcl.com (online Payment form) as per details mentioned @ Annexure-1 or Bank Guarantee from any Nationalized Banks, Axis Bank, ICICI Bank, HDFC Bank, Kotak Mahindra Bank, IndusInd Bank, Federal Bank, Bandhan Bank, IDBI Bank and Karur Vysya Bank, as per the specified Performa of GIPCL **(Annexure-2)** or by way of RTGS/NEFT/IFT and the details for RTGS/NEFT/IFT as under: - 1. **Name of Account Holder**: Gujarat Industries Power Co. Ltd. 2. **A/c. No.**: 33514692834 3. **Name of Bank**: State Bank of India 4. **Address of Bank**: Utility Building, Nani Naroli, Taluka Mangrol, Dist. Surat. Pin 394 110 5. **IFSC code**: SBIN0013423 6. **MICR Code**: 394002513
Availability of Bid document:	On web site https://tender.nprocure.com or http://www.gipcl.com
Downloading of tender document from websites:	**17/07/2025 to 06/08/2025**
Issue of Corrigendum to document, if required:	As and when required till last date of submission.
Last date of online submission of entire offer / complete Bid in all two parts on https://tender.nprocure.com	**06/08/2025 up to 17.00 hrs.** at https://tender.nprocure.com
Submission of Techno-Commercial (Part-I) Bid in Physical form along with supporting documents at below mentioned address:	**08/08/2025 up to 17.00 hrs.**

Date and time for online opening of Techno-Commercial Bid (Part-I):	**11/08/2025 up to 09.00 hrs.**
Date and time for opening of Price Bid (Part-II):	The date and time of opening of price bids will be intimated to the technically eligible Bidder's at least one day in advance by phone / fax / courier / email.
E-Reverse Auction:	E-Reverse Auction will be conducted on **e-Auction USER ID on https://e-auction.nprocure.com** and informed by GIPCL to all qualified Bidders.

The above details are for information purposes only and the details are provided in the document. Bidders are advised to read the bid document before submitting the bid.

IMPORTANT NOTE TO BIDDERS:

1. Amendment / corrigendum of the bid document, the forms, schedules etc. may be done any time by GIPCL during the period between publication of notice and submission of bid in the web site. The Bidders are required to visit the web site regularly till the last date of online bid submission **(i.e. 06/08/2025 up to 17.00 hrs).**
2. GIPCL reserves the right to reject any or all the offers / bids received without assigning any reason thereof.
3. The Bidders are required to quote the rate strictly as per the terms and conditions mentioned in the bid document. Conditional bid will not be entertained and shall be liable for outright rejection.
4. Bidder to note that Price Bid of those bidders shall be opened who is found technically qualified and is found reasonably responsive to GIPCL's tender terms and conditions and scope of Works.
5. All the relevant documents as per the requirement of the tender shall be submitted physically along with EMD in sealed cover so that the same is received in this office on or before the due date and time. All such documents should be submitted by RPAD / speed post / Hand Delivery. Otherwise the offer will not be considered and no any further communication in the matter will be entertained.
6. No tender shall be accepted in any case after due date and time of receipt of tender, irrespective of delay due to postal or any other reasons and GIPCL does not assume any responsibility for late receipt of the tender
7. The Bidders are required to submit their bids on-line in the web site https://tender.nprocure.com and the physical copy of all the relevant documents of tenders / offers shall be submitted by Registered Post A.D. or Speed Post or Courier or Hand Delivery superscripting the envelope with Tender No. and Description of tender, Name of Bidder, contact numbers etc addressed to

   General Manager (Mines)
   Gujarat Industries Power Company Limited,
   Surat Lignite Power Plant,
   At & P.O. Nani Naroli, Taluka Mangrol,
   Dist. Surat-394 110, Gujarat

DISCLAIMER

1. This Bid Document is not an agreement or an offer by GIPCL to Bidders or any third party.

2. This Bid Document does not purport to contain all the information each Bidder may require. Some Bidders may have better knowledge of the Project than the others. It is expected and recommended that each Bidder conducts its own due-diligence, investigations and analysis and verifies and satisfies itself of the accuracy and completeness of the information in this Bid Document and obtain independent advice/ information from appropriate sources.

3. Neither GIPCL nor its employees or its consultants/advisors shall have any liability to any Bidder or any other person under the law of contract, tort, the principles of restitution or unjust enrichment or otherwise for any loss, expense or damage which may arise from or be incurred or suffered in connection with this Bid Document, or any matter deemed to form part of this Bid Document, the award of the Project, or any other information supplied by or on behalf of GIPCL or its employees, any consultants/advisors or otherwise arising in any way from the selection process for the award of the Project.

4. Information provided in this Bid Document to the Bidder(s) is on a wide range of matters, some of which depends upon interpretation of law. The information given is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. GIPCL accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

5. GIPCL accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this Bid Document.

6. GIPCL may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this Bid Document.

7. The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid Document including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by GIPCL or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and the GIPCL shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the Bid, regardless of the conduct or outcome of the bidding process.

8. Bid Document and the information contained herein are strictly confidential and privileged and are for the exclusive use of the Bidder to whom these are issued or it's concerned Promoter(s) / wholly owned Subsidiary (ies) on whose strength / experience the Bidder is seeking qualification. This Bid Document must not be copied or distributed by the recipient to third parties (other than, to the extent required by applicable law or in confidence to the

recipient's professional advisors, provided that such advisors are bound by confidentiality restrictions at least as strict as those contained in this Bid Document). In the event that after the issue of the Bid Document the recipient does not continue with its involvement in the bidding process for any reason whatsoever, this Bid Document and the information contained herein must be kept confidential by such Bidder and its concerned Promoter(s) / wholly owned Subsidiary (ies) and professional advisors, if any at all times.

9. Information relating to the examination, clarification, evaluation and recommendation for the Bidders shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional advisor advising GIPCL in relation to, or matters arising out of, or concerning the bidding process. GIPCL will treat all information, submitted as part of the Bid, in confidence and will require all those who have access to such material to treat the same in confidence. GIPCL may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/ or GIPCL.

10. The Bidders or their Promoter(s) / wholly owned Subsidiary (ies) shall not make any public announcements with respect to this bidding process or this Bid Document. Any public announcements in this regard shall be made exclusively by GIPCL. Any breach by the Bidder shall be deemed to be non-compliance with the terms and conditions of the Bid Document and shall render its Bid liable for rejection. GIPCL's decision in this regard shall be final and binding on the Bidder.

11. GIPCL reserves the right to change or modify the Bid Document at any time during the bidding process. All Bidders to whom this Bid Document has been issued shall be intimated of any such change. The Bidders or any third party shall not object to such changes/modifications. Any such objection by the BIDDER shall make the bid liable for rejection by GIPCL. Further objection by any third party shall be construed as infringement on confidentiality and privileged rights of GIPCL with respect to this Bid Document.

12. GIPCL reserves the right in its sole discretion, without any obligation or liability whatsoever, to accept or reject any or all of the bids at any stage of the bidding process without assigning any reasons. Further GIPCL reserves the right to annul the bidding process and / or to reject any or all bids at any stage prior to the signing of the Mining Contract without thereby incurring any liability to the affected Bidders or any obligation to inform the affected Bidders of the grounds for GIPCL's action. Decision of GIPCL shall be final and binding in this regard.

13. GIPCL may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment, assumptions, terms and conditions contained in the this Bid Document.

14. The Bidder should confirm that the Bid Document is complete in all respects. In the event that the Document or any part thereof is mutilated or missing, the Bidder must notify GIPCL immediately at the following address:

General Manager (Mines)
M/s. Gujarat Industries Power Company Ltd
Lignite Power Plant, At & Po. Nani Naroli,
Taluka Mangrol, Dist. Surat- 394 110, Gujarat.
Phone: 02629-261087
Email: cgmminesoffice@gipcl.com

15. If no intimation is received by GIPCL at the above-mentioned address within 5 Business Days from the date of issue / download of the Bid Document, it shall be considered that the Bid Document received by the Bidder is complete in all respects and that the Bidder is fully satisfied with the Bid Document. No extension of time may be granted to any Bidder for submission of its Bid on the ground that the Bidder did not obtain a complete set of the Bid Document.

16. It shall be deemed that by submitting the Bid, the Bidder agrees and releases GIPCL, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/ or performance of any obligations hereunder, pursuant hereto and/ or in connection herewith and waives any and all rights and/ or claims it may have in this respect, whether actual or contingent, whether present or future.

    By receiving this Bid Document, it shall be deemed that the persons so receiving the Bid Document have reviewed, understood and accepted the disclaimers contained in this.

CONTENTS

CHAPTER-I INVITATION FOR BID

CHAPTER-I INVITATION FOR BID	
Section-1 (Instruction to Bidders)	
1.	**Brief Introduction:**
	Gujarat Industries Power Company Limited (GIPCL) was incorporated in the year 1985 as a Public Limited Company. GIPCL is in the business of Electrical Power Generation, the current installed capacity is 1184.4 MW. GIPCL also operates captive Lignite and Limestone Mines to meet the fuel requirement of the 500 MW Surat Lignite Power Plant. For 500 MW (2 x 250 MW) Surat Lignite Power Plant at Village Mangrol; GIPCL has acquired mining lease and clearances for Open Cast Lignite and Limestone mining in Vastan and Mangrol -Valia region which ensures uninterrupted fuel supply to the Surat Lignite Power Plant. At present, Rainwater of about 35.00 Lakh CuM is accumulated in Mangrol mines, which is acidic in nature. Intend to install water treatment plant at Mangrol Mines. As part of environmental compliance, GIPCL intends to implement a project to treat rainwater accumulated in mines by installation of suitable water treatment system finally treated water shall be discharged to nearby waterbody to meet GPCB norms.
2.	**Scope of Bid:**
2.1	Gujarat Industries Power Company Limited, Surat (referred to as Employer in these documents) invite bids for the works of: a) EPC contract for Supply, testing, erecting & commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical, Electrical & Instrumentation work at Surat Lignite Power Plant (SLPP), Mangrol. b) Providing Operation and maintenance of the proposed treatment facility for Three (3) years, after commissioning the entire system and conducting three months successful trial run including defect liability.
2.2	This is a Two Stage Tender.
2.3	The successful bidder will be expected to complete the works within a period of 6 months excluding 3 months trial run and acceptance of plant i.e. total 9 months excluding monsoon.
3.	**General Instructions:**
	a) For the purpose of bid evaluation, if the employer representatives feel necessary to visit specific or all such plants as mentioned above by the bidder, the bidder shall make necessary arrangements for the same. The cost of such visits shall be borne by the bidder. b) To participate in e-Reverse Auction, bidders have to create e-Auction USER ID on https://e-auction.nprocure.com and it is mandatory to submit the same along with physical Technical-Commercial Bid, so that the bidder shall be allowed to participate in the e-Reverse Auction. c) The experience as Sub-Contractor / back to back works shall not be considered. d) The experience of Joint Venture works shall be considered as pro-rata basis of

	share of the partners in that particular project work. e) The contractor who is having no experience as well as specialty in such Water / Effluent Treatment Plant (ETP), as required above, his tender will be rejected outright. f) Joint Venture will not be permitted for this tender. g) Bidder should possess valid PF Number. Bid without proof of the same shall be rejected. h) The Bidder has to submit copy of INCOME TAX Permanent Account Number (PAN). i) Bidder has to submit GST registration number. Copy of registration of the certificate should be submitted. j) The bidder should not have been Blacklisted by Government of India/Government of Gujarat or any State Board/Corporations for the last three (03) years. Details regarding bidder's organization shall be submitted (General information) and (structure and organization). k) Bidder shall have to submit the "Litigation(s), Court Case(s) or Arbitration(s) of the Bidder" as amended in Form-D attached. l) Bidder shall have to submit the "Declaration for Contractual Disputes/ Litigations" as amended in Form-D attached. m) If Bidder or its Partner(s) or Director(s) is / are/ was in any Litigation(s) or Court Case(s), either completed or under progress during last five (5) years or Black Listed / Deregistered / Stopped or banned from dealing in the past by any Govt, of Gujarat Undertakings / Depts. / Authorities and Govt. of Gujarat supported companies / undertakings / organizations, bid of that party will be liable to be rejected. Bidder agrees and undertakes to accept decision of GIPCL in this regard as final and binding on the Bidder without any demur and that no further correspondence shall be done in this regard at any stage. n) However, details of the Arbitration case (s) either completed or under progress during last five (5) years by the Bidder or its Partner(s) or Director(s) is / are/ was shall be provided by the bidder along with FORM-D. o) If at any time such declaration is found false, the bid will be rejected or if the contract work is already awarded, it will be terminated forthwith without payment of any compensation and the EMD/ PBG will be forfeited. p) Bidders are advised to carefully read the instructions, evaluation norms and other terms and conditions described in these documents under different Chapters before making their offer. q) Bidder shall visit site prior to bidding and shall provide an undertaking along with bid submission to have visited site and has understood the site conditions and have considered all cost pertaining to the site conditions and requirement prior to bidding. Bidder shall submit site visit certificate along with bid. r) Employer reserved the right (i) to change, alter or to waive any technical or commercial terms, condition and qualification (ii) to reject all the bids or any bid in part or full without assigning any reason whatsoever (iii) for making changes / relaxation in eligibility criteria at any time. The bidder shall have no cause of action or claim against the employer or its Officers / Employee's successor or assignee for rejection of his tender/bid.

	s) The Tender of those bidder(s) who fail to submit the required documents physically within the stipulated date and time will be treated as non-responsive and their Price Bid will not be opened. t) The Gujarat Industries Power Company Limited (GIPCL) reserves the right to accept or reject any or all the tenders without assigning any reasons. The bidder shall have to fulfill the entire minimum requirements as mentioned above for all the criteria of finance, experience and technical. u) One Bid per Bidder: Each bidder shall submit only one bid for one contract. A bidder who submits or participates in more than one Bid (other than as a Sub-contractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified. v) Tender documents are not transferable. w) Cost of Bidding: The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs. x) Site visit: The Bidders are advised to visit the proposed work Site after downloading the tender copy from https://tender.nprocure.com or http://www.gipcl.com to study the actual working and all other related conditions, before submitting their offer. y) The Bidders may approach the office of the GIPCL for assistance to examine the site of works and its surroundings and obtain for themselves, at their own responsibility, all information that may be necessary for preparing the bid and entering into a contract. z) All costs and liabilities arising out of the Site visit shall be at Bidder's account. The contractor shall give a declaration of site visit as per the format provided in Form-C of the Tender Document.
4.	**Bidding Documents:**
	a) The set of bidding documents comprises the documents listed in the table below and addenda issued in accordance with Clause 4 (h): **Chapter 1 : Invitation for Bids** **Chapter-2 : Specifications** **Chapter-3 : Drawings** **Chapter-4 : Price bid / Schedule of Price** b) The Bidder shall prepare the bid document in two parts (1) Techno-Commercial Bid and (2) Price Bid. All bids (Techno-Commercial and Price bid) should be submitted online through the web site https://tender.nprocure.com c) A hard copy of the entire format along with all forms duly filled, with proof of tender fee (tender fee shall be paid online but proof of shall be enclosed) and EMD in form of DD or BG, shall be submitted in a sealed cover marked Techno-Commercial Bid, Part-I, Tender No. GIPCL /MANGROL/WTP/2025-26 at the office of the General Manager (Mines) at the address given below, on or before **08/08/2025 not later than 17.00 hrs**. On receipt and verification of the same, the Bidder will be declared qualified for the Price Bid. To:

General Manager (Mines)
Surat Lignite Power Plant
Gujarat Industries Power Company Limited (GIPCL),
At & Po Nani Naroli, Taluka Mangrol, Surat-394112 (Gujarat).

d) The Price Bid shall be submitted online only on https://tender.nprocure.com. No physical submission of rates will be entertained as it should be furnished online only. Also, no fax, email and letter will be entertained for the same.

e) **Contents of the Techno-commercial bid:**

1) This cover should be super scribed as **Techno-Commercial Bid**, **Part-I, Tender No. GIPCL /MANGROL/WTP/2025-26**

2) All information regarding technical aspects of your offer as specified in the tender bid documents and technical schedules (data sheets & guarantee statements) & data to be submitted in hard copy /uploaded online as specified in below:

i. Covering Letter
ii. Bid Form for Technical Proposal and Appendix to Technical Proposal;
iii. Declaration by the bidder that his tender is without any **technical or commercial deviations** in the format of the letter enclosed with the tender.
iv. The Tender documents duly signed by an authorized person on each page.
v. Full technical description of the items and services proposed by the bidder including makes.
vi. Details of construction equipment proposed for the execution of the works and make.
vii. Details of manpower proposed for the Project Management and Site Management including qualification and experience of the personnel.
viii. Work methodology and plan.
ix. Bar Chart and PERT charts for the execution of the works.
x. Process design, hydraulic flow diagram with levels, and layout plan with dimensions of proposed treatment units, etc., shall be furnished as a minimum for evaluation purpose (online & in hard copy).
xi. Confirmation of performance guarantee and Defect liability period.
xii. Confirmation of the commercial terms and conditions. There shall be no reference of the Price.
xiii. Any other technical details.
xiv. Guarantee statements (Power, chemical etc.) and Data Sheets (as per Chapter-2) (to be uploaded online as well as in hard copies).
xv. Financial Standing of the Contractor such as for the past 3 years (, 2022-23, 2023-24 and 2024-25) consisting of Profit and Loss Statement, Balance Sheet and Auditor's Report.
xvi. Power of authority of the signatory to the Bidder, In case of a Partnership Firm as a Bidder, a certified copy of the Partnership

	Deed of the Firm xvii. GST Number xviii. PAN Details **f) Price bid:** 1) The financial proposal shall be submitted online on website https:// www.tender.nprocure.com, the financial bid. 2) Price bids of only those bidders shall be opened whose technical bid is found qualified and is found responsive, suitable in accordance with the tender requirements. 3) GIPCL reserves the right to accept or reject any or all tenders/Bids/Offers without assigning any reason thereof or rescind the bidding process. 4) The schedule of prices in the tender document shall be strictly followed in the same manner by the tenderer and without any deviations or alterations of the format. g) **Clarification of Bidding Documents**: A prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing or by mail at the Employer's address indicated in the invitation to bid. The Employer will respond to any request for clarification which he received earlier than 7 days prior to the deadline for submission of bids. h) **Amendment of Bidding Documents**: 1) Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing tender addenda. 2) Any addendum thus issued shall be part of the bidding documents and shall be communicated in writing or by fax to all the purchasers of the bidding documents. Prospective bidders shall acknowledge receipt of each addendum by mail to the Employer. Addenda shall be incorporated in the bids submitted by the Bidder. **3)** To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may extend as necessary the deadline for submission of bids, in accordance with Sub-Clause 6.2 (b) below.
5.0	**Preparation of Bids:**
5.1	**Language of the Bid:**
	All documents relating to the bid shall be in the English language.
5.2	**Documents comprising the Bid:**
	The bid to be submitted by the bidder shall comprise the following: a) The Bid (in the format indicated in Chapter-1, Section 2) b) Bid Security; and Qualification Information Form and Documents c) Originals only of Specifications and Drawing duly stamped on all pages by the Bidder d) any other materials required to be completed and submitted by bidders in accordance with these instructions. e) The documents listed under Sections 2 and 5 shall be filled in without exception.

5.3	**Bid Prices:**
	a) The contract shall be for the whole of works as described in Sub-Clause 2.1, The Tenderer shall quote his unit rates for the items given in the Bill of Quantities and Rates. The unit rate so quoted shall be applicable irrespective of any future change in quantities subject to Clause 26.4 of Conditions of Contract. b) The Stated rates are including for all duties, taxes, and other levies payable by the Contractor, except GST as per present tax structure, if tax structure changes, variation in taxes or payable by the Bidder, shall be reimbursed by GIPCL to the extent levies during the currency of the contract, if applicable and directly related to the services rendered by the Bidder under this contract. c) The stated rates shall be fix and firm for the entire duration of the Contract and shall not be subject to adjustment on any account. d) Unless specified otherwise in Employer's Requirements, Bidders shall quote for the entire facilities on a "single responsibility" basis such that the total bid price covers all the Contractor's obligations mentioned in or to be reasonably inferred from the bidding documents in respect of the design, engineering, manufacture, including procurement and subcontracting (if any), supply, construction, installation, testing, commissioning and completion of the facilities. This includes all requirements under the Contractor's responsibilities for testing, pre-commissioning and commissioning of the facilities and, where so required by the bidding documents, the acquisition of all permits, approvals and licenses, etc., operation, maintenance and training services and such other items and services as may be specified in the bidding documents, all in accordance with the requirements of the Conditions of Contract.
5.4	**Currencies of Bid and Payment:**
	The rates and the prices given are in Indian Rupees.
5.5	**Bid Validity:**
	a) Bids shall remain valid for a period not less than 120 (one hundred and twenty) days after the date for bid submission specified in Clause 6.2 (a). A bid quoted by the Bidder as valid for a shorter period shall be rejected by the Employer as non-responsive. b) In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by mail. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid except c) The Contract Price will remain fixed during the extended period of validity. The rates accepted shall be firm for entire duration of the contract including AMC of three years. No escalation what so ever shall be payable.
5.6	**Bid Security:**
	a) The Bidder shall furnish, as part of his Bid, a Bid security in the amount as mentioned ITB. This bid security shall be in favour of Gujarat Industries Power Company Limited. and may be in one of the following forms in favour of Gujarat Industries Power Company Limited, payable at Surat: 1) A bank guarantee issued by a Nationalized / Scheduled Bank located in India

	2) Demand draft, or Cheque b) Bank guarantees issued as surety for the bid should be valid for 45days beyond the validity of the bid. c) Any bid not accompanied by an acceptable Bid Security and not secured shall be rejected by the Employer as non-responsive. d) The Bid Security of unsuccessful bidders will be returned without interest as promptly as possible, but not later than 30 days after the expiry of the period of bid validity specified in Sub-Clause 5.5 (a) or after receipt of Performance Security Deposit from the Contractor, whichever is earlier. e) The Bid Security of the successful bidder will be discharged when the bidder furnished the required Performance Security. f) The Bid Security may be forfeited 1) if the Bidder withdraws the Bid after Bid opening during the period of Bid validity; 2) to reject the bid or terminate the contract, if it is found at any stage that the Bidder/ Contractor has furnished any wrong/ misleading information or forged document along with the bid or subsequently during the period of contract and amount of EMD and PBG will be forfeited and necessary further action may be initiated as may be deemed fit by the management or 3) in the case of a successful Bidder, if the Bidder fails within the specified time limit to furnish the required Performance Security. 4) In case, the Contractor fails to mobilize required manpower, resources and equipments within 15 (Fifteen) days from the issue of LoA, the amount of performance bank guarantee (PBG) may be forfeited at the sole discretion of the company. g) No interest shall be paid on any Bid security/Performance Security/ or Guarantee in lieu thereof.
5.7	**Alternative Proposals by Bidders:**
	Alternative bids shall not be considered for any part of the Works.
5.8	**Format and Signing of Bid:**
	a) The Bidder shall prepare the Bid as specified in clause 5.2 and following the instructions in clause 3. b) The original and copy of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder. All pages of the bid where entries or amendments have been made shall be initialed by the person or persons signing the bid. c) The Bid shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.
6.0	**Submission of Bids:**
6.1	**Sealing and Marking of Bids** a) The Bidder shall prepare the bid document in two parts (1) Techno-Commercial Bid and (2) Price Bid. All bids (Techno-Commercial and Price bid) should be submitted online through the web site https://tender.nprocure.com b) A hard copy of the entire format along with all forms duly filled, with proof of

	tender fee (tender fee shall be paid online but proof of shall be enclosed) and EMD in form of DD or BG, shall be submitted in a sealed cover marked Techno-Commercial Bid, Part-I, Tender No. GIPCL /MANGROL/WTP/2025-26 at the office of the General Manager (Mines) at the address given below, on or before **08/08/2025 not later than 17.00 hrs.** On receipt and verification of the same, the Bidder will be declared qualified for the Price Bid. To: General Manager (Mines) Surat Lignite Power Plant Gujarat Industries Power Company Limited (GIPCL), At & Po Nani Naroli, Taluka Mangrol, Surat-394112 (Gujarat). c) The Sealed Bid shall contain, 1) The Qualification Information indicated in Section 2, duly filled in original 2) Originals of Chapter-1 Invitation for Bid, Chapter-2, Specifications, Chapter-3 Drawing and Chapter – 4, Price Bid/ Schedules of Price duly stamped and initialed on each page by the tenderer as proof of their having scrutinized the documents. d) In addition to the identification required in Sub-Clause 6.1 (b), the envelopes shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared late, pursuant to Clause 6.3. e) If the envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the bid.
6.2	**Deadline for Submission of the Online and Physical Bids:**
	a. Bids must be received by the Employer at the address specified above not later than **06/08/2025 up to 17.00 hrs** at https://tender.nprocure.com and submission of Techno-Commercial (Part-I) Bid in Physical form along with supporting documents will be **08/08/2025 up to 17.00 hrs.** In the event of the specified date for the submission of bids declared a holiday for the Employer, the Bids will be received up to the appointed time on the next working day. b. The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 4 (h), in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.
6.3	**Late Bids:**
	Any Bid received by the Employer after the deadline prescribed in Clause 6.2 will be returned unopened to the bidder.
6.4	**Modification and Withdrawal of Bids:**
	a) Bidders may modify or withdraw their bids by giving notice in writing on & before the deadline prescribed in Clause 6.2(a). b) Each Bidder's modification or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with Clause 6.1, with the outer and inner envelopes additionally marked "MODIFICATION" or "WITHDRAWAL", as appropriate. c) No bid shall be modified after the deadline for submission of Bids. d) Withdrawal or modification of a Bid between the deadline for submission of bids

	and the expiration of the original period of bid validity specified in Clause 5.5 (a) above or as extended pursuant to Clause 5.5 (b) may result in the forfeiture of the Bid security pursuant to Clause 5.6. e) Bidders may offer discounts to, or modify the prices of their Bids only by submitting Bid modifications in accordance with this clause, or included in the original Bid submission.
7.0	**Bid Opening and Evaluation:**
7.1	The envelope containing Part I- Techno-Commercial Bid aspects of the bid will be opened on the scheduled date of opening of the bid, at the office of the GIPCL. The date and time of opening of price bids will be intimated to the technically eligible Bidder's at least one day in advance by phone/ fax/ courier/ email.
7.2	The Techno-Commercial Bid (Part I) of the Bidders will be evaluated on the basis of Pre-qualification criteria and information available with GIPCL on the performance of Bidder etc. Bidders should be careful in preparing their bid papers for the sufficiency and clarity. Only the shortlisted Bidders will be informed about the date & time of opening of the price bids (Part II).
7.3	**Evaluation of Price Bid:**
	a) Rate quoted for the EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years shall be considered for deciding the lowest three bidders (minimum) or 50% out of total bidders (rounded to the next higher whole number), whichever is higher for making them eligible for the e-reverse auction. However, lowest grand total amount for EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years combined shall be considered as the base rate which will put up for starting e-Reverse Auction. b) e-Reverse auction shall be for reducing the lowest grand total amount of EPC Contract For Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years combined and the bidders have to reduce their grand total amount of EPC Contract For Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years combined in decrement of value as decided before start of e-Reverse Auction. After e-Reverse Auction process, L1 bidder shall be decided based on the lowest grand total amount bid for the EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years combined. c) Decremental value and duration for the e-Reverse Auction shall be informed to the qualified bidders before start of e-Reverse Auction. d) Percentage reduction in the estimated value of EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years together by e-reverse auction process will be equally applied to all the works i.e.

	EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years i.e. equal percentage in all the EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years will be adjusted accordingly.
8.0	**Award of Contract:**
8.1	**Award Criteria:**
	Subject to Clause 8.2, the Employer will negotiate if required with the bidder whose bid has been determined to be substantially responsive to the Bidding documents and who has offered the lowest evaluated Bid Price. On completion of negotiations the employer will award the contract to the lowest bidder.
8.2	**Employer's Right to Accept any Bid and to Reject any or all Bids:**
	Notwithstanding Clause 8.1, the Employer reserves the right to accept or reject any Bid or part of the Bid and to cancel the Bidding process and reject all Bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Employer's action.
8.3	**Notification of Award:**
	a) The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period. This letter (hereinafter and in the *Conditions of Contract* called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price"). b) The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 8.4. c) Upon accepting the Performance Security for the Successful Bidder, the employer shall issue a 'Notice to Proceed' to the Contractor, in which the date of commencement of the Contract shall be indicated. d) Upon furnishing of the Performance Security by the successful Bidder, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful.
8.4	**Performance Security:**
	A Performance Security Deposit **@ 10% of ETP Installation Cost** (shall be applicable on the Contract Work. Within 15 days of issue of LOA, the Contractor will make payment of security deposit (SD) in the form of Demand Draft drawn in favor of Gujarat Industries Power Co. Ltd., payable at Baroda or Bank Guarantee from any Nationalized Banks, Axis Bank, ICICI Bank, HDFC Bank, Kotak Mahindra Bank, IndusInd Bank, Federal Bank, Bandhan Bank, IDBI Bank and Karur Vysya Bank. The BG shall also be maintained valid for at least three months after the completion of the contract period.
8.5	**Corrupt or Fraudulent Practices:**
	a) The Employer expects the Bidders, Suppliers, Contractors, and Consultants, observe the highest standard of ethics during the procurement and execution of such

contracts. Therefore, the Employer

1) Defines, for the purposes of this provision, the terms set forth below as follows:
2) "Corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of the Employer in the procurement process or in contract execution;
3) "Fraudulent practice" means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;
4) "Collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of the Employer, designed to establish bid prices at artificial, non-competitive levels; and
5) "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract;

b) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question.

	CHAPTER-I INVITATION FOR BID
	Section-2 (FORMS OF BID, QUALIFICATION INFORMATION AND LETTER OF ACCEPTANCE)
9.0	**Qualification Information:**
9.1	a) The information to be filled in by the Bidder in the following pages will be used for the purposes of Evaluation of Technical Submission as provided in Clause 7.3 of the Instructions to Bidders. The Contractor shall use this format and prepare the submission in as many pages as he wishes. Particular care shall be taken to submit certificate from the previous clients in support of the Bidder's claims. **b) Please note that joint venture is not permitted.** c) **Financial Criteria**: The Bidder should have average annual turnover of INR. 4.35 Crores (Rupees Four Crores Thirty-Five Lakh only) for last three consecutive financial years (FY 2022-23, FY 2023-24 and FY 2024-25). Balance Sheet of the company to be submitted duly verified by certified Chartered Accountant. The Balance Sheet must be in the name of the Company who is purchasing the tender document. d) Minimum net worth shall be positive during last financial year (2024-25). e) **Experience Criteria**: The bidder should possess the following minimum experience: a. Bidder should have executed similar work in the last seven years ending the last day of month previous to the one in which bids are invited which should be operating successfully for at least one full calendar year and should submit/enclose proof of the same. Similar work means effluent treatment plant / CETP ("Similar Works" means experience of design, detailed engineering, procuring, construction, testing, commissioning of Wastewater / Effluent treatment plant/ CETP). b. Bidder shall have experience of having completed (including successful trial run, testing & commissioning) in India in last five years from the last date of the previous month in which tender published) at least two works of similar nature, having a minimum 1.00 MLD capacity and Plant is in successful operation for at least one year. c. The bidder should possess the following minimum experience: i. One work of similar nature having a minimum 3.00 MLD capacity and Plant. ii. Two work of similar nature having a minimum 2.00 MLD capacity and Plant. iii. Three work of similar nature having a minimum 1.50 MLD capacity and Plant. f) For the purpose of bid evaluation, if the employer representatives feel necessary to visit specific or all such plants as mentioned above by the bidder, the bidder shall make necessary arrangements for the same. The cost of such visits shall be borne by the bidder. **g) To participate in e-Reverse Auction, bidders have to create e-Auction USER ID on https://e-auction.nprocure.com and it is mandatory to submit the same along with physical Technical-Commercial Bid, so that the bidder shall be allowed to participate the e-Reverse Auction.**

	h) The experience as Sub-Contractor / back to back works shall not be considered. i) The experience of Joint Venture works shall be considered as pro-rata basis of share of the partners in that particular project work. j) The contractor who is having no experience as well as specialty in such Water / Effluent Treatment Plant (ETP), as required above, his tender will be rejected outright. k) Bidder should possess valid PF Number. Bid without proof of the same shall be rejected. l) The Bidder has to submit copy of INCOME TAX Permanent Account Number (PAN). m) Bidder has to submit GST registration number. Copy of registration of the certificate should be submitted. n) If Bidder or its Partner(s) or Director(s) is / are/ was in any Litigation(s) or Court Case(s), either completed or under progress during last five (5) years or Black Listed / Deregistered / Stopped or banned from dealing in the past by any Govt, of Gujarat Undertakings / Depts. / Authorities and Govt. of Gujarat supported companies / undertakings / organizations, bid of that party will be liable to be rejected. Bidder agrees and undertakes to accept decision of GIPCL in this regard as final and binding on the Bidder without any demur and that no further correspondence shall be done in this regard at any stage. o) However, details of the Arbitration case (s) either completed or under progress during last five (5) years by the Bidder or its Partner(s) or Director(s) is / are/ was shall be provided by the bidder along with **FORM-D**. p) If at any time such declaration is found false, the bid will be rejected or if the contract work is already awarded, it will be terminated forthwith without payment of any compensation and the EMD/ PBG will be forfeited. q) Bidders are advised to carefully read the instructions, evaluation norms and other terms and conditions described in these documents under different Chapters before making their offer. r) Bidder shall visit site prior to bidding and shall provide an undertaking along with bid submission to have visited site and has understood the site conditions and have considered all cost pertaining to the site conditions and requirement prior to bidding. Bidder shall submit site visit certificate along with bid. s) Employer reserved the right (i) to change, alter or to waive any technical or commercial terms, condition and qualification (ii) to reject all the bids or any bid in part or full without assigning any reason whatsoever (iii) for making changes / relaxation in eligibility criteria at any time. The bidder shall have no cause of action or claim against the employer or its Officers / Employee's successor or assignee for rejection of his tender/bid. t) The Tender of those bidder(s) who fail to submit the required documents physically within the stipulated date and time will be treated as non-responsive and their Price Bid will not be opened. u) The Gujarat Industries Power Company Limited (GIPCL) reserves the right to accept or reject any or all the tenders without assigning any reasons. The bidder shall have to fulfill the entire minimum requirements as mentioned above for all the criteria of finance, experience and technical.

v) One bid per bidder will be allowed.

w) Each bidder shall submit only one bid for one contract. A bidder who submits or participates in more than one Bid (other than as a Sub-contractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified.

x) Tender documents are not transferable.

y) The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs.

z) Site visit: The Bidders are advised to visit the proposed work Site after downloading the tender copy from https://tender.nprocure.com or http://www.gipcl.com to study the actual working and all other related conditions, before submitting their offer.

aa) The Bidders may approach the office of the GIPCL for assistance to examine the site of works and its surroundings and obtain for themselves, at their own responsibility, all information that may be necessary for preparing the bid and entering into a contract. All costs and liabilities arising out of the Site visit shall be at Bidder's account.

bb) The contractor shall give a declaration of site visit as per the format provided in **Form-C** of the Tender Document.

cc) **Conflict of Interest:**

A Bidder shall not have a conflict of interest (the "Conflict of Interest") that affects the bidding process. Any Bidder found to have a Conflict of Interest shall be disqualified. In the event of disqualification, GIPCL shall forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to GIPCL for, inter alia, the time, cost and effort of GIPCL, including consideration of such bids, without prejudice to any other right or remedy that may be available to GIPCL hereunder or otherwise. Without limiting the generality of the above, a Bidder shall be considered to have a Conflict of Interest that affects the bidding process, if:

i. such Bidder (or any constituent thereof) and any other Bidder (or any constituent thereof) have common shareholders or other ownership interest; provided that this qualification shall not apply in cases where the direct or indirect shareholding in a Bidder or a constituent thereof in the other Bidder(s) (or any of its constituents) is less than 10% of its paid up and subscribed capital; or

ii. a constituent of such Bidder is also a constituent of another Bidder OR a partner in another Bidder or a constituent of another Bidder; or

iii. such Bidder receives or has received any direct or indirect subsidy from any other Bidder, or has provided any such subsidy to any other Bidder: or

iv. such Bidder has the same representative for purposes of this Bid as any other Bidder; or

v. such Bidder has a relationship with another Bidder, directly or through common third parties, that puts them in a position to have access to each other's information about, or to influence the Bid of either or each of the other Bidder;

vi. such Bidder has participated as a consultant to GIPCL in the preparation of any documents, design or technical specifications of the Project.

9.2 Constitution or legal status of Bidder [Attach copy]:

a) Place of registration: _____

b) Principal place of business: _____

9.3 Power of attorney of signatory of Bid [Attach]

9.4 Work performed as prime contractor (in the same name) on works of a similar nature (experience of having completed designing, detailed engineering, procuring, construction, testing, commissioning of Wastewater / Effluent treatment plant/ CETP) over the last five years in the format prescribes below.

Project Name	Name of the Employer*	Description of work	Value of contract (Rs. Lakh)	Capacity of treatment Plant (MLD)	Date of issue of work order	Stipulated period of completion	Actual date of completion*	Remarks explaining reasons for delay and work completed
2020 - 2021								
2021 - 2022								
2022 - 2023								
2023 – 2024								
2024 – 2025								

*Attach certificate(s) from the Client on company's letter head.

9.5 Proposed work method and schedule. The Bidder should attach descriptions, drawings and charts as necessary to comply with the requirements of the Bidding documents.

	CHAPTER-I INVITATION FOR BID
	Section-3 (General Conditions of Contract)
10	**General:**
10.1	**Definitions**
	Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Capital initials are used to identify defined terms. a) Bill of Quantities and Rates means the priced and completed Bill of Quantities and Rates forming part of the Bid. b) The Completion Date is the date of completion of the Works as certified by the GIPCL in accordance with Sub Clause 33.1. c) The Contract is the contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in Clause 11 (c) below. d) The Contract Data defines the documents and other information which comprise the Contract. e) The Contractor is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer. f) The Contractor's Bid is the completed Bidding document submitted by the Contractor to the Employer. g) The Contract Price is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract. h) Date of Commencement is the date as stated in the letter to proceed from the employer to the contractor. i) Days are calendar days; months are calendar months. j) A Defect is any part of the Works not completed in accordance with the Contract. k) The Defects Liability Period is the period named in the Contract Data and calculated from the Completion Date. l) The Employer is the party who will employ the Contractor to carry out the Works. m) ETP In-charge is the person authority appointed by the employer as to deal to all the matters related to the execution and operation of the contract. n) ETP In-charge shall be appointed by Employer and be responsible to carry out such duties and exercise such authority as may be delegated to him by Employer. o) Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works. p) The Initial Contract Price is the Contract Price listed in the Employer's Letter of Acceptance. q) The Intended Completion Date is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. r) Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works. s) Plant is any integral part of the Works, which is to have a mechanical, electrical, electronic, or chemical or biological function. t) The Site is the area defined as such in the Contract Data.

	u) Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Engineer. v) A Sub-contractor is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site. w) Temporary Works are works designed, constructed, installed, and removed by the Contractor, which are needed for construction or installation of the Works. x) A Variation is an instruction given by the GIPCL, which varies the Works. y) The Works are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.
11.0	**Interpretation:**
	a) In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The ETP In-charge will provide instructions clarifying queries about the Conditions of Contract. b) If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion date for the whole of the Works). c) The documents forming the Contract shall be as follows and their order of priority shall be interpreted in the given order (1) Letter of Acceptance, notice to proceed with work. (2) Contractor's Bid (3) Contract Data (4) Conditions of Contract including Special Conditions of Contract (5) Specifications (6) Drawings (7) Bill of Quantities (8) Any other document listed in the Contract Data as forming part of the Contract.
12.0	**Language and Law:**
	The language of the Contract and the law governing the Contract are stated in the Contract Data. Jurisdiction at Surat.
13.0	**ETP In-charge Decisions:**
	Except where otherwise specifically stated, the ETP In-charge will decide contractual matters between the Employer and the Contractor in the role representing the Employer.
14.0	**Delegation:**
	The ETP In-charge may delegate any of his duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.
15.0	**Communications:**
	Communications between parties, which are referred to in the conditions, are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

16.0	**Sub-Letting of Work:**
	The whole of the work included in the contract shall be executed by the Contractor and the Contractor shall not directly or indirectly transfer, assign or sublet the contract or any part thereof or interest therein. Sub-Letting of Work is not allowed.
17.0	**Other Contractors:**
	The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors. The Contractor shall as refer to in the Contract Data, also provide facilities and services for them as described in the Schedule. The Employer may modify the schedule of other contractors and shall notify the Contractor of any such modification.
18.0	**Personnel:**
	a) The Contractor shall employ the key personnel named in the Schedule of Key Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule. b) If the ETP In-charge asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.
19.0	**Employer's and Contractor's Risks:**
	The Employer carries the risks, which this Contract states are Employer's risks, and the Contractor carries, the risks, which this Contract states, are Contractor's risks.
20.0	**Force Majeure**
	The performance of the obligations herein contemplated may be suspended without incurring the penalty in the event of the subsistence of Force Majeure conditions. If a Force Majeure situation arises, the affected Party shall promptly notify the Party in writing of such conditions and the performance shall be suspended as per mutual agreement. For the purposes of this clause, 'Force Majeure' means an event beyond the control of the Party and not foreseeable by the Party and shall include events of floods, explosions, riots, wars, hurricane, epidemics, any other Act of God, quarantine restrictions, terrorism, government actions and provided always that such acts result in the impossibility of the further performance of the contract.
21.0	**Contractor's Risks:**
	All risks of loss of or damage to physical property and of personal injury and death, which arise during and in consequence of the performance of the Contract risks, are the responsibility of the Contractor.
22.0	**Insurance:**
	The Contractor shall take adequate statutorily prescribed group insurance covers for all men (WC Insurance policy with medical extension for all the persons engaged in work) and comprehensive insurance of machinery / equipments (on re-instatement basis) engaged by him/it for performance of the work at the Site. Any insurance claim brought against GIPCL by an individual or by any such other persons who suffered

	damage to himself or his property due to negligence of the Contractor or his Sub-Contractor or his employees/Agent, the same shall be settled by the Contractor at his own cost, expense and consequence. Copy of the valid insurance policy shall be submitted by the Contractor to GIPCL on regular basis for record. No amount shall be reimbursed by GIPCL on this account.
23.0	**Site Investigation Reports:**
	The Bidder shall be given a copy of the Site investigation report. The Report is only preliminary and the Contractor upon award of Contract is expected to make his own investigation to establish the soil and foundation conditions. The Contractor, in preparing the Bid, shall rely on the Site Investigation Reports referred to in the Contract Data, supplemented by any information available to the Bidder, However, such reference to the site investigation report shall not transfer any of the Contractor's responsibility to the Employer nor shall enable the Contractor to make any claim on the Employer on the basis of information available or not available in the Site Investigation Report.
24.0	**Queries about the Contract Data:**
	The ETP In-charge will clarify queries on the Contract Data.
25.0	**Contractor to Construct the Works:**
	The Contractor shall construct and install the Works in accordance with the Specification and Drawings, and as per instructions of Engineer.
26.0	**The Works to Be Completed by the Intended Completion Date:**
	The Contractor may commence execution of the Works on the Date of commencement and shall carry out the Works in accordance with the program submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.
27.0	**Approval by the Engineer:**
	a) The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Engineer, who is to approve them if they comply with the Specifications and Drawings. b) The Contractor shall be responsible for design of Temporary Works. c) The Engineer's approval shall not alter the Contractor's responsibility for design of the Temporary Works. d) All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Engineer before their use.
28.0	**Safety:**
	The Contractor shall be responsible for the safety of all activities on the Site.
29.0	**Possession of the Site:**
	The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract Data, the Employer is deemed to have delayed the start of the relevant activities and in such case, on request from contractor the extension in time limit shall be considered as per the merit the case.
30.0	**Access to the Site:**
	The Contractor shall allow the ETP In-charge and any person authorized by the GIPCL access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured / fabricated / assembled for the works.

31.0	**Instructions:**
	The Contractor shall carry out all instructions of the Engineer which comply with the applicable laws where the Site is located.
32.0	**Arbitration:**
	All disputes, differences, claims and questions, whatsoever, which may arise either during the continuance of this contract or afterwards between the Supplier and GIPCL, touching the interpretation and / or the execution of any clause of this contract, or any other act, deed or commission / omission by any party or as to any other matter in any way relating to these clauses or right, duties, obligations or liabilities or either party under these clauses shall be referred to a Sole Arbitrator under the provisions of The Arbitration And Conciliation (Amendment) Act, 2019 or any statutory modification thereto or re-enactment thereof in force from time to time. The seat and venue of such arbitration shall be Surat, Gujarat state only. The arbitration shall be conducted in English language.
33.0	**Governing Law and Jurisdictions:**
	This Contract and the interpretation of the provisions thereof and the performance thereof shall be governed by the laws of India. Notwithstanding any other court or courts having jurisdiction to decide the question (s) forming the subject matter of the reference if the same had been the subject matter of Suit, any and all actions and proceedings arising out or relative to the contract (including any arbitration in terms thereof) shall lie in the court of competent civil jurisdiction in this behalf at Surat only (where this contract has been signed on behalf of the Management) and only the said court shall have jurisdiction to entertain and try such action (s) and / or proceedings to the exclusion of all the other courts.
34.0	**Time Control:**
25.1	**Program:**
	a) Within the time stated in the Contract Data the Contractor shall submit to the Engineer for approval a Construction Program including showing the general methods, arrangements, order, and timing for all the activities. b) A format for submission of Progress Report shall be got approved by the Engineer. During the progress of the work, the Engineer may suggest modification to the format, in which case, the contractor shall follow the directions strictly. c) An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities. d) The Contractor shall submit to the Engineer, for approval, an updated Program at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an updated Program within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted. e) The Engineer's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Engineer again at any time. A revised Program is to show the effect of Variations and Compensation Events.

25.2	**Extension of the Intended Completion Date:**
	The GIPCL may extend the Intended Completion Date of six months of the date of issue of LoI/Work Order if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost.
25.3	**Delays Ordered by the Engineer:**
	The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works.
25.4	**Management Meetings:**
	a) Either the ETP In-charge or Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure. b) The Engineer shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken is to be decided by the ETP In-charge either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.
25.5	**Early Warning:**
	The Contractor shall cooperate with the Engineer in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer.
26.0	**Quality Control**
26.1	**Identifying Defects:**
	a) The Engineer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect. b) The contractor shall permit the Employer's Technical auditor to check the contractor's work and notify the Engineer and Contractor of any defects that are found. Such a check shall not affect the Contractor's or the Engineer's responsibility as defined in the tender document/work order.
26.2	**Tests:**
	If the Engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples.
26.3	**Correction of Defects:**
	a) The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected. b) Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Engineer's notice.

26.4	**Uncorrected Defects:**
	If the Contractor has not corrected a Defect within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect corrected, and the amount will be recovered from the Contractor.
27.0	**Payments:**
	The Contractor shall submit running account bill for the work executed for a period not less than one calendar month. The running bill shall be signed by the Contractor's authorized representative and In-charge from GIPCL. The bill so prepared and certified will be submitted for payment to the office of the General Manager (Mines). Date of such submission of bill will be 5th day after completion of the calendar month, or the actual date of submission, whichever is later, will be taken into account for considering due date of payment. Running bill to the extent of 100% shall become payable. The payment of the certified amount of the Running bills shall be due 15 days after submission, by contractor, of running bill completed in all respect after deducting therefrom: a) Income Tax (TDS) as per the provisions of the Income Tax Act in force, b) Amount of LD levied, if any. c) Cost of other material / services provided. d) Recovery against any damages recoverable under the provisions of this tender. However, if the Contractor desires in writing and if GIPCL's financial status permits, the payment of RA Bills can be made earlier, subject to the condition that the Contractor will pass on a rebate @ 2% per month on pro-rata basis for actual early payment days.
28.0	**Tax**
	a) The Contractor shall be responsible for the payment of any and all prevailing contributions, taxes, duties, levies & fees to the Central or State Government or local authorities directly or indirectly applicable to the work under this contract. b) **GST**: As per prevailing laws, GST is payable by the Contractor. GST will be paid to the Contractor as per prevailing rates and rules to the extent directly related to the services rendered or Goods supplied by the contractor under the said contract and submit GST Return as a documentary proof and contractor will mention the GST amount separately in the invoice/bill along with SAC/HSN Code under GST. c) Any fresh imposition or variation in statutory duties, taxes or levies, made after the last date of submission of bids, will be recovered from/ reimbursed to the Contractor, as the case may be. The reimbursement/ recovery to the Contractor will be made against supporting documents & for only such taxes/duties/levies that are directly applicable to the contract and are applicable/ reflected on his running bills. d) Further any benefit due to statutory changes in the law including taxes/duties/levies shall be pass on GIPCL. e) Bidder shall consider input credit of GST on capital item while quoting rates. Further during contractual period, if any additional input credit available on operational items (for e.g. GST levied on diesel), same shall be passed on to GIPCL.

29.0	**Currencies:**
	All payments shall be made in Indian Rupees.
30.0	**Liquidated Damages:**
	a) If the Contract period is extended due to the omissions and/or commissions of Contractor, the cost of supervision for the extended period shall be borne by the Contractor. b) If the Contractor fails to complete the work under contract within the stipulated completion date, he shall pay liquidated damages to the Employer at the rate stated in the Contract Data for each week or part that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the contract data. Even if, a part of the work is completed, if it cannot be put into operation because of the non-completion of the remaining works, the liquidated damages shall be calculated on the full value of the contract. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities. c) Delays requiring payment of full liquidated damages shall be sufficient clause for termination of contract and forfeiture of security deposit against performance bond (performance guarantee) d) "Time is the essence of the contract and payment or deduction of liquidated damages shall not relieve the contractor from his obligation to complete the work as per agreed construction program and milestones or from any other of the contractor's obligations and liabilities under the contract." **e) If Contractor fail in the commission of the ETP within six months of the date of issue of LoI/Work Order, work will be completed by GIPCL and LD for the non-compliance, will be levied at three times of the actual cost incurred as determined by the GIPCL.** **f) The Contractor shall have to operate ETP for at least monthly average of 20 Hours of Operation of ETP per day i.e. 600 Hours/Month subjected to the availability of the power from GIPCL. Duration of non-availability of power shall be deducted from the monthly average of 20 Hours of Operation of ETP per day i.e. 600 Hours/Month.** g) If Contractor fails to collect the sample as well as submission of fortnightly effluent analysis reports within every 07 days after the completion of 15 days period, GIPCL shall withhold 0.5% of each RA Bill amount of the Successful bidder. But submission of reports is compulsory even after the said period of 07 days. If bidder has its own NABL accredited laboratory, in that case, monthly report of effluent has to be compulsorily done by another NABL accredited laboratory. h) In case of not achieving all or any one of water parameters as mentioned in treated effluent in this tender document for more than 5 days in a month, **2% of each RA Bill amount** shall be deducted from the amount of monthly invoice of the Successful bidder. Basis of deduction may be based on analysis by any other NABL laboratory arranged by GIPCL or results given by any statutory agency like State Pollution Control Board, CPCB or MOEF&CC etc. i) During the inspection by statutory body, if it is observed that parameters of discharged water is not maintained as per standards, strict action shall be taken

	against Contractor and it will be the responsibility of Contractor to handle the matter with that statutory body(ies) as well as represent them the outcome of parameters within statutory norms after taking appropriate corrective and preventive measures till the withdrawal of said notice. j) Monitoring shall be done as per guidelines given by Engineer-in-charge of GIPCL. Contractor has to maintain all the parameters of filtered / treated sewage within the stipulated limits or he will be penalized for not maintaining the parameters given by employer and GPCB. All expenditure incurred for the same like, suit fee, court fee, case fee, or the penalty as decided by GIPCL and penalty charged by GPCB shall be deducted from his pending bills or Security Deposit.
31.0	**Performance Security:**
	The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Employer, and denominated in Indian Rupees. The Performance Security shall be valid until a date 90 days from the date of date of issue of the certificate of completion of three years of Operation & maintenance.
32.0	**Defect Liability and Cost of Repairs:**
	Loss or damage to the Works or Materials to be incorporated in the Works between the Date of Commencement and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions. The Contractor shall be responsible to make good at his own expense any defect which may develop within the period mentioned as defect liability period in the Contract Data. The Employer shall give the Contractor a notice in writing about the defects and the Contractor shall repair the defect in maximum of 7 days. If the contractor fails to repair/remove the defect, the Employer may execute the work by himself and deduct the expense towards the work from any monies due to the Contractor. The employer shall have the right to appropriate all or part of the security deposit towards the expense in repairing the defects
33.0	**Finishing the Contract:**
33.1	**Completion:**
	After completion of the work, the contractor will serve a written notice to the GIPCL to this effect. GIPCL shall upon receipt of this notice shall conduct a complete joint survey of the work within 7 days and prepare a defects list jointly. The defects pointed out by the GIPCL would be rectified by the contractor within 14 days and thereafter acceptance report to be signed jointly by the contractor and GIPCL. This joint acceptance report shall be treated as 'Completion Certificate'.
33.2	**Taking Over:**
	The Employer shall take over the Site and the Works within seven days of the GIPCL issue a certificate of Completion.
33.3	**As Built Drawings:**
	a) The Contractor shall supply "As Built" Drawings by the dates stated in the Contract Data. b) If the Contractor does not supply the Drawings by the dates stated in the Contract Data, or they do not receive the Engineer's approval, the Engineer shall withhold the amount stated in the Contract Data from payments due to the Contractor.

33.4	**Termination:**
	a) The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract. b) Fundamental breaches of Contract include, but shall not be limited to the following: 1) The Contractor stops work for 28 days when no stoppage of work is shown on the current program and the stoppage has not been authorized by the Engineer; 2) A payment certified by the Engineer / GIPCL is not paid by the GIPCL to the Contractor within 56 days of the date of the Engineer's certificate; 3) the Engineer / GIPCL gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer; 4) The Contractor does not maintain a security which is required; 5) the Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data; and 6) If the Contractor, in the judgment of the Employer has engaged in fraud and corruption, as defined in ITB Clause 8.4, in competing for or in executing the Contract. 7) the contractor has defaulted in fulfilling his obligations under this contract. c) When either party to the Contract gives notice of a breach of contract to the Engineer / GIPCL for a cause other than those listed under Sub Clause 33.4 (b) above, the Engineer / GIPCL shall decide whether the breach is fundamental or not. d) Notwithstanding the above, the Employer may terminate the Contract for convenience. e) If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.
33.5	**Payment upon Termination:**
	a) If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer / GIPCL shall issue a certificate for the value of the work done less advance payments received up to the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor the difference shall be a debt payable to the Employer. b) If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Engineer / GIPCL shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.
33.6	**Property**
	All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed

	to be the property of the GIPCL, if the Contract is terminated because of a Contractor's default.
33.7	**Release from Performance:**
	If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor the GIPCL shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.
34.0	**Special Conditions of Contract:**
34.1	**General:**
	The Contractor is advised to note that the following Special Conditions are part of the Contract and he will not have any right to claim at any time for delays or for expenditure incurred by him in fulfilling the following special conditions.
34.2	**Scope of Works:**
	a) The scope of work includes EPC & Three years O&M contract for Waste Water treatment plant at Mangrol mines. b) Including providing necessary Labour, all materials, plants and machineries as per specification laid down in the contract documents. c) Successful Bidder shall also undertake the work for the amendment in NOC and CC&A from GPCB, for Mangrol-Valia Lignite Mine w.r.t. Installation of ETP at Mangrol Mine. Bidder shall undertake all the activities and liaisioning for the amendment in NOC and CC&A for Mangrol-Valia Lignite Mine w.r.t. Installation of ETP at Mangrol Mine. d) Any Statuary fees, if to be deposited at GPCB w.r.t. amendment in NOC and CC&A from GPCB, for Mangrol-Valia Lignite Mine, will be borne by the GIPCL.
34.3	**Tender Drawings:**
	The drawings issued with these Tender Documents are Tender Drawings. Tender Drawings are prepared in such detail as are necessary to give a comprehensive idea of the works.
34.4	**Working Drawings:**
	a) The Contract Drawings shall be supplemented by working drawings or shop drawings prepared by the Contractor which are required for the execution of the works. These working drawings shall include all details required for execution of job and any other detail the Engineer may ask during construction. b) All drawings shall be computerized and shall be submitted both in hard copy as well as soft format as AutoCAD files. c) Approval by the Engineer of the Contractor's working drawings shall not relieve the Contractor from responsibility for the accuracy of dimensions and details, nor shall such mutual agreement and compliance to his working drawings constitute an acceptance by the Employer of the correctness and adequacy of the drawings. d) Working drawings as required or as directed by the Engineer shall be prepared and submitted by the Contractor sufficiently in advance. All working drawings shall be checked by the Engineer / GIPCL and work can commence only upon getting approval of the working drawing. e) Delays to work by reason of lack of approvals of working drawings and shop

	drawings are deemed to be a risk the Contractor is taking with full knowledge and no compensation shall be claimed by the Contractor or none given by the Employer, on account of such delay. f) The costs of furnishing working drawings shall be included in the rates for various paying items given in the Bill of Quantities. g) In this respect the Contractor shall employ his Engineers and AutoCAD Draughtsman specifically for planning and preparation of working drawings.
34.5	**Protection of the Works during Contract Period:**
	It is clearly understood that any damage occurring to the Works (completed or under execution) is the Contractors responsibility and no claims will be entertained by the Employer.
34.6	**Discrepancies in alignment:**
	Discrepancies in alignment and levels etc., noticed during construction and/or on completion shall be rectified by the Contractor at his own cost, Engineer's approval does not relieve the Contractor of his responsibilities.
34.7	**Power Supply:**
	Three phase HT Electricity supply will be made available by GIPCL at single location for lighting, pumping and ETP etc. Further distribution of power will have to be arranged by the Contractor at its own risk and cost
34.8	**Contractor's Facilities:**
	The successful Tenderer is to provide and maintain a site office at a location approved by the Engineer / GIPCL, within 15 days from the date of issue of Notice to Proceed.
34.9	**Progress Photographs and Reports:**
	Contractor shall submit monthly 12 progress Photographs 12" x 8" size in five copies as part of his monthly progress report, as specified in the Special Specifications.
34.10	**Safety on Site:**
	Measures to ensure safety of workers and plant at site shall be taken by the Contractor. Excavations shall be protected by barriers and lighting shall be provided at night to warn pedestrians and vehicles. Motorable access to the site and within the site shall be maintained during the construction period. The Contractor shall designate a Safety Officer who will be in charge of all Safety Measures. The cost of all safety equipments and the cost of providing a safety officer at site would be deemed to be included in various Items of the Schedule of Quantities and Rates.
34.11	**Labour:**
	a) The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport. b) The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Engineer may require.
34.12	**Compliance with Labour Regulations:**
	a) During continuance of the contract, the Contractor shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other

	labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. b) The Contractor shall be responsible for arranging requisite manpower, its training and medical examination and shall also fulfil the provisions of Mining and Labour laws, PF Act and Rules, Contract Labour Laws, the workmen compensation Act etc., pertaining to employment of labour and other statutes in force from time to time. c) The contractor has to comply with provisions of occupational, safety, Health and working conditions code-2020, The code on wages 2019, the industrial relations code 2020 and the code on Social security 2020 which may come into force from the date of notifications in official Gazette. d) The Contractor will be required to obtain License from the office of the Labour Commissioner for the required strength of labour, before commencement of work at site and the same shall be maintained updated and valid throughout the currency of the contract. e) The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. f) If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, the Engineer/Employer shall have the right to deduct any money due to the Contractor including his amount of performance security. g) The Employer/Engineer also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer. h) The employees of the Contractor in no case shall be treated as the employees of the GIPCL at any point of time.
34.13	**PROTECTION OF ENVIRONMENT:**
	a) The contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation. b) During continuance of the contract, the contractor and his sub-contractors shall abide at all times by all existing enactments on environmental protection and rules made thereunder, regulations, notifications and bye-laws of the State or Central Government, or local authorities and any other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority. c) Salient features of some of the major laws that are applicable are given below: 1) The Water (Prevention and Control of Pollution) Act, 1974, This provides for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. 'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties

	of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms. 2) The Air (Prevention and Control of Pollution) Act, 1981, This provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment. 3) The Environment (Protection) Act, 1986, This provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property. 4) The Public Liability Insurance Act, 1991, This provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.
35.0	**Contract Data:**
	a) The Works consist of EPC & Three years O&M contract for Waste Water treatment plant at Mangrol mines as described in detail under the caption “Scope of Work” in the Special conditions of Contract. b) The Date of Commencement shall be the date specified in the Notice to Proceed with the work. c) The Intended Completion Date for the whole of the Works is 6 months excluding monsoon Period reckoned from the date of commencement as indicated in the Notice to Proceed, Issued by the Employer. The work shall have the following milestones d) Milestone dates: Physical completion of works Period from the date of commencement of work: 1) Milestone 1: Completion all Civil Works and Site development - 3 Months 2) Milestone 2: Completion of installation of all Electrical and mechanical Equipments - 2 Months. 3) Milestone 3: Commissioning including first fill of Plant - 1 Months e) The Site Possession Date shall be the date within seven days from the date of issue of Notice to proceed with the work. f) The Site is located at Nani Naroli, Mangrol, District Surat, Gujarat State. g) The Defects Liability Period is 12 months from the date of certification of completion of works.

	1) The language of the Contract documents is English 2) The law which applies to the Contract is the laws of Union of India 3) The currency of the Contract is Indian Rupees.

	CHAPTER – 2 TECHNICAL SPECIFICATIONS

1 Introduction:

Gujarat Industries Power Company Limited (GIPCL) was incorporated in the year 1985 as a Public Limited Company. GIPCL is in the business of Electrical Power Generation, the current installed capacity is 1184.4 MW. GIPCL also operates captive Lignite and Limestone Mines to meet the fuel requirement of the 500 MW Surat Lignite Power Plant.

For 500 MW (2 x 250 MW) Surat Lignite Power Plant at Village Mangrol; GIPCL has acquired mining lease and clearances for Open Cast Lignite and Limestone mining in Vastan and Mangrol -Valia region which ensures uninterrupted fuel supply to the Surat Lignite Power Plant.

At present, Rainwater of about 35.00 Lakh CuM is accumulated in Mangrol mines, which is acidic in nature. intend to install water treatment plant at Mangrol Mines.

As part of environmental compliance, GIPCL intends to implement a project to treat rainwater accumulated in mines by installation of suitable water treatment system finally treated water shall be discharged to nearby waterbody to meet GPCB norms.

2 Raw water and Treated water characteristics:

The design of waste water treatment plant shall be for mine water having characteristics as shown in Table-1 below.

Table- 1: Design Mine / wastewater characteristics

Sr. No.	Parameter	Value
1	pH	< 4
2	Conductivity, us/cm	5000 - 5300
3	Total Dissolved Solid (TDS), mg/l	2800-3000
4	Suspended solid, mg/l	< 30
5	Colour, pt.co.scale	< 20
6	Sulphate, mg/l	850 - 900
7	Chloride, mg/l	1100-1300
8	Iron, mg/l	5-10
9	Copper, mg/l	1-2
10	Zinc, mg/l	1- 3
11	Silica, mg/l	35 - 40
12	Phosphate, mg/l PO4-	1 - 2

13	Ca Hardness, mg/l	1100-1300
14	Mg Hardness, mg/l	700-800
15	Total Hardness, mg/l	1800 - 2100

Table- 2: Treated wastewater characteristics

Sr. No.	Parameters	Value
1.	pH	6.5 – 8.0
2.	Colour, pt.co.scale	BDL
3.	Total suspended Solids, mg/l	< 10
4.	Biological oxygen Demand, mg/l	< 20
5	Chemical oxygen Demand, mg/l	<100
6	Total Dissolved Solid (TDS), mg/l	< 2800
7.	Total Hardness, mg/l	<1000
8.	Turbidity, NTU	< 2
9.	Residual Chlorine, mg/l	> 0.2

3 Treatment process description

Mine Water shall be transferred to the Collection tank. Chemicals (i.e. soda ash/lime) shall be added into the collection/equalization tank to neutralize pH. After neutralizing the water, it shall be pumped to the Reactor clarifier for hardness removal. Reactor clarifiers combine the functions of chemical treatment, mixing, flocculation, and sedimentation. From the Reactor clarifier, water shall be transferred to the Glass Media Filter (AMF) feed tank. Activated Media Filter to remove impurities/suspended solids. Water passes through the filter media, which traps and removes suspended solids. The filter media can be made of multiple layers of different or same materials. The filter media can be backwashed to clean it and restore its filtration efficiency.

The filtrate from Media Filter shall be taken/ collected to Treated water tank for final disposal. Sludge generated from Reactor clarifier shall be collected in to sludge sump and shall be pumped to the Mechanical sludge dewatering device for further treatment. Necessary Centrifuge feed pumps shall be provided.

Bidder shall offer their bid as per the treatment scheme specified in this tender document and shall note that alternative treatment proposal is not acceptable.

4 Scope of work

The scope of work under this Single Responsibility Contract includes construction of all works as described in subsequent paragraph to achieve the objective to treat 5 MLD Mine water & produce water for safe discharge to nearby waterbody as per the stipulated treatment

quality / standards as per good and acceptable engineering practices and workmanship manner.

However, bidder shall be responsible to study the existing site conditions on his own, acquaint himself with the same properly, and obtain necessary data / clarifications from required authorities on his own prior to bidding for this work.

The scope of work will be in general but not limited to:

A. Design & Detailed Engineering, Procurement & Construction of Civil, Piping, Mechanical, Electrical, Instrumentation, & Interconnecting Pipe works including erection, testing, trail runs, commissioning, guaranteeing and operation and maintenance (including spares) of 5 MLD capacity Effluent Treatment Plant (ETP) as per detailed technical specifications and data sheet.

B. The contractor shall also undertake Trial run of treatment with allied works for a period of three (3) months & the comprehensive operation and maintenance of water treatment plant (WTP) for 3 (Three) years and if required it can be extended to another 2 (Two) years.

C. The scope includes all the work including civil, mechanical, and electrical and instrumentation related with the Effluent Treatment Plant (ETP). The capacity of plant shall be 5 MLD.

D. Successful Bidder shall also undertake the work for the amendment in NOC and CC&A from GPCB, for Mangrol-Valia Lignite Mine w.r.t. Installation of ETP at Mangrol Mine. Bidder shall undertake the all the activities for the amendment in NOC and CC&A for Mangrol-Valia Lignite Mine w.r.t. Installation of ETP at Mangrol Mine. Any Statuary fees, if to be deposited at GPCB w.r.t. amendment in NOC and CC&A from GPCB, for Mangrol-Valia Lignite Mine, will be borne by the GIPCL.

E. Design, Construction, Supply, Installation, Testing, Commissioning, Trial run, 5 MLD Effluent Treatment Plant (ETP) at SLPP as per brief description of project as under: The scheme of water treatment plant shall be:

Metallic Floating Pontoon WPS → Collection tank → Flash mixer+ Reactor Clarifier → Media Filter Feed Tank → Media filter → Treated water tank with chlorination → Sludge dewatering unit

1) Metallic Floating Pontoon WPS for transporting Mine water from the Mines up to collection tank along with pumps, necessary fittings & approximate 200-250 m pipe length
2) Collection tank & pumphouse
3) Flash mixer+ Reactor Clarifier
4) Media Filter including Back wash with Water and Air Scouring

5) Treated water tank and pump house
6) Chlorination room(s) include Dosing tank & pumps etc.
7) Sludge dewatering unit (clarifier sludge sump, & pump, sludge dewatering unit & DWPE dosing system etc.)
8) Main LT Room & Control Room (to house PLC/HMI system) and along with necessary office furniture
9) Electrical work shall include Engineering, supply, inspection, & testing at manufacturer's works, delivery to site, unloading & storage at site, installation, testing at site, and commissioning of the entire electrical facilities including electrical equipment, control devices, fittings, cables/wires, conduits, hardware and consumable and also including all relevant works like termination, cable jointing, earth excavation/backfilling, structural works for equipment support / M.S. fabricated cable trays, all allied civil works, etc. along with One year Operation & Maintenance including Comprehensive repairing work of complete installation at Water Treatment Facility.
10) Instrumentation & Automation work shall include engineering, supply, inspection, & testing at manufacturer's works, delivery to site, unloading & storage at site, installation, testing at site, and commissioning of entire instrumentation and automation works including fittings, cables/wires, conduits, hardware and consumable and also including all relevant works like termination, cable jointing, earth excavation/backfilling, structural works for equipment support / Hot Dip Galvanized or FRP Cable trays, all allied civil works, etc. along with Operation & maintenance including Comprehensive repairing work of complete installation of entire instrumentation and automation work at Water Treatment Facility of Mangrol Textile Park at Surat. All instruments shall be provided with required consumables, accessories, and hardware, complete in all respects and shall be mounted as per manufacturer's recommendations only to ensure reliable and trouble-free operation.
11) Contractor to adopt/adhere to the general engineering specifications and practice given below while designing the treatment plant, which shall form as part of specific requirements and shall supersede general requirements specified elsewhere in tender when observed to be in conflict to below requirements:
    - Monorail with Electrically operated chain hoist/ Mechanical Operated Chain Pully Block & EOT shall be provided at all pump houses / pump locations (both underground and above ground except for locations for which EOT crane with electrically operated chain hoist is specified) for handling of various pumps; at sludge dewatering building to handle mechanical dewatering devices, at Blower room for handling air blowers, etc. and each shall be of adequate capacity (min. 1.25 times the weight of the equipment / single heaviest component). Monorail / Rail shall be extended outside the pump house / building to facilitate loading / unloading of equipment directly on vehicle, for which ramp approach / otta shall be provided. The lift for chain/hoist shall be considered from hook eye to bottom of sump / floor level or ground level, whichever is higher.
    - Adequate measures shall be taken to prevent dry running of the pump in all modes of operation i.e. manual as well as auto mode. The sump floor shall slope towards suction pit / channel. Care must be taken especially for underground sludge sumps to provide suction pit of adequate size for emptying the sump for ease of maintenance.

- All pumps shall be provided with flooded suction. Effective liquid depth of units shall be considered between levels corresponding to lowest liquid level and highest liquid level as per design. Accordingly, all sumps/tanks shall be provided with required suction pit. Displacer / Float type Level switches (in addition to level transmitter where specified for auto operation / alarms) shall be provided for dry run protection of pumps to trip the pumps irrespective of auto or manual mode of operation of the pumps.
- Operating platforms shall be provided for operation of any equipment and to take care of valves causing inconvenience to operate from ground/floor level.
- All pump areas / pedestals shall be provided with kerb walls and suitable arrangement for collection of leakage and connection to the nearest piping/unit, keeping in mind the process requirement. In dry wells, necessary drain collection pit and dewatering pump of sufficient capacity and head requirement with level switches for auto start & stop operation shall be provided in all pump houses, especially underground pump house for this purpose.
- Vehicular approaches shall be provided to the units for operation and wherever required maintenance.
- Flushing connections shall be provided for all sludge handling units and sludge lines.
- Access to all units / walkways / platforms shall be by RCC stairways except for valve and such operating platforms requiring occasional use where access with ladders shall be accepted.
- The clear distance between adjacent pump (>7.5KW) / blower (>7.5KW) pedestal or any other equipment (dewatering unit, etc.) shall be minimum 1000mm or higher as recommended by manufacturer to ensure smooth operation and maintenance including opening clearances for acoustic / equipment hood or covers, etc. The clear distance from pedestal to internal face of end walls shall not be less than 1500mm. The clear distance from pedestal to internal face of walls shall not be less than 1500 mm on suction side and 2000 mm on motor side of the pump set.
- However, for pump / blower with motor rating 7.5KW and below, the clear distance between adjacent pump foundation can be up to 750 mm, clear distance from pedestal to internal face of end (side) walls as well as clear distance from pedestal to internal face of walls (suction & delivery side) shall not be less than 1000mm.
- Motors of all outdoor equipment shall be covered with canopy.
- All chemical dosing pumps shall be provided with pulsation dampeners. Metering pumps shall have bypass with valves and external pressure safety valves.
- Safety shower and eye wash facility, and service water connection shall be provided near chemical storage &handling areas, especially chlorination area.
- All instrument indication facilities shall be readable from grade.
- All below grade valves shall be operable from grade by providing extended spindle and hand wheel arrangement.

- Epoxy lining in alum / coagulant / polyelectrolyte / etc. chemical tanks and any other units as required, shall be provided. Complete wetted surface including free board and top of walls shall be lined.
- All pre-treatment / overhead units and for underground tanks where specified shall be able to be segregated for manual desludging / draining, whenever required, along with drain piping and valve. The purpose is to have possibility to drain all the tanks and other applicable units to make empty for cleaning / maintenance purpose. The drain pipe / drain valve (sluice/knife gate valve) shall be of minimum 150mm size.
- Common delivery header and suction header of pumps (and blowers) shall be provided with a blind flange on one end.
- Exhaust fans with bird screen / net shall be provided for all LT rooms, chemical handling/storage area, laboratory, filter house, etc. Min 2nos. or higher quantity shall be provided as per requirement.
- Min. depth of structural foundation for major water retaining structure shall be below the foundation level of existing structure / up to good yellow soil and for grade slab if subgrade soil is found unsuitable then the soil below grade slab shall be replaced with granular sub base /sand filling/Rubble soling up to required depth.
- Maintain all approaches / roads to and in site in rainy season too at own cost.
- The reinforcement steel shall be CRS Fe 500 grade for all water retaining structures and TMT Fe 500 for non-water retaining structures. The approved makes shall be TISCO / SAIL / VIZAG / Kamdhenu, Electrotherm, Hytuff, Friends, Gujarat NRE, National, pagoda, welspun, Gallont, Birla, Jindal, Essar, German TMX, Mono steel, Rudra TMX as per vendor list.
- All water retaining structures for sewage handling/treatment plant units, buildings and all other structures shall be constructed in Ordinary Portland Cement (OPC) Grade53 as per IS specification. The approved makes shall be Ultra Tech, Ambuja, Sanghi, Kamal, J K Laxmi, wonder, Binani, Siddhi, ACC, Birla, Hathi, Nuvoco Vistas as per vendor list.
- Concreting for all water retaining structures shall be with water proofing Compound.
- The chhajjas for ventilators shall be provided in order to avoid the rainwater splashing entering the rooms.
- Carting of surplus excavated earth shall be within GIPCL limit.
- All sludge lines & unit drain lines shall be of minimum 150mm dia. (or higher as specified elsewhere) along with isolation valves (sluice / knife gate valve)
- All RCC pipes shall be min. NP4 (or better as specified in tender requirement) socket spigot type as per IS with rubber ring.
- Pipe indicators for the pressure main pipeline, gravity main etc. shall be provided in such a way that it is easier to identify for maintenance and safety during excavation activity on the route.

- The plinth level of all the building shall be min. 900 mm above formation level (FGL). The roof of the building shall be min. 3.6 m above plinth/floor level or higher as required.
- All the buildings / pump house with plinth shall be provided with 1000 mm wide plinth protection of 100 mm thick CC 1:2:4 laid over 150 mm consolidated rubble soling.
- Plaster and paint requirement to be provided for all civil units:
- The inside surface of all water retaining structures shall be provided with 15 mm thick waterproof plaster in Cement mortar 1:3. Inside surfaces of rest civil units including buildings, pump house, etc. shall be plastered with 15 mm thick cement mortar 1:3 with floating coat of cement slurry.
- Outside surface of all civil units (water retaining, buildings, pump house, etc.) shall be provided with 20 mm thick double coat sand face plaster in cement mortar (first coat 12mm thk in cement mortar 1:3 and second coat 8mm thk in cement mortar 1:2).
- The bottom of all water retaining structures / units / tanks and channels shall be provided with 50 mm thick IPS / Screeding with water proofing compound.
- The outside surface of all water retaining structures and rest civil units including buildings, pump house, etc. but excluding administration building shall be provided with weather coat emulsion paint. The outside surfaces of the administration building shall be provided with apex paint. All inside surfaces of buildings, pump house, etc. units shall be provided with plastic emulsion paint.
- Parapet walls of 900mm height shall be provided above administration building and 600mm high for rest all buildings and pump houses.
- At all joints of Brick work and RCC, PVC chicken mesh jali shall be provided.
- All cables within building shall be laid on cable trays (on wall or within cable trenches or both) and for cables on walls / platforms of various buildings or civil units shall be laid on cable trays and rest all cables to be laid outside the building / outdoors shall be laid buried in ground or can be laid on overhead pipe / tray racks (bottom / lowest tray to be min. 4m height from FGL and min. 5m height or more as required at road crossing). All cables trays shall be of medium duty GI / FRP / GRP and cable trenches shall be in constructed in RCC.
- Except for pipes / channels for which minimum sizes are specified in tender specifications and in this specific requirement, fluid velocity to be considered in the design of balance pipes / channels / valves / gates shall be as under:

  For gravity flow :1.2 m/sec max.

  For pump discharge :2.5 m/sec max

  For Pump Suction :1.5 m/sec max

  For Air line :20 m/sec max (25 m/sec max. permitted only for uPVC
- Lateral Piping for diffusers below water at aeration tank floor level).

- **All indoor & outdoor lighting fixtures shall be power saving long life LED type only**
- All valve and flow meter chambers shall be in RCC construction only. The bottom of flowmeter chamber shall be provided with adequate slope and a dewatering pit of min. 750mm x 750mm x 750mm depth to house a dewatering pump with low and high level switches for automatic pump operation to pump out accumulated water in chamber and prevent submergence of meter in water.
- Industrial grade / duty FRP (Molded Fibreglass) grating and manhole covers can be accepted instead of MS Gratings and CI manhole covers. Similarly slip resistant molded fiberglass floor cover (flooring product that combines slip resistant floor plate and molded FRP grating) can be accepted for covering the submersible pump or such opening (esp for treated water application) instead of MS chequered plate covers.
- **Contractor should install Telemetry Flowmeter for checking of the exact outgoing flow capacify of the treated water.**
- **Whenever required, Contractor has to operate the ETP in 3 Shifts of 8 hours each considering 18-20 Hours of Operation of ETP per day.**
- **Contractor shall be responsible for the analysis of all the parameters given below once in 15 days (pH to be monitored daily) in their laboratory as well as once in a month from NABL Recognized laboratory.**
- **Records of all the parameters should be maintained properly as shall be submitted to GIPCL. The hazardous waste generated on account of treatment of water should be disposed of as per regulatory norms of GPCB and records should be maintained properly.**
- **From the energy conservation point of view, Bidders are advised to use the Star Rating Motors, electric panel, capacitor bank and other related accessories.**

5 Battery Limits

Following Terminal points shall be considered for the scope of work

Mine water	-	Floating Pontoon WPS
Treated water	-	up to Treated Water Tank of WWTP
Electric Power	-	415 V, 3 Phase, 50 Hz

6 Brief Datasheet with owner's requirement and Vendor confirmation

The guidelines for design criteria for Pumping Stations and process design criteria for Treatment Plant, unless otherwise specified, shall be as under. The specified sizing and quantities mentioned are minimum and not limited to and contractor shall provide adequately higher sizing / quantities if required and any additional items for satisfactory fulfillment of the specified tender conditions and final treated water quality.

Note: - *Bidder to consider recycle flow (Centrate from sludge dewatering units, dirty backwash of filters, etc. as applicable) wherever "other flows" is specified.*

The Scope of work under each subhead shall consist of Design, construction of Civil Engineering works, supply, and installation and testing /commissioning of all piping, mechanical, electrical & instrumentation works / equipments' and other essentially required ancillary work etc. complete for each unit mentioned here under.

The hydraulic as well as structural design calculations for each of the following units / channel / pipelines etc., as required along with Civil G.A. drawings and G.A. drawings for mechanical / electrical/ instrument equipment along with design calculations as applicable, with complete details shall have to be submitted by the contractor for approval of the employer before starting execution of each work / procurement of any equipment. The specified sizing and quantities mentioned is indicative minimum.

Design Criteria

6.1 Water withdrawal from Mines

Hydrological Survey, SITC of HCF pump sets on floating pontoon and all electro-mechanical accessories shall be provided for withdrawn of mine water at Mangrol.

(A) Civil work

- Design and Construction of necessary fixtures for Floating Pontoon.
- Construction of RCC Valve chambers of required size.

(B) Scope for SITC of Electro – Mechanical Works at Mine Site on Floating Pontoon shall include but not limited to the following:

(i) Horizontal Centrifugal Pump-Motor Sets/ polder type submersible with all required accessories and hardware complete as per Tender Specifications, conditions and drawings. The pumps to be installed on floating pontoon, etc. and all required accessories/ fittings for such mounting shall be included in scope.

(ii) 2 nos. (1 W+1S) 250 m3/hr capacity pump with Head: 95m, Motor Rating: 110 kW mini. 1450 Syn. RPM.

(iii) Manually gear box operated Butterfly valve on delivery line of each pump line at bank end side for isolation with all required accessories and hardware as per tender and drawing.

(iv) Swing check valves on delivery side of each pump at pontoon side and on pumps delivery header at pond bank end along with all required accessories and hardware as per tender and drawing.

(v) Noncorrosive pipe/ HDPE Pipe, Specials and Fittings (Lot) for delivery line, delivery manifold with branch line of required size each on pontoon side and bank end side and header line as required on bank end side to connect the header to rising main pipe etc. with all required accessories and hardware.

(vi) Non-metallic Floating pontoon/ metallic Floating pontoon suitable for above horizontal Centrifugal pump sets along with approved make 3 MT chain pulley block with HOT and required size monorail girder with required material like MS angles, channels, beams, drums, alu./ MS chequered plates etc. as per Tender Specifications, Conditions and drawings.

(vii) Floating bridge min. 1.0 m wide suitable for support of necessary cables and walkway with safety railings on either side with required material like angles, channels, beams, drums, al.chequered plates etc. as per Tender Specifications, Conditions and drawings.

(viii) All under water (wetted) hardware Nuts, bolts, etc. (Lot) shall be in suitable for inlet water parameter and non-wetted hardware shall be G.I. However, all hardware of delivery header of pump up to sump top shall be suitable for inlet/ feed water parameters.

(ix) Structural Steel and other misc. work required to complete the work as per tender.

(x) Any additional work / labour require including any required additional accessories / hardware / tools, etc.as per site conditions require to complete the work as per specifications and site requirement.

6.2 Collection tank & pumphouse

This tank receives mines water. The mixers shall be provided in this tank for proper equalization purpose. The mixer shall be equipped with an impeller type, high speed mixer.

From the collection tank, the water shall be pumped to the flash mixers. For this purpose, pumps shall be provided.

No. of Units	:	1 No. covered sump
Design inlet Flow	:	Min. 5 MLD + recycle flow
HRT	:	Min. 30 minutes.
Size	:	As per design

Material of Construction	:	RCC M 30
Min. Free Board	:	0.5 m
Clarifier feed Pumps		
No. of Pumps	:	Two (02) Nos. (1W + 1S)
Capacity of Pumps	:	Min. 5 MLD + recycle flow
Type of Pump	:	Submersible CF
Head	:	As per design
Motor	:	As per design
Material of Construction	:	Suitable for feed condition / non-corrosive
Mixer for Tank		
Nos. of mixer/tank considered		Min. 2 Nos.
Power requirement for Mixing		5 watt/m3

6.3 Flash mixer

From the collection tank, the effluent shall be pumped to the flash mixers. For this purpose, pumps shall be provided.

There shall be RCC flash mixers, for the quick mixing of Lime. The mixer should be equipped with an impeller type, high speed mixer. The outlets of the mixers shall lead directly to Reactor clarifier.

Flash mixer inlet & outlet arrangement shall be designed to avoid short-circuiting of the flow by providing a baffle wall at inlet side with suitable size of opening at bottom. A weir shall be provided at outlet of each flash mixer with overflow leading to outlet chamber / distribution chamber and onwards conveyance to the Reactor Clarifier inlet through suitable pipeline.

The capacity of flash mixer shall be for min. 5 MLD + recycle flow.

Material of construction shall be RCC M-30

Retention time shall be minimum 60 seconds.

The size of flash mixer shall be designed by the contractor such as to provide minimum 500 mm clear free board.

Adequate and proper arrangement of operating platforms with chequered tiles shall be provided for accessing flash mixer unit and for accessing weir plates at flash mixer outlet and operation of gates provided at distribution chamber and flash mixer inlet as well as for flash mixing equipment.

Arrangement shall be made to feed the Lime (coagulant) at the inlet of each flash mixer through an independent separate pipeline from alum / chemical tanks for each flash mixer by at least 80NB or sufficient higher size uPVC pipeline such that one to one pipeline is

provided from dosing pump header line to each mixer. An isolation full bore ball valve (min. 80NB or higher as per pipe size) shall be provided on discharge side of dosing line to each flash mixer suitably mounted for ease of O&M.

Dosing tanks with agitators and dosing pumps for Lime/ coagulant dosing shall be provided to feed the solution in the flash mixer chamber.

Minimum DN150 mm dia. Pipe drain puddle, drain valve (sluice / knife gate valve) shall be provided in flash mixer at bottom. Drain chamber of sufficient size shall be constructed below ground level with top RCC slab cover &RCC chambers and onwards conveyance / disposal shall be by RCC NP3 (socket & spigot type) piping leading to dirty water sump.

Three numbers of girders (I - sections) for supporting agitator motor for mixer shall be provided of sufficient size (min ISMB: 200) with 8 mm thick chequered plate top over each flash mixing tank. These girders shall be grouted in RCC wall of flash mixer. All M.S. sections, plate etc. shall be provided epoxy paint. Minimum 1200 mm width RCC platform with 1.0 m. high hand railing shall be provided for operating flash mixer gates &valves on dosing lines to each flash mixer and connecting to distribution chamber platform / walkway on one side and preferably connected to both the clarifier walkway on either side.

6.4 Reactor Clarifier

The design flow shall be received by clarifier from the flash mixer by central inlet pipe.

The water shall flow to clarifier through an opening in the bottom of the draft tube. Draft tube impeller will assist in mixing Coagulant in the fed effluent. Polymer and ferrous sulphates dosing shall be provided. Settled sludge is re-suspended from the settled solid blanket, which is maintained above the reaction cone. The conical shape of the cone promotes flocculation by allowing reduce turbulence as solid travels downwards within the cone and providing increased cross section area in the clarification zone as flow rises towards weirs.

The clarified water flow shall be collected by Launder and shall be taken Filter feed tank. The sludge from the Reactor clarifier shall be taken to the chemical sludge sump and pump house.

No. of Units	:	1 no.
Capacity of Reactor clarifier	:	5 MLD+ recycle flow
Detention time	:	120 Min. for clarification and 20 min for flocculation
Surface loading rate at average flow	:	60 $m^3/d/m^2$ (max.)
Weir loading rate at average flow	:	125 $m^3/d/m^2$ (max.)
Floor slope	:	1 in 12

Side water depth	:	4.5 m (Min.)
Solid concentration in clarified sludge	:	1-2%
Specific gravity of primary sludge	:	1.00
Material of Construction	:	RCC (M 30)
Free Board	:	0.5 m
Clarifier Bridge with wheel assembly	:	Min. 1200 mm clear width
Peripheral speed of Scrapper Arm	:	1 - 3 cm / sec
Thickness of scrapper Blade	:	6 mm (Min.)
Thickness / Size of Rubber Squeezes	:	Min. 10 mm thk. x 100mm or suitable Ht.
MOC of Bridge and Scrapper	:	MS, IS 2062, FRP lined. All hardware, nuts and Bolts (wetted / submerged and non-wetted) shall be of SS– 304 Material.
Painting	:	FRP lined
Telescopic Bleed valve	:	1 set for each clarifier a standard. • If more than one sludge withdrawal line, one set to be provided for each sludge withdrawal line / chamber. • Inlet telescopic line to be provided with isolation valve (Sluice / knife gate valve). • sludge line and overflow / return line from chamber to be provided with isolation valve, normally open.
Water flushing connection for each sludge withdrawal chamber / sludge withdrawal line	:	2 nos., 50mm dia. with isolation ball valve and flanged entry with blind flange, one on each side of sludge withdrawal valve of sludge withdrawal line, each on upstream and downstream side of sludge withdrawal valve.
Railing	:	MS pipe / structure railing with epoxy paint.
Sludge Drain Valve for each sludge withdrawal line / sludge withdrawal chamber		1 No. with extended spindle valve (shall be electric actuator operated, minimum 300 mm diameter straight to drain chamber. The actuator shall be above ground level connected with extended spindle.

Reactor Clarifier shall include;

- Sludge Collector Drive Mechanism complete with Drive Head, etc.
- Turbine drive mechanism complete with reducer, variable frequency drive.
- Center Draft Tube
- Center Shaft & Sludge Collector Scraper Arms

- Bridge superstructure
- Reaction Cone
- Radial Effluent Collection System

Drive Unit
The turbine agitator and sludge collector drive mechanism will be of the concentric dual stack type. The sludge collector drive will be self-contained and mounted on top of the center draft tube concentric with the agitator drive.
The sludge collector drive mechanism shall consist of a geared motor coupled to a drive head through chain & sprocket. The drive head shall consist of a primary and final gear reduction unit. The motor rating shall be indicated in vendor's data sheet.

Turbine Impeller
The agitator drive shall consist of primary drive unit equipped to provide variable speed input to a final enclosed reduction unit. The impeller shaft shall be coupled to the gearbox by means of a rigid coupling.
The motor is coupled to the gearbox through a V belt drive. The speed of impeller shall be variable through variable frequency drive.
The motor rating shall be as indicated in data sheet. The complete drive assembly shall be mounted on a frame bolted to the bridge.

Clarifier Center Shaft & Scraper Arms
The center shaft shall be of ERW pipe. Scraper arms shall be attached to the lower cage section for effectively scraping the sludge to the tank center.
The scraper arms shall be rigidly connected to the center shaft and equipped with blade sets and spaced to scrap settled sludge across the tank bottom to a sludge hopper located near the center of the basin. The arms shall be truss type construction and provided with rubber squeezes.

Reaction Cone
The reaction cone shall separate the flocculation zone from the clarification zone. The reaction cone shall be fabricated of **Steel with FRP coating**. Structural steel members from the access bridge structure through tie beams shall support the cone.

Center Draft Tube
A circular center draft tube is provided to serve as an influent pipe and solids mixing zone. The draft tube shall serve to direct the combined mixed flow (raw flow and recirculated sludge slurry) into the flocculation zone.

Bridge Assembly
An all welded structural steel Access Bridge consisting of two wide flanged beams / channels / truss shall extend from clarifier end wall to central drive head. A walkway shall extend over the entire bridge length.

Effluent Collection System

The effluent system shall consist of a network of radial launders connected to a peripheral RCC launder. The radial launder shall be fabricated from steel plates and provided with overflow v-notch weirs on either side.

Painting
Painting for all MS parts total FRP Coated.

General
Entire mechanism shall be generally in MSFRP construction except the castings.

6.5 Filter Feed Tank & Pumps

This tank receives permeate from the Pressure filter. This tank shall have pumps to feed the AFM. The tank shall be having MOC of RCC M30.

Necessary Submersible Pump Set of required capacity (required flow & head) shall be provided to feed AFM (Pressure) Filters. The pumps shall be installed within suction pit of required width and depth as desired for minimum submergence.

Delivery line of each pump shall be provided with non-return valve / dual plate check valve, and an isolation sluice / knife gate valve. An electromagnetic flow meter with metallic expansion bellows shall be provided on header line to measure the flow supply to proposed WTP.

Monorail with electric chain hoists shall be provided for lowering and lifting of proposed pump sets.

The pressure filter feed pumps shall interlock with the UF Feed Sump & final permeate sump levels to stop the pumps on achieving high level in sump and to start when the sump level falls to middle level / set low level. A level transmitter shall be provided at filter feed sump for monitoring sump level and for level-based auto operation of pumps. The electric actuator operated valve at filter feed sump inlet also shall be suitable interlocked with plant operation.

Filter Feed Sump		
No. of Units	:	1 No. covered sump
Design inlet Flow	:	Min. 5 MLD + recycle flow
HRT	:	Min. 30 min.
Size	:	As per design
Material of Construction	:	RCC M 30
Min. Free Board	:	0.5 m
Filter Feed Pumps		
No. of Pumps	:	Three (03) Nos. (2W + 1S)
Capacity of Pumps	:	Min. 5 MLD + recycle flow
Type of Pump	:	Submersible CF

Head	:	As per design
Motor	:	As per design
Material of Construction	:	Non-corrosive / Suitable for feed condition

6.6 Pressure Filter (AFM Filter)

The Mine water from the filter feed sump shall be pumped to the Pressure Filter (with Activated Filter Material (AFM) media for filtration and support layers) for further treatment before reuse to remove suspended solids, Turbidity & Oil grease.

AFM is made of recycled crushed green glass which has the correct chemical and physical properties for activation process. AFM is hydraulically optimised in terms of grain shape and size to enhance performance. It is self-sterilized filter media with larger surface area and longer life without any chemical regeneration.

From filter, treated sewage enters the Treated Sewage tank for final disposal.

The dirty backwash water / drain shall be led to sludge sump. In case of gravity drain, required drain pit of capacity as recommended by pressure filter vendor with required pipe up to Sludge sump shall be provided.

The advantages of Activated Filter Material (AFM) filters are as follows:

- ✓ AFM is a direct replacement for sand in any type of sand filter.
- ✓ Reduce backwash water demand & energy demand by an average of 50%
- ✓ Will not support Bacterial growth (Fouling)
- ✓ Shelf life also 10+ year without replacement or regeneration.

No. of units	:	Min. 2 Working
Capacity	:	Min. 5 MLD + recycle flow
Filtration Rate, Max.	:	15 $m^3/hr/m^2$ max.
Shell Height	:	Min. 2m (Vessel Ht. Min. 2.6m)
MOC – Shell / Body	:	MS (min. 12mm thk.) shell with FRP lining (min. 2mm thk.) and MS (min. 14mm thk.) dish end with FRP lining (min. 2mm thk.)
Size	:	As per design
Filter Media	:	
Size	:	Grade Wise, AFM NG Grade 1 having Min. 60-70% Ht. with Supporting media of AFM Grade 2 & AFM Grade 3 in about equal height for balance media

		height
Type	:	Glass Self Sterilized
MOC - Strainer	:	SS 304
Type of backwash	:	Mechanical
Backwash (Air Scour) Blowers	:	Required, 2 Nos. (1W + 1S) of required capacity
Backwash (Water) Pumps	:	Required, 2 Nos. (1W + 1S) of required capacity

Air and water backwash facility shall be provided for which all pumps, blowers, etc. shall be provided of required capacity and in 100% standby configuration.

- Back wash shall be direct by pumps. For this purpose, 2 Nos. (1W + 1S) pump sets of required capacity shall be provided.
- 2 Nos. (1W + 1S) of air blowers of required capacity shall be provided for air backwash of filter bed.

Filter backwash	
Rate of air scouring	600-900 LPM/Sq.m.
Duration of air scouring	5 minutes for each filter
Rate of backwash flow	400 -600 LPM/Sq.m.
Duration of backwashing	10 minutes for each filter

Sizes of the nozzles shall be worked out considering the following velocities conditions.

Filter inlet	2.0 m/sec.
Filtered water out let	1.5 m /sec.
Backwash water inlet	2.5 m /sec.
Scour air inlet	15 m/sec.

6.7 Treated Water Tank & Pumphouse

Tank receives the permeate water from Activated Media Filter. The detention time in the tank shall be one hour. Necessary treated water transfer pumps shall be provided. The tank shall be covered and of RCC-Epoxy painted construction. The back-wash water for media filter cleaning shall be taken from this tank.

Disinfection (Chlorination) Units including Hypo dosing Tank and pumps shall be designed for design Flow.

Baffle walls shall be provided in the Tank to facilitate hydraulic mixing of treated water. The entire construction shall be in M-30 grade reinforced cement concrete and as per IS 3370.

The inside surface of the Tank shall be provided with 20 mm thick water proof plaster in Cement mortar 1:3. The bottom of the tank shall be provided with 50 mm thick screeding. The outside surface shall be provided with 20 mm thick double coat Sand phased plaster in cement mortar 1:3 with paint as per civil specification.

Treated/Disinfected water shall be pumped / transferred to the disposal point.

Design Flow	:	Min. 5 MLD or higher as per design
HRT	:	Min. 1 hour
Size		As per design
Material of Construction		RCC M-30
Free Board		Min.0.5 m
Dose of Hypo chloride	:	5 ppm (min.) or suitable for 0.5 ppm FRC
No. of dosing tank	:	2 nos. (1W + 1S)
Dosing Pumps		2 nos. (1W + 1S)
Treated water transfer Pumps	:	
No. of Pumps	:	2 Nos. (1W + 1S)
Capacity of Pumps		Min. 300 m3/hr.
Head	:	15 m min. or higher as per design
Type of pump	:	Horizontal Centrifugal
Material of Construction:	:	
Casing	:	CI FG 260
Impeller	:	CF8M
Shaft / Shaft Sleeve	:	AISI410
Accessories	:	Guide rail, chain, auto coupling, duck foot bend etc.
VFD	:	As per Process Requirement
Operation Philosophy of Pumps	:	Manual
Isolation Valve on Rising Main / Header Line	:	Required, Sluice / Knife Gate Valve,
Metallic Expansion Bellows on Rising Main / Header Line	:	Required

Sodium hypochlorite solution shall be added for disinfection at suitable dosing rate. The entire construction shall be in M-30 grade reinforced cement concrete and as per IS 3370. It shall be RCC Frame cum Brick Masonry Structure with Rolling Shutter, Windows & Ventilators, EOT Crane of minimum 3 Ton capacity or 1.25 times the weight of the single Unit whichever is more to lift the pumping machinery. Also, it shall be provided with

IRONITE IPS Flooring, Kota stone flooring Internal & External Plaster and Internal &External Painting.

6.8 Sludge dewatering units

6.8.1 Sludge sump & pump house

The sludge sump shall be provided to collect the sludge from Physico –chemical process. The sump shall be equipped with coarse bubble type air grid with air blowers facilitate/ mixers for the mixing of contents of sludge sump. The sludge from the sludge sump shall be fed to mechanical dewatering system.

No. of sump & pump house	:	1 No.
Solid concentration	:	0.8 to1.2 % (normal)
Specific gravity of sludge	:	1.03
Actual pumping hours for sludge Pumping	:	16 hrs/day for design flow for Centrifuge / Plate and Frame filter press (PFP)/ screw press (SP) feed
Design capacity	:	As required for design average flow
Hydraulic Retention Time	:	2 hrs. storage (min.) if feed to Centrifuge / PFP / SP
Material of Construction		
Sump	:	R.C.C. (M-30) with waterproof plaster
Pump house	:	RCC frame structure with masonry walls
Free board	:	500 mm (min.)
Top of sump	:	Min. 300 mm above FGL with handrail
Dewatering pump for pump house	:	Required along with level switches for auto operation & alarm
Sludge Transfer Pumps		
No. of Pumps	:	Centrifuge / PFP / SP Feed: As per No. of Centrifuge / PFP / SP with min. one standby
Type of Pump	:	Centrifuge / PFP / SP Feed: Positive Displacement type Screw Pump
Capacity of Pump	:	As per sludge flow
Head of pump	:	As per hydraulic design
Pump Efficiency	:	Preferably more than 30%
Fluid Handled	:	Sludge of 0.8 – 1.2 % Solids Consistency
Specific Gravity	:	1.03
Solid Handling Capacity	:	40mm Max.
Material of Construction of Pumps (Screw Pump)		
Pump Housing	:	CI IS 210 GR FG 260
Rotor/Shaft	:	SS AISI 410 or 431
Stator	:	Nitrile Black
Material of Construction (submersible non-clog):		

Casing	:	CI IS 210 Gr FG 260
Impeller	:	CF 8 M
Shaft / Shaft Sleeve	:	ASTM A276 SS 410
Sludge Mixing System / Mixer		
Type of air grid	:	Coarse Bubble
Air mixing rate provided (m3/hr/m3 of liquid volume)	:	1.2
Sludge Mixing Blowers/agitator		
No. of Blowers	:	2 Nos. (1W + 1 S)
Type of Blower	:	Twin lobe, Positive Displacement (Roots) Type, Air Cooled
Capacity of Each Blower	:	As per process design requirement.
Blower pressure	:	As per design
Air Mixing Rate	:	1.2 m3/hr/m3 of volume of sludge sump

6.8.2 Mechanical Sludge Dewatering Building

The Mechanical Sludge Dewatering Device shall be solid bowl type centrifuge / Plate & frame Filter press (PFP) / Screw Press (SP) designed for 100% trouble free operation at all times and provided as per the following guidelines:

The device shall be so located that the dewatered sludge can be loaded into Trucks/ Trolleys / Containers directly. Preferably the device shall be so located that the dewatered sludge falls into the Trucks/ Trolleys / Containers without the requirement of another Material Handling Unit.

The dewatering device of minimum capacity as specified above or higher as per design requirements in required numbers and designed to operate for number of hours per day as specified above shall be provided.

The dewatered sludge shall have a minimum solids concentration of 20% or more (measured as dry solids w/w basis) so that it can disposed by open body Trucks/Trolleys.

The Centrifuge shall be solid bowl type of co-current / counter current design, as decided by the Bidder. It shall have sufficient clarifying length so that separation of solids is effective. The Mechanical Sludge Dewatering Device (Centrifuge / Filter press) and its accessories shall be mounted on a common Base Frame so that the entire assembly can be installed on an elevated structure.

No. of Units	:	No. of Working Units of Centrifuge/ PFP / SP shall be as per process design & selected capacity suitable for 16 hrs. operation + 1 No. Standby unit
Type	:	Centrifuge / filter press
Capacity	:	As per Process Design
Operating Hours	:	16 hrs. per day max.
Specific gravity of influent sludge	:	1.03

Solid concentration at inlet (max.)	:	0.8-1% (w/v) solids consistency or lower
Solid concentration of dewatered cake	:	20% by wt. min. dry solid basis
MOC – Wetted Parts	:	SS-304 or as per equipment specs for mechanical works
Operation of Sludge Dewatering system	:	Manual / Automatic, interlocked with Feed Pumps, Polyelectrolyte (PE) dosing Pumps operation for tripping the system in case of any failure/stoppage in associated equipment.
Hopper / Chute for sludge disposal from centrifuge / Filter press outlet into tractor trolley, app. 1.5-2m above GL	:	Required, constructed from min. 3mm thk GI plate or 5mm thk FRP plates
Flow Measurement	:	Required, electro-magnetic flow meter on inlet line to each centrifuge / PFP / SP along with metallic expansion bellows.

Differential speed and Bowl speed shall be adjusted by changing the Pulleys. Differential speed may be adjustable by use of epicyclical gears. The Bowl shall be protected with flexible connections so that vibrations are not transmitted to other equipment. The Base Frame shall be provided with anti-vibration Pads.

A Centrifuge / Filter press Building shall be provided near Sludge Sump & Pump House to house Centrifuges/ Filter press. It shall be a G (Stilt) + 1 type RCC Frame Structure. Centrifuges / PFP / SP shall be installed on the First Floor whereas Trucks/Trolleys/Containers shall be parked on the Ground Floor. An Electrical Hoist with Travelling Trolley of suitable capacity shall be provided. Also, it shall be provided with adequate flooring, Internal & External Plaster and Internal & External Painting. Plinth Protection shall be provided along the periphery as per specifications.

The height of sludge dewatering building room from finish ground level shall permit passage of truck underneath it plus a clearance of 1 m. The top of the platform shall be covered with RCC slab. The room shall be of sufficient size to accommodate centrifuge / Filter press units, polyelectrolyte dosing tank, polyelectrolyte dosing pumps, necessary pipes, fittings, valves and other electrical, mechanical and instrumentation works. It is the responsibility of the Contractor to verify and provide appropriate size of the room from operation point of view.

All the machinery shall be supported over suitable foundation. An RCC staircase of 1.2 m width with hand-railing shall be constructed to have access to platform from formation level.

Along all sides of the platform 1 m high pipe railing / brick masonry wall shall be provided.

The dewatered sludge shall be guided to trolleys providing GI/FRP chute of adequate opening. Chute shall be extended up to 1.5-2m above ground level or directed by an engineer-in-charge during execution.

Note: For mechanical sludge dewatering system instead of centrifuge, bidder may consider

offering Sludge Dewatering Device consisting of a combination of Gravity belt thickener and plate & frame filter Press or Screw press to handle and generate sludge consistency as specified in these tender specifications. The Belt Press shall be in manufactured **completely in SS 304 construction** comprising of preferably 14 rollers. It should have a Gravity belt pre-thickening Section, a Pressure Section, a Belt Alignment and Tensioning System and a Belt Washing System including belt wash pump, completely wired control panel with suitable controllers to enable smooth, safe and automatic operation of the filter press. The unit shall be generally having a total of three filtering cloths of suitable material as per manufacturer's design. All drives shall be comprised with an individual variable gear motor. The complete unit will supplied be factory assembled and internally wired and piped.

6.8.3 Polyelectrolyte Dosing System

Polyelectrolyte shall be dosed online at the inlet of Centrifuges. Minimum dosage of polyelectrolyte shall be min. 1.5-2.0 Kg/Ton of dry solids in sludge at 0.1% solution strength. There shall one Solution Preparation Tank and one Solution Dosing Tank, each suitable for a minimum of 8 hrs. of operation and equipped with slow-speed Mixer (max. 100 RPM).

No. of Dosing Tanks	:	4 nos. (3 dosing & 1 preparation tank)
Capacity	:	Each of 8 hrs. dosing requirement
Solution strength	:	0.1% (max.)
Material Construction of Tank	:	RCC epoxy lined
Level Switches	:	Required, one no. per tank for low level trip of tank agitator & alarm
No. of Agitator	:	1 no. per tank
Type of Agitator	:	Turbine type
MOC of Agitator	:	SS 316
Agitator Speed	:	60 – 100 RPM
No. of Dosing Pump	:	Equal to no. of mechanical dewatering device
Capacity	:	As per poly dosing requirement (min.2 Kg/MT of dry solids with at least 25% spare margin/capacity)
Type of Pump	:	Diaphragm
Pressure	:	2 kg/cm2 (Min.)
MOC:		
Wetted parts	:	SS304
Diaphragm	:	Teflon
Gland	:	PTFE
Base plate	:	MSEP

Diaphragm type dosing pumps of required capacity as per design (with min. 25% spare margin) with head and quantities as specified above shall be provided to dose the required quantity of polyelectrolyte to the mechanical dewatering device. The entire construction shall be in M-30 grade reinforced cement concrete and as per IS 3370 and with epoxy lining. RCC Platform/Walkway along with RCC Staircase, minimum 1.00 m wide with Hand Railing as per specifications shall be provided for access from Finished Ground Level to the top of the Unit & to the Operating Platform/Walkway.

6.9 Filtrate recycle tank and pump

It receives the Centrate from Sludge dewatering system and backwash water from Media filters. Necessary pumps shall be provided to pump this rejected water back in the process. The tank shall be RCC-Epoxy painted in construction.

No. of Units	:	1 no
Design Flow	:	Filtrate from mech. sludge dewatering system & PSF /PSF Backwash water
HRT	:	1 hr.
Capacity	:	As per Design
Size	:	As per design
Material of Construction	:	RCC M 30
Free Board	:	0.5 m
No. of Pumps	:	Min. 2 nos. (1 W + 1 S)
Type of Pump	:	Hori. Centrifugal non-clog. / Submersible non-clog
Capacity of pump	:	As per design
Head of pump	:	As per design
Material of Construction	:	
Casing	:	CI FG 260
Impeller	:	CF8M
Shaft / Shaft Sleeve	:	AISI410

6.10 ELECTRICAL & INSTRUMENTATION WORKS

- The employer will provide a 415 V, 3-Phase, 50 Hz, 3-Wire power supply to the LT Panel incomers 1 & 2 (PCC/PMCC) via LT cable, including all necessary accessories.
- Accordingly, the scope of electrical work includes receiving Incoming 3 phase, 4 wire LT power from employer shall provide up to the incomers 1 & 2 of the Main Plant LT panel (PCC/ PMCC APFC, PDB, LDB, etc.), Push Buttons, Cable and Cables Trays, Earthing, Motors, Indoor & Outdoor lighting system within specified area of ETP campus and others electrical accessories to complete the Plant. Obtaining required statutory approvals, Liasoning for obtaining power, etc.

- LT rooms shall be RCC Frame and Brick Masonry Structure equipped with Rolling Shutters, Windows/Ventilators, Exhaust Fans and Safety Equipment including Sand Buckets, Fire Extinguishers, etc. complete.

The entire Plant shall be operated on 415 V, 3-Phase, 50 Hz, 3-Wire system. The Contractor's Scope of Work shall include the following as a minimum:

- The employer will provide a 415 V, 3-Phase, 50 Hz, 3-Wire power supply to the LT Panel incomers 1 & 2 (PCC/PMCC) via LT cable, including all necessary accessories.
- LT Panels (PCC / PMCC / MCC/ APFC / LDB / PDB, etc.)
- Automatic Power Factor Correction Panel of minimum 12 steps or higher as specified in detailed specifications.
- MV / LT Motors as applicable
- LT Cabling (Power, Control. Etc.), Double Compression Ni-Plated Brass Cable Glands, Fittings & Accessories.
- GI / FRP Cable Trays & Fittings & Accessories
- Earthing System (Chemical Earthing) for Electrical equipment as well as Instruments
- Internal Lighting in Buildings (Energy Eff. LED Type) to maintain lux levels as per specifications
- External Lighting / Road & Pathway Lighting (Energy Eff. LED Type) to maintain lux levels as per specifications
- Internal & other Electrification works
  - 1200mm sweep ceiling fan at required locations.
  - 450mm dia. exhaust fans at required locations except for toilet blocks. 300mm dia. exhaust fans for toilet blocks.
  - Power points and other requirements at various locations.
- Local Push Button Stations near respective Drives &Junction Box etc. along with complete all required accessories and hardware, etc.
- Safety Accessories as required (Fire extinguishers, sand filled fire bucket with stand, first aid box, first aid / safety charts & sign boards, battery operated emergency lamp, rubber mats as required, hand gloves as required, etc.)
- Any other item / accessories required for successful completion of the project.

The Contractor shall design/execute the System as per standard specifications, I.E. Rules and Regulations, requirements of State Electricity Board and other local Authorities and actual site conditions.
Bidder shall refer to electrical specifications for further requirements / detailed specifications.

INSTRUMENTATION SCOPE OF WORKS:

PLC/HMI BASED SYSTEM FOR PLANT
Salient features of the proposed System shall be as follows:

- Dynamic display of all online Instrument shall be available on HMI Screen.
- All Drive shall operate manually.

Bidder shall provide following instruments as a minimum in addition to others specified elsewhere in tender specifications (Refer instrumentation chapter for detailed specifications):

- pH analyzer for quality monitoring of Plant at Collection tank, Filter feed tank, Treated water tank.
- TSS analyzer for quality monitoring of Plant at Collection tank, Filter feed tank, Treated water tank.
- TDS/Conductivity analyzer for quality monitoring of Plant at Collection tank, Filter feed tank, Treated water tank.
- Ultrasonic type Level transmitter at each Sump of Plant to level monitoring of Each Sump/ tank.
- Electro-magnetic type flow meter at Collection Tank Transfer Pump, Treated Water Pump Header, at Centrifuge Feed Pump Common header (Inst. & Totalized Flow with trends).
- Ultrasonic type open channel flow meter with remote type transmitter for monitoring treated sewage flow (Inst. & Totalized Flow with trends)
- Diff. Pressure Transmitter across each GMF for monitoring differential pressure / clogging of condition GMF.
- Pressure Gauges shall be provided at delivery of each pump, blower, compressor, etc.
- PLC & HMI system only for Online Instrument for remote monitoring as per specifications.
- Instrument Cables (Power / Control / Signal / Communication) & Cable Trays, Instrument Earthing System, Cable Glands, Junction Boxes & Accessories, etc.
- Any other as required to complete the work in all respects.

7 List of Equipments

Major components of civil, mechanical and electrical Equipments are to be listed by the vendor.

8 Following Documents are attached for submission of offer

1. Datasheet format
2. Site plan with ETP area earmarked
3. Plant ground level
4. Power consumption as per given in tender
5. Chemical consumption format given in tender
6. O&M cost summary format given in tender

9 Documents to be submitted by vendor with the offer

1. Detailed process write-up

2. Design basis and Design calculations.
3. Datasheet of civil and mechanical items indicating motor rating, MOC, Size, Capacity, numbers working and stand-by,
4. Detailed list of civil, mechanical, electrical and instrument equipments included.
5. Process flow diagram
6. Hydraulic flow diagram.
7. Layout of the plant to be installed in the space marked for WTP Power statement. as per format given in tender
8. P&ID indicating size and MOC of pipeline.
9. Chemical consumption statement as per format given in tender
10. Replacement cost of spare parts and media etc.
11. Utilities requirement.
12. The items not included in the scope but required for smooth operation which is to be provided

10 Process Data sheet

(Note: -Contractor are requested to provide the detail data sheet as per chosen methodology for treatment for explanation of process)

NO.	PARTICULARS	Data should be filled by Bidder
1	**Floating Pontoon**	
2	**Collection tank Feed Tank &pump**	
	No. of Units	
	Design Flow	
	HRT	
	Capacity	
	Size	
	Material of Construction	
	Free Board	
	Feed pumps	
	No. of Pumps at pontoon	
	Type of Pump	
	Capacity in m3/hr	
	Head in m	
	Motor KW/RPM	
	Material of Construction	
	Casing	
	Impeller	
	Shaft / Shaft Sleeve	
	Shaft sealing/Packing	
	Accessories	

	Mixer for Tank	
	Air rate	
	Nos. of mixer/tank considered	
	Power requirement for Mixing	
	Providing Mixer	
3	**Flash mixer**	
	No. of Units	
	Capacity of Tank	
	Detention time	
	Type of Mixer	
	Mixer speed	
	MOC of mixer	
	Motor KW/RPM	
4	**Reactor Clarifier**	
	No. of Units	
	Capacity of Reactor clarifier	
	Detention time	
	Surface loading rate at average flow	
	Weir loading rate at average flow	
	Floor slope	
	Side water depth	
	Solid concentration in clarified sludge	
	Specific gravity of primary sludge	
	Material of Construction	
	Free Board	
A.	**Chemical dosing tanks**	**Data should be filled for each chemical separately**
	No. of Dosing Tanks	
	Capacity of tank	
	Solution strength	
	Diameter (m)	
	Height (m)	
	Details of controls	
	Material of Construction of Tank	
B.	**Chemical dosing pumps**	
	No. of Dosing Pump	
	Capacity of Dosing Pump	
	Type of Pump	
	Pressure	
	Motor Rating	
	Material of Construction	

	Wetted parts	
	Diaphragm	
	Gland	
	Base plate	
5	**Filter Feed Sump**	
	No. of Units	
	Design inlet Flow	
	HRT	
	Size	
	Material of Construction	
	Min. Free Board	
	Filter Feed Pumps	
	No. of Pumps	
	Capacity of Pumps	
	Type of Pump	
	Head in m	
	Motor KW/RPM	
	Material of Construction	
	Casing	
	Impeller	
	Shaft / Shaft Sleeve	
	Shaft sealing/Packing	
	Accessories	
6	**Pressure Filter/ AMF**	
	No. of units	
	Capacity	
	Filtration Rate, Max.	
	Shell Height	
	MOC – Shell / Body	
	Size	
	Filter Media	
	Size	
	Air blower for Filter	
	Nos. of blowers	
	Capacity of blower	
	Head in mmwc	
	MOC	
	Casing	
	Lobes	
	Shaft	
	Gears	

	Common Base Frame	
	AMF Backwash Pumps	
	Number of working units	
	Number of standby units	
	Capacity in m3/hr	
	Head in m	
	Type of pump	
	Motor rating	
	MOC of Pumps	
	Casing	
	Impeller	
	Shaft / Shaft Sleeve	
	Accessories	
	Back wash and Flushing period	
	Frequency	
7	**Treated water tank & pump**	
	Design Flow	
	HRT	
	Size	
	Material of Construction	
	Free Board	
	Dose of Hypo chloride	
	No. of dosing tank	
	Dosing Pumps	
	Treated water transfer Pumps	
	No. of Pumps	
	Capacity of Pumps	
	Head	
	Type of pump	
	Material of Construction:	
	Casing	
	Impeller	
	Shaft / Shaft Sleeve	
	Accessories	
	VFD	
	Operation Philosophy of Pumps	
	Isolation Valve on Rising Main / Header Line	
	Metallic Expansion Bellows on Rising Main / Header Line	
8	**Sludge dewatering System**	
	Centrifuge feed pumps	

	No. of Pumps for filter press feed	
	Type of Pump	
	Capacity of pump-m3/hr	
	Head of pump in m	
	Motor KW/RPM	
	Material of Construction	
	Casing	
	Impeller	
	Shaft / Shaft Sleeve	
	Accessories	
	Sludge dewatering units	
	Quantity (Working + Standby)	
	Capacity (m3/hr)	
	Feed sludge consistency (%)	
	Dewatered sludge consistency (%)	
	Type of plate	
	Size of Plate	
	Nos. of plate	
	Nos. of Chamber	
	Filtration area	
	MOC of Plate	
	Cake holding capacity	
	Hydraulic Cylinder	
	Operation of press	
	Total cycle time	
	(1) Feeding time	
	(2) Pressing time	
	(3) Cake removal time	
	Material of Construction	
	- Free Body	
	- Moving body	
	- Tie bar	
	- Cocks	
	- Nozzles	
	Motor rating (KW)	
	Dewatering Polyelectrolyte Solution Dosing Tank with Agitator	
	No. of working unit	
	No. of standby unit	
	MOC	
	Capacity (m3)	
	Holding time (hrs.)	
	Liquid depth (m)	
	Length (m)	

	Width (m)	
	Free board	
	Agitator Type	
	Nos.	
	MOC	
	Speed (RPM)	
	Motor (KW)	
	DWPE Dosing Pump	
	No. of pump (working + standby)	
	Type of Pump	
	Capacity of Dosing Pump-(LPH)	
	Head (m)	
	Motor Rating	
	Material of Construction	
	Wetted parts	
	Diaphragm	
	Gland	
	Base plate	
9	**Sludge dewatering Building**	
	Nos. of Unit	
	Size	
	Height	
10	**Chemical room**	
	No. of units	
	Size	

DATA SHEETS FOR MECHANICAL ITEMS
SUBMERSIBLE NON-CLOG PUMP (To be filled separately for each pump)

PARTICULAR	PARTICULARS TO BE FILLED BY BIDDER
LIQUID DATA	
Liquid handled	
Specific gravity –kg/dm3	
PUMP DATA	
Make	
Pump type	
Pump Model	
Number of pumps	
Design capacity-m^3/hr.	
Total Rated Head-m	
Guaranteed Overall efficiency of Pump set-%	
Motor input at rated duty-kw	
Rated Speed of pump (FLS of Motor) -RPM	
Pump Efficiency at duty point-%	
Pump input at Duty Point-Kw	
Max. BKW for Rated Impeller-kw	
Recommended motor rating- kw	
Min. Submergence Required-m	
Shut off head -m	
Min. permissible solid size-mm	
MOTOR DATA	
Motor Rating in KW	
Voltage / Phase / Frequency & % variation	
Combined Voltage & Frequency variation	
Insulation Class	
Full Load Speed-RPM	
Full load current (FLC)-A	
Cable Type / Size Control & Signal Cable: Power Cable:	
Protection Class	
MOC	
Pump Casing & wear Ring (M)	
Impeller (M)	
Wear Plate / Wear Ring	
Shaft (M)	
Motor housing/Oil chamber (M)	
Hardware in contact with liquid	

Guide pipe	
Lifting Chain with 300 mm dia rings @ every 2 m	
ACCESSORIES & SERVICES REQUIRED	
Auto Coupling unit	
SS304 Guide pipe with support	
SS304 Lifting Chain	
Pump Monitoring Unit	
Set of foundation bolts & Nuts	
Control Panel	
Non-Standard / special maintenance tools	
Two years normal working Spare parts	
WEIGHT	
Weight of pump set-kg	
DRAWINGS	
ISO efficiency curve	
Performance curve	
GAD drg. of Pump set	
C/S drg. of pumpset with part list	
TESTING	
Hydrostatic test	
Performance test	
Static and dynamic balancing test	
Visual inspection check	

SUBMERSIBLE CENTRIFUGAL PUMP (To be filled separately for each pump)

PARTICULAR	**PARTICULARS TO BE FILLED BY BIDDER**
LIQUID DATA	
Liquid handled	
Specific gravity –kg/dm3	
PUMP DATA	
Make	
Pump type	
Pump Model	
Number of pumps	
Design capacity-m^3/hr.	
Total Rated Head-m	
Guaranteed Overall efficiency of Pump set-%	
Motor input at rated duty-kw	
Rated Speed of pump (FLS of Motor) -RPM	
Pump Efficiency at duty point-%	
Pump input at Duty Point-Kw	
Max. BKW for Rated Impeller-kw	
Recommended motor rating- kw	
Min. Submergence Required-m	
Shut off head -m	
Min. permissible solid size-mm	
MOTOR DATA	
Motor Rating in KW	
Voltage / Phase / Frequency & % variation	
Combined Voltage & Frequency variation	
Insulation Class	
Full Load Speed-RPM	
Full load current (FLC)-A	
Cable Type / Size Control & Signal Cable: Power Cable:	
Protection Class	
MOC	
Pump Casing & wear Ring (M)	
Impeller (M)	
Wear Plate / Wear Ring	
Shaft (M)	
Motor housing/Oil chamber (M)	
Hardware in contact with liquid	
Guide pipe	

Lifting Chain with 300 mm dia rings @ every 2 m	
ACCESSORIES & SERVICES REQUIRED	
Auto Coupling unit	
SS304 Guide pipe with support	
SS304 Lifting Chain	
Pump Monitoring Unit	
Set of foundation bolts & Nuts	
Control Panel	
Nonstandard / special maintenance tools	
Two years normal working Spare parts	
WEIGHT	
Weight of pump set-kg	
DRAWINGS	
ISO efficiency curve	
Performance curve	
GAD drg. of Pump set	
C/S drg. of pumpset with part list	
TESTING	
Hydrostatic test	

HORIZONTAL CENTRIFUGAL PUMP (For each pump)

PARTICULAR	PARTICULARS TO BE FILLED BY BIDDER
LIQUID DATA	
Liquid handled	
PUMP DATA	
Make	
Pump type	
Pump Model	
Number of pumps - Nos.	
Design capacity-m^3/hr.	
Total Rated Head-mlc	
Guaranteed Pump efficiency at rated capacity-%	
Pump input at rated duty-KW	
Rated Speed of pump- RPM	
Max. BKW @ Rated Impeller.	
Reco. Drive motor rating- KW	
N.P.S.H. required-m	
Shut off head-m	
CONSTRUCTIONAL FEATURE	
No. of stage	
Impeller dia. in mm	
Shaft / Drive Transmission	
Shaft sealing	
Gland packing Type & Size / Seal Face Combination	
Nozzle orientation & size-mm	
Suction: Side (mm / Side)	
Discharge: Side (mm / Side)	
Flange drilling	
Direction of rotation	
MOC	
Pump Casing (M)	
Impeller (M)	
Shaft (M)	
Shaft Sleeve (M)	
Casing Wearing Ring (M)	
Impeller Wearing Ring (M)	
Lantern Ring	
Shaft Sealing	
Hardware in contact with liquid / Non-wetted	
Liquid deflector	
Gland	

Painting	
Base plate (Drain rim type)	
ACCESSORIES & SERVICES REQUIRED	
Pin Bush Type Coupling	
Coupling guard	
Set of foundation bolts & Nuts	
Base Plate	
WEIGHT	
Weight of pump-kg	
Weight of motor-kg	
Reco. Crane capacity-Ton	
DRAWINGS	
ISO efficiency curve	
Performance curve	
GAD Drg. of Pump set	
C/S drg. of pump with part list	
Catalogue of products	
QAP of products	
Speed Torque curve	
TESTING	
Hydrostatic test	
Performance test	
Dynamic balancing test	
Strip test	
Visual inspection check	

AGITATOR FOR ALL CHEMICAL DOSING

PARTICULAR	**PARTICULARS TO BE FILLED BY BIDDER**
Make	
Tank Dimension (MM)	
Size of solid particles	
Operating conditions	
Temperature (°C)	
Pressure (Kg/cm2)	
Material of Construction	
Service	
Mechanical Data	
Blades	
1). Type	
2). Nos.	
3). MOC.	
Shafts	

1). MOC	
2). Mixer Entry (Top/ Side/ Bottom/ Portable)	
3). Mounting (Clamped/ Flanged, Mounting Angle)	
Drive Type	
Drive Unit Transmission type (Gear/ Belt/ Direct)	
Type of Motor	
Motor Rating	

ACTIVATED MEDIA FILTER (AFM)

PARTICULAR	**PARTICULARS TO BE FILLED BY BIDDER**
No. of filters	
Design flow	
Type	
MOC	
online backwashing	
Backwash valve	
Backwash arm and internals	
Seals	
Filter size (Micron)	
Maximum pressure drops at rated flow (kPa)	
Minimum feed water recovery, on 24-hour basis (%)	
Maximum backwash flow (l/sec)	

Note: Other equipment/ items as may be required for proposed tender scope of Work

Date: …… (Signature of Authorized Signatory).....

Place: ……. (Printed Name).....

(Designation).....

(Company Seal).....

Note:

(1). Continuation Sheets of like size and format may be used as per Bidder's requirement and shall be annexed to this Attachment.

11 Guarantee statements

Design Basis & Performance (Guaranteed)

(A) Mines water quality (Design Values considered)

Parameter	Units	Values*
Flow	MLD	
pH	--	
Conductivity	us/cm	
TDS	mg/l	
Turbidity	NTU	
Suspended solid	mg/l	
Colour	pt.co.scale	
Sulphate	mg/l	
Chloride	mg/l	
Iron	mg/l	
Copper	mg/l	
Zinc	mg/l	
Silica	mg/l	
Phosphate PO4-	mg/l	
Ca Hardness	mg/l	
Mg Hardness	mg/l	
Total Hardness	mg/l	

* values considered for design.

(B) Treated wastewater for disposal (Guaranteed)

Parameter	Units	Values
Flow	MLD	
pH	--	
Total suspended Solids	mg/l	
Total Dissolved Solid (TDS)	mg/l	
Biological oxygen Demand	mg/l	
Chemical Oxygen Demand	mg/l	
Total Hardness	mg/l	
Residual Chlorine	mg/l	
Colour	pt. co. scale	
Turbidity	NTU	

(C) Chemical Consumption (Guaranteed)

Chemical Description	**Units**	Qty.
(Specify separately for each Chemical)		
Hypo Chloride	mg/l	
	Kg/MLD	
Other Chemicals -1	mg/l	
	Kg/MLD	
Other Chemicals -2	mg/l	
	Kg/MLD	
Other Chemicals -3	mg/l	
	Kg/MLD	
Dewatering Poly-electrolyte	mg/l	
	Kg/MLD	

(D) Generation of Sludge solids-

Generation of Sludge	**MT/Day**	**MT/Year**
Sludge cake		

Date: …… (Signature of Authorized Signatory).....

Place: …… (Printed Name).....

(Designation).....

(Company Seal).....

Note:
Bidder has to confirm the minimum efficiency in technical bid while other guaranteed parameters should be submitted online with price bid.

12 Approved Vendor Lists

APPROVED VENDOR LIST FOR MECHANICAL EQUIPMENT

1.	Horizontal Centrifugal HSCF / End Suction-BPO / Centrifugal Non-Clog Pumps (for Dry Pit)	-	Beacon Weir / Jyoti / Kirloskar / KSB / Mather & Platt (Wilo) / Worthington / Grundfoss / Ebara / ANDRITZ
2.	Multi stage High Pressure Pumps (for Dry Pit)	-	Kirloskar / KSB / Mather & Platt (Wilo)/ Grundfoss / Ebara / ANDRITZ
3.	Submersible Centrifugal Vertical / Non-clog Pumps (for Wet Well)	-	Aqua / Kirloskar / Kishor / KSB / ABS / ITT-Flyght / Grundfoss / Xylem / Mather & Platt / WPIL / ANDRITZ
4.	Drain / Dewatering Pumps (Submersible / Horizontal)	-	Aqua / Kirloskar / Kishor / KSB / ABS / ITT-Flyght / MBH / Wilo (M&P) / SU / Pullen / Jai Pumps / JASCO
5.	Metering / Dosing Pumps	-	Swellore / V.K.Pumps / Shapotools/ Milton Roy/ SR Metering
6.	PP Pump	-	Leak proof / Propeller / BEW-Bhagwati / ALFA Pumps / Engineer Combine / ANTICO
7.	Screw (Progressive Cavity) Pump	-	Roto / Netzsch / Tushaco / Seepex/ U T Pump
8.	Sluice Valves	-	Kirloskar / IVC / IVI / Audco / R&D Multiple / Kejriwal / Keystone / Fouress / GM Engg. VAG / AVK
9.	Non-Return Valves (Single / Multi door) / Dual Plate Check Valves	-	Kirloskar / IVC / IVI / Audco / R&D Multiple / Kejriwal / Keystone / Fouress / GM Engg. VAG / AVK
10.	Butterfly Valves	-	Kirloskar / IVC / IVI / Audco / R&D Multiple / Kejriwal / Keystone / Fouress / GM Engg. VAG / AVK
11.	Knife Gate Valve	-	Jash / Fouress / Vass (Dezurick) / VAG / Orbinox / VAG / IVI
12.	Globe Valve	-	Kirloskar / IVC / IVI / Audco / R&D Multiple/ Advance / Fouress / Kejriwal / GM Engg.
13.	Foot Valve	-	Kirloskar / IVC / IVI / Audco / R&D Multiple/ Advance / Fouress / Kejriwal / GM Engg.
14.	PP Foot Valve/Strainer	-	Gokul Poly Valves / GF-GEORG FISCHER / Dinesh Plastic / UNP / ASTRAL
15.	Ball / Plug / Needle Valves (Metallic)	-	Audco / Intervalve / Kirloskar / Saunders / Saturn / Virgo / GM Engg. / L&T/ Hi-Tech BDK-Weir
16.	Ball Valve (PP / uPVC)	-	GF-GEORG FISCHER / Dinesh Plastic / UNP / ASTRAL
17.	Diaphragm Valve	-	Audco / Intervalve / Kirloskar / Saunders / GM Engg. / L&T

18.	Sluice Gates / Open Channel Gates	-	Jash / IVC / IVI R&D Multiple / BIC
19.	HOT/EOT Crane and Pulley block.	-	Morris / Indef / Safex / W H Brady / JAPS / Meeka / Hitech Anker
21.	Air Blower - Twin Lobe	-	Kay / Swam / Everest / Usha Compressors / Garden Denver / Aerzen
22.	Air Blower - Tri-Lobe, Energy Efficient	-	Garden Denver, Aerzen, Howden, Roots-GE, Siemens, Sulzer-ABS
23.	Air Blower (Centrifugal Fan type)		Supreme Plastic, Nufibrotech, BSF, Patel Air Flow (PAF)
24.	Agitator / Mixer	-	Remi / Schurtek / Fibre & Fibre / Milton Roy/ Shivpad / Triveni / Rathi Vessels & Systems
25.	Gear Boxes	-	Elecon / CPEC / Premium Transmission (PTPL)/ Bonfiglioli / Radicon (PBL) / Bonfiglioli / Shanthi Gears
26.	D.I. Pipes & fittings.	-	Electro Steel / Kejriwal / Lanco-Shrikalahasti / Kiswok / Jindal / Electrotherrm
27.	D.I. Double Flanged (DI DF) Pipes & fittings.	-	Electro Steel / Kejriwal / Lanco- Shrikalahasti / Kiswok / Jindal/ Electrotherrm/Truform / Chandrachal (DI barrel pipe for DI DF Pipe manufacturing shall be as per approved make of DI pipes Only)
28.	C.I. Pipes & fittings.	-	Electro Steel / Kejriwal / Upadhaya Valves / NJMW / Eskay (Howrah) / Oriental Castings / BIC
29.	SS / Duplex Pipes, Flanges & fittings.	-	Remi / Ratnamani / APEX TUBE / NASCENT / Hi-Tech Metal / Randhir Metal / LG Pipes
30.	Air Compressor	-	Ingersol Rand, Kirloskar, Atlas Copco / Khosla / CPE
31.	Solenoid Valve	-	Rotex, Janatics, Schrader,asco, smc
32.	HDPE Pipes	-	Astral / Dutron / Duraline / Narmada / RIL (PIL) / Penwalt / Anjney / Jain Irrigation / Sangir
33.	PVC / uPVC / CPVC Pipes	-	Astral / Supreme / Prince / Dutron
34.	M.S. / C.S. / G.I. Pipes	-	Jindal / Zenith / Tata / Welspun / Samshi / Asian / SAIL
35.	Bearing for all equipment	-	SKF / FAG / NBC
36.	Fasteners	-	Precision / Darukhanawala / Echjay / Tata / Sundaram
37.	Mechanical Seals	-	Eagle Seals (Sealol) / Durametallic / Burgman
38.	Electric Actuator	-	Auma / Rotork / Emerson
39.	MS Steel Plate Sheet	-	Essar / Tata / Jindal / SAIL / Zenith / Asian
40.	Expansion Bellows	-	Dhruv / Precision / Technoflex /Precise Engg. /

			Flexican Bellows & Hoses / Flexpert Bellows / Sur Industries (Surflex) / Athulya Bellows / Stanfab Engineering
41.	Paint	-	Asian Paints / Shalimar / Berger / Dulux
42.	Filter press	-	Teknofanghi / Emo / Ekoton / Andritz / Voest-Alpine
43.	Centrifuge	-	Humboldt- MBE / Alpha Laval / Hiller/ GEA Westfalia

The contractor shall distinctly understand that it will not be their prerogative to insist on a particular brand from the list, final selection will be done with the approval of Engineer in charge.

NOTE:

1. The final Selection of make from the approved vendor list rests with GIPCL / shall be prerogative of GIPCL and bidder shall commence procurement only after getting required approval for make from GIPCL
2. In case of Make of any other equipment / item / components not specified in the above list then the approval of make of such items shall be subject to the approval of GIPCL on basis submission of vendor credentials by bidder (Company Profile with financial statement, List of PO executed in Last Five Years from date of LOI , at least 2 nos. performance certificate from end user, etc. shall be submitted by bidder in support of vendor credential for the review and approval by GIPCL).

APPROVED VENDOR LIST – ELECTICAL EQUIPMENT / COMPONENT

ITEM DESCRIPTION	APPROVED MAKE
INSTRUMENT TRANSFORMERS (CT / PT / CBCT)	AUTOMATIC ELECTRIC / AEP / ASHMOR / C&S / CG POWER / ECS / GILBERT AND MAXWELL / INDCOIL / JYOTI / KAPPA / PRAGATI / PRECISE / SILKAANS
SURGE SUPPRESSORS	ABB / EMERSON / ERICO / MTL / OBLUM / PEPPERL+FUCHS / PHOENIX / RAYCHEM SCHNEIDER / SIEMENS / WEID MULLER
LIGHTNING ARRESTORS	Birla NGK Insulators / CG POWER / DHRUVA/ ELPRO / JEF / JAYSHREE / OBLUM / WS
ALARM ANNUNCIATORS (SOLID STATE TYPE WITH LED ILLUMINATION) / FACIA ANNUNCIATOR	APLAB / ALSTOM / DIGICONT / ICA / IICP / MINILEC / PROCON INST. (P) LTD / PROTON ELECTRONICS
BATTERY BACKED POWER PACK	ALAN / BHARANI / GOGATE / G'LEC
ELECTRONIC CIRCUIT RELAY	ALLEN BRADLEY / OEN / OMRON / PLA
PANEL CRCA / MS / GI PLATES & SHEET	ARCEL OR MITTAL / ASIAN / ESSAR / JINDAL / SAIL / TATA
ALUMINIUM BUSBAR MATERIAL	BANCO / HINDALCO / JINDAL / STERLITE
COPPER BUSBAR MATERIAL	HINDALCO / JINDAL / STERLITE
LV PANEL / SWITCHBOARD - DRAWOUT / FIXED TYPE (PCC-LVDB / PMCC / MCC / MLDB / MPDB / MOVDB / APFC)	ABB / ALPHA NIPPON / C&S / CG POWER / ELEMBICA / ELEMECH / HORIZON / INDUSTRIAL CONTROLS / LAURITZ KNUDSEN ELECTRICAL & AUTOMATION / PATEL BROTHERS / POSITRONICS / POWER & INSTRUMENTATION (O) LTD. / SCHNEIDER / SIEMENS / SUN AUTOMAT / SWATI SWITCH GEAR / HIGH VOLT / ALSTOM / JYOTI / G SONS POWER / POWERTECH SWITCHGEARS (I) PVT. LTD. / CORE METAL KRAFTS LTD / EXPEL PROSYS PVT. LTD. / SAMUDRA POWER PRODUCTS / SHIVSHAKTI ENGINEERS / ANY OTHER MANUFACTURER WHO MEETS THE REQUIREMENT SPECIFIED AT NOTE BELOW.

NOTE:

Additionally, following requirements shall also be fulfilled by Panel Vendor to qualify to supply of LV Panels:

1. Should have obtained from CPRI/ERDA type test certificate for LV Panel with rated voltage of 415V (3 Phase), 50Hz rated frequency and Minimum 3200A rated current and having short circuit withstanding strength of Minimum 65kA for one second.
2. Should have obtained from CPRI/ERDA type test certificate for Degree of Protection Class IP-55 or above for LT Panel with rated voltage of 415V (3 Phase), 50Hz rated frequency

3.The company should be in existence for Minimum 5 years and shall have GST Registration Certificate or required such supporting documents. 4.Shall have ISO 9001:2015 or latest amended up to date certified. Necessary self-attested supporting documents / copy of certificates in support for documents as specified above shall be submitted by bidder of panel vendor whose name is being proposed for make approval / supply panel during execution stage while proposing the vendor make approval for employer's review and approval. Employer reserves the right to inspect the works facility of such panel vendor to assess the facility and verifying the requirements as specified above. Further Bidder and vendor (LV panel manufacturer) to note that if it is observed that the LV panel vendor's details submitted are incorrect or fake or forged, Employer reserves right to initiate action against such Bidder/Vendor including keeping their registration with Client in abeyance for up to 3 years or as decided by the concerned authority of Client.	
APFC PANEL	ABB / ASIAN / ALSTOM / CG POWER / CSPC (C&S) / DATAR / EPCOS / EASUN / LK-E&A (FORMLY L&T E&A) / NEPTUNE / SCHNEIDER / SIEMENS / ALL APPROVED VENDORS FOR LT PANEL
DETUNED SERIES REACTORS WITH TEMPERATURE MICRO SWITCH (HARMONIC FILTER REACTOR)	ABB / EPCOS / NEPTUNE / SUBODHAN / VISHAY / YESHA / WHEPL / SIEMENS
DYNAMIC POWER FACTOR CORRECTION THYRISTOR MODULE	ABB / EPCOS / NEPTUNE / SUBODHAN / SCHNEIDER / SIEMENS
CAPACITOR DUTY CONTACTOR	ABB / EPCOS / LK-E&A (FORMLY L&T E&A) / SCHNEIDER / SIEMENS / C & S
AC/DC POWER & AUXILLARY CONTACTOR	ABB / BCH / C&S / GE / INDO ASIAN / LK-E&A (FORMLY L&T E&A) / SCHNEIDER / SIEMENS / MITSUBISHI
LV CAPACITORS / POWER CAPACITOR	ABB / ASIAN / BHEL / CG POWER / EPCOS / GE / HAVELLS / KHATAU JUNKER / MADHAV / MALDE / NEPTUNE / PRABODHAN / POWER MATRIX / SCHNEIDER / SUBODHAN / SHREEM / SIEMENS / UNIVERSAL /VISHAY
SOFT STARTER (MICRO PROCESSOR BASED)	ABB / CG POWER (EMOTRON) / DANFOSS / ROCKWELL / SCHNEIDER / SIEMENS
VVVF DRIVES (VFD)	ABB / CG POWER (EMOTRON) / DANFOSS / ROCKWELL / SCHNEIDER / SIEMENS / YASKAWA / NORD
SEMICONDUCTOR FUSE	BUSSMANN / FERRAZ / GE / SIEMENS
HRC FUSE (POWER & CONTROL)	ABB / C&S / GE / INDO ASIAN / LK-E&A (FORMLY L&T E&A) / SCHNEIDER / SIEMENS / TECHNOELECTRIC
AIR CIRCUIT BREAKERS	ABB / C&S / LEGRAND / LK-E&A (FORMLY L&T E&A) / MITSUBISHI / SCHNEIDER / SIEMENS
MCCB'S	ABB / C&S / GE / LEGRAND / LK-E&A (FORMLY

	L&T E&A) / MITSUBISHI / SCHNEIDER / SIEMENS
MPCB	ABB / C&S / INDO ASIAN / LK-E&A (FORMLY L&T E&A) / MITSUBISHI / SCHNEIDER / SIEMENS
MCB / RCCB / RCBO / ISOLATORS	ABB / C&S / GE / HAVELLS / INDO ASIAN / LEGRAND / LK-E&A (FORMLY L&T E&A) / MITSUBISHI / MOELLER / SCHNEIDER / SIEMENS
TEMPERATURE SCANNER WITH RS 485 MODBUS COMMUNICATION	ELECTRONET / MULTISPAN / MASIBUS / NIVAM / NISHKO / REDIX / SELEC
KWH / LOAD MANAGER / MULTI FUNCTION METER	ABB / CONZERV / ENERCON / IMP / KRYKARD / LK-E&A (FORMLY L&T E&A) / MECO / RISHABH / SCHNEIDER / SECURE / SIEMENS
DIGITAL AMMETER / VOLTMETER / POWER FACTOR METER	ABB / ALSTOM / AE / ASIAN / CONZERV / IMP KRYKARD / LK-E&A (FORMLY L&T E&A) / MECO / MASIBUS / MULTISPAN / NEWTEK ELECTRICALS / RISHABH / SCHNEIDER / SECURE / SIEMENS
ANALOG (ELECTROMECHANICAL) METERS – AMMETER & VOLTMETER	AE / IMP / MECO / RISHABH / SELEC
HANDHELD DIGITAL MULTIMETER / CLIP-ON METER / MEGGER	FLUKE / IMP / MECO / MOTWANE / RISHABH
CONTROL / SELECTOR SWITCH	ABB / ALSTOM / BCH / EE / GE / HAVELLS / JYOTI KAYCEE / LK-E&A (FORMLY L&T E&A) / RECOM / SCHNEIDER / SIEMENS / SULZER
INDICATING LAMPS	ABB / BCH / EE / IEC / LK-E&A (FORMLY L&T E&A) / SCHNEIDER / SIEMENS / TEKNIC CONTROLS / VAISHNO
PUSHBUTTONS	ABB / BCH / LK-E&A (FORMLY L&T E&A) / RASS / SCHNEIDER / SIEMENS / TEKNIC / VAISHNO
CONSTANT VOLTAGE TRANSFORMER/CONTROL TRANSFORMER	AE / ASHMORE / G & M / INDCOIL / NEC / PRAGATI / PRECISE / SILKAANS
MICROPORCESSOR BASED MOTOR PROTECTION RELAY WITH RS 485	ABB / CSPC (C & S) / EXCEL-TECH INDIA / LK-E&A (FORMLY L&T E&A) / PROK DEVICES / SCHNEIDER / SIEMENS / MITSUBISHI
BI-METAL / ELECTRONIC / MICROPROCESSOR BASED OVERLOAD RELAY	ABB / ALSTOM / CSPC (C&S) / CG POWER / GE / INDO ASIAN / LAURITZ KNUDSEN ELECTRICAL & AUTOMATION / SCHNEIDER / SIEMENS / MITSUBISHI

THERMISTER RELAY	ALSTOM / INSTA CONTROLS / MINILEC / SELEC
SINGLE PHASING PREVENTER WITH UV/OV PROTECTION	ABB / C&S / GE / LK-E&A (FORMLY L&T E&A) / MINILEC / SCHNEIDER / SIEMENS
TIME SWITCH	GIC / LEGRAND / SCHNEIDER / SIEMENS / THEBEN
TIMERS / TIME DELAY RELAY	ABB / BCH / EAPL / ELICO / INDO ASIAN / LEGRAND / LAURITZ KNUDSEN ELECTRICAL & AUTOMATION / MINILEC / OMRON / PLA / SCHNEIDER / SIEMENS / TEKNIC / THEBEN
PANEL VENTILATION FAN	COOLTRON / HICOOL / NADI / REXNORD
TERMINAL BLOCK/CONNECTORS	CONNECTWELL / ELMEX / PHEONIX / TELEMECHANIQUE / WAGO
LIGHTING / SMALL POWER DISTRIBUTION BOARDS / ENCLOSURES	ABB / BCH / C&S / ELDON / ENCLOTEK / HENSEL / HAVELLS / INDO ASIAN / LEGRAND / LK-E&A (FORMLY L&T E&A) / RITTAL / SCHNEIDER / SIEMENS / STANDARD ELECTRIC / ALL APPROVED VENDORS FOR LT PANEL
PUSH BUTTON STATIONS / JUNCTION BOX (FOR CAST ALUMINIUM ONLY)	BALIGA / BCH / CEAG / EXPROTECTA / EXCEL / FCG FLEXPRO / HANSU / HENSEL / PUSTRON / SCHNEIDER / SIEMENS / SUDHIR
NON METALLIC ENCLOSURES (INCLUDING INDUSTRIAL RECEPTACLES / PB STATION)	BCH / HENSEL / LEGRAND / PUSTRON / RITTAL / SCHNEIDER / SIEMENS / SINTEX
MOTORS (LV)	ABB / BBL / BHEL / CG POWER / JYOTI / KEC / LHP / MARATHON / SIEMENS
CABLES HV - XLPE INSULATED	ASIAN CABLE / CCI / FINOLEX / GLOSTER / HAVELLS / KEI / NICCO / POLYCAB / PRIMECAB (RAVIN CABLES) / RPG CABLES (KEC INTERNATIONAL)/ TORRENT CABLES / UNIVERSAL
CABLES LV - POWER & CONTROL CABLES / EARTHING CABLES	ASIAN CABLE / AVOCAB / CCI / FINOLEX / GLOSTER / HAVELLS / KEI / LAPP / NICCO / POLYCAB / PRIME CAB (RAVIN CABLES)/ RPG CABLES (KEC INTERNATIONAL) / RR KABEL / TORRENT / UNIVERSAL CABLES
WIRES - FLEXIBLES (ALL TYPES)	AVOCAB / ANCHOR / ATLAS / FINOLEX / GLOSTER / HAVELLS / KEI / LK-E&A (FORMLY L&T E&A) / LAPP / POLYCAB / RR KABEL / UNIVERSAL
GI / FRP CABLE TRAYS, ANY OTHER FRP ITEMS	DUDHAT INFRA / FIBER TECH COMPOSITE / GLOBE / INDIANA / JACINTH / LEGRAND / KISMAT ENGITECH LLP / M.M. ENGINEERING / SHARDA / SILVERLINE POWER / SHREE KRISHNA ENGG. / SUPER ELECTRO / SUMIP / SATYAM COMPOSITES / VATCO

CABLE GLANDS (SINGLE / DOUBLE COMPRESSION, NI-PLATTED BRASS)	BALIGA / BRACO / COMET / EX-PROTECTA / ELECTROMEC / FCG / HMI / JAINSON / SIEMENS / SUDHIR
CABLE GLANDS – POLYAMIDE	FIBOX / GEWISS / HENSEL / LAPP
CABLE LUGS	3D / 3M / COMET / CONNECTWELL / DOWELLS / JAINSON
CABLE TERMINATION/JOINTING KITS	3M / ABB / CCI / KABELDON / M SEAL / RAYCHEM / XICOM
UPVC CONDUIT & ACCESSORIES	AKG / BHAGYALAXMI PIPE INDUSTRY / CLIPSAL / LK-E&A (FORMLY L&T E&A) / POLYCAB / PRECISION / SALZER / ANY OTHER FOR UPVC PIPES AS PER MECHANICAL VENDOR LIST
MS / GI CONDUIT & PIPES	BEC INDUSTRIES / JINDAL / JK TUBE / SAIL / TATA STEEL / ZENITH / ANY OTHER FOR MS/GI PIPES AS PER MECHANICAL VENDOR LIST
MS / GI LIGHTING POLES & BRACKETS (TUBULAR SWAGED / OCTAGONAL)	AMBICA POLES PVT LTD / BAJAJ / BOMBAY TUBES AND POLES / FABIRON /KISMAT ENGITECH LLP / GAYATRI ELECTRICALS / INDIA ELECTRIC POLES / RIDDHI POLES / SHAKTI POLES / SURYA / SHREE KRISHNA ENGG. / UTKARSH INDIA
LIGHT FIXTURES	BAJAJ / C&S / CGL / GE / HAVELLS / LK-E&A (FORMLY L&T E&A) / PHILIPS / SURYA / SCHREDER / TISVA (USHA INTERNATIONAL LIMITED) / WIPRO
DECORATIVE / MODULAR SWITCH & SOCKET	ABB / ANCHOR / CLIPSAL / CRABTREE / Havells / INDO ASIAN / LK-E&A (FORMLY L&T E&A) / LEGRAND / MK-HONEYWELL / MDS / SIEMENS / SCHNEIDER / Toyama
CEILING / WALL MOUNTING / EXHAUST FANS	ATOMBERG / ALMONARD / BAJAJ / CGL / HAVELLS / KHAITAN / ORIENT / USHA
CHEMICAL TYPE EARTHING INCLUDING COPPER BONDED ELECTRODE & BACK FILL COMPOUND	ASHLOK / CURSP / ECO TECHNOLOGY & PROJECTS/ ENNOV INFRA / ERICO / ISG GLOBAL / JEF / PRAGATI ELECTROCOM / SAARA EARTHING/ EQUIVALENT REPUTED MAKE SUBJECT TO EMPLOYER APPROVAL

The contractor shall distinctly understand that it will not be their prerogative to insist on a particular brand from the list, final selection will be done with the approval of Engineer in charge.

NOTE:

1. The final Selection of make from the approved vendor list rests with GIPCL / shall be prerogative of GIPCL and bidder shall commence procurement only after getting required approval for make from GIPCL
2. In case of Make of any other equipment / item / components not specified in the above list then the approval of make of such items shall be subject to the approval of GIPCL on basis submission of vendor credentials by bidder (Company Profile with financial statement, List of PO executed in Last Five Years from date of LOI, at least 2 nos. performance certificate from end user, etc. shall be submitted by bidder in support of vendor credential for the review and approval by GIPCL).

PRICE BREAKDOWN:

- Whenever requested by the Engineer-in-charge, the contractor shall furnish detailed price breakdown for supply and installation of each of the items of electrical works including for each type/size of applicable cable/light fitting/earth pit/earth stations.
- This breakdown prices are required for the purpose of justification for progress payment and also for working out addition and deletion, if any, in the scope of work at a later date.

APPROVED VENDOR LIST FOR INSTRUMENTATION SYSTEM

Item Description	Approved Vendors
Process Analyzers (pH, TSS, Conductivity (TDS), etc.)	E+H, Emerson, Hach, Yokogawa, Xylem / WTW, Krohne, Forbes Marshall (Forbes Marshall make for pH analyzer & Conductivity Analyzer; Optex, Japan make for Turbidity analyzer)
Ultrasonic Type Level Tx.	Endress+Hauser, Siemens, Krohne, Vega, Emerson, ABB
Electro Magnetic Flow Meter	ABB, E+H, Krohne Marshall, Yokogawa, Siemens
Differential Pressure Transmitter	ABB, Emerson, Fuji, Honeywell, Siemens, E+H Yokogawa
Pressure Gauges	Wika, General Instru. Consortium, Pricol, Manometer (I) P. Ltd., Baumer, Excel Instrument, Precision Mass, Forbes Marshall, H. Guru
Programmable Logic Controller (PLC) System / HMI	ABB, Rockwell (Allen Bradley), Schneider, Siemens, Honeywell, Phoenix
Panel Enclosures	BCH, Bartakke, Eldon (nVent Hoffman), Enklotek, Rittal, Pyrotech
DC Power Supplies (DIN Rail mounted)	Phoenix, Omron, Aplab, IFM, Schneider, Allen Bradley, Siemens, Intex, Microtex, Schneider, IFM, Meanwell
Ethernet Switch	D-Link, Rockwell, Siemens, Schneider, Cisco, Phoenix Contact
Miniature Relay	ABB, Omron, Phoenix, Schneider, Rockwell
Indication Pilot Lamps (LED Type)	Teknic, Schneider, Siemens, Salzer, Vaishno
Push Button/ Selector Switch (with NO/NC Element)	Teknic, Schneider, Siemens, Salzer, L&T, Rass, Vaishno, Kaycee, Binay
MCB	Siemens, MDS, L& T, I MG, Indokopp, Schneider Hager, Havells, ABB, C & S, Legrand
Fuses	L&T, Siemens, ABB, Schneider, Bussmann
Terminals	Elmex, Phoenix, Wago, Connectwell
Panel Wires	Finolex, Havell's, R R Kabel, Lapp Cable, L&T, Polycab
Panel Illumination	Philips, Crompton, GE, Bajaj, Havells, Surya
Alarm Annunciator	Aplab Ltd., Minilec, IIC, ICA, Protons
UPS	Emerson (Liebert / Vertiv), Schneider (APC), Merlin Gerin, Socomec, Hirel-Hitchi, Eaton, Numeric, ABB, BPE
Instrument Cables (Power , Signal, Control)	Associated Cables, Associated Flexible and Wires P.Ltd. Brook Cables, Thermo cables, Udey Pyro, RPG Cables. Polycab, Rolliflex, RR Kabel, Havells

Cable Glands	Ex-Protecta, Braco, Comet, HMI, 3D, Sudhir, Connectwell
Cable Tray (GI / FRP), Any Other FRP item	M.M.Engineering, Globe, Jacinth, Silver line Power, Shree Krishna Electrical, Sumip, Fiber Tech Composite/ Satyam Composites, Dudhat Infra, Indiana ,Legrand, Sharda , Vatco , Super Electro, Kismat Engitech LLP
Instrument Valves and Manifolds, Tube Fittings, Pneum. Brass Fittings	Excel Hydropneumatic, Industrial Enterprise, Festo, Multimetal Industries, Placka, SMC, Technomatic, Wesmec, Fluid Controls, Aptek , Anmol (Superlok), General, Smart, Instrument Consortium

The contractor shall distinctly understand that it will not be their prerogative to insist on a particular brand from the list, final selection will be done with the approval of Engineer in charge.

NOTE:

1. The final Selection of make from the approved vendor list rests with GIPCL / shall be prerogative of GIPCL and bidder shall commence procurement only after getting required approval for make from GIPCL
2. In case of Make of any other equipment / item / components not specified in the above list then the approval of make of such items shall be subject to the approval of GIPCL on basis submission of vendor credentials by bidder (Company Profile with financial statement, List of PO executed in Last Five Years from date of LOI, at least 2 nos. performance certificate from end user, etc. shall be submitted by bidder in support of vendor credential for the review and approval by GIPCL).

INSPECTION:

Test / Calibration Certificates shall be reviewed and approved prior to dispatch clearance. The PLC/HMI based control panel shall be offered for inspection at manufacturer's works prior to dispatch.

13 Opration and Maintaninace of wwtp

PART A: SCOPE OF WORKS

13.1 The contract includes comprehensive operation and maintenance of Mines/ Effluent Treatment Plant (ETP) for mine water at Surat Lignite Power Plant (SLPP), Mangrol covered under the scope of present work of this tender (here in after referred to as "plant" or "Effluent Treatment Plant (ETP) with pontoon facilities for pumping on round the clock basis for a period of 36 Calendar Months (Three Years) after successful completion of trial run of three months and acceptance of Plant. The contractor shall commission the plant and start trial run immediately after commissioning. The O & M period starts after completion of three months of trial run & acceptance of the plant / pumping stations. Additional information is given in the following sections to facilitate the monitoring works. Contractor shall note that preparation of Operation and Maintenance Manual for the Wastewater treatment designed and set up by them is included in Scope of Work. This manual shall be duly got approved from Employer prior to commissioning.

13.2 The Effluent Treatment Plant (ETP) with pontoon facilities for pumping set up on turnkey basis and shall be operated and maintained by the contractor including all works. Contractor has to incur all the costs, taxes & duties, transportation, labour, machining, welding, repairing, replacing of complete machine/equipment and making good any and all parts / plant equipment, consumables, process chemicals and other chemicals (unless specifically mentioned as free supply by employer), motors, pumps, membrane, gear unit, HT/LT switchgear, PLC panel, lighting system, cables, battery charger, battery, instruments, meters, chemicals for laboratory, etc. in all respects in order to achieve the desired / design performance of plant & pumping stations.

Only Power shall be supplied free by employer during trial run and O & M period and rest all expenses including chemicals, consumables, spares, manpower, etc. shall be borne by the successful bidder.

13.3 The Contractor will be held responsible for O & M and satisfactory performance of the entire Plant. Major components and works shall include the following but not limited to:

a) Operate the plant efficiently for specified duration of O&M period (24 hours/day & 365 days/year) including all consumables, chemicals, parts or components for repairs replacement, **part or complete equipment replacement if required due to wear & tear or completion of it's useful life within the tenure of O&M,** labor, transportation and other charges, except for cost of power and supply of secondary treated sewage. Power cost shall be borne by employer. Secondary treated sewage shall be supplied by employer.

b) Operate and maintain all units and equipment of proposed Treatment Plant as per the requirement of the process to meet continuously and consistently desired treated sewage

characteristics in conformity with specifications/treated outlet characteristic for treated waste water as per quality specified in tender to provide industrial grade water on round the clock basis; maintain all equipment in good working condition as per the O & M manual as prepared by the contractor and duly approved by the Employer.

c) Attend breakdown of civil, mechanical, electrical, piping and instrumentation works and maintain the plant and equipment throughout the Contract Period.

d) The operation and maintenance service provided by the Contractor for the period specified in the Contract shall ensure the continuous operation of the Plant and that the breakdown or deterioration in performance, under normal operating conditions, of any items of Plant and equipment and component parts thereof is kept to a minimum.

The contractor shall determine operating parameters, select settings (chemical dosages, etc.) and generally optimize the process, and working of the treatment plant. Excessive chemical dosing i.e. doze more than / less than normal should be avoided; otherwise penalty shall be levied and recovered from the contractor.

e) The Contractor shall adhere to the manufacturers' recommendations with respect to equipment maintenance, consumables, the types and grades of lubricants to be used, frequency of lubrication, adjustments to be made regularly and recommended spares to be held in store.

The spares, tools and tackles supplied by contractor as specified herein as a part of this tender obligation are property of employer and employer has no obligation to supply the same to contractor for carrying out any rectification work. Contractor for the purpose of O&M shall have required spares in stock at site and maintain a record of the same. In case if employer hands over any spare for carrying out rectification in emergency situation, the same shall be handed over back by contractor to employer within reasonable period of time and not exceeding a maximum of 4 weeks duration in any case. Failing to do so, employer reserves the right to deduct the price of same from O&M bill/Security Deposit of contractor. Arranging necessary tools and tackles for effective and efficient O&M of the plant is responsibility of contractor.

The contractor shall provide **timely planning** and **regular procurement of all required spares and consumable including chemicals & reagents, chlorine tonners, grease, lubricating oil, cleaning agents, laboratory reagents etc.** Contractor shall arrange for the requirement well in advance.

f) Maintaining Logbooks / Records of the work carried out to keep them in good working condition. He shall obtain approval of the format of logbooks and records from Employer.

g) The Contractor shall prepare and implement an effective plant maintenance program in consultation with the Employer. It is absolutely the Contractor's responsibilities to look

after all sorts of maintenance whether routine, preventive or break down or any other type of maintenance. The Contractor will be responsible to carry out day to day as well as periodic maintenance necessary to ensure smooth and efficient performance/running of all equipment.

h) Submission of daily and monthly O & M report.

i) To ensure the uninterrupted discharge of the treated water from ETP, Contractor shall liaison with public/ local leadership/ Government Officials, however., GIPCL will also take adequate steps if required for the above purpose.

j) In case of any local dispute arising out due to discharge of the treated water from ETP, from the surrounding villages whatsoever, it will be in the scope of Contractor to resolve the issue.

k) Carry out regular and frequent sampling, analysis and result recording of Filtered /treated sewage as per the procedures laid out by the Owner and in conformity with standard methods;

l) Employ appropriate and skilled manpower; provide all tools, tackles, equipment, laboratory instruments, glassware and chemicals, reagents etc. required for effective implementation of the Services detailed above.

m) Area lighting – The premises of various works are provided with various lighting fixtures 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 contractor's cost.

n) All buildings, bathroom, toilet to be kept swept, cleaned, and 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 (broom) shall be provided and used as required. All ventilators, windows/doors to be cleaned and to kept in good aesthetic condition.

o) To keep watch on overflowing of sump. If such overflow takes place the agency shall have to bear the damages caused to surrounding properties.

p) Maintaining laboratory and it's all equipments. All materials, equipment and labour shall have to be employed by the agency to maintain the same. All glassware, equipment, chemicals & reagents for carrying out quality analysis of sewage (intermediate stage / treated) shall be in contractor's scope.

q) Contractor shall submit six copies of the O & M Manual for approval of Employer, which may be modified, if required by Employer, and two copies would be returned by Employer duly approved and signed.

r) The contractor shall monitor the performance of the proposed Treatment Plants; conduct the analysis of the influent, intermediate stage as well as effluent (WWTP outlet) quality

after treatment by taking necessary grab and composite samples as directed by employer, and as per requirement to maintain the treated water quality at outlet of WWTP (combined permeate quality) as well as intermediate stage treatment quality as specified in tender. Contractor shall initiate and take adequate actions to ensure smooth and satisfactory performance/ running of the plants on a 24 hours/ round the clock basis. All parameters as specified in tender for influent, intermediate stage and final outlet shall be tested and necessary records shall be maintained at site.

Note: The 24-hour composite sample shall be used for carrying out necessary parameter testing, once in a day (24 hours basis).

Sr. No.	Sampling Point	Type of Sampling	Frequency of Sampling	Parameters to be Tested in STP Lab.
1	Mines water/ wastewater at collection tank	Grab	1 Times a Day	TSS, pH, Hardness
2	Mines water/ wastewater at collection tank	Composite	Daily	pH, TSS,
3	Tertiary Treated wastewater at treated water tank	Grab	1Times a Day	pH, TSS, Hardness
4		Composite	Daily	pH, TSS, Hardness, FRC, TDS, COD
5		Composite	1Times a week	All parameters as per guarantee statement

s) For the smooth running of the plant all the required equipment, machineries, accessories, major and minor spares, consumables including chemicals & reagents, greases, lubricants, all cleaning agents, packing, rubber sheet, laboratory reagents, all hardware, required quantity of white wash, oil paint color, all types of epoxy paint, material required for house- keeping and cleaning etc. are to be brought by the contractor. The quality of all consumable and spare etc. i.e. technical requirements as per manufacture recommendation shall remain unchanged.

t) To sludge and other separated solids from the plant is to be disposed as specified in the tender.

If the contractor fails to remove sludge / solids from the treatment plant for any reason and beyond the notice period issued by the employer, the same shall be removed by employer by engaging other agencies and 1.5 times of the actual cost incurred shall be recovered from the contractor.

u) The contractor shall carry out cement paint/ enamel paint/ white wash/apex as per technical specification for exterior / internal finish of civil units at the end of every three

years of O&M and similarly shall also carry out painting on mechanical equipment, above ground pipe lines, hand railing, etc. at the end every three years of O&M i.e. before the end of third O & M of the plant.

v) The contractor shall hand over the plant back to EMPLOYER on expiry of his contract in fully working condition (including all standby units also to be in fully working condition) satisfying the requirement of treated sewage. All the electrical, mechanical and instrumentation including standby shall be in perfect working condition.

a. Successful Bidder has to take the membership for the Common Solid Waste Disposal facility to disposed the hazardous waste generated (Sludge) and shall bear all the cost arising for the disposal of hazardous waste generated (Sludge).

13.4 The Contractor shall procure, keep at site and use necessary tools, tackles and safety equipment for day-to-day routine maintenance, preventive maintenance and break down maintenance. Also, minor and major repairs to the equipment involved in the plant have to be carried out by the contractor during the O&M period. The contractor shall submit report, discuss and finalize with the Employer on the major repairs required to be carried out and how these repairs will be undertaken, to the satisfaction of the Employer and obtain written approval from the Employer before carrying out any major repairs.

1. The scope also includes cleaning of units, removing 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 required quantity of Filtered/ treated sewage is treated properly.
2. The disposal of the foreign particles like sand, dead or alive animals etc. from all the units of the plant to suitable place as shown by Employer is in the scope of contractor.

The scope of works also includes the calibration of all meters e.g. pressure gauge, Ammeter, voltmeter, relay, trivector / multifunction meter, Energy meters, temp scanners, flow meters etc. for measurement of accurate readings.

The scope of work of contractor includes operation & maintenance of Transformer, LT PMCC panel, PDB, LDB, earthing works, lighting etc., or any other maintenance required.

PART B: OPERATION AND MAINTENANCE SPECIFICATION

1. SUFFICIENCY OF TENDER

1.1. The prices entered in the Price Schedule shall, except in so far as it is otherwise provided, be deemed to cover all the Contractor's obligations under the Contract and all matters and things necessary for the operation and maintenance of the Plant. Particular requirements set forth in the Specification are given without prejudice to the aforementioned general obligations of the Contractor.

2. DOCUMENTS / INSTRUCTION FURNISHED BY THE EMPLOYER

2.1. The Employer may issue at such times as he may think proper during the contract period instructions as may appear to him to be necessary for the guidance of the Contractor in the operation and maintenance of the Plant. The Contractor shall be bound by the same, obey and execute.

2.2. The Contractor shall acknowledge the receipt of such instructions in writing or by fax. The Contractor shall carefully check all such instructions before commencing any Works. The Contractor shall inform the Employer in writing, within 3 (three) days from the receipt of the same, of any errors or omissions discovered, or of the difficulty to execute any Works or part thereof in compliance with the written instructions received from the Employer. Failing to do so, contractor shall be liable to execute at their own cost the necessary alterations to any Works resulting from these errors or omissions.

2.3. The Contractor will also be furnished with two copies of all instructions as may be issued by the Employer. One copy of all such O & M manuals and instructions issued to the Contractor shall be kept in his office at the site. The O & M manuals or instruction shall be considered valid only if the Employer has signed it.

3. CONTRACTOR'S ORGANISATION & ADMINISTRATION OF THE CONTRACT

3.1. The Contractor shall provide experienced administrative, managerial, technical, supervisory, non-technical personnel and labour necessary to operate and maintain the plant properly, safely and efficiently on a continuous 24 hours basis for the full term of the O & M Contract Period. During O & M period if any expert / technically knowledgeable / special persons or manpower needed, he shall have to arrange & bear / pay any and all cost, charges, fare, and allowances etc. for the same. The employer will not pay any cost / charges for the same.

3.2. The qualifications and capability of the Contractor’s personnel shall be appropriate for the task they are assigned to perform. The staff provided shall be fully trained in the operation of the various units of the Treatment Plant before being given

responsibility for operating any part of the Plant. If in the opinion of the Employer, any member of the Contractors staff is considered to be insufficiently skilled or otherwise inappropriate or not doing the work properly he is required to perform, he shall be replaced by the Contractor with a person with the appropriate skills and experience for the task, to the satisfaction of the Employer. The Contractor will be required to submit to the Employer the Schedule of 'Manpower' and 'Organization Chart'. The contractor shall keep all the details, bio-data, photograph, references, application, and all such records with him even after he is removed or resigned from work of this site. Guilty person or undisciplined person shall not be employed by the Contractor.

3.3. Any change of personnel shall be promptly informed to the Employer within a day's time. Normal duty hours for the contractors' operation & maintenance personnel may be modified as necessary and agreed by the Employer. A rotating shift schedule shall be established by the Contractor and agreed by the Employer which will ensure that an adequate number of the Contractor's staff, fluent in Hindi as well as Gujarati is on duty at Plants 24 hours per day, 7 days per Week, including all holidays. The contractor shall have to issue identify cards with photographs to all the state employed for O & M.

3.4. The Contractor shall submit a diagram showing the structure of the organization for his administration of the Contract. The structure shall include a Project Team consisting of Project Manager. The Project Manager and his site team shall be stationed at project location / city. The Project Manager shall have authority and powers to take decisions on the spot and/or incur expenditure(s) in the interest of the work whenever required by the Employer.

3.5. All correspondence and communication between the Employer and the Contractor shall be directed through the Project Manager.

3.6. Contractor shall provide minimum manpower as per qualification and experience mentioned below:

Sr. No.	Designation	Qualifications	Experience	No. of Persons
1	Plant Manager	**Diploma Mech/ Elect**	3 years' experience preferably with 1-year experience in the field of O&M of STP or ETP	01
2	Chemist	M.Sc. (Micro) or B.Sc. (Chem.)	3 years' experience and knowledge in identifying micro-organism and testing procedures	01

3	Electrical/ Mechanical Engineer	D.E.E. (Electrical/ Mechanical.) or higher	3 years' experience in maintenance of LT/HT Panel, motors, Lighting System, DG Set & other elect works	01
4	Electrician	ITI (Elect. trade) or PWD Supervisory Certificate / DEE or higher	3 years' experience of relevant electrical equipments for O&M	03
5	Plant/ Pump Operator	ITI Fitter / DME or higher	3 years' experience of operating pumping machinery & other rotating equipment, valves, etc.	07
			TOTAL PERSONS	13

3.7. Minimum manpower required in various shifts is as per requirement:

In addition to above daily staff, any other staff as required shall be deputed as and when required

Note: The staff as per above qualification and in specified numbers shall be deployed by contractor at the time of commencement of O&M. However, as the plant is provided with various instrumentation and suggested for automated operation as far as possible as per scope of work / specifications of tender, it is envisaged that the number of personnel under various categories may be optimized in order to optimize the O&M cost of employer. For this purpose, employer shall observe the performance of plant and assess the requirement of manpower during the initial months of operation and after that shall carry out meeting with contractor for mutual agreement on optimization of staff based on understanding and with a clear intent that any such action shall not lead to unsatisfactory operation of the plant

3.8. Relaxation in qualifications and number of staffs shall not be allowed in normal circumstances. The above staff shall be distributed in general shift and three shifts as tabulated above.

As per agreement, the No. of staff in each shift should always remain present; otherwise, penalty towards absence of any staff shall be levied and recovered from the contractor. The penalty shall be decided by the Engineer-in-Charge / GIPCL.

The arrangement of reliever for weekly off/holiday/leave etc. shall be made by the contractor. Absence on any ground like weekly off or holiday shall not be considered.

The presence of staff in each shift should be marked in a register to be maintained at office of Engineer of the Employer at Proposed Treatment Plants; which shall be considered as final. The contractor's staff must mark their presence in this register. The contractor may maintain a separate register for his own purpose.

The payment to be made to all persons should not be less than the minimum wages finalized time to time under labour law.

3.9. The staff of Contractor will always remain in contact with Employer and follow his instructions. The Contractor shall have to issue identity cards with photograph to all the staff employed for operation and maintenance; otherwise, they will not be allowed to enter the plant premises.

3.10. The Contractor shall employ all the required staff (and in no case less than the number specified in the tender which is mandatory) within 7 days of award of the Contract, otherwise full payment will not be made. In such case, the commencement of the Contract Period and payment thereof shall be reckoned only from the date of employment of full numbers of staff. If at any stage it is felt necessary that additional manpower over and above the specified minimum manpower is required for the proper operation of the treatment plant, contractor shall employ necessary additional manpower at no extra cost within 7 days from the date of issue of notice by employer/ engineer-in-charge.

3.11. The Contractor will comply with all safety rules and regulations and all inter-disciplinary measures as followed by the Employer. The Employer will not be responsible for any accident / injury to the staff or any person of the Contractor or loss or damage to any property. Further, the Employer will not provide any insurance or free medical facility to the staff of Contractor.

3.12. Providing necessary security arrangements for the safety of the plant and the contractor's personnel will be the responsibility of the contractor.

3.13. All Central / State Government / Semi-Government / Local Body's rules and regulation pertaining to this contract, all legal formalities pertaining to provident fund, factory act, all legal formalities shall be followed and observed by the Contractor without any extra cost to the Employer. Please note that failure in complying so, all liabilities arising as per laws will be to the Contractor's account.

3.14. No accommodation / guesthouse / transportation facility will be provided by the Employer to the Contractor. No staff or any person shall reside in the plant premises and any such person found shall be driven out immediately.

3.15. Due to strike by the Contractor's employees, the operation and maintenance of plant must not be affected, and the property of Employer should not be damaged. In such case any dispute / discrepancy occurs, the decision of Engineer-in-charge will be final

and will be binding to the contractor. Also, if any expense is made by Employer, it will be deducted from Contractor's bill/ SD.

3.16. The duration of the contract shall be THREE years from the date of issue of completion certificate / taking over certificate. However, the Employer reserves the right to terminate the contract at any time by giving 3 months' notice to the contractor.

3.17. The contractor shall provide necessary chemicals (polyelectrolyte etc.), tank mixture, lubricating oil, and grease in their store room. Stacking and day-to-day preparation of a solution shall be arranged by the contractor. Similarly, chlorine tonner / cylinder shall also be provided by the contractor at the door – step of the chlorination plant. Disconnecting and removal of empty tonners and reconnection of filled tonners shall be carried out by the contractor. The minor spares shall be required for disconnection/reconnection i.e. clamp/O' rings/washers shall also be arranged by the contractor.

3.18. The scope of work also includes **regular cleaning of complete plant area including floor, railing, door, windows, light fixtures and ceiling etc**. similarly, minimum 5 mts. from the construction boundary on the outside of the plant area shall also be cleaned and maintained by the contractor.

3.19. This work is inclusive of but not limited to operation, maintenance, housekeeping, cleaning, removing sludge by its own carrier arrangement, painting, whitewashing, preparing data, recording, correspondence work to the employer and Government Departments, etc. All this work should be done as per standard practices and by following labour, factory, electrical, GPCB, and all other old and new law and order, Indian standards etc. as applied of Local, State and Central Govt. of India.

3.20. Nothing is to be provided by the employer excluding electricity. All the formalities to all government authorities for factory, electrical, GPCB, etc. for having NOC, water consent, Hazard waste concern, approval etc. shall be done by the contractor. However, necessary legal fees to all government authorities shall be borne by the employer.

3.21. Monitoring shall be done as per guidelines given by Engineer-in-charge. Contractor has to maintain all the parameters of filtered / treated sewage within the stipulated limits or he will be penalized for not maintaining the parameters given by employer and GPCB. All expenditure incurred for the same like, suit fee, court fee, case fee, or the penalty as decided by GIPCL and penalty charged by GPCB shall be deducted from his pending bills or Security Deposit.

3.22. The Contractor shall have to test the sewage samples of the influent and effluent from respective treatment units as per frequency as specified in table above at 3.0 (r) through the laboratory provided at the plant; as per the schedule fixed by the Engineer

in charge. The same have to be verified and checked by the employer once a week by taking parallel sample from the same point and at the same time and analyzing the same at the employer's laboratory or laboratory approved by employer. Proper register/record shall have to be maintained by the contractor and any modification /rectification, on the basis of analytical results of samples if required, in performance of each unit shall be carried out immediately. The daily analysis report along with steps for the rectification / modification taken, if any, shall also be reported to the employer with the daily report. The weekly report shall also be submitted to the Engineer-in-charge of the employer, with remarks and the steps taken for modification, if any, taken during the period of report.

3.23. The quoted rate shall remain firm and valid for THREE years of O&M contract.

3.24. The payment of O&M charges will be made as per relevant clause of Special Conditions of Contract for O&M.

3.25. The other terms and conditions described in this tender document, wherever applicable, shall remain unchanged.

3.26. However, during O&M period, the contractor has to supply all the spares, at his cost during major-minor breakdown and also maintenance works.

3.27. Contractor shall be responsible for health check-up of O&M staff on regular basis as per statutory requirements.

4. MAINTENANCE

4.1. The maintenance service provided by the Contractor for the period specified in the Contract shall ensure the continuous operation of the Plant and that the breakdown or deterioration in performance, under normal operating conditions, of any items of Plant and equipment and component parts thereof is kept to a minimum.

4.2. The Contractor shall carry out the Maintenance of the plant installations in accordance with the requirements of the O & M Manual and also to the approved Maintenance Plan as mutually agreed.

4.3. The Contractor shall adhere to the manufacturers' recommendations with respect to equipment maintenance, the types and grades of lubricants to be used, frequency of lubrication, adjustments to be made regularly and keep in safe custody recommended spares, which may be required for smooth & trouble-free operation of the plant on day to day basis.

4.4. The Contractor to operate and maintain all equipment as recommended in the O & M manual and maintains logs and records of the work carried out to keep them in good working condition. The Employer shall approve the format of logs and records.

4.5. The Contractor shall prepare and implement an effective plant maintenance programme in consultation with the Employer. It is absolutely the Contractor's responsibilities to look after all sorts of maintenance whether routine, preventive or break down or any other type of maintenance. The Contractor will be responsible to carry out day to day as well as periodic maintenance necessary to ensure smooth and efficient performance / running of all equipment.

4.6. The contractor shall along with the O & M Manual submit a write-up covering vision, mission, plan for smooth & trouble-free operation & maintenance of the Plant. It shall include all activities, their duration and planned deployment of manpower and resources.

4.7. Contractor shall set-up and maintain laboratory at plant site complete with all equipment, testing instruments, glassware, weigh scale, chemicals, reagents, consumables and carry out necessary calibration from time to time to conduct tests as stipulated in 5.3 below and as per process requirement and any other test required to check some of the basic parameters, not specifically mentioned.

5. DOCUMENTATION / REPORTS

5.1. The Contractor will be furnished with two copies of O & M manuals (prepared by him) approved by Employer. The Contractor will also be furnished with two copies of all instructions as may be issued by the Employer. One copy of all such O & M manuals and instructions issued to the Contractor shall be kept in his office at the site. The O & M manuals or instruction shall be considered valid only if the Employer has signed it. The Contractor will be responsible for keeping & updating record of documents including History Card for equipment and maintaining everyday logbook. The Contractor shall maintain and update logbook and details of operational parameters like pumping hours, aerator operation 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 Employer).

5.2. Printing of log sheets, registers and all necessary stationery required for maintaining records of operations and maintenances has to be arranged by the Contractor at his cost, duly approved by Employer. Format of log sheets, registers will be made available to the contractor by the Employer.

5.3. The Contractor shall submit to the Employer every week and within first seven days of every month, a copy of the weekly/ monthly O & M report. This report must include the following:

a) Sampling of Tertiary treated sewage analysis highlighting all important parameters, grab samples collected three times a day (peak hours, lean hours, average) at every 8

hrs as well as 24-hour composite samples; Major parameters to be covered include BOD, COD, TSS, chlorides, pH, Faecal Coliform, TN, TP, FRC, Total hardness, Sulphate Alkalinity as $CaCO_3$, Magnesium, Fluoride, Turbidity, TDS

b) Sampling of treated potable water analysis highlighting all important parameters at every 8 hrs as well as 24-hour composite samples collected; Major parameters to be covered include pH, Turbidity, FRC

c) Qty. of sludge cake removed per day and gross.

d) Details of plant visit made by any govt. authority like Employer, GPCB, etc.

e) The duration of each pump operation per day.

f) Plant output on each hour and total for the day in MLD.

g) Preventive maintenance work carried out during the month.

h) Preventive maintenance work that will likely to be carried out in the next week.

i) Maintenance carried out due to fault / breakdown of equipment.

j) The details of each equipment that was not available for operation due to preventive maintenance or breakdown of equipment related to that pump equipment, giving the reason for breakdown. The details shall include number of hours the pump equipment could not be operated and whether standby capacity was available and put into operation.

k) Details of parts and consumable replaced.

l) The number of days & hours per day the plant was run whether fully or partly if the case may be and specifying the reason why the plant could not be operated fully. Whether all or single unit is operated in cases of where twin/more nos. of a particular unit processes, Media filtration ETC. as applicable) are provided.

6. TELEPHONE FACILITY

6.1. The Contractor shall have to arrange for mobile phones to minimum two personnel of Key Staff for communication pertaining to plant O&M with employer. Any cost to the repair to the telephones and the telephone bills will be borne by the Contractor.

7. SAFETY, HEALTH AND ENVIRONMENT

7.1. The Contractor shall be responsible for safety on Site during the O & M of the Works by the Contractor. Health of workers shall be protected against infectious and contagious diseases. Environmental protection shall also be given priority so as to conserve the environment.

7.2. The Contractor's duties with respect to Safety shall include the following:

(a) Utilize safety awareness procedures in every element of operation and maintenance.

(b) Give emphasis to safety including:

i. Safe working and safety procedures as per rules and regulations of the DGMS, factory inspector, electrical inspector regarding use of protective clothing, gloves, boots and helmet etc.

ii. Cleanliness of the Plant as a whole

iii. Awareness of hazardous conditions and accident reporting and necessary compliance

iv. Safe practice in Treatment Plant

7.3. The Contractor shall be responsible for all safety measures and those procedures adopted shall comply with the Indian regulations pertaining to such work and local safety codes currently in force. Where such codes do not adequately cover the Plant then the Contractor shall ensure that proper safety procedures are followed. Those given below are minimum standards and the works shall not be limited to these, if higher standards prevail. The Contractor will comply with all safety rules and regulations and all interdisciplinary measures as followed by the Employer. The Employer will not be responsible for any accident/ injury to the staff of the Contractor. Further, the Employer will not provide any insurance or free medical facility to the staff of Contractor.

7.4. If the work in the vicinity of electrical equipment has to be carried out after connection has been made to the electricity supply the Contractor shall comply with any "Permit to Work" system approved by the Employer.

7.5. Suitable scaffolds shall be provided for workmen for all work that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra man shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and hand holds shall be provided on the ladder.

7.6. All necessary safety equipment as considered adequate by the Employer shall be available for use of persons employed on the Site and maintained in a condition suitable for immediate use. The Contractor shall take adequate steps to ensure proper use of the equipment by those concerned, in the following manner:

(a) Those engaged in handling any material which is injurious to eye shall be provided with protective goggles.

(b) Those engaged in welding shall be provided with welder's protective eye-shields.

(c) Those involved in works in areas where there is a risk of drowning shall be provided with life jackets.

(d) Electrician, wiremen and helper shall be provided with shock-proof shoes.

7.7. Adequate provision shall be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work. When work is done near any place where there is risk of drowning, all necessary equipment shall be provided and kept ready for use and all necessary steps taken for the prompt rescue of any person in danger. Only after arranging such equipment, tools/ tackles etc. at site work shall be started.

7.8. To ensure effective enforcement of the rules and regulations relating to safety precautions, arrangements made by the Contractor shall be open to inspection by the Employer or his Representative and the inspecting officers.

7.9. Notwithstanding the provisions made above the Contractor is not exempted from the operation of any Act or rule in force.

8. TOOLS AND TEST EQUIPMENT

8.1. A complete set of necessary tools and test equipment required for operation & maintenance of the plant shall be available with the Contractor. This shall enable erection, dismantling, repairing, replacing or testing to be carried out on any part of the Plant whether of an electrical, mechanical or other nature, during the contract period. All tools and test equipment shall be procured, kept at site in good condition and used properly by the Contractor at his expense. The contractor shall prepare and implement an effective plant maintenance program in consultation with the Employer. It is absolutely the contractor's responsibilities to look after all sorts of maintenance whether routine, preventive or break down or any other type of maintenance. The Contractor will be responsible to carryout day to day as well as periodic maintenance necessary to ensure smooth and efficient performance/ running of all equipment.

9. ASSISTANCE FOR THE EMPLOYER'S STAFF

9.1. The Contractor shall provide all necessary assistance to the Employer and his staff in carrying out their duties of checking setting out, inspecting and measuring the Works. The Contractor shall provide staff, office attendants, labourers and other help as may be needed from time to time by the Employer.

9.2. The Contractor shall provide for the Employer and his staff such protective clothing, safety helmets and rubber boots of suitable sizes, 440 volts series hand lamps and the like as may reasonably be required by them. These articles shall remain the property of the Contractor.

10. FIRST AID BOX

10.1. The Contractor shall at his own cost provide and maintain at the Site of Works standard first aid boxes at minimum six locations as directed and approved by the Employer for the use of his own as well as the Employer's staff on Site as stipulated by local regulations. Contractor shall arrange to train all their staff in first aid treatment within 3 months.

11. NOTICE BOARDS / DISPLAY BOARDS

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

12. APPLICATION

12.1. These general conditions of the contract shall apply to the extent that they are not superseded by provision in other parts of the contract.

13. GENERAL ROUTINE MAINTENANCE

To operate and maintain the Proposed treatment plants and equipment in accordance with the aim and purpose of treatment. The plant and equipment covered under the above contract will be promptly attended by the contractor including any "Trouble shooting" to ensure smooth and trouble-free operation. The contractor will be responsible for smooth and satisfactory operation and maintenance of the Proposed Treatment Plants on the round the clock basis for THREE years period from the date of taking over the plant after 3 months trial run period is completed and on acceptance of plant.

A Technical expert of the contractor shall visit the plant on every fortnight and will suggest if required, to improve the efficiency and working of the plant. The visit must be recorded at Employer's document and outcome of the visit/ minutes of meeting should be got signed by Employer's authorized representative without which the visit shall not be considered.

The employer shall check the operation of the plant or designate an organization of his choice to carry out inspections. 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.

13.1. Below routing maintenance shall be carried out as a minimum and as applicable for the type of plant / process (as applicable):

1) Regular cleaning of screens in all shifts depending upon load

2) Checking Alignment, tightening of fasteners, and lubrication of gear and other moving parts of processing units, rail alignment etc. as applicable

3) Checking of all pumps, motors, gears etc. for its proper operation.

4) Checking of gas mixing system, gas holder unit for its proper operation.

5) Checking all the pipelines for preventing choking, water tightness etc.

6) Monitoring parameters in incoming and treated effluent/water.

7) Safe disposal of Membrane and dry sludge cake generated on daily basis at a site indicated by employer.

8) Watering of plants and trees

13.2. General routine maintenance schedule for various plant units 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 sewage treated or guaranteed power on daily basis exceeds the quoted or guaranteed value, 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) Checking and refilling of silica-gel in the breather of the transformer and checking temperature gauge, vent pipe, voltage tap changing switch

d) Regular watering in the earth-pits.

e) Check for any oil leak in the transformer and intimating and repairing of the same.

f) Opening of end cover & cleaning of dust by Air blowing of induction motors, PMCC and other panel & PCC

g) Checking and replacement of bulbs, tubes, chokes, starters, switches, control etc. throughout the plant and including outdoor lights and high mast pole installation.

h) Replacement of LT panel fuse base, links, fuse, relay, contactor kit (main and auxiliary) and timer.

i) Check for any loose connection in electrical equipment and rectification of the same.

k) Monitoring power factor, take corrective steps and ensure optimum power consumption.

l) Replacement of gland packing for the pump, sluice valves etc. whenever required.

m) Greasing of bearings and lubricating all moving parts as per the schedule

n) Tightening of all loose nut-bolts and other fasteners

o) Cleaning of sump tanks

p) Lubricating and test operation of the valves

q) General cleaning of all equipment and building

r) Replacement of pump rubber bush, gland packing, sleeve, bearing, oil seal, shaft, liquid ring and impeller.

s) Replacement of motor bearings and terminal plate and rewinding of motor when needed.

t) Replacement of non-return valve T bolt, hinge pin, flap/ gate.

14. PREVENTIVE MAINTENANCE CHECKS

14.1. The Contractor shall adopt a preventive maintenance check's schedule as agreed mutually between the Contractor and the Employer.

14.2. The following checks as a minimum to be performed daily by the Contractor's personnel

a) Whether there is a change in the sound of a running pump, abrupt changes in bearing temperature and seal leakage?

b) The pump capacity, pressure, power consumption and vibration level to check if outage is required to address deterioration of specified performance values.

c) Rise in temperature of bearings in motor, in moving parts and other units, etc.

d) Working of gauges, sensors and other flow measuring devices

e) Average power factor, kVARH, kWH consumed

14.3. The following checks as a minimum to be performed weekly by the Contractor's personnel

a) Pipeline and valve leakage

b) Functioning of non-return valve

c) Tightness of all electrical connections of PMCC, PLC panel etc.

d) Tightness all cable connections

e) Temperature rise due to loose connections

f) Operation of valves and sluice gates.

g) Current and voltages in all electrical equipment

h) Average power factor, kVARH, kWH consumed

14.4. The following checks as a minimum to be performed monthly by the Contractor's personnel

a) Topping of distilled water, tightness of terminations etc.

b) Transformer: 1. Oil level to be checked. If found less, oil to be top up as per specified level. 2. Breathing holes in silica gel breather to be checked and properly cleaned if required, for proper breathing action. 3. Colour of silica gel in breather to be checked. If colour is changed to pink, the same to be replaced. 4. Reading of MOG for oil level of main tank and conservator tank & oil to be filled if required. 5. Leakage of oil from any part/point of transformer. 6. Standby Transformer to be charged alternatively.

c) LT panels: Functional checks of all feeders, electrical interlock checking.

d) Gland packing

e) Wear and tear of moving parts

f) Adoption of Electrical energy conservation methods and energy consumption

g) Electrical contacts

h) Motors

i) Meggering of electrical equipment

j) Watering of earthing pits

14.5. The following checks as a minimum to be performed quarterly by the Contractor's personnel

a) Relay testing and calibration if possible of meters, gauges, instruments

b) Speed of motors

c) Level gauges and flow meters signals

d) Cleaning, checking/tightening of L.T. Circuit/Panel

e) Tightening of PMCC components

f) Auxiliary DB,

g) Setting and functioning of Aarm & Trip contacts of OTI, WTI, Buchholz relay, PRV, etc. to be checked to confirm whether the protection relays in Remote panel is properly working or not. Examine for Cracks/ dirt deposits. Clean the bushings and change if cracks are found.

h) Temperature indicator dial glasses shall be kept clean/clear, if found broken same to be replaced.

i) Measurement of Earthing Resistance of all Earthing stations.

14.6. The following checks as a minimum to be performed bi-annually by the Contractor's personnel

a) Free movement of stuffing box glands, gland bolts to be cleaned & lubricated and packing to be inspected to determine whether it requires replacement.

b) Pump and motor alignment should be checked and corrected if necessary.

c) Grease lubricated bearings should be checked to see that they contain the correct amount of grease and that it is still of suitable consistency.

14.7. The following checks as a minimum to be performed annually by the Contractor's personnel

a) Vibration should be reviewed. If the pump is tending towards unacceptable vibration levels:

i. The bearing should be removed, cleaned and examined for flaws and wear.

ii. The bearing housing should be carefully cleaned.

iii. Rolling element bearings should be examined for scratches and wear.

iv. Immediately after cleaning, rolling element bearings that are considered acceptable for reinstallation should be coated with grease. If the bearings are damaged it shall be replaced with new bearing of the correct size and type as per O&M manual.

b) Shaft sleeve and shaft should be examined for wear.

c) When coupling halves are disconnected for an alignment check, the vertical shaft movement of a pump with sleeve (journal) bearing should be checked at both ends with packing or seals removed. Any movement exceeding the original design clearance should be investigated to determine the cause. The endplay allowed by bearings should also be checked. If it exceeds that recommended by the manufacturer, the cause should be determined and corrected.

d) Stuffing boxes should be repacked and the pump & motor should be realigned and reconnected

e) Overhauling requirement of all equipment

f) Improvement required if any in operation of plant

g) Testing and Calibration of all instruments

h) Transformer cleaning, checking silica gel, oil checking filtering/replacing, Explosion vent checking and to be replaced if damaged. Level of oil in the Temperature indicators in the pockets holding Thermometer to be checked and oil

to replenished, if required. Check for Dielectric strength & Moisture content in Transformer oil & suitable action to be taken to restore the quality of oil.

14.8. This work is also inclusive of painting of plants as per following schedule and paint shall be of the same specification as described in respective unit/ mechanism as per original specification of the executed work.

Sr. No.	Item	Duration
1.	Civil work	Once in three years i.e. at the end of 3rd year of O&M
2.	Doors and windows	---do----
3.	Shutters, grills, collapsible gate etc.	---do----
4.	All L.T. panels	--do----
5.	All process equipment with its accessories and GI railings etc.	---do---
6.	Street / flood light pole	---do----
7.	Pump sets, valves, C.I. fittings, sluice gate, etc.	---do----

Note: However, if any unit mechanism will found to have some defect in paint work at any time, the Contractor has to repaint the same under the instruction of Employer.

15. MINOR REPAIR GENERALLY ENCOUNTERED IN THE PLANT

15.1. The minor repairs which have been most often encountered are as given below:

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, indicating lamps, Push buttons, control MCB, Indicating meters etc.

iv) Replacement of moving and fixed contacts or contactors

v) Repairs to isolators and switch fuse units and replacement of it and fuse base units.

Pump sets

a) Replacement of coupling bolt and nuts including rubber bushes
b) Replacement of worn-out impeller nut
c) Replacement of spindle nut in the sluice valve.
d) Replacement of terminal plate in the motor
e) Replacement of faulty/dead spares in the battery charger and battery control panel.
f) Replacement of gland packing, graphite packing from the pump sets.

16. ADDITIONAL SCOPE OF WORK

16.1. For other incidental additional work, if any, the Contractor on authorization in writing from the Employer shall execute which is not specifically mentioned in the scope at present.

17. ELECTRIC POWER AND WATER

17.1. Employer shall directly pay all the power bills but the Contractor will be required to furnish Electricity Consumption in the Schedules provided. If the average power factor in the electric supply company bill is less than 0.90, the penalty / charge for the same, if levied by power supply company, shall be recovered from contractor's O&M Bill / Security Deposit.

17.2. Contractor will have to make his own arrangements for supply of clear potable water in the plant. Contractor shall bear cost towards distribution of water within premises.

17.3. The contractor shall co-ordinate with the power supply company staff to follow up for restoration of power supply in case of interruption and in order to maintain the performance of Plant contractor shall take all necessary actions to operate the plant on a round-the clock basis.

18. PLANT INSPECTION AND VISITS

18.1. The Employer shall check the operation of the plant or designate an organization of his choice to carry out inspections. 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 required by the Employer to complete these inspections.

18.2. Before any inspection, the Employer shall give prior notice of three days to the Contractor, indicating the name(s) of the person(s) empowered to carry out such

inspection in the name of the Employer. In case of surprise visit, vigilance or other checks, such notice shall not be given.

18.3. At the end of each quarter period, or at the initiative of the Employer, a JOINT VISIT shall be organized so that both parties can check the condition of the installation at the plant.

18.4. A report shall be drawn up to record the suggestions and opinions of both parties. The Employer reserves the right to call in equipment manufacturers or specialized technicians for these visits.

18.5. These visits shall provide an opportunity for examining maintenance programs and operating procedures and improvements requiring therein.

18.6. In addition to the above, the Employer reserves the right to arrange the visits of. VIP's dignitaries and other persons of Social or Political repute, as and when necessary, at the Treatment Plant. The Contractor shall offer full cooperation to the Employer on the occasions of such visits.

19. MEASUREMENT AND ANALYSIS

19.1. The Employer has the right to perform any analysis or inspection he deems necessary.

The Contractor shall be responsible for the security and protection of flow meters at the designed point. If there is any malfunctioning of the meters, action will be initiated by the Contractor to rectify the same and it shall be reported to the Employer immediately.

20. PAYMENT

20.1. The Contractor's request(s) for payment shall be made to the Employer in writing, accompanied by invoice(s) for each month. Payment shall be made by the Employer subsequent to the submission of such invoice(s) by the contractor and approval of the monthly O&M report by the engineer in charge on monthly basis. The bill for any month shall not be released unless the monthly O&M report is approved by the site engineer.

20.2. The Employer will deduct from the amount payable to the contractor, any amount paid by Employer on behalf of the Contractor.

20.3. The Contractor should have to follow Minimum Wages Payment Act-1936, Bonus Act-1965, Employees Provident Fund & Miscellaneous Provision Act-1952 & other industrial and Labour Laws With latest amendments, state and central laws, Indian Pinal Code related to this O & M work.

20.4. The Contractor should have to open the Bank accounts of all the manpower engaged by him during the O&M period. The accounts should be in any nationalized bank in

the city where employer / place of work is located and & details of the same shall be furnished to employer.

20.5. The Contractor should have to submit the Bank payment sheet of all the manpower engaged during the O&M period, every month with monthly O & M bill. Without submitting this bank statement and if not found satisfactory in accordance with tender requirement, monthly O & M bill will not be processed further for payments / necessary penalties or deductions as applicable shall be carried out from the O&M bill.

20.6. Copy of wage payment sheet of the previous month to employees actually employed by the Contractor at the ETP;

20.7. Documentary evidence of the P.F. amount deducted from the monthly salary of the employees of the Contractor actually employed at ETP for execution of the contract and submission of this amount along with Contractor's contribution to the P.F. Commissioner, for the previous month.

Documentary evidence of the GST deposited of the previous month.**21 PENALTIES**

21.1. **If a man** on the duty remains absent and there will not be any replacement in his place, the contractor will be penalized at the rate of **Rs. 1,000/- per man per day for skilled staff (Sr. 1 to 4 above for WWTP site staff) and Rs. 500/- per man per day (for rest all staff at WWTP site) for up to no limit**.

21.2. If plant- in- charge, chemist, Mech. supervisor, Elect supervisor will remain absent for more than 15 days and if contractor fails to make an alternate arrangement for plant in charge, Chemist, Mech. supervisor, Elect. Supervisor then necessary action shall be taken by Employer and it shall be binding to the contractor.

21.3. If at any time present staff excluding plant in-charge, Mech. supervisor, Elect. Supervisor, Chemist is less than minimum required staff mentioned in this tender; contractor shall be panelized at the rate of Rs.1000/-per person day up to no limit.

21.4. The restoration period for repairing work / replacement work shall be as under.

(The period shall be counted from intimation received / given to the contractor)

Sr. No.	Type of Work	Restoration Period
1.	Repairing Of MS/CI/DI Piping within premises.	Work should start within 12 hours after decanting the system and completed within 72 hours.
2.	Repairing of all types of valves.	
3.	Replacement/repair of electro-mechanical spares of pump / motor / panel board / transformer and other equipments.	Maximum seven days or as per requirement as decided by engineer- in-charge.
4.	Repairing of civil Damages Within	Maximum seven days or as per

	premises.	requirement as decided by engineer- in-charge.
5.	For major repairing shut down will be given as per requirement by engineer in charge with prior permission of competent authority.	

21.5. No equipment shall remain idle/unrepaired or damaged. If any equipment is not repaired, rectified, replacement of major part of equipment as per above reference table column no.3 the contractor shall be penalized with no limit at the rate of minimum Rs. 1000/- per day for delay in Restoration of equipment/Machinery of the plant those are required in continuous operation to meet the plant process requirement.

21.6. Spare capacity of equipment / Machinery Shall be repaired/rectified within 15 days or decided by engineer – in – charge

21.7. Contractor shall have to maintain all the parameter of treated water/waste water within stipulated limit as per the statutory norms and guaranteed statement of the plant. LD shall be deducted for non-compliance as mentioned in clause No. 30 as Liquidated Damages.

21.8.

21.9. Contractor should have to maintain lighting facility in plant premises. In case if no light is found or left unrepaired for more than two days then penalty of Rs 5000 per day will be charged.

21.10. For non-satisfactory operation and maintenance of the plant penalty will be charged as decided by GIPCL. For example, operator sleeping during duty hours, poor housekeeping, not handling plant properly, etc.

22. EXTENSION

22.1. If Employer desires to extend the O&M duration for a period of three (03) months after completion of O&M duration as per contract, contractor shall carry out the same as per agreed rate for last month of O&M and without any extra charge during this extended period.

23. COMPLAINACE OF LEGAL REQUIREMENTS:

23.1. Contractor is required to strictly follow the provisions of wages payment act 1936, bonus act 1965, Employees Provident Fund & miscellaneous Provisions Act 1952 & Labour laws with latest amendments, state and central laws, Indian penal code related to this operation & Maintenance work.

23.2. As and when required contractor is bound to furnish required information to the project manager, Gujarat Industries Power Company Limited (GIPCL), Surat Lignite Power Plant (SLPP), Village: Nani Naroli, Taluka Mangrol, Dist. Surat-394112.

23.3. Contractor will not be given any relaxation regarding these provisions.

23.4. Attention of contractor is invited to the child labour (Prohibition and Regulations) Act 1986, which prohibits employment of children below 18 years of age in certain occupation and process for regulation of employment of children in all other occupation and progress. Hence contractor is requested to ensure to adhere to the provision. Any violation of the provision will lead to panel action. Apart from strict action as per Employer rules which may include black listing / removing the name of the contractor from the list of registered Contractors.

23.5. Any legal action required under any law specifically under IPC shall be initiated by Contractor. It is duty of the contractor to adhere to and follow the provisions under various laws of state and central government of Republic of India.

23.6. FIR to police department, if required, shall be lodged by contractor (for example, in case of theft of some material) and legal action shall be initiated in relevant cases by contractor.

23.7. It shall also be informed in detail about incidence to the employer.

23.8. The contractor shall have to observe all provisions under various acts like labour contract act, minimum wages act, workman compensation act- 1923, R.P.F.C. Act, Indian electricity Act, etc. and the financial implication arising due to breach of any act shall be fully borne by contractor. The Contractor shall be responsible / liable to pay the insurance charges, income tax, sales tax, service tax, or any other taxes payable to Government for carrying out of the work.

23.9. The rates to be quoted by agency shall include all taxes, G.S.T., professional Tax, ESI registration, etc. No extra amount shall be made by employer on account of any tax variation except GST. Necessary Income tax, R.P.F.C., Property tax, etc. shall be deducted from the bills as per rules of Employer.

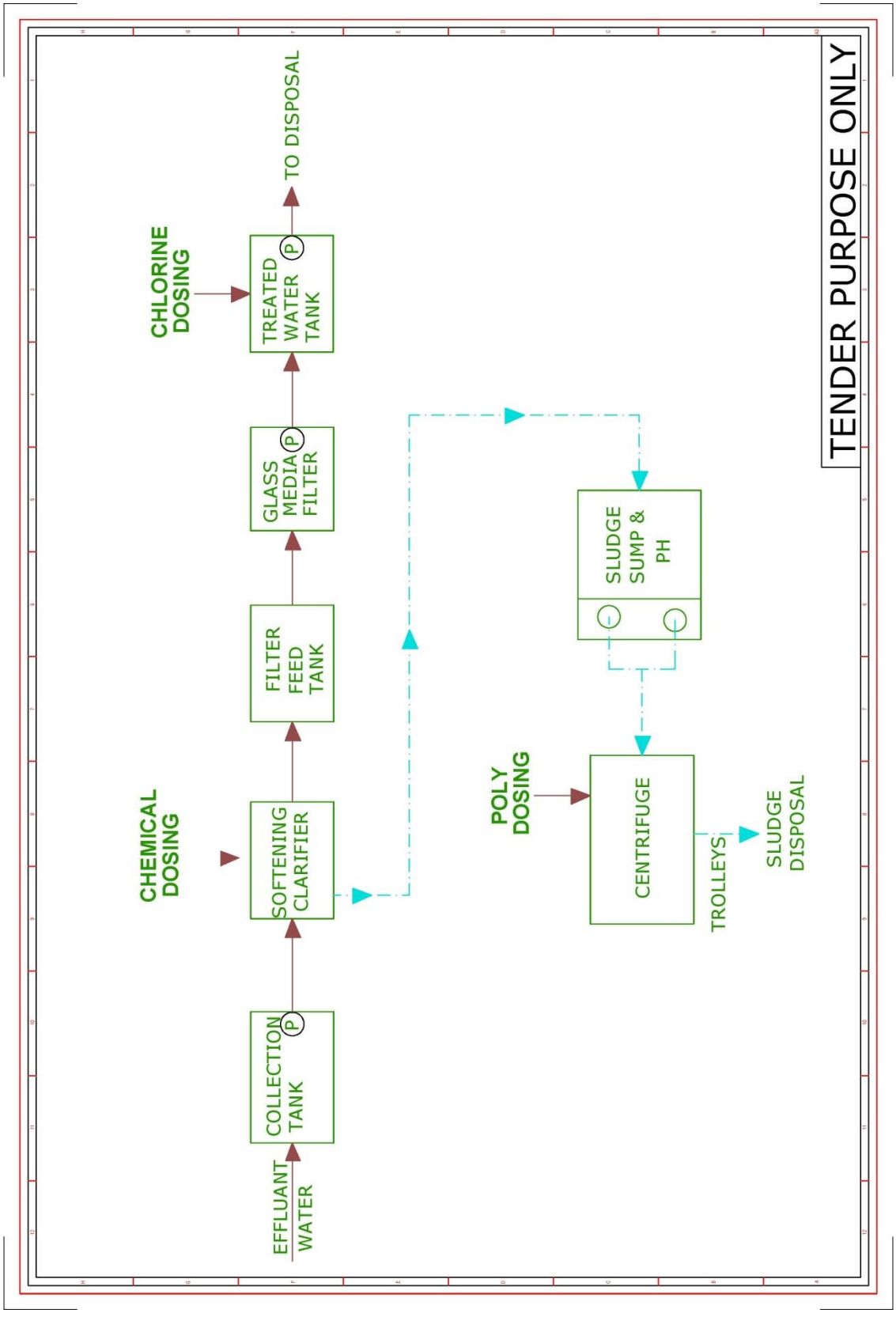
23.10. During O&M period, Employer, GPCB, may collect frequently filtered sewage & also RO permeate samples for checking of parameters etc., the contractor will pay such lab charges to Employer, GPCB.

23.11. EMPLOYER will also collect samples for checking average monthly, the lab charges will be borne by the contractor.

	CHAPTER – 3 TENDER DRAWINGS

1. Surface Plan for Proposed Location of ETP:

2. Schematic Diagram of ETP:



	CHAPTER – 4 PRICE BID: SCHEDULES OF PRICE

PRICE SCHEDULE - A OVERALL SUMMARY OF PRICES

Sr. No.	Item		Rate offered (Including taxes & duties except GST) in Rs.
I)	**Construction Phase:**		
	Engineering, Procuring, providing, Constructing, Installing and Commissioning (EPC) and conducting 3 months successful trial run and acceptance test of 5 MLD capacity Mine / waste water Treatment Plant at Mangrol Mine, SLPP along with all related mechanical & electrical equipment & accessories, instrumentation, including miscellaneous works etc. **(Rs including taxes & duties except GST)** .		To be quoted on-line only
II)	**Operation & Maintenance phase:**		
	Operation and maintenance of Mine water Treatment Plant for three (3) years, after commissioning the system and conducting three months successful trial run **(O&M scope includes entire proposed work under the scope of this tender) along with all spares, consumables, chemicals etc.**		
	a)	O&M price for first year **(Rs including taxes & duties except GST)**	To be quoted on-line only
	b)	O&M price for second year **(Rs including taxes & duties except GST)**.	To be quoted on-line only
	c)	O&M price for third year **(Rs including taxes & duties except GST)**.	To be quoted on-line only
III)	**Base Price of (I to II), in Rs.**		
IV)	**% of GST**		To be quoted on-line only
V)	**GST Amount, Rs.**		
VI)	**Total Price of (III + IIV), in Rs.**		

1) The Bidders shall quote firm rate in terms of **Rupees**.
2) Management reserves the right to accept or overlook or reject any lower rate offered by the Bidder without assigning any reason thereof.
3) The Bidders are required to quote the rates strictly as per the terms and conditions mentioned above. The conditional bid will not be entertained and will be summarily rejected.
4) **Rates include all taxes except GST.**
5) GST and any other fresh imposition or variation in taxes or payable by the Bidder, shall be reimbursed by GIPCL to the extent levies during the currency of the contract, if applicable and directly related to the services rendered by the Bidder under this contract.
6) Rate quoted above for the EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years shall be considered for deciding the **lowest three**

bidders (minimum) or 50% out of total bidders (rounded to the next higher whole number), whichever is higher for making them eligible for the e-reverse auction. However, lowest grand total amount for EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years combined shall be considered as the base rate which will put up for starting e-Reverse Auction.

7) e-Reverse auction shall be for reducing the lowest grand total amount of EPC Contract For Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years combined and the bidders have to reduce their grand total amount of EPC Contract For Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years combined in decrement of value as decided before start of e-Reverse Auction.
8) After e-Reverse Auction process, L1 bidder shall be decided based on the lowest grand total amount bid for the EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years combined.
9) Decremental value and duration for the e-Reverse Auction shall be informed to the qualified bidders before start of e-Reverse Auction.
10) Percentage reduction in the estimated value of EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years together by e-reverse auction process will be equally applied to all the works i.e. EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years i.e. equal percentage in all the EPC Contract for Supply, Testing, Erecting & Commissioning of 5 MLD Effluent Treatment Plant (ETP) along with Civil, Mechanical and Electrical Work, Operation & Maintenance of Three Years will be adjusted accordingly.
11) L1 Bidder, declared after the e-Reverse Auction process may be called for negotiation and if required, may be asked by GIPCL for reduction in rates of any of works, if found quoted unreasonably high.
12) Awarded Rates shall be escalated based on the formula for escalation rate as provided in the bid document.
13) Rates will remain firm throughout the contract period or any extension thereof. There will not be any escalation/compensation to the Bidder against any revision in MWR (Minimum Wage Rates). The Successful Bidder shall not pay less than the Minimum Wages notified by the Government from time to time to his employees of corresponding categories.
14) The Contract Price will remain fixed during the extended period of validity. The rates accepted shall be firm for entire duration of the contract including AMC of three years. No escalation what so ever shall be payable.
15) Successful Bidder shall at his expense comply with all labour and industrial laws and such other acts and statues as may be applicable to the contract in respect to pay etc. On account of any default in respect of all liabilities and in case of non-compliance of the above, the company can withhold their payments till all legal liabilities are discharged.

PRICE SCHEDULE – B

SCHEDULE OF MILE STONE PAYMENT

1. **Construction Phase:**

   a. **PACKAGE FOR CIVIL WORK ON SITE**: PAYMENT BREAK-UP FOR CIVIL WORKS

      a) 10% on completion of foundation work for below ground work
      b) 25% on completion of work above ground work

   b. **PACKAGE FOR ETP PLANT AT SITE:** PAYMENT BREAKUP FOR PIPING, MECHANICAL, ELECTRICAL & INSTRUMENTATION WORKS ALONG WITH SPARES AS SPECIFIED

      a) 25% on supply of all equipment to site
      b) 05% of erection and installation
      c) 05% on successful Commissioning and hydro test
      d) 30% after after commissioning the system and conducting three months successful trial run and acceptance by GIPCL.

2. **Operation & Maintenance phase:**

   Operation and maintenance of Mine water Treatment Plant for three (3) years after commissioning the system and conducting three months successful trial run **(O&M scope includes entire proposed work under the scope of this tender) along with all spares, consumables, chemicals etc.**

   Successful Bidder has to operate the ETP for at least monthly average of 20 Hours of Operation of ETP per day i.e. 600 Hours/Month. **If the successful bidder fails to operate the ETP for monthly average of 20 Hours of Operation of ETP per day i.e. 600 Hours/Month, payment for actual running hours of the month shall be given on the pro-rata basis.**

   Example:

   - Minimum running hours per Month: 600 Hrs/Month
   - Monthly O&M Charges: Rs. 1.20 Lakh/Month
   - Hourly O&M Charge: Rs 200 per Hr
   - Actual running hours per month: 500 Hrs
   - O&M Charge for particular month: (Rs 200 per Hr X 500 Hrs) Rs 1.00 Lakh

a) **<u>O&M Payment for First year</u>**: The final rates after e-reverse auction for the O&M price for first year will be divided by the 12 months and will be paid after every month provided that the ETP operates for at least **monthly average of 20 Hours of Operation of ETP per day i.e. 600 Hours/Month**.

b) **<u>O&M Payment for Second year</u>**: The final rates after e-reverse auction for the O&M price for second year will be divided by the 12 months and will be paid after every month provided that the ETP operates for at least **monthly average of 20 Hours of Operation of ETP per day i.e. 600 Hours/Month**.

c) **<u>O&M Payment for Third year</u>**: The final rates after e-reverse auction for the O&M price for third year will be divided by the 12 months and will be paid after every month provided that the ETP operates for at least **monthly average of 20 Hours of Operation of ETP per day i.e. 600 Hours/Month**.

FORM – A

(To be submitted on Company's Letter Head)

CHECK LIST OF DOCUMENTS ENCLOSED WITH BID

Sr. No.	Particulars	Declarations (Strike out whichever is not applicable)
1	Details of the Tender Fees being Paid	Yes/ No
2	Earnest Money Deposit for the value as indicated in Notice Inviting Tender	Yes/ No
Formats enclosed-duly filled in and signed along with all required enclosures, complete as per instruction to Bidder		
3	Form-B (Status of Bidder, with documentary proof)	Yes / No
4	Form-C (Declaration about the Site visit)	Yes / No
5	Form-D (Declaration for Contractual Disputes/ Litigations)	
Other documents to be enclosed by the Bidder as per the instruction of the bid document.		
6	Power of authority of the signatory to the Bidder.	Yes / No
7	Copy of PF registration details, if available	Yes / No
8	Copy of GST details, if available	Yes / No
9	Bid document duly signed by Contractor on each page	Yes / No
10	In case of a Partnership Firm as a Bidder, a certified copy of the Partnership Deed of the Firm.	Yes/No
11	Financial Standing of the Contractor such as for the past 3 years (2022-23, 2023-24 and 2024-25) **1. Profit and Loss Statement,** **2. Balance Sheet,** **3. Auditor's Report**	 Yes/No Yes/No Yes/No
12	**e-Auction USER ID for https://e-auction.nprocure.com**	**Mandatory Yes**
13	**All the required supporting documents as per Clause Nos. 4.0 (e) and 9.0, for techno-commercial bid.**	**Mandatory Yes**

Name of Firm :
Signature of Bidder :
Seal of Company :
Date :

FORM – B

(To be submitted on Company's Letter Head)

STATUS OF THE BIDDER

Name of the Bidder	
Address	
Registered Office	
For Correspondence	
Telephone Number	
Fax Number	
E-mail Address	
Whether the firm is joint stock company, individual, Partnership firm (**Attested copies of Deeds, Articles of Association to be enclosed)**	
Name of the person holding power of attorney **(Attested copy of power of Attorney to be enclosed)**	
Name of Partners with their Present and Permanent address	
Name of Bankers with full address and Telephone Numbers	

Name of Firm :

Signature of Bidder :

Seal of Company :

Date :

FORM – C

(To be submitted on Company's Letter Head)

Declaration about the Site Visit

I / We do hereby confirm and declare that I/We have independently inspected the site for the installation ETP at Mangrol Lignite Mine of GIPCL in Surat district and have ascertained & obtained all relevant & necessary information, data, particulars, prevailing wage structure, conditions of services & availability of workforce, facilities available, existing industrial environment and other working conditions etc.

I/We have also assessed the risk associated with the work whether apparent or inherent to the nature of work involved and satisfied our self as to the nature, condition, quantum, extent, scope and magnitude of the work involved in the contract, type and condition of the strata, rock, soil, sub-soil, ground, working conditions of the area, availability of power supply, water supply, men and machinery requirement and availability of land.

I/We do hereby agree and undertake not to raise any dispute and / or objection at any stage on any ground whatsoever, during the currency of the contract if awarded to me/us.

Name of Firm :
Signature of Bidder :
Seal of Company :
Date :

Confirmation from GIPCL

It is to certify that the officials from M/s _____ have visited site for the installation ETP at Mangrol Lignite Mine of GIPCL in Surat district on dated----------.

GM (Mines)

FORM – D

(To be submitted on Company's Letter Head)

Declaration for Contractual Disputes/ Litigations

I _____ on behalf of ……Name of Party/Company……..hereby confirm that I/We have not been engaged in any Industrial Dispute(S) or have invoked legal recourse e.g. litigation against any Govt, of Gujarat Undertakings / Depts. / Authorities and Govt. of Gujarat supported companies / undertakings / organizations for the last Five (05) years. There are no ongoing/pending legal matter(s) with any of the Govt. of Gujarat Undertakings / GoG supported Companies, including GIPCL.

I/We also confirm that M/s …….. ……. Have not been Blacklisted/ deregistered / listed under stop Deal by any Govt, of Gujarat Undertakings / Depts. / Authorities and Govt. of Gujarat supported companies / undertakings / organizations, including GIPCL for the last Five (05) years.

The above is true, as on date, to the best of my knowledge. Any breach/ false statement in this regard shall account to disqualification of the Bid being submitted herein.

However, details of the Arbitration case (s) either completed or under progress during last five (5) years by the Bidder or its Partner(s) or Director(s) is / are/ was shall be provided by the bidder along with FORM-H.

Name of Firm :

Signature of Bidder :

Seal of Company :

Date :