

#### **BUNDELKHAND SAHAKARI DUGDH SANGH MARYADIT**

# SIRONJA, SAGAR (M.P.) 470004

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# **E-TENDER NOTICE**

Online e-tenders (Two Bid System) are invited from the Manufacturers/Suppliers/contractors who completed Installation, Commissioning of different capacities ETPs (Dairy affiliated) on turnkey basis to other Co-operative Dairies/G.O.I/State Govt. Department & its undertaking Dairies for the Design, Supply, Installation, Civil construction work and Commissioning of ETP Plant for Milk Chilling Centre Jatara (25 KLPD) & Rajnagar (15 KLPD) situated in different cities of M.P (Sagar Division) working under Bundelkhand Sahakari Dugdha Sangh Maryadit, Sagar M.P. The tender notice, tender documents, containing the terms and conditions can be purchased online & downloaded through following website http://www.mptenders.gov.in from 31.08.2021, 11:00AM onwards upto 20.09.2021 at 02.00PM. The tender will be submitted from 31.08.2021, 12:00 Noon onwards upto 20.09.2021 at 02.00PM. The tender will be opened on 21.09.2021 at 03:00 PM. The detailed Tender Form can be seen (only for reference) at our H.O website: www.sanchidairy.com. For digital Signature please contact M.P. State Electronic Development Corporation Ltd., Area Hills, Bhopal on toll free no. 18002588684. Corrigendum/Amendment if any to this publication would appear only on the above-mentioned websites and will not be published elsewhere.

CHIEF EXECUTIVE OFFICER
Bundelkhand Sahakari Dugdh Sangh Marydait, Sagar

# **Introduction**

Milk Chilling Centre involves only milk chilling and washing of utensils and tanks. The effluents are generated from milk processing through milk spillage, drippings, washing of cans, tankers bottles, utensil, equipment's and floors.

Bundelkhand Sahakari Dugdh Sangh Maryadit, sagar intends to develop the Effluent Treatment Plant to treat the effluent generated from various milk processing activities of above Milk Chilling Centre for following capacities to treat the effluent.

| Name of dairy plant         | Capacity of ETP to be installed |
|-----------------------------|---------------------------------|
| Milk Chilling Centre Jatara | 25                              |
|                             | KLPD                            |
| Milk Chilling Centers-      | 15                              |
| Rajnagar                    | KLPD                            |

- 1.0 E-Tenders are invited from the reputed Manufacturers/Suppliers/contractors having experience in design
  - , construction, fabrication, supply, erection, testing, commission and operation on contract for the following effluent treatment plant on Turnkey basis: -

| Name of dairy plant             | Capacity of ETP to be installed |
|---------------------------------|---------------------------------|
| Milk Chilling Centre Jatara     | 25 KLPD                         |
| Milk Chilling Centers- Rajnagar | 15 KLPD                         |

#### 2.0. SCOPE OF WORK:

Design, construction, fabrication, supply, erection, testing, commission and operation of followingeffluent Treatment plant: -

| Name of dairy plant             | Capacity of ETP to be installed |
|---------------------------------|---------------------------------|
| Milk Chilling Centre Jatara     | 25 KLPD                         |
|                                 |                                 |
| Milk Chilling Centers- Rajnagar | 15 KLPD                         |
|                                 |                                 |

- > On Turnkey basis with one-year operation & maintenance of the plant.
- To provide training to operate ETP to Dairy personnel.
- ➤ To get approval required Consent To Establishment (CTE) and Consent To Operate (CTO) from MPPCB. However, FEE for CTE & CTO shall be reimbursed against submission of receipt.
- > Official renewal of water consent issued to industry by MPPCB, Contractor will have

to submit two consecutive quarterly treated Sewage sample report from MPPCB /MOEF Laboratory with respect to standard laid down by MPPCB under IS:2490. Official fees for fresh / renewal consent will be paid by Bundelkhand Sahkari Dugdh Sangh Mayardit on submission of proper receipt.

2.1 The Bidders are requested to go through the tender document's instructions and various terms and conditions, it may be noted that no conditions or stipulations to the contrary or which are inconsistent will be not be accepted. Bidders are required to ensure that all such parts of the tender document like schedules etc. (duly filled-in & signed) except the Price Bid, are submitted with the "Technical Bid".

### 3.0 TENDER SUBMISSION

- **3.1** The tender document can be purchased by downloading from the website **www.mptenders.gov.in** by payment of the cost of the tender document Rs. 2000/- **till date** 20.09.2021 **upto 2:00P.M.**.. The tender document is also available on the website **www.sanchidairy.com** of M.P Co-Operative Dairy Federation only to read the terms & conditions, scope of works etc. as a reference only.
- 3.2 The **Technical Bid Physical** will be comprised of supporting documents as per **Clause** 5.0 & 5.6 should be submitted personally or send by Registered post, so as to reach the office of the Chief Executive Officer Bundelkhand Sahakari DugdhaSangh, Dairy Plant, Sironja, Sagar (M.P.) not later than 21.09.2021 up **to 2:00 p.m.** Bundelkhand Sahakari Dugdha Sangh will not be responsible for any postal delay. Envelop to be superscribed with "**TECHNICAL BID- Physical**" & tender for E.T.P- **Chilling Centre of BKDS**.
- 3.3 All the tenderers are required to deposit Earnest Money on line. As the tender will be finalized the tenderers will get back the EMD from MP TENDERS (as per their norms) on line. Submissions of earnest money by any other mode than specified above shall not be acceptable and the related tender shall not be eligible for consideration.
- 3.4 The "Technical Bid Online" will comprised of supporting documents as per Clause 5.0& 5.6 should be submitted on line on website <a href="https://www.mptenders.gov.in">www.mptenders.gov.in</a> along with scanned copies of the Annexures (I) to (VII) & the documents required for fulfilling eligibility criteria for "Technical Bid".
- 3.5 The Bidders should submit "Price Bid" online on website www.mptenders.gov.in in the specified "schedule- (IV) of Price Bid Format". The date and for opening Price Bid will be informed separately to the eligible bidders whose EMD and technical bid documents are found as per the eligibility criteria of tender conditions. Physical submission of Price Bid will be rejected outrightly & tenderer submission will alsobe rejected.
- **3.6** Technical Bids (Physical) should be submitted in properly sealed conditions.
- **3.7** Technical Bids (Physical) received by E-mail /Telegram/Fax will not be considered.

- **3.8** Technical Bids (Physical) received after the scheduled date/ time will not be considered.
- **3.9** Individual singing the tender or other related documents must specify whether he hassigned as -
- a) The sale proprietor of the unit or legally constituted attorney of such proprietor.
- b) A partner of the firm if it is a partnership firm, in which case he must have valid power ofattorney.
- c) Authorized signatory in case of Registered/Limited company/organization.
- **3.10** The Bidders should clearly state in their offers the address for communication together with their Telegraphic / e-mail / Telephone and Fax No. Any change in the address should immediately be notified to the Chief Executive Officer, Bundelkhand Sahakari Dugdha Sangh (M.P.), so that the correspondence thereafter may be made at the new address.
- **3.11** Chief Executive Officer, Bundelkhand Sahakari Dugdha Sangh will have discretion to place full, partial or split orders for any part/parts of the work /works of the tender in case rates of morethan one party are lowest & similar etc.
- 3.12 Joint ventures are permitted to participate in Tenders.
- **3.13 Scanned copy of E.M.D.**deposit transaction receipt to be uploaded online andoriginal to be submitted with the "Technical Bid" (Physical ) of the tender otherwise the Bid shall be liable for rejection.
- **3.14** Bidders downloading the tender document from the website will have to Sign the declaration as described as "Annexure- (VI). The Bidder is bound to accept the conditions of the declaration.
- 3.15 The "Technical bids" will be opened initially for evaluation as per tender specifications and other requirements as specified in the clause-(5), Bidder's Technical Qualifications criteria.
- **3.16** bidder/contractor used in various clauses means the agency to whom purchase / work order have been awarded by the BKDS. for execution of E.T.P.works

# 4.0 BID SECURITY (E.M.D.)

- **4.1** Technical bid must be accompanied by bid security (Earnest Money Deposit EMD) of **Rs.50,000.** The bids which are not accompanied with EMD shall be rejected. The bid security shall be deposited online. Submission of earnest money by any other mode than specified above shall not be acceptable and the related tender shall not be eligible for consideration.
- **4.2** Unsuccessful Tender's E.M.D. shall be returned by mptenders.gov.in, as per their norms to the Bidders, as soon as possible, after the tender is decided. No interest shall be paid on

E.M.D. deposits.

**4.3 EMD may be forfeited** if successful Bidder fails / denies to perform work OR If anyBidder withdraw its bid during the bid validity period.

# 5.0 BIDDER'S TECHNICAL OUALIFICATION CRITERIA: -

(a) The Bidders who completed Installation, Commissioning of different capacities ETPs of Dairy affiliated on turnkey basis to other Co-operative Dairies/G.O. I/State

Govt. Department& its undertaking Dairies could be participated in this tender. The selection of bidder for turnkey project of 15 & 25 KLPD ETP for the purpose of bidding, the Bidder shall meet the following minimum criteria & Technical Bid must accompanied the followings to qualify for opening of the Price Bid. If Bidder may not be able to fulfil the listed requirements then **bidders Price Bid** will not be opened: -

- **5.1** The Bidder, in the same name and style, should be in business for least for 3 financial Years i.e. 2019-20, 2018-19 and 2017-18. In case of change of name of Bidder by merger / acquisition / change in status, the bidder may be eligible based on the documentary evidence.
- **5.2** The Bidder should have valid registration under various Acts that may be applicable for the contract proposed. The Bidder must submit the details of PAN & GST with the documentary supports (However this is not limited, as Income Tax, Companies, Works

Contract Tax, Service Tax, Employee State Insurance, Contract Labour, Provident fundetc can be whenever needed then the contractor has to furnish.)

- 5.3 The Bidder in the same name & style shall have successfully executed /completed contractsof similar nature and of same capacity plant for the respective bid during last 3 years i.e2019-20, 2018-19 and 2017-18. In the following {Details to be provided in enclosed Annexure-(III)}: -
- 5.4 The Bidder's should have financial turnover of Rs. 1.00 Cr. (Rs. One crores) in the same name and style during any of the 3 financial years (i.e. 2019-20, 2018-19 and 2017-18) ending 31<sup>st</sup>March in business of supply of effluent treatment plant on turnkey basis as per enclosed Annexure- (IV)
  - 1. Similar nature of works means Effluent treatment plants based on Anaerobic & aerobic treatment (Extended Aeration), for similar bio- degradable organic waste, preferably for successfully project executed for Dairy /Food Industry in India.
  - 2. Bidder should have completed min 5 nos. ETP based on Anaerobic& aerobic treatmentin dairy industries.
  - 3. Similar nature of works means "Establishment of an Effluent treatment plant with similar biological treatment systems having Anaerobic treatment (UASB Digester) for any Dairy / Food / Distillery / Pharma/ Edible Oil & Fat Industry of Minimum 50 KLPD capacity".

#### 6.0 PRICE BID: -

Bidders are requested to fill price format as per prescribed format only given at Schedule (IV)

# 7.0 **BID VALIDITY: -**

Bid shall be valid for a period of 120 days from the date of opening of Price Bid.

#### 8.0 COST OF BIDDING: -

The Bidder shall incur all costs associated with the preparation and submission of its bid, and BKDS.in no case shall be responsible for any cost incurred by bidder.

#### 9.0 BID PRICE: -

- 9.1 Price indicated on the price schedule shall be inclusive of all taxes and other expenses. Any kind of taxes and duties or charges in addition to applicable taxes such as GST, no other charges like PACKING AND FORWARDING, FRIEGHT, INSURANCE, LOADING AND UNLOADING shall not be paid extra by the BKDS.
- 9.2 Wherever applicable Tenderers outside the State of M.P. should also quote the prevailing rate of Taxes if applicable under new GST in case of any benefit to BKDS.

### 10.0 BID CURRENCY: -

All prices shall be quoted in Indian rupees ONLY

# 11.0 SECURITY DEPOSIT

Security deposit @ 5% of each payments to the Bidder shall be kept towards security deposit and this amount will be refunded after completion of defect liability period. No interest will be paid by the BKDS on security deposit.

#### 12.0 AGREEMENT: -

Successful Bidder has to submit the non-judicial stamp paper of Rs.1000/-& sign the agreement within 10 days from the date of issue of rate acceptance letter by BKDS. If Bidder failed to execute the agreement within the specified time the E.M.D. shall be forfeited with termination of tender.

#### 13.0 GENERAL (Important) NOTE FOR INTENDING BIDDER

- 13.1 The Bidders are expected to have visited the site before filling in the rates, to assess the nature of the soil, the depth and variation of the sub-soil water and the problems that are likely to be encountered in construction or are likely to affect the design before filling in the rates.
- 13.2 After acceptance of the tender, the successful bidder shall submit 5 copies of design & drawings (Approved & Checked by BKDS approved Structural Engg. Or from faculty of Government Engineering College) of the following sets of drawings normally within15 days from the date of receipt of acceptance letter.
- (a) All detailed working drawings showing dimensions of the various components of the structure should be submitted by the successful bidder.
- (b) All detailed technical drawings of the foundations, superstructures etc. showing all the details of the reinforcement, the details of the foundations, columns, vertical walls, plasters, pathways, plinth protections, railings etc. should also be given on a large scale, for each unit of the E.T.P.
- (c) As per P.W.D. norms & design the mix of concrete in each sections or components of RCC structure, plaster, flooring etc. shall be specified & checked by the Structural Engg. Faculty of the Govt. Engg. College. The successful bidder should carefully note that no drawing or drawings with incomplete details will be accepted and the successful bidder will be responsible for any delay or loss of quality. In such circumstances the successful bidder shall be bound for the rectifications or reconstruction of the identified structures as per the decision of the BKDS. If such identified rectifications or reconstructions within the intimated time will not be carried out by the successful bidder then the contract may be terminated at any stage of the progress of works and penalty shall be imposed to

complete the balance works as per the manner decided by the BKDS.

- 13.3 Due weightage shall be given to the past experience, effectiveness, efficiency of the system with benefits and advantages etc.
- 13.4 The contractor shall arrange for insurance etc. of his people employed for erection and installation work as per ESIC act workman compensation and any other provision to meet statutory requirement of various labour Act / Rules. In case of accident to any of the workers during the period of installation, BKDS shall not bear any liability what so ever the entire responsibility primary and final in this respect will be that of the successful bidder and may ask end customer's view about implementation and overall effectiveness of complete system.
- 13.5 The Chief Executive Officer of BKDS. reserves the right to accept or reject any / or all the tenders without assigning any reason, whatsoever. No correspondence in this regard shall be entertained by Bundelkhand Sahakari Dugdh Sangh Maryadit, Sagar.
- 13.6 For any technical clarification / interpretation decision of C.E.O., BKDS shall be final. Also, it should be clearly understood that in the event of successful Bidder failing to accept and execute the work order, decision of the Chief Executive Officer, Bundelkhand Sahakari Dugdha Sangh, in this respect will be final and binding on the Bidder.

# 14.0 <u>COMPLETENESS</u>

- 14.1 It is not the intent to specify completely herein all details of the work. Nevertheless, workshall be complete and operative in all aspects.
- 14.2 Any material or accessories which may not have been specifically mentioned but which are necessary for usual, satisfactory and trouble-free operation of the system, shall be furnished by the contractor without any extra charge to BKDS>

#### 15.0 PROJECT COMPLETION SCHEDULE

(11) Time of completion of all the ETP work shall be 9Months, including rainy season from the date of signing of the agreement.

# 16.0 PENALTY ON LATE COMPLETION/LIQUIDATED DAMAGES

The time period to complete the work should be strictly adhered. In case they are not followed or in case of delay in execution or non-execution of the order, the BKDS reserves the right either to cancel the order and make alternative arrangement from other sources at the risk and cost and expenses of the contractor. In case the contractor delays in completion of the work as per schedules, the following liquidated damages will be charged as per BKDS directives: -

| S.NO | DURATION OF DELAY | LIQUIDATED<br>DAMAGE |
|------|-------------------|----------------------|
| 1.   | 1 Month           | 1%                   |
| 2.   | 1 to 2 months     | 2%                   |
| 3.   | Beyond 2 months   | 5%                   |

# **CO-ORDINATION OF PROJECT**

The contractor shall co-ordinate with BKDS. officers/ Engineers and/or Consultant at site for execution of project to monitor quality of work & fulfil the design criteria & specification of E.T.P. provided in bid.

# 18.0 PROTECTION TO EQUIPMENTS

The contractor shall effectively protect supplied equipment's/ material at his own expense, such work, equipment or material as may be liable to damage, theft or tampering during erection. Insurance charges etc. for the above shall be borne by the contractor till handing over of complete installation of E.T.P. to the BKDS as per terms and conditions of contract

#### 19.0 GUARANTEE / DEFECT LIABILITY PERIOD: -

- 19.1 The defect liability period shall be 18 months from the date of the successful commissioning of all the component of the E.T.P.
- 19.2 Successful commissioning date of E.T.P. will be comprises of not only the satisfactorily completion & working of all components of E.T.P. but also includes the 1<sup>st</sup>treated Sewage sample report from MPPCB /MOEF Laboratory with respect to standards laid down by MPPCB under IS:2490.
- 19.3 Any defect / defects found during the defect liability period shall be rectified / replaced by the contractor within time period specified as may be necessary for the proper running of plant at his own cost on providing intimation by the BKDS.
- 19.4 On non-compliance of clause 19.3 as mentioned above the BKDS will do the rectification/replacement needed to run the plant departmentally / through engaging some other agency / agencies and the cost of it will be recovered from the security deposit or by encashmentof amount from the Bank Guarantee.

# 20.0 FORCE MAJEURE

20.1 The terms and conditions mutually agreed upon shall be subject to the BKDS shall be considered in default in performance of its obligations here under, if such performance is prevented or delayed because of war, hostilities, revolution, civil commotion, strike, epidemic, accident, fire, wind, flood, earthquake or because of any law, order proclamation, regulation or ordinance of any government or any nature, beyond the reasonable control of the party affected. Should one or both of the parties be prevented from fulfilling his/their contractual obligations by state of force majeure lasting continuously for a period of six months, the two parties should consult with each other regarding the future implementation of the contract of the purchase /work order.

### 21.0 ARBITRATION

- 21.1 For all the matters of dispute between the successful Bidder and Bundelkhand Sahakari Dugdha Sangh, are submitted to a arbitrator as per Arbitration Act-1996.
- 21.2 For all judicial issues the venue of jurisdiction shall be Sagar (M.P.)

#### 22.0 PAYMENT CONDITIONS: -

The payment for various items under the schedule will be made based on the work completed satisfactory. For payment under schedule the payment conditions will be under: -

Stage No. (1): - Submission of PERT chart for project planning, schedules of proposed work and executional drawings of ETP Approved by structural Engg Faculty of Govt. Engg College& accepted by BKDS & also on submission of Bank Guarantee of equal amount in favour of C.E.O., BKDS for aperiod of 12 months = 20% of accepted price will be released.

Stage No. (2): - On arrival of all the plant equipment's and related components at site including Satisfactory completion of all civil constructions = 30% of the accepted price of contract value will be released.

Stage No. (3): - After satisfactory commissioning of the plant and its approval by

BKDS. and submission of approved treated water sample report from MPPCB = 40% of the accepted price will be released.

Stage No. (4): - After successful completion of the work and submission of Bank Guarantee Of 10% of the accepted price of the contract in favor of the C.E.O., BKDS for a period of 18 months from the date of successful completion of work of E.T.P = 10% of the accepted price will be released.

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# Design, Supply, Installation, Testing and Commissioning of Packaged Type Effluent Treatment Plant – 15 KLD

**Basis of Design** 

# **OBJECT:**

The proposed Effluent Treatment Plant (ETP) has been designed to treat 15 KL/Day Effluent discharge from dairy waste to prescribed outlet standards .. This proposal is for design, construction, installation and commissioning of the system on turnkey basis except civil work.

# The proposed ETP is designed to treat sewage with following characteristics:

ETP 15 KLD

Operating Hours : 20 Mode of Operation : Semi-Automatic

**Input Quality Considered:** 

| S.No. | Description/Parameter    | UOM         | Value     | MPPCB limit    |
|-------|--------------------------|-------------|-----------|----------------|
| 1.    | Flow                     | Cu.mt. /day | 20        |                |
| 2.    | pH                       |             | 6-8       | 6.5-9          |
| 3.    | Total Solids             | Ppm         | 3000      | Less than 2200 |
| 4.    | Suspended Solids         | Ppm         | 1000      | Less than 100  |
| 5.    | Total Dissolved Solids   | Ppm         | 2000      | Less than 2100 |
| 6.    | Biological Oxygen Demand | Ppm         | 1200-1500 | Less than 30   |
| 7.    | Chemical Oxygen Demand   | Ppm         | 2000-2500 | Less than 250  |
| 8.    | Oil, Grease and Fat      | Ppm         | 350       | Less than 10   |

# **Output Quality Considered:**

| S.No. | Description/Parameter    | UOM         | Value          | limit          |
|-------|--------------------------|-------------|----------------|----------------|
| 1.    | Flow                     | Cu.mt. /day | 16             |                |
| 2.    | pН                       |             | 6.5-8          | 6.5-9          |
| 3.    | Total Solids             | Ppm         | Less than 2200 | Less than 2200 |
| 4.    | Suspended Solids         | Ppm         | Less than 100  | Less than 100  |
| 5.    | Total Dissolved Solids   | Ppm         | Less than 2100 | Less than 2100 |
| 6.    | Biological Oxygen Demand | Ppm         | Less than 30   | Less than 30   |
| 7.    | Chemical Oxygen Demand   | Ppm         | Less than 250  | Less than 250  |
| 8.    | Oil, Grease and Fat      | Ppm         | Less than 10   | Less than 10   |

**Battery Limit** 

Inlet: At the inlet ETP's Bar Screen Chamber Water: At one point within the battery limit

Electricity: At one point within the battery limit Outlet: At the outlet of Discharge from TWT

# **Treatment Scheme**

The treatment scheme for the ETP plant will consist of following main equipment's

→Bar Screen Chamber → Equalization cum Collection Tank → Coagulation Tank → Flocculation Tank → Primary Settling tank → MBBR Reactor → Secondary Settler Tank → Tertiary Feed Tank → Disinfection Unit → Pressure Sand Filter → Activated Carbon Filter

Sludge Handling Unit

→Sludge Tube settler →Sludge Drying beds

#### **Uses of Treated Water:**

• Reuse in Gardening, Flushing

# **Process Description**

| Bar Screen              | The wastewater coming to the plant is mainly generated through the Dairy Unit. This contains         |  |  |
|-------------------------|--|--|--|
|                         | Fats, oil, sand and debris etc. This water is initially fed to a bar screen. The larger impurities   |  |  |
|                         | like plastics are trapped in the bar screen.   |  |  |
| Equalization Tank       | The wastewater from the Screening is collected in the Equalization Tank to homogenize the            |  |  |
| Equalization Falik      | Effluent parameters then it is pumped to further process.  |  |  |
| Coagulation Tank        | Water from collection tank will enter into Coagulation Chamber where coagulant agent will be         |  |  |
| Coagulation Talik       | added for chemical reaction to produce the macro flocks.   |  |  |
| Flocculation Tank       | Water from Coagulation Chamber will enter into Flocculation Zone where Flocculent agent &            |  |  |
| Troccatation Tank       | poly dosing will be added to produce the micro floces that will make sludge separation easy.         |  |  |
|                         | Water then is fed to the specially design settler which is called Tube settler. The sludge flocks    |  |  |
| Primary Tube Settler    | settle in the conical bottom and the clear liquid overflows from the top of the tube settler. The    |  |  |
|                         | clear liquid from the tube settler enters into the chlorine contact tank                             |  |  |
| Tertiary Feed Tank      | Water gets stored here and This tank also provides feed for tertiary treatment.                      |  |  |
| Multi-grade Filter      | Water From the chlorine contact tank it is pumped to the Multi grade sand Filter and Activated       |  |  |
|                         | Carbon filter for the final filtration. The multi-grade filter is used to remove the total suspended |  |  |
|                         | solids, dirt, iron and reduce silt and to provide TSS free water                                     |  |  |
| Activated Carbon Filter | The ACF (Activated Carbon Filter) is used to further polish the water and to remove the total        |  |  |
|                         | color, smell, odor, from the water.  |  |  |
| Sludge Handling Unit    | Slurry from Tube settler tank will be pumped to sludge drying bed which will be filled with          |  |  |
|                         | sand media which separates heavy sludge particle from the slurry and the supernatant will be         |  |  |
|                         | flowed to Equalization tank through gravity. In large capacity plant slurry will be pumped to        |  |  |
|                         | sludge holding tank to further thicken it, then it will be feed to centrifuge/filter press through   |  |  |
|                         | screw pump to separate water from slurry to make sludge in dry cake form.                            |  |  |
|                         |  |  |  |

# **Schedule of Quantities of Electro-Mechanical Equipments**

| SN         | Item                         | Specification   |                             | Unit  | Quantity  |
|------------|------------------------------|-----------------|-----------------------------|-------|-----------|
| A          | <b>Mechanical Equipments</b> |                 |                             |       |           |
| 1.0        | Bar Screen                   | Size            | 250 x 250                   | Each  | 2         |
| 1.0        | bar Screen                   | MOC             | SS 304                      | Each  | 2         |
|            |                              | Type            | Submersible                 |       |           |
|            |                              | Flow            | 0. 75 m3/hr                 |       |           |
| 2.0        | Raw Sewage Transfer          | Head            | 8-10 meter                  | Б.1   | 1 1.      |
| 2.0        | Pumps<br>for Equalization    | Solid Handling  | 32 mm                       | Each  | 1 working |
|            | Tor Equalization             | MOC             | CI                          |       |           |
|            |                              | Voltage         | $415 \pm 6\% 50 \text{ Hz}$ |       |           |
|            |                              | Volume          | $0.25 \text{ M}^3$          |       |           |
| 3.0        | Coagulation Tank             | MOC             | MSEP                        | No.   | 1         |
|            |                              | Volume          | $0.25 \text{ M}^3$          |       |           |
| 4.0        | Flocculation Tank            | MOC             | MSEP                        | No.   | 1         |
|            |                              | Surface Area    | $0.5 \text{ M}^2$           |       |           |
| 5.0        | Primary Settling tank        | MOC             | MSEP                        | No.   | 1         |
|            |                              | Volume          | 1.5 M <sup>3</sup>          |       |           |
| 6.0        | Clarified Water Tank         | MOC             | MSEP                        | No.   | 1         |
|            |                              | Flow            | 10.0 m3/hr                  |       |           |
|            |                              | Head            | 0.4 kg/cm2                  |       | 1 working |
| <b>7.0</b> | Twin Lobe Air Blower         | MOC             | CI                          | Each  |           |
|            |                              | RPM             | 1500                        |       |           |
|            |                              | Header          | GI Pipe                     |       | 1         |
| 7.1        | Blower Header & Inter        | Sub Header      | GI Pipe                     | Lot   |           |
|            | connecting Piping to EQT     | Valves          | Ball/Butter Type            |       |           |
|            |                              | Туре            | Disc                        |       | 1         |
| 7.0        | Air Diffusers                | Bubble          | Coarse                      | T - 4 |           |
| 7.2        | for EQT                      | MOC             | EPDM                        | Lot   |           |
|            |                              | Air Flow        | 4-6 m3/diffuser             |       |           |
| 7.3        | Instruments Air              | Safety Valve    | 2 No                        | Lot   | 1         |
| 7.5        | Instruments An               | Pressure Gauge  | 1 Lot                       | Lot   | 1         |
|            |                              | Size            | 750 mm                      |       |           |
| 8.0        | Tube Settler Media           | Color           | Black                       | Lot   | 1         |
| 0.0        | Tube Settler Media           | MOC             | PVC                         | Lot   | 1         |
|            |                              | Structure       | V type                      |       |           |
|            |                              | Shape           | Trapezoidal Cylindrical     |       |           |
| 9.0        | .0 MBBR Media                | Specific weight | $0.47 \text{ kg/m}^2$       | Lot   | 1         |
|            |                              | Density         | 0.93 gm/cc                  |       |           |
|            |                              | Capacity        | 0.25 m <sup>3</sup> /hr     |       |           |
|            |                              | MOC             | CI                          |       | 1 working |
| 10.0       | Sludge Transfer Pump         | Filter Media    | PP/ Polyester               | Each  |           |
|            |                              | Handling        | Manual                      |       |           |
| 11.0       | Alum, Lime & Poly Dosing     | 5               |                             |       |           |

| SN   | Item                           | Specification       |                                     | Unit  | Quantity  |
|------|--------------------------------|---------------------|-------------------------------------|-------|-----------|
|      | Systems                        |                     |                                     |       |           |
| 10.1 | Daving Barrer                  | Capacity            | 0-6 LPH                             | E1.   | 2         |
| 12.1 | Dosing Pump                    | Type                | Diaphragm                           | Each  | 3         |
| 10.0 | 12.2 D : T I                   | Capacity            | 50 Liters                           | Б 1   | _         |
| 12.2 | Dosing Tank                    | MOC                 | HDPE                                | Each  | 3         |
| 13.0 | <b>Chlorine Dosing Systems</b> |                     |                                     |       |           |
| 12.1 | D ' D                          | Capacity            | 0-4 LPH                             | Б 1   | 1         |
| 13.1 | Dosing Pump                    | Туре                | Diaphragm                           | Each  | 1         |
| 12.2 | D . T .                        | Capacity            | 50 Liters                           | г 1   | 1         |
| 13.2 | Dosing Tank                    | MOC                 | HDPE                                | Each  | 1         |
| 14.0 | Agitators for Reaction Tanks   | MOC                 | MSEP                                | Each  | 2         |
|      |                                | Туре                | Horizontal Centrifugal              |       |           |
| 4    |                                | Flow                | 0.75 m <sup>3</sup> /hr             |       |           |
| 15.0 | Filter Feed Pump               | Head                | 20-25 meter                         | Each  | 1 working |
|      |                                | MOC                 | CI                                  |       |           |
| 16.0 | Multi-grade Filter             |                     |                                     |       |           |
|      | 3                              | MOC                 | FRP                                 |       |           |
|      |                                | Diameter            | 10 Inches                           |       |           |
|      | Pressure Vessel                | HOS                 | 54 Inches                           | - I   | 1         |
| 16.1 |                                | Opening             | Тор                                 | Each  |           |
|      |                                | Working Pressure    | 3.0 kg/cm <sup>2</sup>              |       |           |
|      |                                | Filtration Velocity | 15 m <sup>3</sup> /h/m <sup>2</sup> |       |           |
| 16.2 | Valve                          | Туре                | Multiport                           | East  | 1         |
| 10.2 | vaive                          | Size                | 15 mm                               | Each  | 1         |
|      |                                | Gravels             |                                     |       |           |
| 162  | Media                          | Pebbles             | 700                                 | Lot   | 1         |
| 16.3 | Media                          | Quartz Sand         | -700 mm-                            | Lot   | 1         |
|      |                                | Bed depth           |                                     |       |           |
| 16.4 | Header Pipeline & Flange       | MOC                 | uPVC                                | Lot   | 1         |
| 10.4 | Header Fipeline & Flange       | Test Pressure       | 10 kg/cm <sup>2</sup>               | Lot   | 1         |
|      |                                | Range               | 0-7 bar                             |       |           |
| 16.5 | Pressure Gauges                | Dial Size           | 2 inches                            | Each  | 1         |
|      |                                | Type                | Bourdon                             |       |           |
| 17.0 | Activated Carbon Filter        |                     |                                     |       |           |
|      |                                | MOC                 | FRP                                 |       |           |
| 17.1 |                                | Diameter            | 10 Inches                           |       | 1         |
|      | Pressure Vessel                | HOS                 | 54 Inches                           | Each  |           |
|      | Tressure vesser                | Opening             | Тор                                 | Lacii |           |
|      |                                | Working Pressure    | 3.0 kg/cm <sup>2</sup>              |       |           |
|      |                                | Filtration Velocity | $14 \text{ m}^3/\text{h/m}^2$       |       |           |
| 17.2 | Valve                          | Type                | Multiport                           | Each  | 1         |
| 17.2 | vaive                          | Size                | 15 mm                               | Eacil | 1         |
| 17.3 | Media                          | Activated Carbon    | -700 mm-                            | Lot   | 1         |

| SN   | Item                            | Specification   |                                | Unit | Quantity |
|------|---------------------------------|---|--------------------------------|------|----------|
|      |                                 | Pebbles   |                                |      |          |
|      |                                 | Gravels   |                                |      |          |
|      |                                 | Bed depth   |                                |      |          |
| 17.4 | Header Pipeline & Flange        | MOC   | uPVC                           | Lot  | 1        |
| 17.4 | Treatter Tipenne & Flange       | Test Pressure   | $10 \text{ kg/cm}^2$           | Lot  | 1        |
|      |                                 | Range   | 0-7 bar                        |      |          |
| 18.0 | Pressure Gauges                 | Dial Size   | 2 inches                       | Each | 1        |
|      |                                 | Type  | Bourdon                        |      |          |
| 19.0 | 10.0 Into Connecting Dining     | MOC   | MS/uPVC                        | Lot  | 1        |
| 17.0 | <b>Inter Connecting Piping</b>  | Test Pressure   | 10 kg/cm2                      | Lot  |          |
|      |                                 | Complete Starters, Overload relays, Single Phase                    |                                | Set  | 1        |
|      | <b>Electrical Control Panel</b> | preventer for pump  ➤ Voltmeter, Ammeter, MCB's , indicating lights |                                |      |          |
| 20.0 |                                 | > Push Buttons  |                                |      |          |
|      |                                 |   |                                |      |          |
|      |                                 | Rocker Switches for Dozers  |                                |      |          |
| 21.0 | Wining & Cable trees            |   | Incomers, Auto-Manual Switches |      | 1        |
| 21.0 | Wiring & Cable tray             | Suitable as per req   | uirement                       | Lot  | 1        |
|      |                                 | Flow meter  |                                |      |          |
| 22.0 | <b>Control Equipments</b>       | pH Meter  | -Suitable- Lot                 |      | 1        |
|      |                                 | Level Switches  |                                |      |          |
|      |                                 |   |                                |      |          |

|    |                          |  | List of Civil Work |
|----|--------------------------|--|--------------------|
| 1. | Bar Screen Cham          | oer  | 1 No.              |
|    | Size                     | 0.6 x 0.6 x 1.0 meters (RCC)   |                    |
| 2. | Oil & grease Tank        |  | 1 No.              |
|    | Capacity                 | $0.25 \text{ m}^3$   |                    |
| 3. | <b>Equalization Tank</b> |  | 1 No.              |
|    | Capacity                 | 5.0 m <sup>3</sup>   |                    |
| 4. | Sludge Drying Bed        | is a second seco | 2 No.              |
|    | Capacity                 | 1 m <sup>3</sup> (RCC)   | 21100              |
| 5. | Plant Room, Foun         | dation for equipments, shed etc.   | 1 Lot.             |

|                            |                          |                        | List of Makes           |
|----------------------------|--------------------------|------------------------|-------------------------|
| Item Description           | Makes                    | Item Description       | Makes                   |
| Sewage Submersible<br>Pump | Kirloskar /CRI /Equiv.   | MS/GI Pipe             | Jindal/ Tata/ Surya     |
| Centrifugal Pump           | Kirloskar/ CRI/ Equiv    | Piping UPVC/CPVC       | Astral/ Supreme/ Prince |
| Filter Feed Pumps          | Kirloskar/ CRI/Equiv.    | Butterfly Valve        | Sant/ Zoloto/ Leader    |
| Sludge Recycle Pump        | Kirloskar/ Wilo          | Fine/ Coarse Diffusers | BWS Approved            |
| Dosing Pump                | Edose/ Initiative/ seko  | Pressure Gauges        | H Guru                  |
| FRP Pressure Vessel        | Pentair/ Aventura/Equiv. | MCC Panel              | BWS Approved            |
| pH Meter                   | Aster/ Reputed           | Switch Gear            | L&T/ Schneider/ reputed |
| Bar Screen (SS/MS)         | Bimal Water Solutions    | Level Switches/ Gauges | Reputed                 |
| Fabricated Tanks           | Bimal Water Solutions    |                        |                         |
| Tube Deck /FAB Media       | BWS Approved             |                        |                         |
| Air Blower                 | Everest/ Airvac/ Equiv   |                        | _                       |

# Scope Matrix-Electrical

| CNI | Description                                    | Su             | ipply    | Erection & Commissioning |           |
|-----|--|----------------|----------|--------------------------|-----------|
| SN  | Description                                    | By<br>Supplier | By Owner | By<br>Supplier           | By Owner  |
| 1   | Motors as per Equipment list                   | $\sqrt{}$      | X        |                          | X         |
| 2   | Local control Panel                            |                | X        | X                        | X         |
| 3   | Power Feeder & Distribution                    | X              | √        | X                        | $\sqrt{}$ |
| 4   | Motor Control Center (MCC)                     |                | X        | √                        | X         |
| 5   | Local Push Button Station                      | $\checkmark$   | X        |                          | X         |
| 6   | Incoming Power Cable to MCC                    |                | X        | X                        | X         |
| 7   | Power Cable from MCC to Motors                 |                | X        |                          | X         |
| 8   | Control cables from MCC to LPBS                |                | X        |                          | X         |
| 9   | Control Cables from MCC to Local Control Panel |                | X        |                          | X         |
| 10  | Field Cabling up to field junction boxes       |                | X        |                          | X         |
| 11  | Glands and Lugs                                |                | X        |                          | X         |
| 12  | GI Cable Trays                                 |                | X        |                          | X         |
| 13  | Structural steel for cable tray supports       |                | X        |                          | X         |
| 14  | Plant Earthing                                 |                | X        | X                        | X         |
| 15  | Plant illumination System                      | V              | X        | X                        | X         |
|     | Legends: √: Yes X: No                          | <u> </u>       |          | I                        |           |

# Terms & Condition

# **Scope of Work**

Design Design is based on the standard parameter

Supply Supply of Mechanical equipment, Electrical, piping as per given details with civil works

Erection Erection of the units under our scope of Supply

Commissioning Commissioning of the units of Effluent Treatment Plant

- ♣ Incoming with earthling Feeder Connection to the Panel and Energisation of the Panel
- ♣ Treated water pipeline beyond the outlet of ACF
- Civil work in supplier Scope
- NOC from any Govt. body if require
- Boarding, lodging, to and fro travelling expenses of erection and commissioning team
- Loading and unloading at site

# our Scope

- ♣ Approach to site & storage for equipment's during the erection work
- ♣ Power / Lighting / Water at the site of work on 24 hrs basis.

# Design, Supply, Installation, Testing and Commissioning of Packaged Type Effluent Treatment Plant – 25 KLD

#### **OBJECT:**

The proposed Effluent Treatment Plant (ETP) has been designed to treat 25 KL/Day Effluent discharge from dairy waste to prescribed outlet standards. This proposal is for design, construction, installation and commissioning of the system on turnkey basis except civil work.

# The proposed ETP is designed to treat sewage with following characteristics:

ETP 25 KLD

Operating Hours : 20 Mode of Operation : Semi-Automatic

Input Quality Considered:-

| S.No. | Description/Parameter    | UOM         | Value     | MPPCB limit    |
|-------|--------------------------|-------------|-----------|----------------|
| 1.    | Flow                     | Cu.mt. /day | 20        |                |
| 2.    | pH                       |             | 6-8       | 6.5-9          |
| 3.    | Total Solids             | Ppm         | 3000      | Less than 2200 |
| 4.    | Suspended Solids         | Ppm         | 1000      | Less than 100  |
| 5.    | Total Dissolved Solids   | Ppm         | 2000      | Less than 2100 |
| 6.    | Biological Oxygen Demand | Ppm         | 1200-1500 | Less than 30   |
| 7.    | Chemical Oxygen Demand   | Ppm         | 2000-2500 | Less than 250  |
| 8.    | Oil, Grease and Fat      | Ppm         | 350       | Less than 10   |

Output Quality Considered: -

| S.No. | Description/Parameter    | UOM         | Value          | limit          |
|-------|--------------------------|-------------|----------------|----------------|
| 1.    | Flow                     | Cu.mt. /day | 16             |                |
| 2.    | pН                       |             | 6.5-8          | 6.5-9          |
| 3.    | Total Solids             | Ppm         | Less than 2200 | Less than 2200 |
| 4.    | Suspended Solids         | Ppm         | Less than 100  | Less than 100  |
| 5.    | Total Dissolved Solids   | Ppm         | Less than 2100 | Less than 2100 |
| 6.    | Biological Oxygen Demand | Ppm         | Less than 30   | Less than 30   |
| 7.    | Chemical Oxygen Demand   | Ppm         | Less than 250  | Less than 250  |
| 8.    | Oil, Grease and Fat      | Ppm         | Less than 10   | Less than 10   |

**Battery Limit** 

Inlet: At the inlet ETP's Bar Screen Chamber Water: At one point within the battery limit

Electricity: At one point within the battery limit Outlet: At the outlet of Discharge from TWT

# **Treatment Scheme**

The treatment scheme for the ETP plant will consist of following main equipments

→Bar Screen Chamber → Equalization cum Collection Tank → Coagulation Tank → Flocculation Tank → Primary Settling tank → MBBR Reactor → Secondary Settler Tank → Tertiary Feed Tank → Disinfection Unit → Pressure Sand Filter → Activated Carbon Filter

Sludge Handling Unit

→Sludge Tube settler →Sludge Drying beds

# **Uses of Treated Water:**

• Reuse in Gardening, Flushing

# **Process Description**

| Bar Screen              | The wastewater coming to the plant is mainly generated through the Dairy Unit. This contains         |
|-------------------------|--|
|                         | Fats, oil, sand and debris etc. This water is initially fed to a bar screen. The larger impurities   |
|                         | like plastics are trapped in the bar screen.   |
| Equalization Tank       | The wastewater from the Screening is collected in the Equalization Tank to homogenize the            |
| Equalization Talik      | Effluent parameters then it is pumped to further process.  |
| Coagulation Tank        | Water from collection tank will enter into Coagulation Chamber where coagulant agent will be         |
| Coagulation Tank        | added for chemical reaction to produce the macro flocks.   |
| Flocculation Tank       | Water from Coagulation Chamber will enter into Flocculation Zone where Flocculent agent &            |
| 1 locediation 1 ank     | poly dosing will be added to produce the micro floces that will make sludge separation easy.         |
|                         | Water then is fed to the specially design settler which is called Tube settler. The sludge flocks    |
| Primary Tube Settler    | settles in the conical bottom and the clear liquid overflows from the top of the tube settler. The   |
|                         | clear liquid from the tube settler enters into the chlorine contact tank                             |
| Tertiary Feed Tank      | Water gets stored here and This tank also provides feed for tertiary treatment.                      |
| Multi-grade Filter      | Water From the chlorine contact tank it is pumped to the Multi grade sand Filter and Activated       |
|                         | Carbon filter for the final filtration. The multi-grade filter is used to remove the total suspended |
|                         | solids, dirt, iron and reduce silt and to provide TSS free water                                     |
| Activated Carbon Filter | The ACF (Activated Carbon Filter) is used to further polish the water and to remove the total        |
|                         | color, smell, odor, from the water.  |
| Sludge Handling Unit    | Slurry from Tube settler tank will be pumped to sludge drying bed which will be filled with          |
|                         | sand media which separates heavy sludge particle from the slurry and the supernatant will be         |
|                         | flowed to Equalization tank through gravity. In large capacity plant slurry will be pumped to        |
|                         | sludge holding tank to further thicken it, then it will be feed to centrifuge/filter press through   |
|                         | screw pump to separate water from slurry to make sludge in dry cake form.                            |

# **Quantities of Electro-Mechanical Equipments**

| SN           | Item   | Specification   |                         | Unit          | Quantity  |
|--------------|--|-----------------|-------------------------|---------------|-----------|
| A            | <b>Mechanical Equipments</b>   |                 |                         |               |           |
| 1.0          | Bar Screen   | Size            | 250 x 250               | Each          | 1         |
| 1.0          | bar screen   | MOC             | MS                      | Each          | 1         |
|              |  | Type            | Submersible             |               |           |
|              |  | Flow            | 1.25 m3/hr              |               |           |
| 2.0          | Raw Sewage Transfer  | Head            | 8-10 meter              | F1.           | 1         |
| 2.0          | Pumps<br>for Equalization  | Solid Handling  | 32 mm                   | Each          | 1 working |
|              | 101 Equalization   | MOC             | CI                      |               |           |
|              |  | Voltage         | 415 ± 6% 50 Hz          |               |           |
| 2.0          |  | Volume          | $0.45 \text{ M}^3$      | <b>&gt;</b> T | 1         |
| 3.0          | Coagulation Tank   | MOC             | MSEP                    | No.           | 1         |
| 4.0          |  | Volume          | 0.45 M <sup>3</sup>     |               |           |
| 4.0          | Flocculation Tank  | MOC             | MSEP                    | No.           | 1         |
|              |  | Surface Area    | $0.5 \text{ M}^2$       |               | _         |
| 5.0          | Primary Settling tank  | MOC             | MSEP                    | No.           | 1         |
|              |  | Volume          | 1.8 M <sup>3</sup>      |               | _         |
| 6.0          | Clarified Water Tank   | MOC             | MSEP                    | No.           | 1         |
|              |  | Flow            | 30.0 m3/hr              |               |           |
| <b>-</b> 0   |  | Head            | 0.4 kg/cm2              |               |           |
| 7.0          | 7.0 Twin Lobe Air Blower   | MOC             | CI                      | Each          | 1 working |
|              |  | RPM             | 1500                    |               |           |
|              | Blower Header & Inter<br>connecting Piping to EQT                    | Header          | GI Pipe                 |               | 1         |
| 7.1          |  | Sub Header      | GI Pipe                 | Lot           |           |
|              | connecting 1 iping to EQ1  | Valves          | Ball/Butter Type        |               |           |
|              |  | Type            | Disc                    |               |           |
| 7.2          | Air Diffusers  | Bubble          | Coarse                  | Lot           | 1         |
| / <b>. 2</b> | Twin Lobe Air Blower  Blower Header & Inter connecting Piping to EQT | MOC EPDM        |                         |               | 1         |
|              |  | Air Flow        | 4-6 m3/diffuser         |               |           |
| 7.3          | Instruments Air  | Safety Valve    | 2 No                    | Lot           | 1         |
|              |  | Pressure Gauge  | 1 Lot                   |               |           |
|              |  | Size            | 750 mm                  |               |           |
| 8.0          | Tube Settler Media   | Color           | Black                   | Lot           | 1         |
|              |  | MOC             | PVC                     |               |           |
|              |  | Structure       | V type                  |               |           |
|              |  | Shape           | Trapezoidal Cylindrical |               |           |
| 9.0          | MBBR Media   | Specific weight | $0.47 \text{ kg/m}^2$   | Lot           | 1         |
|              |  | Density         | 0.93 gm/cc              |               |           |
|              |  | Capacity        | 0.25 m <sup>3</sup> /hr |               |           |
| 10.0         | Sludge Transfer Pump   | MOC             | CI                      | Each          | 1 working |
| 10.0         | Studge Transfer Tump   | Filter Media    | PP/ Polyester           | Lacii         | 1 WOIKING |
|              |  | Handling        | Manual                  |               |           |
| 11.0         | Alum, Lime & Poly Dosing   |                 |                         |               |           |

| SN   | Item                            | Specification                     |                                     | Unit  | Quantity  |
|------|---------------------------------|-----------------------------------|-------------------------------------|-------|-----------|
|      | Systems                         |                                   |                                     |       |           |
| 10.1 | Daving Barrer                   | Capacity                          | 0-6 LPH                             | E1-   | 2         |
| 12.1 | Dosing Pump                     | Туре                              | Diaphragm                           | Each  | 3         |
| 10.0 | D . T .                         | Capacity                          | 50 Liters                           | г 1   | 2         |
| 12.2 | Dosing Tank                     | MOC                               | HDPE                                | Each  | 3         |
| 13.0 | <b>Chlorine Dosing Systems</b>  |                                   |                                     |       |           |
| 10.1 | D : D                           | Capacity                          | 0-4 LPH                             | Б 1   | 1         |
| 13.1 | Dosing Pump                     | Type Diaphragm Capacity 50 Liters |                                     | Each  | 1         |
| 12.0 | D . T . I                       |                                   | 50 Liters                           | Б 1   | 1         |
| 13.2 | Dosing Tank                     | MOC                               | HDPE                                | Each  | 1         |
| 14.0 | Agitators for Reaction<br>Tanks | MOC                               | MSEP                                | Each  | 2         |
|      |                                 | Туре                              | Horizontal Centrifugal              |       |           |
|      |                                 | Flow                              | 0.75 m <sup>3</sup> /hr             |       |           |
| 15.0 | Filter Feed Pump                | Head                              | 20-25 meter                         | Each  | 1 working |
|      |                                 | MOC                               | CI                                  |       |           |
| 16.0 | Multi-grade Filter              |                                   |                                     |       |           |
|      | 8                               | MOC                               | FRP                                 |       |           |
|      |                                 | Diameter                          | 13 Inches                           |       | 1         |
|      |                                 | HOS                               | 54 Inches                           | -     |           |
| 16.1 | 6.1 Pressure Vessel             | Opening                           | Тор                                 | Each  |           |
|      |                                 | Working Pressure                  | 3.0 kg/cm <sup>2</sup>              |       |           |
|      |                                 | Filtration Velocity               | 16 m <sup>3</sup> /h/m <sup>2</sup> |       |           |
| 160  | ¥7. 1                           | Туре                              | Multiport                           | Б 1   |           |
| 16.2 | Valve                           | Size                              | 15 mm                               | Each  | 1         |
|      |                                 | Gravels                           |                                     |       |           |
| 160  | 26.11                           | Pebbles                           | 700                                 | Lot   | 1         |
| 16.3 | Media                           | Quartz Sand                       | -700 mm-                            |       |           |
|      |                                 | Bed depth                         |                                     |       |           |
| 164  | H 1 P' 1' 0 Fl                  | MOC                               | uPVC                                | T . 4 | 1         |
| 16.4 | Header Pipeline & Flange        | Test Pressure                     | 10 kg/cm <sup>2</sup>               | Lot   | 1         |
|      |                                 | Range                             | 0-7 bar                             |       |           |
| 16.5 | Pressure Gauges                 | Dial Size                         | 2 inches                            | Each  | 1         |
|      |                                 | Type                              | Bourdon                             |       |           |
| 17.0 | Activated Carbon Filter         |                                   |                                     |       |           |
|      |                                 | MOC                               | FRP                                 |       |           |
|      |                                 | Diameter                          | 13 Inches                           |       |           |
| 17.1 | Pressure Vessel                 | HOS                               | 54 Inches                           | Fach  | 1         |
| 1/.1 | riessure vessei                 | Opening                           | Тор                                 | Each  |           |
|      |                                 | Working Pressure                  | 3.0 kg/cm <sup>2</sup>              |       |           |
|      |                                 | Filtration Velocity               | $15$ m $^3$ /h/m $^2$               |       |           |
| 17.2 | Valva                           | Type                              | Multiport                           | E1:   | 1         |
| 17.2 | Valve                           | Size                              | 15 mm                               | Each  | 1         |
| 17.3 | Media                           | Activated Carbon                  | -700 mm-                            | Lot   | 1         |

| SN   | Item                            | Specification   |                       | Unit | Quantity |
|------|---------------------------------|---|-----------------------|------|----------|
|      |                                 | Pebbles   |                       |      |          |
|      |                                 | Gravels   |                       |      |          |
|      |                                 | Bed depth   |                       |      |          |
| 17.4 | Haaday Dinalina & Flanca        | MOC   | uPVC                  | Lot  | 1        |
| 17.4 | Header Pipeline & Flange        | Test Pressure   | 10 kg/cm <sup>2</sup> | Lot  | 1        |
|      |                                 | Range   | 0-7 bar               |      |          |
| 18.0 | Pressure Gauges                 | Dial Size   | 2 inches              | Each | 1        |
|      |                                 | Type  | Bourdon               |      |          |
| 19.0 | Inton Connecting Dining         | MOC   | uPVC                  | Lot  | 1        |
| 19.0 | <b>Inter Connecting Piping</b>  | Test Pressure   | 10 kg/cm2             | Lot  | 1        |
|      |                                 | <ul> <li>Complete Starters, Overload relays, Single Phase<br/>preventer for pump</li> </ul> |                       | Set  | 1        |
| 20.0 |                                 | ➤ Voltmeter, Ammeter, MCB's, indicating lights  |                       |      |          |
| 20.0 | <b>Electrical Control Panel</b> | > Push Buttons  |                       |      |          |
|      |                                 | Rocker Switches for Dozers  |                       |      |          |
|      |                                 | ➤ Incomers, Auto-M  | anual Switches        |      |          |
| 21.0 | Wiring & Cable tray             | Suitable as per req   | uirement              | Lot  | 1        |
|      |                                 | Flow meter  |                       |      |          |
| 22.0 | Control Equipment's             | pH Meter  | -Suitable-            | Lot  | 1        |
|      |                                 | Level Switches  |                       |      |          |
|      |                                 |   |                       |      |          |

|          |  | List of Civil Work |
|----------|--|--------------------|
| 1. Bar S | creen Chamber                              | 1 No.              |
| Size     | 0.6 x 0.6 x 1.0 meters (RCC)               |                    |
| 2. Oil & | grease Tank                                | 1 No.              |
| Capac    | ity $0.25 \text{ m}^3$                     |                    |
| 3. Equal | ization Tank                               | 1 No.              |
| Capac    | ity $8.0 \text{ m}^3$                      |                    |
| 4. Sludg | a During Dada                              | 2 No.              |
| Capac    | e Drying Beds<br>ity 1 m³ (RCC)            | 2 No.              |
| •        |  |                    |
| 5. Plant | Room, Foundation for equipments, shed etc. | 1 Lot.             |

|                            |                          |                        | List of Makes           |
|----------------------------|--------------------------|------------------------|-------------------------|
| <b>Item Description</b>    | Makes                    | Item Description       | Makes                   |
| Sewage Submersible<br>Pump | Kirloskar /CRI /Equiv.   | MS/GI Pipe             | Jindal/ Tata/ Surya     |
| Centrifugal Pump           | Kirloskar/ CRI/ Equiv    | Piping UPVC/CPVC       | Astral/ Supreme/ Prince |
| Filter Feed Pumps          | Kirloskar/ CRI/Equiv.    | <b>Butterfly Valve</b> | Sant/ Zoloto/ Leader    |
| Sludge Recycle Pump        | Kirloskar/ Wilo          | Fine/ Coarse Diffusers | BWS Approved            |
| <b>Dosing Pump</b>         | Edose/ Initiative/ seko  | Pressure Gauges        | H Guru                  |
| FRP Pressure Vessel        | Pentair/ Aventura/Equiv. | MCC Panel              | BWS Approved            |

| pH Meter                    | Aster/ Reputed         | Switch Gear            | L&T/ Schneider/ reputed |
|-----------------------------|------------------------|------------------------|-------------------------|
| Bar Screen (SS/MS)          | Bimal Water Solutions  | Level Switches/ Gauges | Reputed                 |
| Fabricated Tanks            | Bimal Water Solutions  |                        |                         |
| <b>Tube Deck /FAB Media</b> | BWS Approved           |                        |                         |
| Air Blower                  | Everest/ Airvac/ Equiv |                        |                         |

Scope Matrix-Electrical

| SN | Description                                    | Su             | ipply        | Erection & Commissioning |           |
|----|--|----------------|--------------|--------------------------|-----------|
|    | Description                                    | By<br>Supplier | By Owner     | By<br>Supplier           | By Owner  |
| 1  | Motors as per Equipment list                   | √              | X            | √                        | X         |
| 2  | Local control Panel                            |                | X            | √ √                      | X         |
| 3  | Power Feeder & Distribution                    | X              | $\checkmark$ | X                        | $\sqrt{}$ |
| 4  | Motor Control Center (MCC)                     | $\checkmark$   | X            | √ √                      | X         |
| 5  | Local Push Button Station                      | $\checkmark$   | X            | √ √                      | X         |
| 6  | Incoming Power Cable to MCC                    |                | X            | √                        | X         |
| 7  | Power Cable from MCC to Motors                 | $\checkmark$   | X            | √                        | X         |
| 8  | Control cables from MCC to LPBS                | $\checkmark$   | X            | √                        | X         |
| 9  | Control Cables from MCC to Local Control Panel | $\checkmark$   | X            | √                        | X         |
| 10 | Field Cabling up to field junction boxes       | $\checkmark$   | X            |                          | X         |
| 11 | Glands and Lugs                                | $\checkmark$   | X            |                          | X         |
| 12 | GI Cable Trays                                 | $\checkmark$   | X            |                          | X         |
| 13 | Structural steel for cable tray supports       | $\checkmark$   | X            |                          | X         |
| 14 | Plant Earthing                                 |                | X            | √                        | X         |
| 15 | Plant illumination System                      | √              | X            | √                        | X         |

**Legends:**  $\forall$ : Yes X: No

Terms & Condition

# Scope of Work

Design Design is based on the standard parameter

Supply Supply of Mechanical equipment, Electrical, piping as per given details

Erection Erection of the units under our scope of Supply

Commissioning of the units of Effluent Treatment Plant

- ♣ Incoming with earthling Feeder Connection to the Panel and Energisation of the Panel
- ♣ Treated water pipeline beyond the outlet of ACF
- Civil work in Supplier Scope
- NOC from any Govt. body if require
- Boarding, lodging, to and fro travelling expenses of erection and commissioning team
- Loading and unloading at site

# **Our Scope**

- 4 Approach to site & storage for equipment's during the erection work
- Power / Lighting / Water at the site of work on 24 hrs basis

# $\underline{\mathsf{SCHEDULE} - (\mathsf{IV})}$

# PRICE BID FORMAT

| S.N.     | Name of dairy/chilling centers | Capacity of<br>ETP | Basic cost of ETP including civil, mechanical, electrical works and installation, successful trial rum and training to BKDS staff for 16 hours (Rs.) | Applicable<br>GST<br>Amount | Charges for one-year operation and maintenance (Rs.) | Applicable<br>GST<br>Amount | Total Cost<br>(Rs.) |
|----------|--------------------------------|--------------------|--|-----------------------------|--|-----------------------------|---------------------|
| 1        | Milk chilling                  | 25                 |  |                             |  |                             |                     |
|          | center Jatara                  | KLPD               |  |                             |  |                             |                     |
| <u>2</u> | Milk chilling                  | 15                 |  |                             |  |                             |                     |
|          | center                         | KLPD               |  |                             |  |                             |                     |
|          | Rajnagar                       |                    |  |                             |  |                             |                     |

# $\underline{\text{SCHEDULE} - (V)}$

| i.        | MAT FOR ORGANISATION D Name of the co./unit:        | DETAILS                                |  |  |  |
|-----------|---|--|--|--|--|
| ii.       | Address of the co./unit:                            |  |  |  |  |
| iii.      | Telephone Numbers (With S.T                         | .D. code) / Mob NO:                    |  |  |  |
| iv.       | Fax Number & Mail I.D:                              |  |  |  |  |
| v.        | Name of the C.E.O./Proprietor/                      | ······································ |  |  |  |
| vi.       | Name of designation of other                        |  |  |  |  |
| S         | ignatory of the Co./Unit                            |  |  |  |  |
| Vii       |   | e issued                               |  |  |  |
| •         | ne competent authority  n. No, Date & enclose copy) |  |  |  |  |
| _         | GST NO & Date                                       | •                                      |  |  |  |
|           | PAN NO.   | •                                      |  |  |  |
| X.        | Number of years of experie                          | ence.:                                 |  |  |  |
|           | close copy of work/purchase                         |  |  |  |  |
| And       | performance report                                  |  |  |  |  |
| In ta     | In tabular form issued by the concerning authority) |  |  |  |  |
| xi.       | How many years have you                             | organization:                          |  |  |  |
| beer      | in this business under the pr                       | resent name?                           |  |  |  |
| wha       | t were the fields when your o                       | organization                           |  |  |  |
| • • • • • |   | •••••                                  |  |  |  |

| was esta  | ablished? Whe                           | ether any new field | ds were                     |        |  |
|---|---|---------------------|-----------------------------|--------|--|
| added in your organization? And if So, when? xii. Have your co./Unit or its sister concerned ever been Black listed/Debarred by MPCDF or its sister Milk unions or G.O.I./State Govt. Department & its Undertaking YES/No xiii. If Yes, when & why/ Give reason in details: |   |                     |                             |        |  |
| (I/we hereby undertake that information furnished in the tender document are correct to the best of our knowledge and belief)   |   |                     |                             |        |  |
| Seal Signature of the Bidder ANNEXURE-II FORMAT FOR KEY PERSONNEL  i- Details of key technical and administrative personnel with the applicant and those that would be assigned to the work.  |   |                     |                             |        |  |
| S. NO,  | Name Age                                | Qualifications      | Experience in related field |        |  |
| i.  | Key Technica                            | al Personnel:       |                             |        |  |
|   |   |                     |                             |        |  |
|   |   |                     |                             |        |  |
|   | • | •••••               | ••••••                      | •••••• |  |
|   | ••••                                    | •••••               |                             |        |  |

| (I/We hereby undertake the correct to the best of our known and the correct to the | hat information's furnished in the tender document are nowledge and belief) |  |  |  |
|---|---|--|--|--|
| Seal & Signature of the Bio<br>ANNEXURE-III   | dder  |  |  |  |
| FROMAT FOR SIMILAR Total cost of work order ::  | WORK EXPEREIENCE  |  |  |  |
| Name of Work  | •   |  |  |  |
| Name of the owner of the project, :   |   |  |  |  |
| Brief Description of the project :  |   |  |  |  |
|   |   |  |  |  |
| Copy of completion certifi<br>Attached  | : yes / No  |  |  |  |
| Time Period for actual completion:  Stipulated date of completion:  |   |  |  |  |
| Period of completion of the entire:  Project, give reason, if delayed :   |   |  |  |  |
| <b>:</b>  |   |  |  |  |
| (I/We hereby undertake that information furnished in the tender document are correct to the best of our knowledge and belief)   |   |  |  |  |

# Seal & Signature of the Bidder

# **ENNEXURE -IV**

# FORMATE FOR FINANCIAL STATEMENT

Information regarding financial standing of the Bidder of the following there years, financial year ended 31st March

| Sr. No. | Details (Financial Year) | Amount (INR) |                 |
|---------|--------------------------|--------------|-----------------|
| 1       | FY- 2019-20              |              | Audited         |
|         |                          |              | Balance sheet   |
|         |                          |              | Attached-Yes/NO |
| 2       | FY- 2018-19              |              | Audited         |
|         |                          |              | Balance sheet   |
|         |                          |              | Attached-Yes/NO |
| 3       | FY- 2017-18              |              | Audited         |
|         |                          |              | Balance sheet   |
|         |                          |              | Attached-Yes/NO |

(I/We hereby undertake that information's furnished in the tender document are correct to the best of our knowledge and belief)

Seal & Signature of the Bidder

# **ANNEXURE-V**

# FORMAT FOR DEVIATION FROM TECHNICAL REQUISTE

- 1. This tender document provides design standards & treatment process to be used in tender package and "basis of design" and "standards & specifications". These all define the qualitative limitations.
- 2. It is compulsory on bidder to provide completer details of equipment and makes. Which supplier is proposing to provide?
- 3. Items, which deviate form the tender proposal, shall be as per design specification of supplier and shall be treated as deviation form the test of this tender document.

Deviation statement sheet to be filled by Bidder, if any
Sr.No Clause No of Tender Deviation Remark
Document

(I/We hereby undertake that information's furnished in the tender document are correct to the best of our knowledge and belief)

Seal & Signature of the Bidder

# **ANNEXURE-VI**

Declaration from to be signed by the Bidders submitting the offer downloaded from website (We Declaration From)

We hereby declare that:

- 1) "We have downloaded the tender document form website <a href="http://www.mptenders.gov.in">http://www.mptenders.gov.in</a> and printed the same. We have verified the content of the printed document form the website and there is no addition, no deletion and or no alteration to the content of the tender document".
- 2) We are aware that, if at any stage, addition/deletion/alteration/manipulation is found in the content of the tender document. Our offer will be summarily rejected/tender will be terminated.
- 3) In case of any dispute, the hard copy of Tender documents approved by competent Authority and preserved in the office of C.E.O., BKDS Sagar shall prevail and considered ad final and we shall have no objection for this.

(I/We hereby undertake that information's furnished in the render document are correct to the best of our knowledge and belief)

Seal & Signature of the Bidder

|   | ANNEXURE-VII  |
|---|---|
| ] | FORMAT FOR EXPERIENCE OF WORK/WORKS OF E.T.P CAPACITY WISE  |
|   | Information regarding Bidder executed/completed contact of similar nature during the three financial years i.e2019-20, .2018-19, 2017-18, in either of the following: - |
| ( | (1) One contact/ Work of similar nature capacity not less 80% of the tendered capacity of the proposed E.T.P.   |
|   | Details of the work & enclosure   |
|   |   |
|   | OR (II) Two contracts/ works of similar nature each capacity not less than 60% of the tendered capacity of the proposed E.T.P.  |
|   | Details of the work & enclosure   |
|   |   |
|   | OR (III) There contracts/works of similar nature each capacity not less that 40% tender capacity of the proposed E.T.P.   |
| ] | Details of the works &:   |

Enclosures

| Similar nature of works means Effluent treatment plants based on aerobic treatment (Extended Aeration), for similar bio-degradable organic waste, preferably for successfully project executed for Dairy/Food Industry in India. A  (I/We hereby undertake that information's furnished in the render document are |                                |  |  |
|--|--------------------------------|--|--|
| correct to the best of our knowledge and belief)   |                                |  |  |
|  | Seal & Signature of the Bidder |  |  |
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