

# Technical specification for the Sewage Treatment Plant

## 1.0 Project

Sewage Treatment plant of 25KLD to be installed for Amarkantak Thermal Power station for both Plant buildings toilets and canteen outlet.

## 2.0 Scope of Work

- Concept development and detailed engineering.
- Fulfillment of Statutory Obligations of State/Central, Approval of the concept, Design, Drawings & Documents by Customer.
- Total Civil Works for system requirement like Inlet Collection Sump (Raw Sewage), Pavement for Packaged STP (Pre-fabricated), Treated Water outlet from STP, Sludge drying System, MCC Rooms, Cable trenches etc.
- Fabrication of all equipments.
- Supply of Equipments, Pumps, Motors etc, Mandatory Spares and erection of all equipments.
- Testing, pre commissioning & commissioning and handing over of the plant to the Customer.

## 3.0 Flow rate logistics

|                 |   |
|-----------------|---|
| Total flow      | : 25 m <sup>3</sup> /day avg. (approx 500 inhabitants operated in three shifts) |
| Operating hours | : 24 hrs  |
| Flow rate       | : 1.5 m <sup>3</sup> /hr  |
| Mode            | : Manual  |
| Space required  | : To be specified by the successful Bidder                                      |

#### 4.0 Quality Logistics

| S.No | Description            | Unit | Inlet     | Outlet    | Standards |
|------|------------------------|------|-----------|-----------|-----------|
| 1    | PH                     | -    | 7.2 – 7.8 | 7 – 8.5   | 5.5 – 9   |
| 2    | Total dissolved solids | Mg/l | 600 – 800 | 600 – 800 | <2100     |
| 3    | Total suspended solids | Mg/l | 150 – 250 | 20 – 30   | <20       |
| 4    | BOD                    | Mg/l | 200 – 300 | <20       | <20       |
| 5    | COD                    | Mg/l | 400 – 600 | <250      | <250      |
| 6    | Chlorides              | Mg/l | 200 – 400 | 200 – 400 | <1000     |
| 7    | Sulphides              | Mg/l | 5 – 15    | <5        | <5        |
| 8    | Oil & grease           | Mg/l | 5 - 10    | 5 -10     | <10       |

#### 5.0 Codes & Standards

All design, fabrication, inspection, and testing of the plant will be done with respect to the latest Indian Standards. In case of non-availability of standards, good engineering practice will be adopted.

##### Standards to be followed:

|                  |                           |
|------------------|---------------------------|
| Pressure vessels | – ASME SEC VIII           |
| Pumps            | – IS 5120                 |
| Piping           | - IS 1239                 |
| Others           | – Available IS standards. |

#### 6.0 Concept

- The sewage generated from various sources will be collected in the Inlet collection Sump.
- The sewage is pumped to other unit through bar screen.
- The sewage is let to Aeration tank with SAFF media where biological treatment takes place. The aerated Sewage water is led to Clarisettler, the clarified water is sent to Chlorine contact tank where hypochlorite dosing is done. The settled sludge is pumped to sludge drying beds.

- The chlorinated water is pumped to Multi Grade filter using Filter feed pump.
- The treated water will be discharged to Outlet Sump from there it is used for Plantation/gardening & flushing purpose.

### **7.0 Equipments list**

Bar screens, Sewage transfer pump, Aeration tank, Air blower, SAFF media, Diffusers, Clarisettler, Clarisettler internals, Sludge pump, Sludge drying beds, Chlorine contact tank, Chlorine dosing system, Filter feed pump, Multi Grade filter, Interconnecting pipes, Electrical system & Mandatory Spares.

### **8.0 Painting**

|          |                                    |
|----------|------------------------------------|
| Internal | : 3 Coats of Epoxy Paint           |
| External | : 2 Coats of Epoxy & Enamel Finish |