

Tender No.: T/ 2545960/2023

Tender Title: Design, Supply, Install and Commission a Centralized Odor Control System (OCU) at Ibri STP

Scope of Work:

Design, supply, install and commission a centralized Odor Control System with complete accessories for air ducts connections with the Balancing Tank and pre- treatment unit at Ibri Sewage Treatment Plant (STP). The design of the system shall be considering the most efficient, reliable, and economical technologies with reduced O&M costs.

The structure of this SOW is bounded to confirm that the Contractor shall adhere to OWWSC policies, Health, Safety and Environmental commitments, and to ensure that the undertakings shall be safe and to carry out the whole work according to the specified standard quality.

Detailed scope of Work.

2.1. Contractor shall design, supply, install and commission a centralized Odor Control System (OCU) with complete accessories for the Balancing Tank and Mechanical Screen. The design of the system shall be by considering the most economical technologies with reduced Operational and maintenance costs.

Dimensions for balancing tank pretreatment Length x Width x Depth: 16.0m x 16.0 m x 3.5 m and Cover tanker discharge point and connect to odor system size 11.8x8.1x4.5 meter contractor shall take the measurement during site visit during the tendering stage.

2.2. H₂S inlet design considerations for the Balancing Tank and Mechanical Screen Building.

- (i) H₂S Inlet Design: 100ppm (**Dynamic**) the contractor shall perform actual measurements.
- (ii) The minimum air exchange for the balancing tank should be around 12 air change per hour.

2.3. Contractor shall study the proper location inside the STP for the proposed OCU.

2.4. Contractor shall guarantee the following parameters of the OCU:

2.4.1. Outlet H₂S = <0.050ppm

- (i) Online measurement of H₂S gas at outlet for a normal measurement of 1.50ppm with alarms while performance guarantee measurement of 0.05 ppm will be done by sampling once a month for 1 year O&M period.

2.5. Contained all H₂S gas emissions from the above-mentioned locations and properly treated them through the OCU ensuring no obnoxious or foul odor occurs in the STP.

2.6. Provide complete connection ductworks from the extraction chambers, OCU unit, and existing facilities comprising of piping, electrical and mechanical works.

2.7. Provide complete sealed GRP cover for the Balancing Tank considering the require opening for the air exchange. The cover shall be designed in a way to avoid working on top of it.

- 2.8. Provide GRP panel covers for Mechanical Screen as required.
- 2.9. Provide all connections to the existing facilities for water, electrical and/or other utilities needed by the OCU.
- 2.10. Provide an online H₂S sensor for the inlet and outlet with digital display unit. Inlet sensor should read the range 0-200 ppm while the outlet sensor should read in range of 0-20 ppm.
- 2.11. H₂S transmitter shall be interlinked for the Audible and Light Warning Devices.
- 2.12. The wastewater residue produced from Odor Control Unit will be treated suitably either by dilution with existing Incoming Sewage, so that it will not impact or affect the performance of existing STP or neutralized before discharging into the existing STP inlet channel.
- 2.13. All the residue solid waste or exhausted activated carbon will be disposed off from the STP site in a safe and environmentally acceptable manner meeting the Disposal regulations in Oman through the competent authorities is under the scope of bidder during the O&M period.
- 2.14. If the Treatment process offered by the bidder requires softened water, then it is bidder's responsibility to incorporate the same in their offer.
- 2.15. If the treatment process offered by the bidder requires TE, then bidders should use the TE water produced from STP plant and accordingly bidders shall consider in their offer. In case, the TE quality is not appropriate, the bidder shall consider alternative water source at his own expense.

Audible Warning Device

- 2.16.1 The OCU shall have an audible warning device with the following minimum requirements:
 - (i) It must be at least 10 dB above the ambient background noise at 1-meter distance from the device.
 - (ii) Minimum frequency of 2 kHz.
 - (iii) Motor vibration must be less than 1 mm/s.
- 2.17. The device shall be protected from any water penetrations during operations, and it must be linked to the H₂S outlet reading of the OCU for the High Alarm setting.
- 2.18. the device shall have Light Warning Device and shall be linked to the H₂S outlet reading of the OCU for the Low Alarm setting.
- 2.19 Provide one (1) running and one (1) standby air extract fan with automatic change over for preset timing and in case of failure.
- 2.20 Manual air dampers shall be installed in the suction and discharge line of the air extract fan.