

Solutions for Industrial Water Treatment Waste Water Treatment and Water Recycling

10,000m³/Day Design-Build-Operate CETRP1 Phase-1 Project
- Sohar, Sultanate of Oman

-1st Successful Industrial Waste Water Treatment and Recycle Plant in Oman-



Advantage of Our Solution

Meeting Customers' Needs with Technical Expertise and Extensive Experience while Achieving both Economic Efficiency and Environmental Preservation

- Building cost effective waste water treatment plant and producing recycled water to be utilized by industries at a competitive price
- Minimizing client risk proposing effective Design Build Operate (DBO) contract
- Meeting new environmental regulations in Oman

Project Overview

Client	Majis Industrial Services SAOC
Location	Sohar, Oman
Start-up	September 2016
Capacity	Waste water treatment: 10,000m ³ /day (phase1) Production of recycled water: 7,500m ³ /day
Plant Description	Biological waste water treatment plant of 10,000m ³ /day capacity and recycle plant (reverse osmosis) to produce 7,500m ³ /day of process water with very low TDS (less than 25ppm) Waste water discharged from petrochemical, power, fertilizer, methanol, steel & iron processing plants has to be treated with domestic sewerage.



Customer Overview

Majis Industrial Services SAOC

Majis Industrial Services SAOC has been providing water and waste water services at Sohar Industrial Port Area (SIPA).

Furthermore, Majis is made responsible for monitoring, collecting, treating, recycling, and reusing the effluent as much as possible at SIPA under the policy makers of the government of Oman.

Challenges

- Protecting the water environment of SIPA by providing pollution control measures
- Providing affordable water tariffs to customers

Current Issues in Oman

Faced Seriously With Customer's Issues

Oman is one of the most water scarce nation in the MENA region with only 416 m³ of water available per person each year compared with 1,429 m³/person/year average in the rest of the region.

Such industries as SIPA houses petrochemical, power, fertilizer, methanol, steel & iron processing plants require cooling and process water for operation 24/7.

Among environmental issues that are currently being addressed, much emphasis has been put on air pollution and liquid discharges.

From January 2014, rules and regulations prohibit discharges of any kind other than brine and cooling water to the marine environment.

This change to the policy implied that the tenants of SIPA currently treating and discharging their waste effluents (treated industrial effluents, TIE) into the return seawater canal for ultimate marine disposal would no longer be able to continue this practice.

Customer's Requirements

Meet the Customer's Challenges and Requirements

1. Meeting new environmental regulations (no discharge of waste water other than brine and cooling water) in Oman, keeping water environment and responding to the industrial water demand
2. Building cost effective waste water treatment plant and producing recycled water to be utilized by industries
3. Minimizing client risk related to operation of the waste water treatment and recycle plant

Our Proposed Solutions

Effective Solutions in line with Majis Requirements

Design & Engineering	<ul style="list-style-type: none">• Designed through detailed analysis to produce the maximum amount of recycled water possible from wastewater• Including a process that maximizes the use of existing assets and is based upon a comprehensive study of existing Treated Industrial Effluent (TIE) assets and discharges requirements• Plant design that minimizes the power and chemical consumption and the Net Present Value (NPV)• The online monitoring stations that will be integrated with the Central Monitoring Station (CMS)
Procurement	<ul style="list-style-type: none">• The dedicated procurement network ensures the procurement of cost-effective equipment and a significant reduction of capital cost compared to other companies.
Construction	<ul style="list-style-type: none">• Minimizing the requirement of construction while converting Sewerage Treatment Plant (STP) for Effluent Treatment (ET)
Operation & Maintenance	<ul style="list-style-type: none">• Operation & Maintenance (O&M) for 5 years• Minimizing client risk by assuming the Design Build Operate (DBO) contractor that will be fully responsible for the entire scheme from online monitoring of discharges to production of process water• Proposing a strong Operation & Maintenance (O&M) team with Trade Effluent Expert (TEE) to deal with tenants, Ministry of Environment and Climate Affairs (MECA)/Sohar Environment Unit(SEU) and Sohar Industrial Port Company (SIPC)

Contribution by Our Solutions

Recycling of Effluent Water

Recycling of effluent water is not only effective in reducing the environmental impact of discharges, but also makes it possible to produce water at a lower cost than seawater desalination.

Reliability of Recycling Technology

Compliance with the restrictions on discharging industrial effluent into the marine environment implies water recycling and re-using, and providing reliable and cost-efficient solutions to this issue is a major technical challenge.

Re-use Application

The system ensures that the quality of the recycled effluent meets customers' demand and expectations.

Photo of CETRP1 Phase-1

CETRP phase 1 is now in operation and produced very high quality (TDS less than 25 PPM) process water for reuse in the industries.



Rewarded another Project for DBO of CETRP1-Phase2 due to Obtaining Reliability and Reputation of CETRP Phase1.

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