OILY WASTEWATER TREATMENT SYSTEMS

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General Overview

Oily Wastewater Treatment Plants (Oily WWTP) are engineered systems designed for the efficient removal of free oil, emulsified oil, hydrocarbons, suspended solids, and associated contaminants from industrial effluents.

These systems are widely applied in:

- Oil & Gas facilities
- Refineries and petrochemical plants
- Tank farms and terminals
- Metal processing industries
- Power plants
- Marine and offshore facilities

The objective is to meet environmental discharge standards or to prepare water for reuse or advanced polishing (UF/RO).

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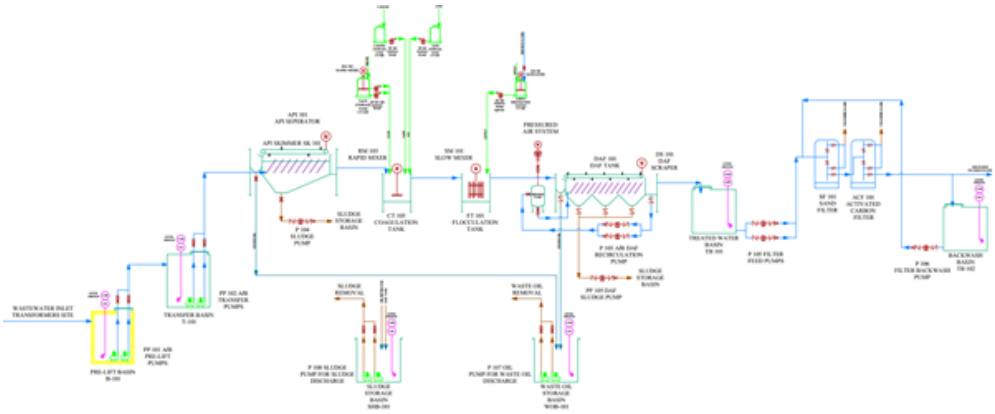
Typical Process Flow

A standard Oily WWTP configuration consists of:

- Equalization Tank
- API Separator or CPI Separator
- Dissolved Air Flotation (DAF) Unit
- Biological Treatment (Optional)
- Sand / Multimedia Filtration
- Activated Carbon Filtration (Optional)
- Sludge Handling System

Process configuration is customized based on influent characteristics.



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Working Principle

1. Primary Oil Separation

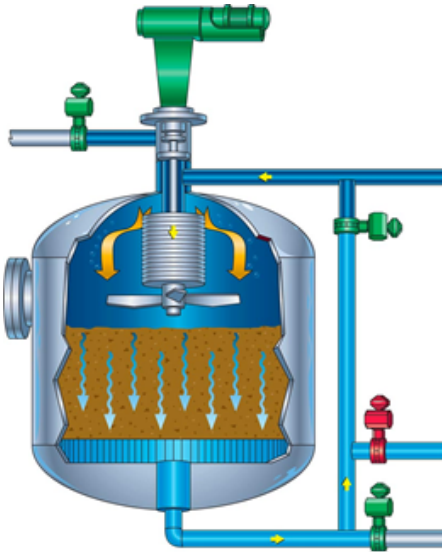
Free oil is removed using gravity separation (API or CPI). Large oil droplets rise to the surface and are skimmed.

2. Secondary Treatment (DAF)

Fine oil droplets and emulsified hydrocarbons are removed via micro-bubble flotation with chemical conditioning.

3. Polishing Stage

Remaining suspended solids and dissolved organics are reduced through filtration and/or biological treatment.



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MAIN COMPONENTS

Main Equipment

- Equalization & Oil Collection Tanks
- API / CPI Oil Separators
- DAF Units (Carbon Steel / SS)
- Chemical Dosing Systems (Coagulant, Flocculant, pH Control)
- Sludge Thickener & Sludge Dewatering Unit
- Multimedia Filters
- Activated Carbon Filters
- Nutshell Filters
- PLC Based Automation System

Applications

- Produced Water Treatment
- Tank Bottom Water Treatment
- Bilge Water Treatment
- Refinery Effluent Treatment
- Industrial Storm Water Treatment

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DESIGN PARAMETERS

Parameter	Typical Range
Flow Capacity	5 – 1000 m^3/h
Oil & Grease (Influent)	100 – 10,000 mg/L
Oil Removal Efficiency	> 95%
TSS Removal	> 90%
Surface Loading Rate (DAF)	5 – 15 $m^3/m^2.h$
Recycle Ratio	10 – 30%

Final discharge values are designed in accordance with local environmental regulations.

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SLUDGE MANAGEMENT

Oil sludge is:

- Collected via skimmers
- Thickened
- Dewatered (Filter Press / Decanter)
- Disposed or sent for recovery

Design prioritizes maximum oil recovery and minimum disposal volume.

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Advantages

High Oil Removal Efficiency
Compact Footprint
Modular & Containerized Options
Fully Automated Operation
Suitable for Fluctuating Loads
Designed for Harsh Industrial Conditions

Engineering Capabilities

- Process Design & Hydraulic Calculations
- PFD & P&ID Documentation
- 3D GA Layouts
- Civil & Mechanical Interface Design
- Instrument List & IO List
- FAT / SAT Procedures
- Performance Guarantee Test Protocol

Optional Enhancements

- ATEX compliant equipment
- Containerized skid-mounted systems
- Integration with MBR or RO
- Oil recovery and reuse systems
- SCADA integration

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WHY CHOOSE US?

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TÜRK PATENT ve MARKA KURUMU

MARKA TESCİL BELGESİ

Marka No : 2020 144180 - Ticaret - Hizmet

Marka Sahibi : USSU MÜHENDİSLİK ARITMA VE MAKİNA TİCARET SANAYİ LİMİTED ŞİRKETİ
TÜRKİYE CUMHURİYETİ
GÜNGÖREN MAH. DİYAR SK. 30 -32/6 Çekmeköy İstanbul

Emtiası : 11 , 35 , 42
İlişiktedir.

İşbu Marka 19/11/2020 tarihinden itibaren ON YIL süreyle 30/04/2021 tarihinde tescil edilmiştir.

Prof. Dr. Habip ASAN
Türk Patent ve Marka Kurumu Başkanı

TÜRK PATENT

- **QUICK FEEDBACK**
- **BEST COMPETITIVE PRICING**
- **CONTINUOUS TECHNICAL SERVICE SUPPORT**
- **WESTERN EUROPE EQUIPMENT**

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Advanced Performance & Process Engineering

- Superior oil removal rates exceeding 95% via multi-stage API and DAF separation.
- Engineered for maximum oil recovery, converting industrial waste into a valuable asset.
- Custom-calculated process designs (PFD/P&ID) tailored to specific influent characteristics.
- Advanced chemical conditioning and emulsion breaking for guaranteed regulatory compliance.
- Optimized hydraulic profiles and mass-balance calculations for reliable 24/7 discharge quality.

Industrial Reliability & Smart Modular Design

- Heavy-duty Carbon Steel or Stainless Steel construction with specialized anti-corrosion coatings.
- US-WCU containerized and skid-mounted designs for a compact footprint and rapid deployment.
- ATEX compliant equipment and safety configurations specifically for hazardous refinery zones.
- Fully automated PLC/SCADA integration for smart skimming, dosing, and remote monitoring.
- Factory Acceptance Tested (FAT) "plug-and-play" units ensuring fast commissioning with minimal civil work.

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SERVICES TO:

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We're excited to work with you

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T.C. TÜRK PATENT ve MARKA KURUMU MARKALAR DAİRESİ BAŞKANLIĞI 1923

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Kurumu Başkanı

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