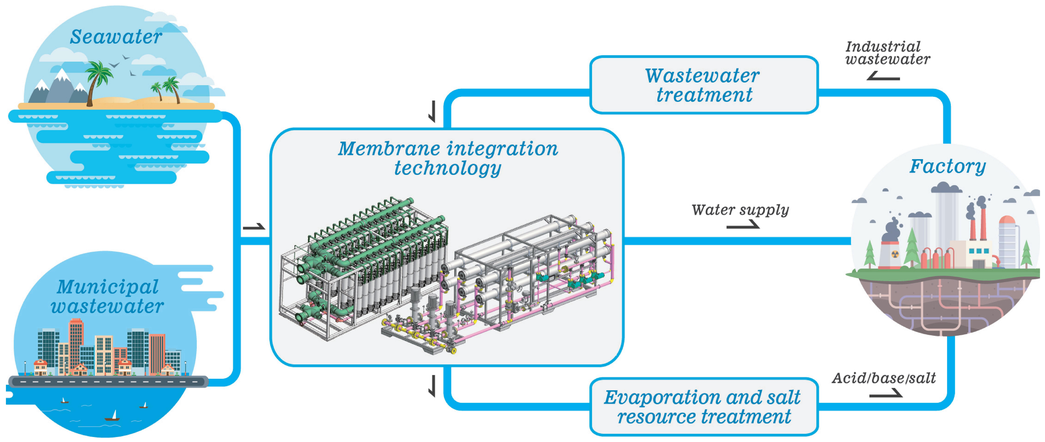
# THE EXPERT OF REUSING INDUSTRIAL WATER

- Looking for new water resources (industrial wastewater, municipal sewage, circulating water, sewage)
- The most feasible method to reduce discharge is to reuse wastewater



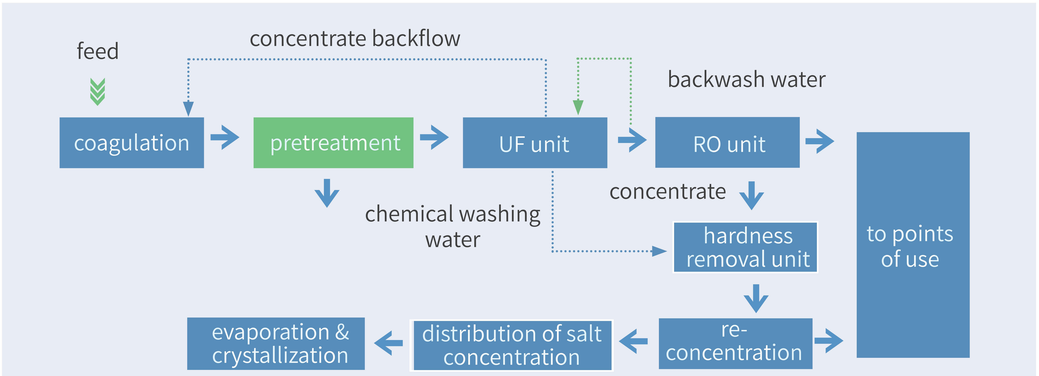



100,000T/d Recycling of Industrial Wastewater (Zero liquid discharge)

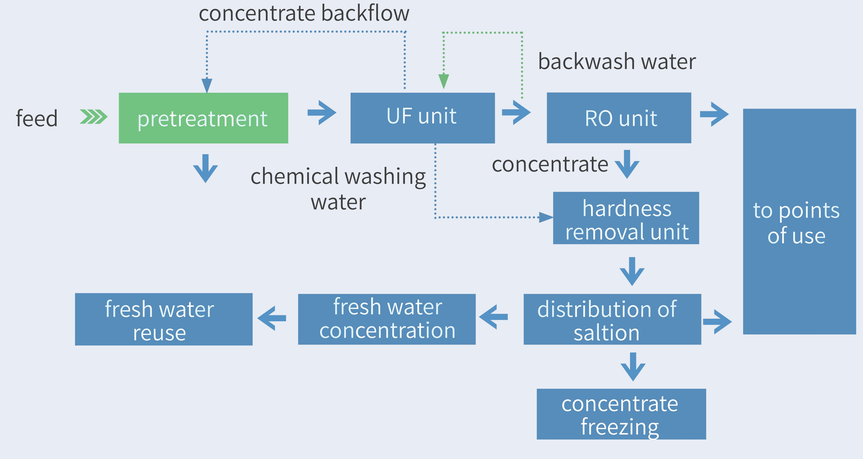
# ZERO LIQUID DISCHARGE SOLUTION

A pioneer in providing high-grade recycled water produced through advanced membrane technology solutions in dyeing,metallurgy and pharmaceutical industry, JIUWU HI-TECH makes wastewater safe for cities and industries to discharge into the environment or industrial-grade water. We customize treatment processes, build, operate and maintain plants to meet the specifications of industrial customers.

## ZERO LIQUID DISCHARGE -THERMAL PROCESS




## ZERO LIQUID DISCHARGE -FREEZING PROCESS



江蘇久吾高科技股份有限公司
JIANGSU JIUWU HI-TECH CO.,LTD

## ZERO LIQUID DISCHARGE PROJECT IN PAPER &PULP INDUSTRY

# SELF-OWNED CORE TECHNOLOGY



Chinese President XiJinping's Visit



Appearance



RO unit



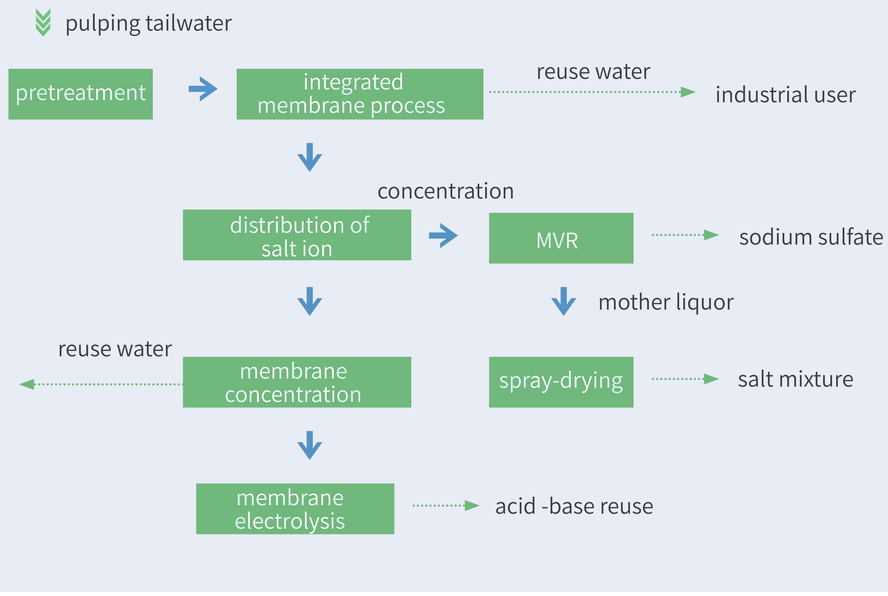


ED unit

UF unit

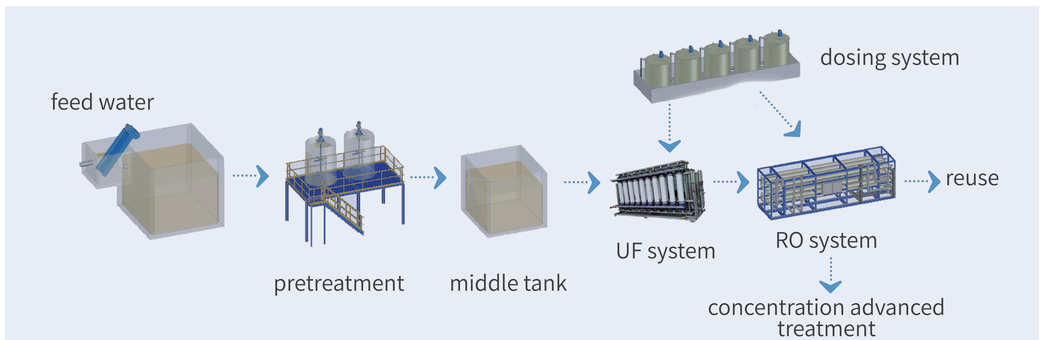
## PROCESS CHARACTERISTICS

- Process cooling water, boiler water, equipment flushing water can be produced
- Concentration after treating can be reused
- Operation cost can be greatly reduced
- Floor space can be significantly decreased






# WATER REUSE




## TECHNICAL ADVANTAGES

- Efficiently integrated enhanced pretreatment technology
- Unique membrane module optimization design
- Lower operation cost , optimal investment cost
- Stable running with full process design





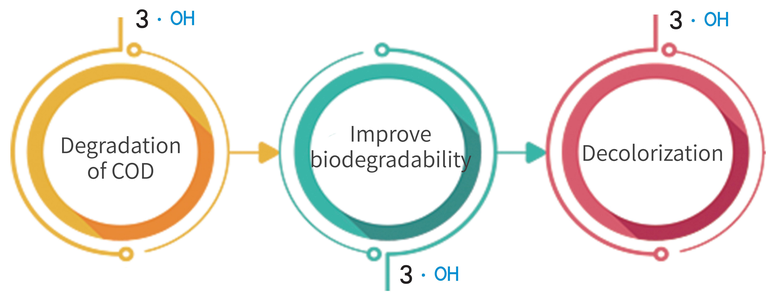

22000t/d reuse project of Nine Dragons Paper limited,China




6000t/d reuse project of TORAY Dyeing limited, China

# ADVANCED INDUSTRIAL WASTEWATER TREATMENT

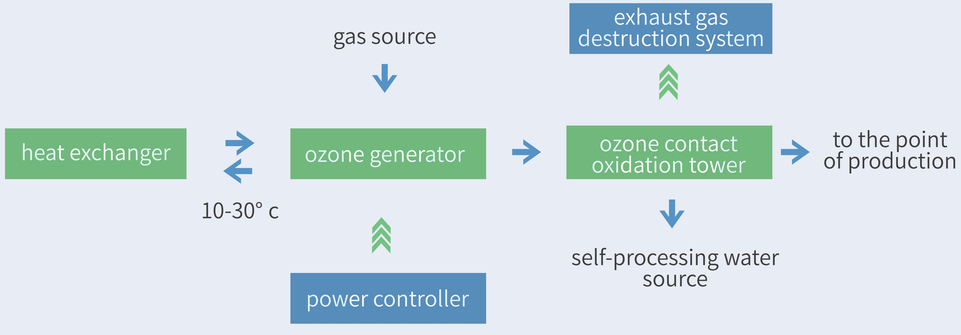
**Ozone catalytic oxidation wastewater treatment technology**




## FEATURES

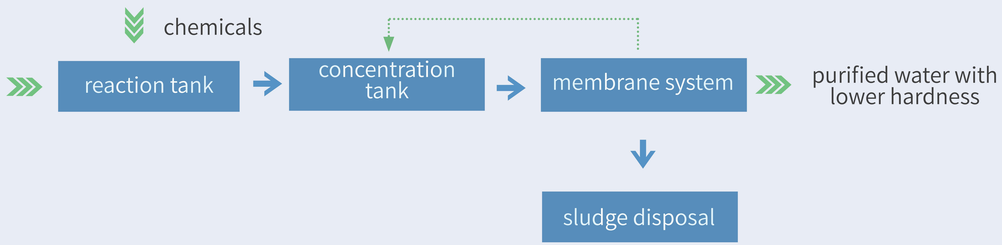
- Does not produce sludge
- Strong oxidizing ability
- Simple process
- 60%-99% decolorization efficiency
- B/C value can be increased by 2-10 times
- Does not cause secondary pollution
- Fast reaction
- Reduce dosage 20%-60%
- 30%-85% CODcr removal rate

## PROCESS



# MEMBRANE COUPLING HARDNESS REMOVAL TECHNOLOGY

## PROCESS




## FEATURES

- Without sedimentation tank
- Without increasing PAC/PAM flocculating agent
- Reduces the amount of chemicals
- Greatly reduces floor space
- The effluent SDI is less than 30





Large-scale brine removal hardness system

# OZONE-COUPLING BIOMEMBRANE SYSTEM TECHNOLOGY

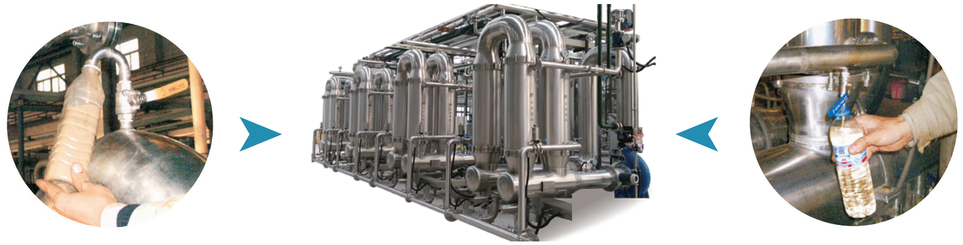
| | |
|---|---|
| COD value | 70-80mg/L(feed ) |
| ozone oxidation technology coupled with biological activated carbon biofilter(O3-BAC) | |
| ozone concentration 20-30mg/L | |
| biofilter HRT 90-120min | |
| activated carbon need not be replaced | |
| COD value | 30-40 mg/L(permeate) |





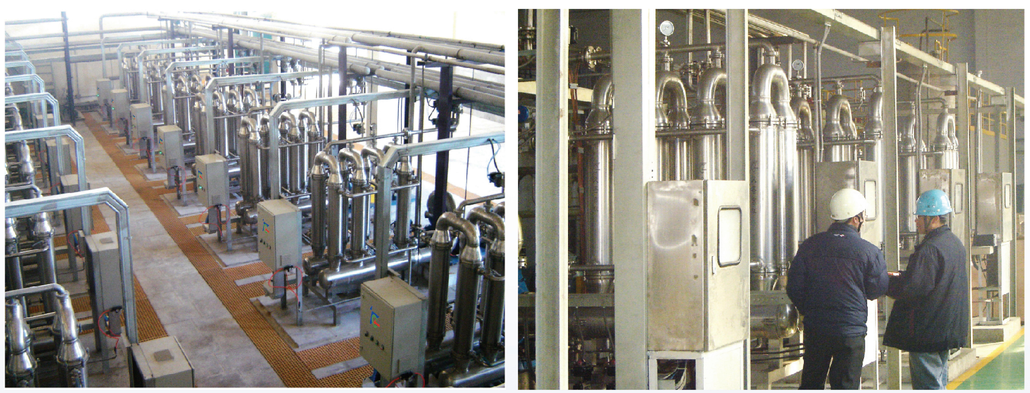
# OIL-WATER SEPARATION TECHNOLOGY

In the production process of rolling, galvanizing, spraying, metal cutting, oil and alkali refining, a large amount of oily wastewater is produced. JIUWU HI-TECH has been successfully applied to the treatment of oily wastewater with ceramic membrane technology, and there are many typical cases. JIUWU HI-TECH can provide the overall process package of emulsified oil wastewater treatment.



## ADVANTAGES OF CERAMIC MEMBRANE PROCESS

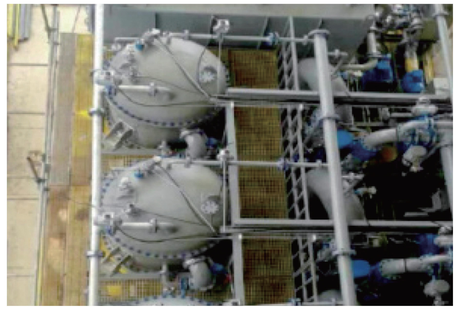
- Acid/alkaline/oxidation chemicals resistance
- High thermal stability and steam disinfected
- Stable over a wide pH range
- Easy to be cleaned and regenerated
- Solvent stability
- Wear ability and excellent strength
- Narrow pore size distribution
- No chemical agent, no new sludge



# OIL & GAS WATER TREATMENT TECHNOLOGY

## MEMBRANE TREATMENT IN OILFIELD CONVENTIONAL WATER FLOODING PRODUCED WATER

Conventional water-flooding technology is widely used in onshore oilfields and offshore oilfields in China. For low permeability and ultra-low permeability reservoirs, water injection quality directly affects the development effect of the oilfield. The ceramic membrane technology is used to finely treat the water flooding wastewater (Patent No. 102225812A), and water quality of the effluent reaches Grade A standard.

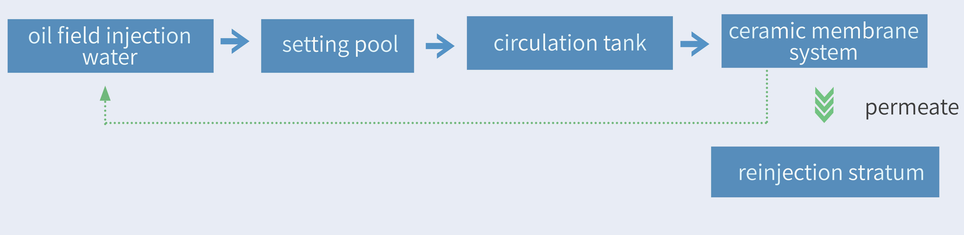




## MEMBRANE TREATMENT IN OILFIELD POLYCONDENSATION / ASP FLOODING PRODUCED WATER

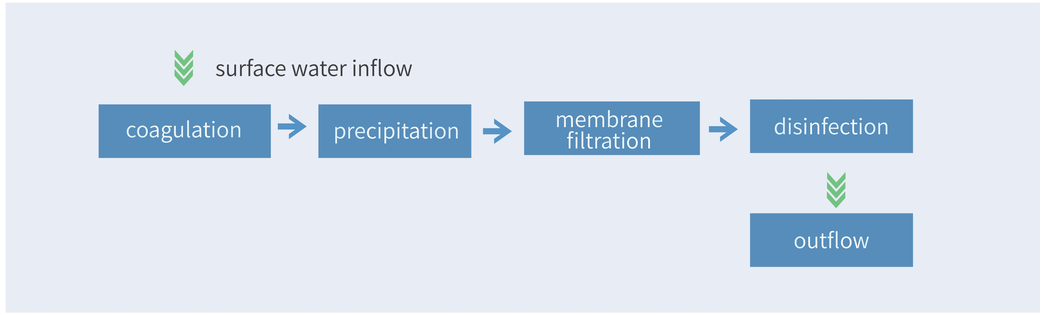
Due to the fact that the polycondensate sewage is very complex, with the characteristics of large viscosity, high degree of emulsification, complex composition, and difficult biodegradation, the traditional process can not meet the demand of oilfield production. The oil and suspended particles of polycondensate sewage are removed to achieve the requirement of water injection in low permeability oilfield when using pretreatment & integration ceramic membrane process

(Patent No .104071919A).



# WATER TREATMENT TECHNOLOGY

## ADVANCED WATER TREATMENT




## FEATURES

- Integrated technology based on membrane separation
- 100% removal of algae, microorganisms, bacteria, E. coli
- Dramatically reduce the amount of fungicide
- Stable outflow without affected by inflow fluctuation
- Small footprint (1/2-2/3 less than traditional process)
- Shorten flow process
- Longer lifespan
- High water yield



2000m$^3$/d waterworks water quality improvement project

# SEAWATER DESALINATION

Due to their high energy efficiency and high reliability, seawater desalination by integrating Ultrafiltration and Reverse Osmosis is one of the most sustainable and cost-effective solutions for converting seawater into potable fresh water.

## CREATING DIFFERENT FLOW SOLUTIONS

- 100-1,000m3/d
- 5MLD-10MLD+
- 1,000-2500m3/d
- Containerized  or skid-mounted

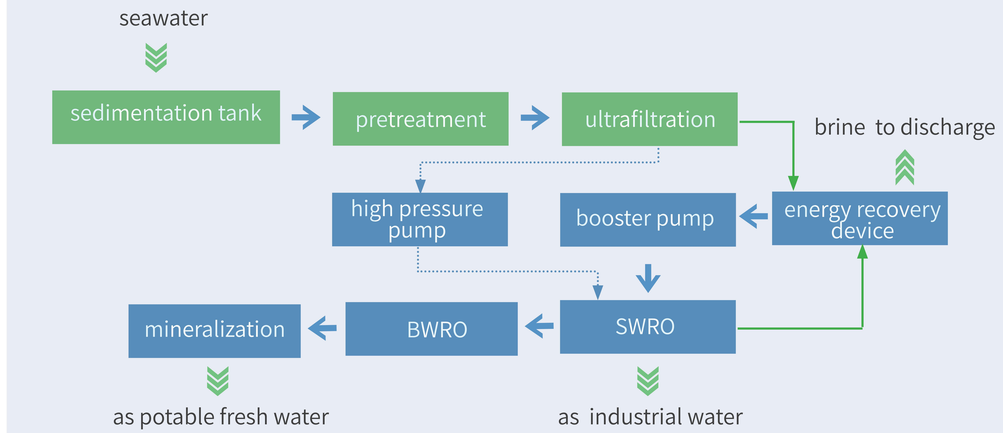
## NATURAL SEAWATER SOURCE TYPE

- Shallow Surface seawater
- Brackish river water
- Deep seawater
- Beach well seawater



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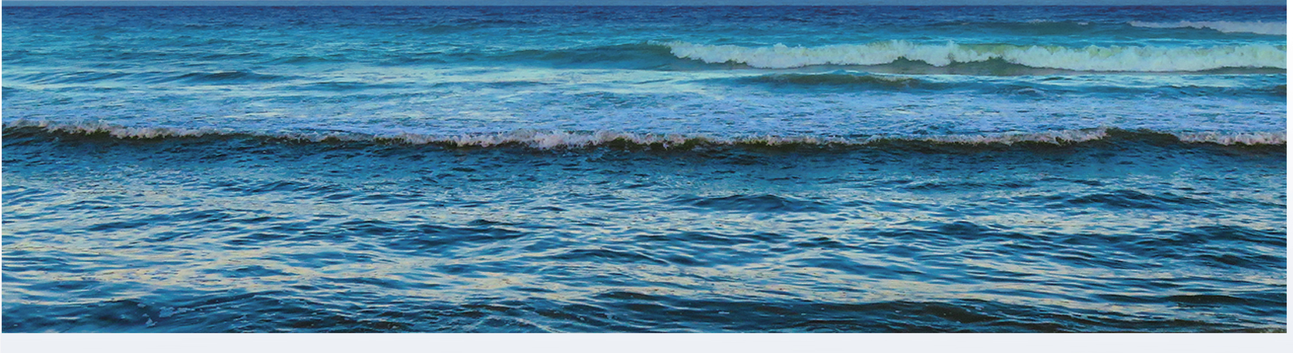
## PROCESS




## FEATURES AND BENEFITS

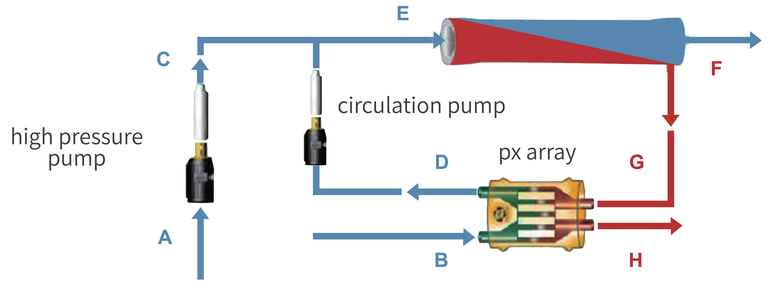


- Advanced UF membrane with pore size 25nm
- Extremely low energy & chemical consumption
- Ultra-low maintenance costs
- Simple to operate with automatic control
- Modular &packaged design
- Fast delivery & installation
- High recovery rate of fresh water
- meet the requirements of irrigation water& industrial water
- Achieve WHO potable water standards
- Green & circular economy



## ADVANTAGES

- Energy recovery up to 98% efficiency
- Single modular design
- High return on investment(ROI)
- Optimized RO process & flexible option






5000 t/d SWRO system



5000 t/d SWRO system