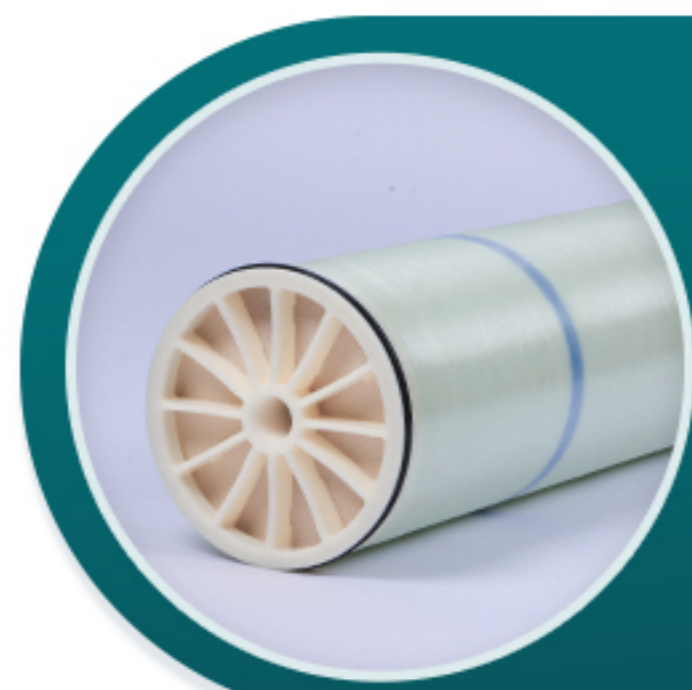


COAL CHEMICAL INDUSTRY

VONTRON ZERO Series

Engineering Reference-One chemical zero emission project

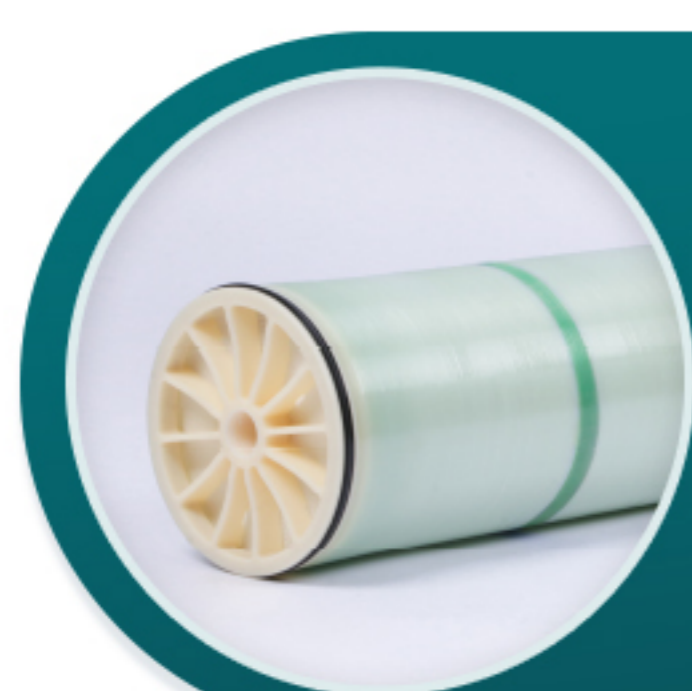
The zero liquid discharge project of chemical wastewater is designed to treat 1800m³/h, and the project is implemented in two phases. After the zero liquid discharge project was put into operation, the zero liquid discharge of wastewater in the chemical park was realized. The extracted sodium chloride was used as the raw material of chlor-alkali workshop and mirabilite was sold outside, achieving the goal of resource utilization and zero liquid discharge of wastewater, which has great economic and environmental value.



ZERO-FR10

| | | |
|----------------|------------------|------------------|
| Rejection Rate | Permeate Flow | Spacer Thickness |
| 99.7 % | 11500 GPD | 34 mil |


Testing Conditions: Operating pressure 225psi (1.55 MPa) Temperature at 25°C pH7.0±0.5 Tested In 2000 mg/L NaCl solution Recovery rate at 15 %



ZERO-HP70

| | | |
|----------------|-----------------|------------------|
| Rejection Rate | Permeate Flow | Spacer Thickness |
| 99.75 % | 8800 GPD | 34 mil |

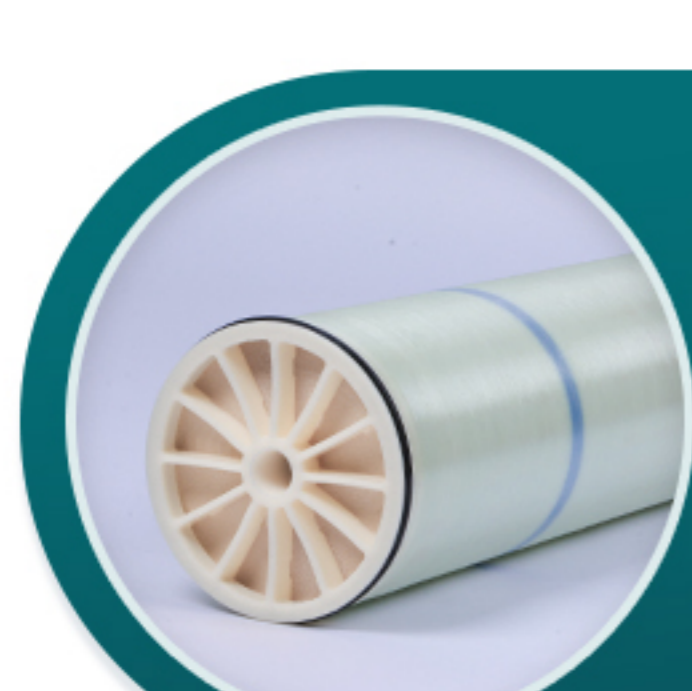
Testing Conditions: Operating pressure 800psi (5.52 MPa) Temperature at 25°C pH8 Tested In 32000 mg/L NaCl solution Recovery rate at 8 %



ZERO-UHP120

| | | |
|----------------|-----------------|------------------|
| Rejection Rate | Permeate Flow | Spacer Thickness |
| 99.7 % | 7400 GPD | 28 mil |

Testing Conditions: Operating pressure 800psi (5.52 MPa) Temperature at 25°C pH8 Tested In 32000 mg/L NaCl solution Recovery rate at 8 %



ZERO-XS90

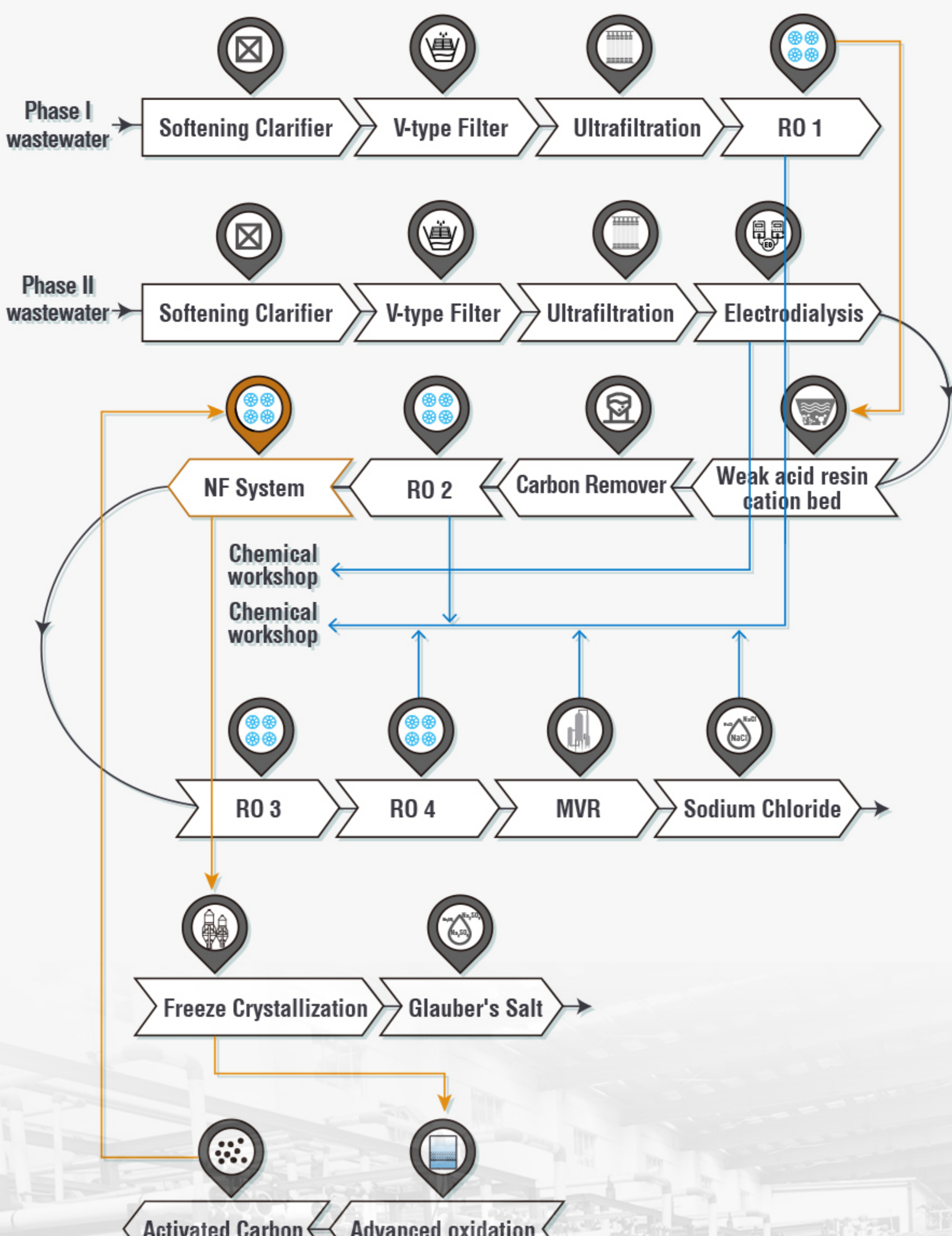
| | | |
|----------------|-----------------|------------------|
| Rejection Rate | Permeate Flow | Spacer Thickness |
| 99.0 % | 8300 GPD | 34 mil |

Testing Conditions: Operating pressure 100psi (0.69 MPa) Temperature at 25°C pH7.0±0.5 Tested In 2000 mg/L MgSO₄ solution Recovery rate at 15 %

PROJECT CONTENT

- **Project name**
The Chemical Zero Liquid Discharge Workshop, NF System;
- **Arrangement**
(6: 3) × 6; Feed Water TDS: 55000-70000 mg/L;
The designed water yield is 54 m³/h, and the recovery rate is 65%.

PROCESS FLOW



The process of zero wastewater discharge project includes four units: pretreatment system, membrane concentration system, freezing and evaporation crystallization system. In the process of membrane concentration system, the separation of sodium chloride and sodium sulfate is realized by multistage RO concentration and nanofiltration.

