Minimal Liquid Discharge
A water management approach that can help you increase recovery and reduce costs
The rising price of water and significant discharge mitigation costs have prompted the search for an alternative to zero liquid discharge (ZLD). ZLD can be expensive and not necessarily environmentally friendly because of the energy and resources typically required to get discharges down to zero.

Some industrial and municipal users are turning to a minimal liquid discharge (MLD) approach: a core set of proven ultrafiltration, reverse osmosis, nanofiltration and ion exchange based technologies and processes that enable users to achieve up to 95% liquid discharge recovery but at a fraction of ZLD’s costs.

Dow Water & Process Solutions can help address your wastewater regulatory challenges with technology that has the potential to minimize your operating costs and maximize water recovery while reducing the amount of energy required to operate. With the industry’s broadest portfolio of sustainable purification and separation technologies, Dow can help you achieve your MLD goals and get you on a path toward cost savings and higher recovery today.

### TYPICAL MINIMAL LIQUID DISCHARGE (MLD) SYSTEM

- **Industrial Wastewater**
- **Equalization basin**
- **Lime softening** (optional)
- **Sand filter** (optional)
- **DOW IntegraFlux**
- **AMBERLITE** IRC 83 Ion Exchange Resin (Ion Separation)
- **DOW™ Specialty Exchange Resin**
- **COD Reduction**
- **UHP RO**
- **Evaporator**
- **Crystallizer**
- **Solids**

*Depending on scaling and fouling potential, IX may be installed between RO stages instead.*

### COST COMPARISON OF MINIMAL LIQUID DISCHARGE (MLD) vs ZERO LIQUID DISCHARGE (ZLD)

<table>
<thead>
<tr>
<th>Water Recovery (%)</th>
<th>TDS (ppm)</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>2,000</td>
</tr>
<tr>
<td>70</td>
<td>6,666</td>
</tr>
<tr>
<td>95</td>
<td>40,000</td>
</tr>
<tr>
<td>99</td>
<td>200,000</td>
</tr>
</tbody>
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Form No. 609-50241 Rev.0 CDP
June 2016