DOW™ Ultrafiltration (UF) modules and DOW FILMTEC™ elements have been installed to purify well water used as process water for soft drink production.

**Fast Facts**

- **Country:** Spain
- **End-User:** Beverage Industry
- **Feed Water Quality:** Well Water
  - Conductivity ~1,000 μS/cm; TSS: 5 mg/L
  - Turbidity: 5 NTU; SDI > 5
- **Membrane Type:** DOW™ UF SFP-2880, DOW FILMTEC™ LE-400i
- **Total # of Elements:** 45, 72
- **Plant Design Info:** 3 racks with 15 modules
- **Plant Capacity:** 200 m³/h (4,800 m³/day), 70 m³/h
- **Recovery:** > 95%, 75%
- **Product Water Quality:** Turbidity < 0.03 NTU (Ultrafiltrate)
  - Temperature Range: 10-20°C
- **Start-Up Date:** June 2010

**Performance**

- Filtration Cycle Duration: 60 minutes
- Operating Flux: 65 L/m²h
- Trans-Membrane Pressure (TMP) at 20°C: 0.40 bar
- No Chemically Enhanced Backwash (CEB) needed.

**Operating Conditions UF – Summary Table**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency</th>
<th>Duration</th>
<th>Chemical Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filtration</td>
<td>—</td>
<td>60 min</td>
<td>—</td>
</tr>
<tr>
<td>Air Scour</td>
<td>Every 60 min</td>
<td>20 s</td>
<td>—</td>
</tr>
<tr>
<td>Backwash</td>
<td>Every 60 min</td>
<td>60 s</td>
<td>0.2 – 0.3 ppm ClO₂</td>
</tr>
<tr>
<td>Forward Flush</td>
<td>Every 60 min</td>
<td>60 s</td>
<td>—</td>
</tr>
<tr>
<td>CEB*</td>
<td>None</td>
<td>None</td>
<td>—</td>
</tr>
<tr>
<td>CIP*</td>
<td>—</td>
<td>—</td>
<td>Alkaline: 0.05% NaOH, 0.2% NaOCl Acid: 2% citric acid</td>
</tr>
</tbody>
</table>

*Chemically Enhanced Backwash
*CIP: Clean-in-Place