

Critical Element Information (CEI)

We recommend that this document is filled out as much as possible. It enables FilmTec to prepare a more detailed Director Services Report.

1. Element details

Model:				
Serial number	A xxxxxx	A xxxxxx		
Location within system	Example: 1 st element in stage 1 from RO unit A	Last element of stage 2 from RO unit B		

2. Feed water source

<input type="checkbox"/> City water	<input type="checkbox"/> Well water	<input type="checkbox"/> Sea water, open intake	<input type="checkbox"/> Sea water, beach well
<input type="checkbox"/> Lake	<input type="checkbox"/> River	<input type="checkbox"/> Canal	<input type="checkbox"/> Tertiary Effluent
<input type="checkbox"/> Other, please specify:			

3. Pretreatment

<input type="checkbox"/> Sodium hypochlorite	<input type="checkbox"/> Chloramines	<input type="checkbox"/> Chlorine dioxide	<input type="checkbox"/> Ozone
<input type="checkbox"/> Clarifier	<input type="checkbox"/> Lime softening	<input type="checkbox"/> Multi media filter	<input type="checkbox"/> Gravity sand filter
<input type="checkbox"/> Pressure sand filter	<input type="checkbox"/> Green sand filter	<input type="checkbox"/> Activated carbon filter	<input type="checkbox"/> Ultra filtration
<input type="checkbox"/> Micro filtration (membranes)	<input type="checkbox"/> Feedwater heatexchanger	<input type="checkbox"/> Cartridge filter Pore size: um Exchange frequency:	<input type="checkbox"/> Softening by ion exchange resin
<input type="checkbox"/> Dealkalization by ion exchange resin	<input type="checkbox"/> Other: please specify		

4. Chemicals used in pretreatment

Chlorine residual	Feed point: Dose rate:	ppm residual prior to neutralization	<input type="checkbox"/> Bisulfite: ppm Feed point:
Flocculants/coagulants	<input type="checkbox"/> alum <input type="checkbox"/> PAC Feed point: Dose rate:	<input type="checkbox"/> Ferric chloride <input type="checkbox"/> Ferric sulfate Feed point: Dose rate:	<input type="checkbox"/> Organic polymer Product name: Feed point: Dose rate:
On-line shock dosing	<input type="checkbox"/> Yes Product name: Dose rate: Frequency:	<input type="checkbox"/> No	

Acidification	<input type="checkbox"/> Yes To pH: <input type="checkbox"/> No	<input type="checkbox"/> Sulfuric acid <input type="checkbox"/> Hydrochloric acid <input type="checkbox"/> Other Please indicate:	
Antiscalant	Product name:	Dose rate:	Feed point:

Is antiscalant diluted?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
What kind of water is used for dilution?	<input type="checkbox"/> RO permeate <input type="checkbox"/> City water	<input type="checkbox"/> RO feed water <input type="checkbox"/> Other, please specify:
How often is a new solution of antiscalant prepared?		

5. RO/NF design

Number of trains:	
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5.1 Configuration

Number of stage:	
Number of pressure vessels in each stage:	
Number of elements per pressure vessel:	
Membrane element type:	
Start-up date RO/NF system:	
Permeate flow recovery:	

5.2 Permeate application

<input type="checkbox"/> Potable water	<input type="checkbox"/> Boiler feed water	<input type="checkbox"/> Irrigation water	<input type="checkbox"/> Process water	<input type="checkbox"/> Other:
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6. RO/NF operation

Is the RO/NF unit in continuous operation?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
How often is the RO/NF system shutdown (time/day, length of shutdown, hours/day)		
Is a flush carried out prior to shutdown?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
What kind of water is used for the flush?	<input type="checkbox"/> Raw feed water <input type="checkbox"/> Permeate	<input type="checkbox"/> Pretreated water <input type="checkbox"/> Other,

7. Comments on current operation and performance trend

Permeate quality:	
Permeate flow:	
Pressure drop:	
Cleaning frequency:	
Other:	

8. Feed water, concentrate, permeate analysis

Temperature (°F or °C)		Feed water SDI	
pH raw water		pH feed water	

Units: mg/l ion meq/l ppm CaCO₃ Other, please specify

Please attach water analysis reports when available.

9. Cleaning

What is the reason for cleaning?	<input type="checkbox"/> Pressure drop increases	<input type="checkbox"/> Permeate flow decline
	<input type="checkbox"/> Salt passage increases	<input type="checkbox"/> Other, please specify
Are stages cleaned separately?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is cleaning solution heated?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is CIP unit equipped with cleaning pump?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is ICP unit equipped with cartridge filters?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Which cleaning method is applied? Please specify:		
<input type="checkbox"/> acid, please specify which product		
<input type="checkbox"/> alkaline, please specify which		
<input type="checkbox"/> biocide, please specify which product		
<input type="checkbox"/> other, please specify which product		
Please indicate in which order the cleaning chemicals are applied: Example: alkaline followed by acid. RO permeate flush after each cleaning. Please describe the cleaning procedure:		
What kind of water is used for the dilution of the cleaning chemicals?		
<input type="checkbox"/> RO permeate	<input type="checkbox"/> RO/NF feed water	<input type="checkbox"/> NF permeate
<input type="checkbox"/> City water	<input type="checkbox"/> Raw water	<input type="checkbox"/> Other, please specify:
What is the flow rate during cleaning? Please indicate which unit:		
<input type="checkbox"/> gpm	<input type="checkbox"/> m ³ /hr	<input type="checkbox"/> Other, please specify which unit
Stage 1:	Stage 2:	
Stage 3:	Other:	