



726 Beacon St, Loves Park, IL 61111 | 815-636-8833 | 800-919-0888 | 815-636-8844 fx | www.watersurplus.com

EQUIPMENT DATA SHEET RO

Description	20 GPM 2-Pass Brackish RO
--------------------	---------------------------

Asset #:	ROE3100086
-----------------	------------

Owner		Mfg. Yr.
Watersurplus		2002

EQUIPMENT TYPE	OEM
RO Skid	USFilter

NORMAL OPERATING PARAMETERS		
Operating Water Temperature	77	°F
Min. Inlet Water Pressure	30	PSI
Maximum SDI	3	
Maximum Turbidity	< 1	NTU
Max. Free Chlorine/chloramines	< 0.01	PPM
Nominal Operating Pressure	487	PSI
Maximum System Recovery	50	%
Maximum TDS	3000	ppm

UNIT CONFIGURATION		
# Passes	2	
1st Pass Stages	2	
2nd Pass Stages	1	
1st Pass Array	2:1	
2nd Pass Array	1	
Housing Size, Mat'l, psi	8" x 4M, FRP, 600 ASME	
Housing Manufacturer	Codeline 80A60-4W	
Total # membranes	(12) 1st Pass, (4) 2nd Pass	

POWER REQUIREMENTS						
GENERAL POWER	VAC	PH	HZ	Amps	Src	
High Voltage	240/480	3	60	100	Ext	
Control Voltage	120	1	60	20	Int	
PUMPS & MOTORS						
	VAC	PH	HZ	HP	Amps	
Primary/First Pass	240/480	3	60	30	48	
Redund/Second Pass						
CIP						
Inlet Feed/Trans						

FLOW SPECIFICATIONS		
1st Pass Feed	42 (57)	gpm (+recycle)
1st Pass Product	34	gpm
1st Pass Concentrate	8	gpm
1st Pass Recycle	15	gpm
1st Pass Perm Flush	2	gpm
2nd Pass Feed	34	gpm
2nd Pass Product	20	gpm
2nd Pass Concentrate	13	gpm
Instrument Air Press	80	psi
Instrument Air Volume	15	SCFM

CONTROLS	
Main Controller	AB SLC-5/05 PLC
HMI	EX Durapanel SE Series
I/O Type	AB 1746
Motor Starter	CuttlerHammer Soft Start Fused
Chem Pumps Qty.	(1) LMI Diaphragm Pump
Chm Pmp Ctrl Method	PLC

PHYSICAL SPECIFICATIONS		
Length	198	inches
Width	54	inches
Height	96	inches
Weight (shipping)	4000	lbs.
PV Housing Size	8" x 180"	dia. x length (in.)
Inlet Piping Material	Sch 80 PVC	
Outlet Piping Material	Sch 40 316 SST	

AVAILABLE DOCUMENTATION					
Description	AVAIL		Description	AVAIL	
Process & Instrumentation Diagram - P&ID	Y		Electrical Schematics	Y	
Piping layout/General Arrangement	N		Program Logic	Y	
Major Component List - MC List	N		Operations/Maintenance Manuals	N	

EQUIPMENT DATA SHEET RO

Description	20 GPM 2-Pass Brackish RO	Asset #:	ROE3100086
Owner		Mfg. Yr.	
Watersurplus		2002	
EQUIPMENT TYPE		OEM	
RO Skid		USFilter	

PROCESS CONNECTIONS (SIZES & LOCATION)			
	Size & Type	Location Symbol	
Feed Inlet	2" ANSI 150 Flanged	Lower, Front, Right	
Permeate Outlet	1.5" ANSI 150 Flanged	Upper, Front, Left	
1st Pass Concentrate Drain	2" ANSI 150 Flanged	Lower, Front, Left	
CIP Inlet	2" 316 SST Victaulic	Upper Left End	
CIP Outlet	2" 316 SST Victaulic	Upper, Right, End	
2nd Pass Concentrate Drain	1.5" ANSI 150 Flanged	Upper, Middle, Front	
Instrument Air	0.375" Quick Disconnect	Lower Right Side Panel	



MISCELLANEOUS INFORMATION

This is a two pass 20 gpm final product RO system. It includes first pass concentrate recycle, caustic feed system with pump and tank built onto the skid. This RO has been redesigned with a new PLC program and updated HMI to operate as a stand alone, independent RO skid. This RO came out of a "system" plant process and had many ancillary pieces of equipment that it controlled. These have been removed and the RO skid simplified for easy single RO operation.

INSTRUMENTATION

Pressure	Ind.	Sw.	Xmtr	Manufacturer	Part Number
Primary Inlet		x		Ashcroft	B420V pressure switch, 200 psi range



726 Beacon St, Loves Park, IL 61111 | 815-636-8833 | 800-919-0888 | 815-636-8844 fx | www.watersurplus.com

EQUIPMENT DATA SHEET RO

Description				20 GPM 2-Pass Brackish RO		Asset #:		ROE3100086	
--------------------	--	--	--	---------------------------	--	-----------------	--	------------	--

Owner				Mfg. Yr.		EQUIPMENT TYPE				OEM	
Watersurplus				2002		RO Skid				USFilter	
Pre-filter Inlet	x			Wika		0-60 psi scale, 2.5" dial, 316 SST wetted parts					
Pre-Filter Outlet	x			Wika		0-60 psi scale, 2.5" dial, 316 SST wetted parts					
High Pump Discharge	x			Ashcroft		0-400 psi scale, 2.5" dial, 316 SST wetted parts					
High Pump Discharge		x		Ashcroft		B420V pressure switch, 1000 psi range					
1st Pass Membr Feed	x			Wika		0-600 psi scale, 4.5" dial, 316 SST wetted parts					
1st Pass Inter-Stage	x			Wika		0-600 psi scale, 4.5" dial, 316 SST wetted parts					
1st Pass Concentrate											
1st Pass Conc Recycle	x			Wika		0-100 psi scale, 2.5" dial, 316 SST wetted parts					
2nd Pass Membr Feed	x			Wika		0-600 psi scale, 4.5" dial, 316 SST wetted parts					
2nd Pass Permeate	x			?		0-60 psi, 2.5" dial, 316 SST wetted parts					
2nd Pass Concentrate	x			?		0-60 psi, 2.5" dial, 316 SST wetted parts					

Conductivity							
Primary Inlet			x	Thornton		200CR Monitor and cell	
2nd Pass Permeate			x	Thornton		200CR Monitor and cell	
Concentrate							

Flow							
Primary Inlet							
1st Pass Concentrate	x		x	Signet		3-8550-3P Analyzer with 515 paddle wheel	
2nd Pass Permeate	x		x	Signet		3-8550-3P Analyzer with 515 paddle wheel	
2nd Pass Concentrate	x		x	Signet		3-8550-3P Analyzer with 515 paddle wheel	
1st Pass Conc Recycle	x		x	Signet		3-8550-3P Analyzer with 515 paddle wheel	

Other							
pH	x		x	GLI		Model 63 Analyzer with AquaMeter cell	
Temperature	x		x	Thornton		200CR Analyzer with dual cond/temp cell	
ORP							

MAJOR COMPONENTS			
Pumps	Manufacturer	Model	Desc
First Pass / Feed	Grundfos	BMP17-23-N	88gpm x 919ft max, 30 Hp, submersible, 480V, 3pH, 60 Hz, 3" Victaulic inlet & outlet
Second Pass			
CIP			

Cartridge Filter	Manufacturer	Model	Desc
Housing	USFilter	18MS03-304-2F-C150U	10"dia x 36"ss 304SST housing, 150 psi, 6 round



726 Beacon St, Loves Park, IL 61111 | 815-636-8833 | 800-919-0888 | 815-636-8844 fx | www.watersurplus.com

EQUIPMENT DATA SHEET RO

Description	20 GPM 2-Pass Brackish RO		Asset #:	ROE3100086
Owner		Mfg. Yr.	EQUIPMENT TYPE	OEM
Watersurplus		2002	RO Skid	USFilter
Elements	GE	RO.Zs 01-30-XK	(6) 2" x 30" long, 1 micron, melt blown, DOE	
Valving	?	?	2" Manual butterfly, CI body, 316SST disc, EPDM	
Chemcial Feed	Manufacturer	Model	Desc	
Pump	LMI	A951-94S	1 gph at 110 psi output, 1/4" tubing, tank mounted	
Tank	?	?	24"dia x 32"ss, PE enclosed day tank	
Level Instrument	?	?	Float switch	
Mixer	Liquid Metronics	1059A	115VAC, 60Hz, SST shaft, plastic Impeller	
Valves & Piping	Manufacturer	Model	Desc	
Primary Inlet	Nibco	NSR8F05	2" PVC ball valve, R&P actuator, AO/SC	
1st Pass Conc	?	Compactorque	0.75" 316SST 3-piece ball valve, R&P act AO/SC	
1 Pass Perm Flush	ASCO	JKH8262G130	0.25" SST Red Hat solenoid valve, 120VAC,200psi	