GrahamTek 16" & 8" Super-Flux RO Demo Plant
Bedok NEWater, Singapore | Capacity: 1,800m^3/day

SYSTEM DESIGN

	16" RO		8" RO
2-Stage Tapered Configuration	2:1	2:1	2:1
Total Vessels	3	3	3
Vessel Specification	Side-Port with GrahamTek Patented EMF	Side-Port with GrahamTek Patented EMF	Side-Port with GrahamTek Patented EMF
Element Per Vessel	4	4	6
Total Elements	12	12	18
Element Specification	16" x 40" fitted with GrahamTek Flow Distributors	16" x 40" fitted with GrahamTek Flow Distributors	8" x 40" fitted with GrahamTek Flow Distributors
Active Surface Area Per Element	1,250 sq ft	1,270 sq ft	400 sq ft
Membrane Type	Saehan RE16040-BLR	Hydranautics ESPA2	Hydranautics ESPA2

SYSTEM PERFORMANCE

Parameters	Unit	16" RO		8" RO
Total Operating Hours	hrs	8466	4347	5988
Overall Flux	GFD	24.0	23.0	16.0
	lmh	40.3	38.6	26.9
1st Stage Flux	GFD	24.1	23.1	16.2
	lmh	40.5	38.8	27.2
2nd Stage Flux	GFD	23.8	23.0	15.8
	lmh	40.0	38.6	26.5
Overall Recovery	%	75	75	75
1st Stage Recovery	%	50.0	50.0	50.0
2nd Stage Recovery	%	50.0	50.0	50.0
RO Feed Pressure	Bar	12.4	11.8	10.4
1st Stage Reject Pressure	Bar	11.3	10.0	8.7
2nd Stage Reject Pressure	Bar	10.7	10.3	7.2
1st Stage Permeate Pressure	Bar	2.30	1.80	2.60
2nd Stage Permeate Pressure	Bar	1.00	1.10	0.80
Feed Flow	m^3/h	75.3	73.3	24.2
Permeate Flow	m^3/h	56.7	55.2	18.2
1st Stage Permeate Flow	m^3/h	38.0	37.0	12.3
2nd Stage Permeate Flow	m^3/h	18.8	18.4	6.0
Overall Permeate Conductivity	µS/cm	12.8	11.3	11.6
1st Stage Permeate Conductivity	µS/cm	9.0	8.2	8.7
2nd Stage Permeate Conductivity	µS/cm	20.8	18.8	20.5
Overall Salt Rejection	%	99.0	99.0	99.0
1st Stage Salt Rejection	%	99.1	99.0	99.0
2nd Stage Salt Rejection	%	98.9	98.9	98.8
Feed Temperature	deg C	31.5	31.2	31.4
Feed pH	pH	7.0	6.9	7.0
Permeate pH	pH	5.3	5.3	5.5
Power Consumption	kWh/m^3	0.66	0.62	0.61