Winflows3.x v. 1.2.30 w **Input Data Summary** **13-Nov-2008 15:06**

Project: Propmech Corp
Project File
Engineer: Randy Leathers
Analysis File: PROPMECH.DSI
Analysis Name: User Defined
Element File Date: May-28-1999

Project Information

Description:	Propmech Corp
Client Name:	Propmech Corp
Location:	Manila Philippines
Engineer:	Randy Leathers
Comments:	36000 gpd RO

Flowsheet Configuration

Flowsheet Type:	Single Pass Flowsheet
Feed Predosing?	Yes
Feed Afterdosing?	No
Product Dosing?	No
Feed CO2 Stripping?	No
Product CO2 Stripping?	No
Raw Feed Bypass?	No
First Pass Recycle?	No

Feed Information

Temperature, Deg C:	20.0
Feed pH:	7.2
Silt Density Index:	2.0
Fouling Allowance:	0.90

Feed Stream Composition (mg/l)

Calcium	40.04
Iron	1.09
Potassium	8.30
Magnesium	5.34
Manganese	15.80
Sodium	39.64
Chloride	2.80
Bicarbonate	298.68
Nitrate	0.01
Sulfate	0.40
Silica	103.00
Carbonate	0.25
Carbon Dioxide	31.03

Flow Rate Specifications

Product Flow:	36,000.0 Gal/day
Array Recovery:	60.0%

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Array Data

Interbank Pressure Loss: 0.00 Psi
Interbank Pressure Boost: 0.00 Psi

Bank	Housings	Elements	Element Type	Element Age
1	4	3	AG4040F	0.00 Years
2	3	3	AG4040F	0.00 Years

Chemical Dosing Specifications

First Feed Dosing to 6.5 pH using Sulfuric Acid

Pump Specifications

Feed Pump Selection:

Winflows3.x v. 1.2.30 w **Results Summary** **13-Nov-2008 15:07**

Project: Propmech Corp
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Analysis Name: User Defined
Element File Date: May-28-1999

Flow Data	***Gal/day***	***Analytical Data***	***mg/L***
RO/NF Feed	60,000.0	RO/NF Feed TDS	515.4
Treated Permeate	36,000.0	Treated Permeate TDS	4.2
System Conc	24,000.0	System Conc TDS	1,233.5

System Data ***Single Pass Design***

Temperature: 20.0 Deg C
Overall Recovery: 60.0%

Array Data

Pass/Stage Recovery: 60.0% Concentrate TDS: 1,234 Conc. Flow: 24,000.0

Bank	Total Housings	Total Elem	Element Type	Feed Flow Gal/day	Perm Flow Gal/day	Feed Psi	Delta Psi	Perm TDS mg/L
1	4	12	AG4040F	60,000.0	21,083.1	194.6	8.3	3.4
2	3	9	AG4040F	38,916.9	14,981.9	186.3	6.5	5.3
Total	**7**	**21**		**60,000.0**	**36,000.0**			**4.2**

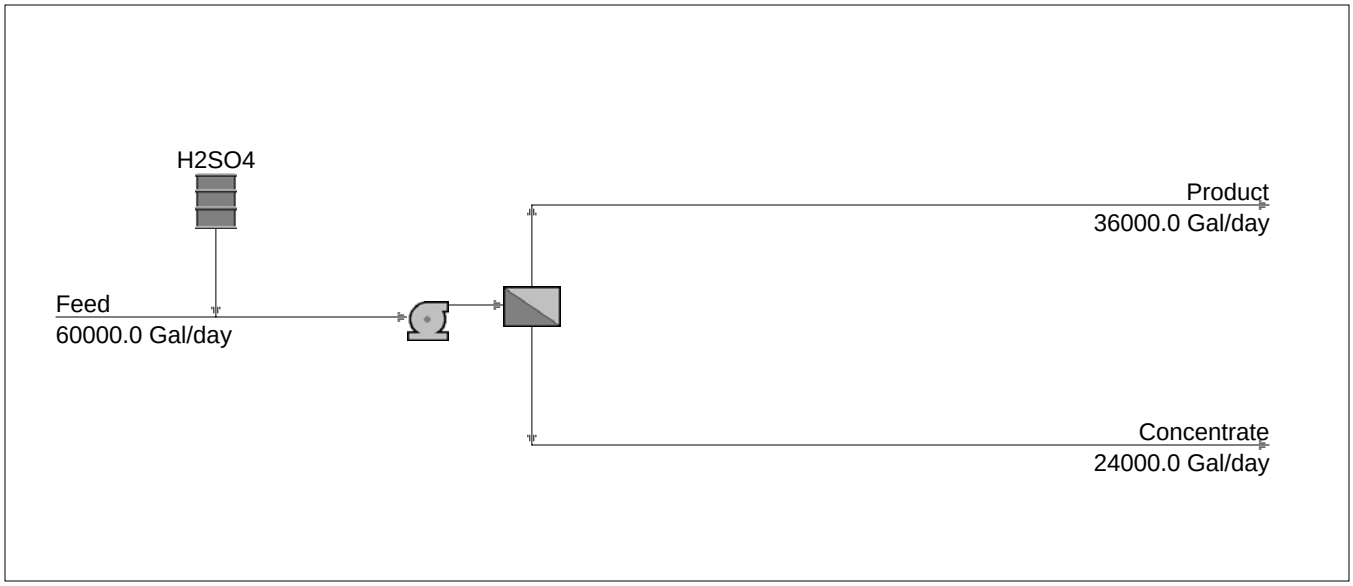
Analytical Data (mg/L)

	Perm	**Feed**	**Conc**		**Perm**	**Feed**	**Conc**
Ca	0.2	40.0	100.1	HCO3	2.3	298.7	495.3
Mg	0.0	5.3	13.3	CO3	0.0	0.3	0.2
Na	0.6	39.6	98.5	Cl	0.0	2.8	7.0
K	0.1	8.3	20.6	SO4	0.2	0.4	199.0
Ba	0.0	0.0	0.0	F	0.0	0.0	0.0
Sr	0.0	0.0	0.0	NO3	0.0	0.0	0.0
NH4	0.0	0.0	0.0	PO4	0.0	0.0	0.0
Fe	0.0	1.1	2.7	SiO2	0.7	103.0	257.2
Mn	0.1	15.8	39.5	CO2	103.1	31.0	103.1
TDS	4.2	515.4	1,233.5	pH	4.6	7.2	6.9
Saturation Data							
CaSO4	0.0%	0.0%	4.7%	BaSO4	0.0%	0.0%	0.0
CaF2	0.0%	0.0%	0.0%	SiO2	0.5%	89.6%	274.5
LSI	-7.6	-0.2	0.0	SrSO4	0.0%	0.0%	0.0

Winflows3.x v. 1.2.30 w **Process Data Sheet** **13-Nov-2008 15:07**

Project: Propmech Corp
Project File
Analysis File: PROPMECH.DSI
Element File Date: May-28-1999

Engineer: Randy Leathers
Analysis Name: User Defined



Flow Data	*Gal/day*	*Analytical Data*	*mg/L*
RO/NF Feed	60,000.0	RO/NF Feed TDS	515.4
Treated Permeate	36,000.0	Treated Permeate TDS	4.2
System Conc	24,000.0	System Conc TDS	1,233.5

System Data		*Single Pass Design*
Temperature	20.0	Deg C
Fouling Allowance	90.0	Percent
Feed Pressure	194.6	Psi
Interbank Boost	0.00	Psi
Interbank Loss	0.00	Psi
Element Age	0.00	Years

Pumping Summary	*Gal/day*	*DP, Psi*	*kW @ 65.0% Efficiency*
Feed	60,000.0	194.64	5.4
Interbank Boost	------	0.00	0.0

Chemical Usage	*Chemical*	*Lb/Day*	*Kg/Day*	*pH or ppm TH*
Feed Predosing	Sulfuric Acid	40.4	18.4	5.0

Winflows3.x v. 1.2.30 w **Errors and Warnings** **13-Nov-2008 15:07**
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WARNING!! Concentrate silica exceeds saturation.

Warning! - The feed water analysis was balanced with added Na or Cl.