Case study of Memsys pilot plant for inland groundwater desalination in West Australia

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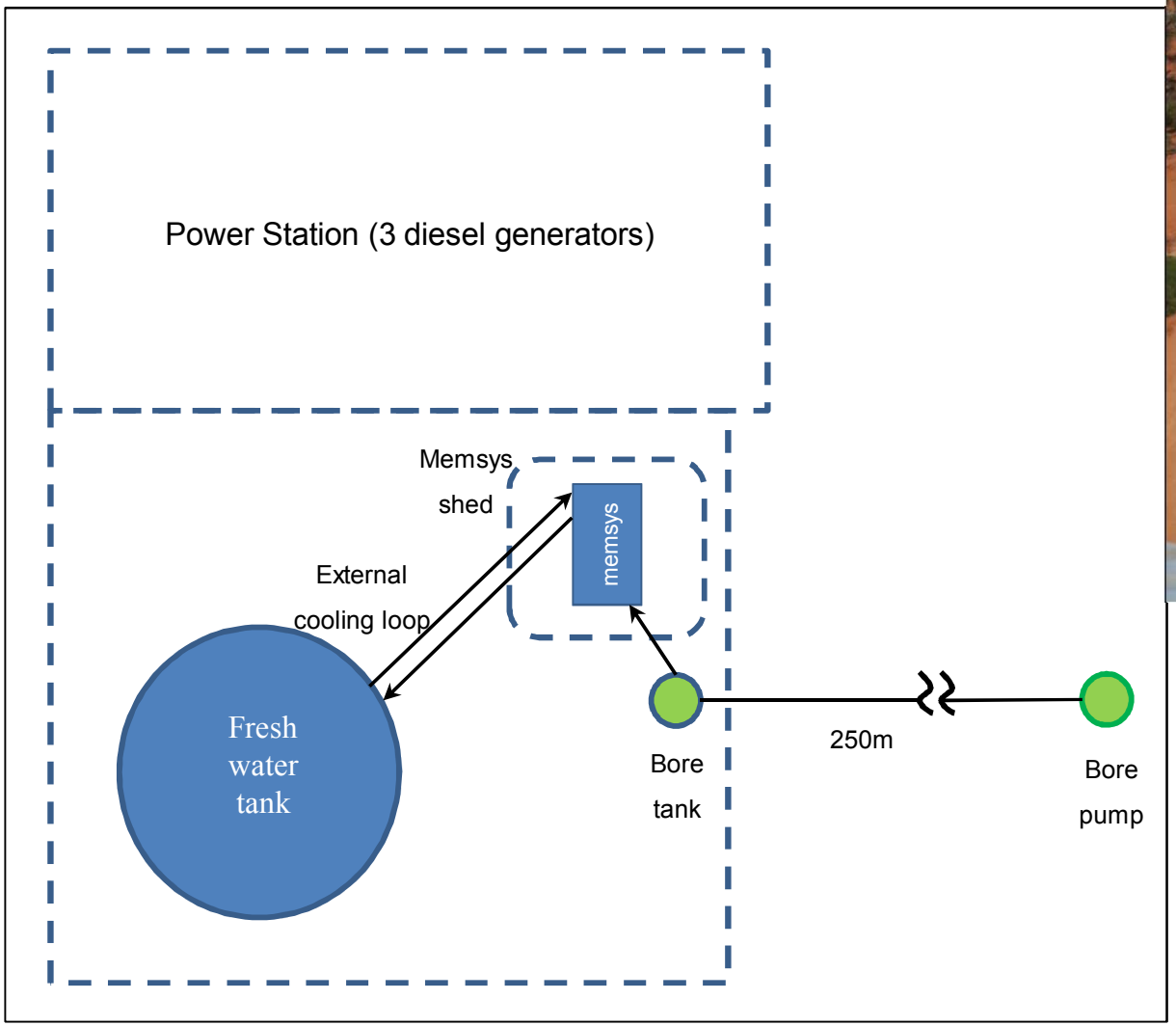
Project aim

- **To develop an energy efficient and chemical free pre-treatment process for the Memsys system**
- **To develop a robust, low maintenance desalination based on the 1 m^3/day Memsys V-MEMD system that is suitable for connection to a solar thermal or waste heat from Generator**
- **To install the unit at the remote community and monitor performance**
- **Based on the results obtained, develop the specs for a 20 m^3/day unit and assess its likely feasibility as a general desalination option**

Location of testing site

Memsys integration – On site installation



Memsys integration – Working conditions

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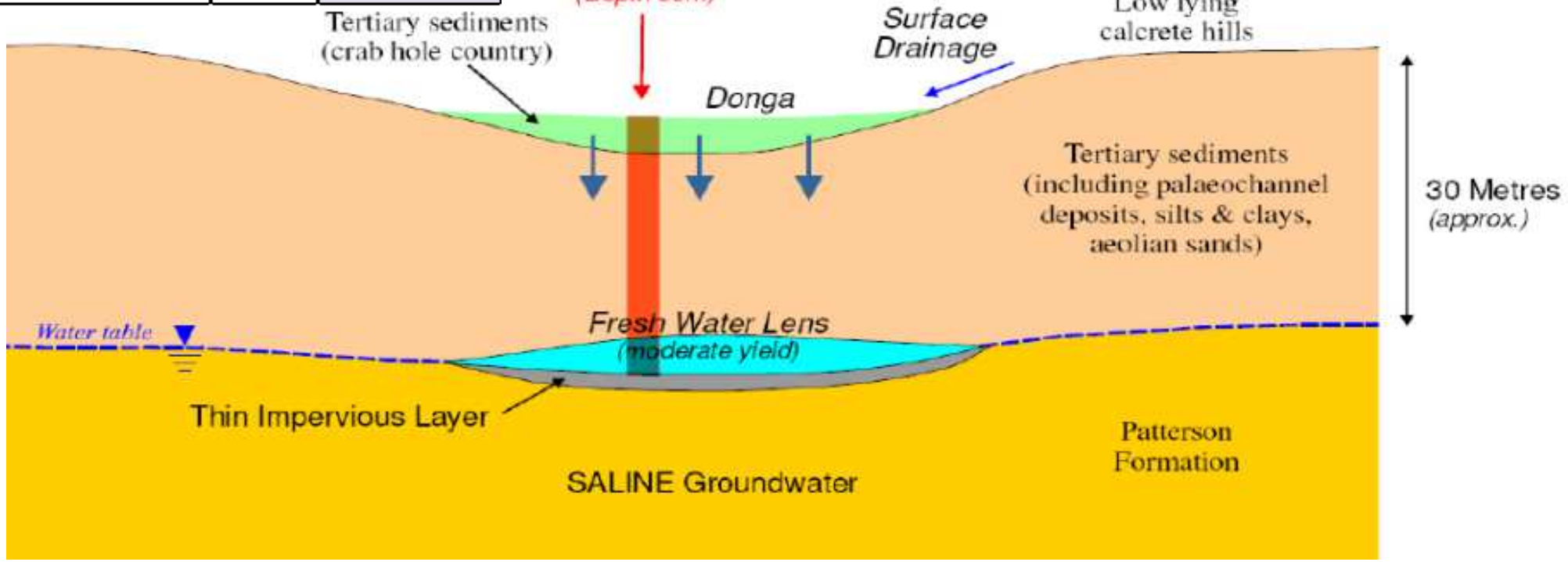
Groundwater information

Bore water analysis	UNIT	BORE 4/99 AS AT 18/06/1999
Calcium	mg/L	760
Chloride	mg/L	25800
EC	mS/m	6300
Hardness Total	mg/L	9320
Iron	mg/L	5.5
Iron total	mg/L	6
Magnesium	mg/L	1800
pH		6.89
Potassium	mg/L	400
Sodium	mg/L	13300
Sulphate	mg/L	5350
TDS (grav)	mg/L	
TDS (calc)	mg/L	
Turbidity	NTU	15
Ionic balance	%	



Water analysis

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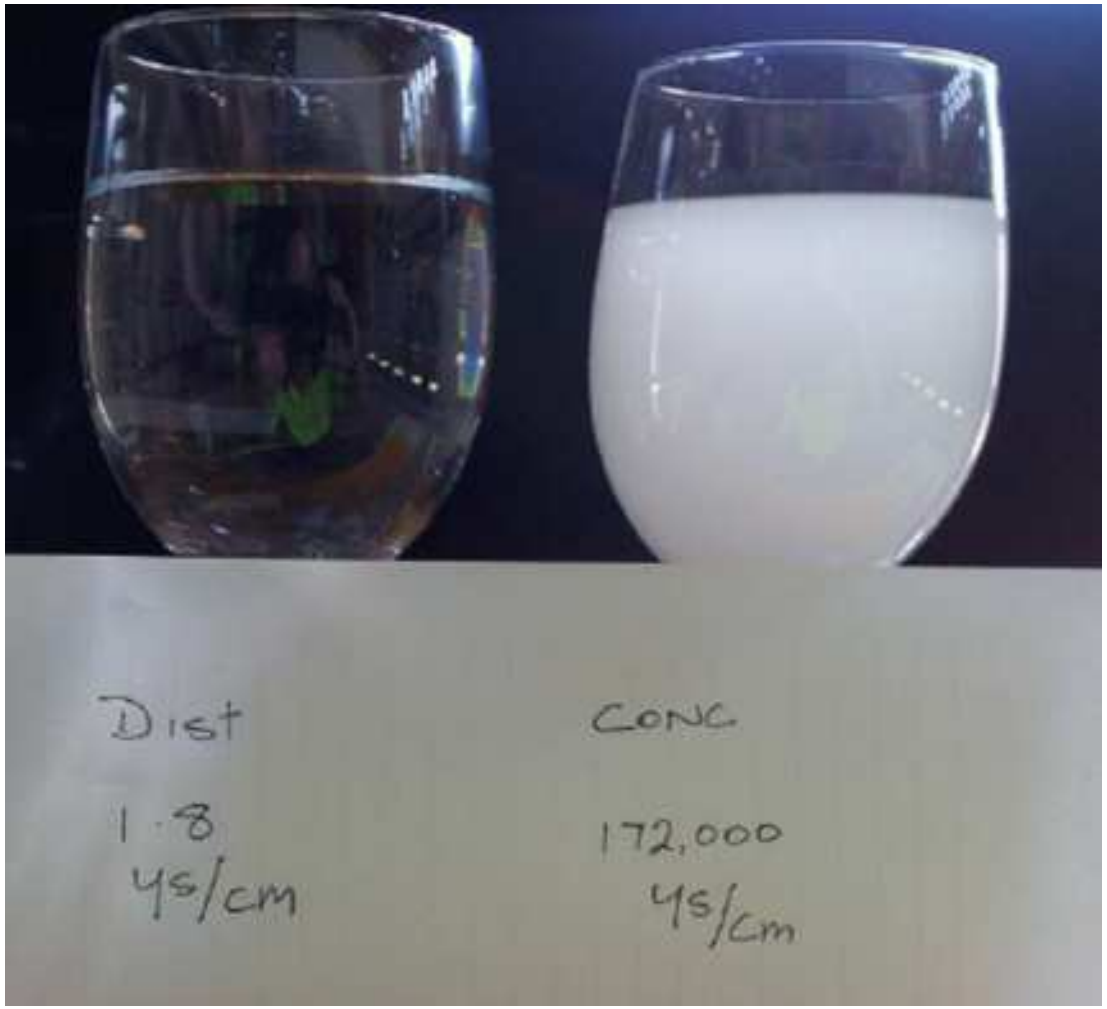
Distillate EC: < 10 µm/cm

Deep concentration of ground water



Distillate conductivity

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Concentrate				Distillate		
EC (mS/cm)	Temp	Turbid	pH	EC µS/cm	Temp	pH
95.5	42.3	6.41	7.74	**90**	39.7	4.64
98.45	42.7		7.55	**35**	40	7.27
96.73	42.1	9.4	7.41	**46**	37.6	8.15
98.37	43.8	9.11	7.42	**68**	40.7	7.98
99.77	44	7.48	7.34	**15**	41.3	8.05