

Wastewater Reclamation Facilities for Reuse Systems

Size	17,000 GPD	.7 MGD	2.0 MGD
Population (at 85 gpcd and 70 gpcd)	200-250	8,200 – 10,000	23,500-28,500
Example	Mt. Lemmon WRF	Marana WRF	Green Valley WRF

WRF

Technology	Pad-Mount Closed Loop Reactor (CLR) Modular with SCADA and remote telemetry	Modular CLR Rebar and Concrete permanent structure with SCADA and remote telemetry (Marana currently has four 50,000 gal. package plants + a .5 Biolac WRF)	Biological Nutrient Removal Oxidation Ditch (BNROD) with SCADA and remote telemetry
Water Quality	B (A+ would require facility modifications for de-nitrification and filtration system)	A+ (currently permitted for B+)	A+
Permits Needed	APP AZPDES Reuse	APP AZPDES Reuse	APP AZPDES Reuse
Land: Footprint and setbacks	WRF 2 acres, spray field 10 acres	WRF 10 acres, Reuse/Buffer 190 acres	WRF 20 acres, ponds/buffer 65 acres
Capital cost per gallon/footal	\$ 2M plus (1982) \$2,000,000/12,500=~\$16/gal	\$13 M = \$18.60 x .7 MGD w/out land (permitted 11/22/2006)	\$17 M = \$8.50 x 2 MGD w/out land (permitted 10/25/2000)
Operating Costs	\$205,419	\$678,962	\$1,058,516
Operator Level and Requirements	Grade 2	Grade 3	Grade 4
Financing Options	Bonds Cash Grants/Loans	Bonds Cash Grants/Loans	Bonds Cash Grants/Loans

Reclaimed System *

Capital Costs	N/A	\$8.17	\$19..2
Operating Costs	N/A	742,000	\$2.1 Million
Land Requirements	N/A	5 to 8 acres	12 to 16

WRF and Reclaimed System Common Issues

Potential Barriers	Need customer with large reuse needs. Need recharge and recovery operation.
Potential Incentives	Buy down conversion costs from groundwater. Buy down capital system costs (WRF and reuse system). Buy down operating/power costs. Subsidize reclaimed water charges.
Technical and Economic Feasibility	Must be technically feasible. Must be economically sustainable Use analysis in <i>The Water Reuse Quote Cost Benefit...</i>