

**APPENDIX E**  
**SOLUTIONS MANAGEMENT**

**SOLUTION EVAPORATION IN LEACH PAD**

<b>Augusta Resource Rosemont PROJECT - LIFE OF MINE SOLUTION EVAPORATION</b>		
<b>ASSUMPTIONS</b>		
1 Spent ore	50,000,000	tons
2 Active spent ore	2,195,000	tons
3 Area of lined spent ore	4,500,000	square feet
4 Rainfall (annual)	22.27	inches
5 Labor and supplies	\$ 1,107	\$/day
6 Evaporation rate	5%	effective
7 Power costs	\$ 0.05	\$/kWh
8 Pond volume	3,000,000	gallons
<b>GALLONS OF SOLUTION TO EVAPORATE</b>		
2,195,000 tons x 2000 lbs/ton x 1 cu ft/125 lbs x 0.3 porosity x 0.1 gravitational water to drawdown	7.9	million gallons
Rainfall factor (1 million sq. ft x 1.86 ft)/7.48 gal/ft cu	4.0	million gallons
Amount remaining in pond	1.9	million gallons
<b>Total Gallons of Solution to Evaporate</b>	<b>13.8</b>	<b>million gallons</b>
<b>MONTHLY EVAPORATION<sup>1</sup></b>		
Month 1 (2,560 gal/min x 1440 min/day x30.5 days x 0.05)	5.6	million gallons
Month 2 (2,700 gal/min x 1440 min/day x30.5 days x 0.05)	5.9	million gallons
Month 3 (3,500 gal/min x 1440 min/day x30.5 days x 0.05)	7.7	million gallons
Month 4 (4,100 gal/min x 1440 min/day x30.5 days x 0.05)	9.0	million gallons
Month 5 (5,000 gal/min x 1440 min/day x30.5 days x 0.05)	11.0	million gallons
Month 6 (5,300 gal/min x 1440 min/day x30.5 days x 0.05)	11.6	million gallons
Month 7 (5,300 gal/min x 1440 min/day x30.5 days x 0.05)	11.6	million gallons
Month 8 (5,000 gal/min x 1440 min/day x30.5 days x 0.05)	11.0	million gallons
Month 9 (4,200 gal/min x 1440 min/day x30.5 days x 0.05)	9.2	million gallons
Month 10 (3,700 gal/min x 1440 min/day x30.5 days x 0.05)	8.1	million gallons
Month 11 (2,900 gal/min x 1440 min/day x30.5 days x 0.05)	6.4	million gallons
Month 12 (2,500 gal/min x 1440 min/day x30.5 days x 0.05)	5.5	million gallons
<b>Total Gallons Evaporated by Month</b>	<b>102.7</b>	<b>million gallons</b>
<b>POWER COSTS</b>		
Month 1 (12,000 gal/min x 100 ft head x 0.746 Hp/kWh x 0.06 \$/kwh x 24 hr/day x 30.5 day/mon)/(3960 x 0.75 pump eff. X 0.9 motor eff.)	14,709.01	
Month 2 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 3 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 4 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 5 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 6 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 7 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 8 (9,000 gal/min x 1440 min/day x30.5 days x 0.05)	11,031.76	
Month 9 (6,000 gal/min x 1440 min/day x30.5 days x 0.05)	7,354.51	
Month 10 (3,000 gal/min x 1440 min/day x30.5 days x 0.05)	3,677.25	
Month 11 (1,500 gal/min x 1440 min/day x30.5 days x 0.05)	1,838.63	
Month 12 (1,500 gal/min x 1440 min/day x30.5 days x 0.05)	1,838.63	
<b>Total Cost of Gallons Evaporated per Month</b>	<b>\$ 128,703.85</b>	
<b>Total Cost for Pumping</b>	<b>\$ 128,703.85</b>	
Labor: 365 days x 24 hrs/day x \$22/hr for technician <sup>1</sup>	192,720.00	
<b>TOTAL</b>	<b>\$ 321,423.85</b>	

1. Evaporation rates from pond sizing calculations - wetted surface area and PLS pond evaporation only.

2. Technician rate from AZ20030012 12/22/2006 AZ12 for Heavy Construction in Arizona.