

Pre-Feasibility Study

Appendix 1:

Estimate of Capital costs supplied by METS include both Direct, Indirect and Infrastructure costs (+-25% accuracy)

Area	Plant throughout basis	Totals Revised Total 2.5Mt/a	Totals Revised Total 5.0 Mt/a
100	Crushing Circuit	\$28,671,591	\$28,671,561
200	Grinding Circuit	\$35,825,064	\$35,825,064
300	Beneficiation & Leaching	\$57,298,646	\$79,160,587
400	Solvent Extraction	\$16,754,261	\$23,701,009
500	Vanadium Precipitation & Packaging	\$13,190,986	\$18,944,223
600	Acid Regeneration	\$181,914,654	\$261,256,571
700	Tailings Filtration	\$24,238,940	\$33,692,662
800	Reagents	\$3,872,378	\$5,169,422
900	Plant Utilities	\$2,414,058	\$3,305,699
	Direct Costs Totals	\$364,180,578	\$489,726,828
	Field Indirects (China supply)	2.0%	\$7,283,612
	EPCM (China supply)	4.0%	\$14,567,223
	Vendor Reps	1.5%	\$1,502,570
	Capital Spares	4.0%	\$4,006,855
	Commissioning Spares	0.5%	\$500,857
	First Fills		\$2,200,000
	Insurance	3.0%	\$3,005,141
	Indirect Costs Total	\$33,066,258	\$42,766,694
Infrastructure & Other Fixed Assets (Non-Factored Costs)			
000	Road	\$18,000,000	\$18,000,000
000	Rail	\$4,130,000	\$4,130,000
000	Power Station	\$22,519,750	\$33,779,625
000	Water Supply	\$797,805	\$997,256.56
000	Buildings	\$7,403,031	\$7,403,031
000	Mobile Equipment	\$8,898,255	\$8,898,255
000	Accommodation Village	\$15,587,137	\$20,677,842
000	Laboratory	\$1,584,767	\$1,584,767
	Non-Factored Cost Total	\$78,920,746	\$95,470,777
	GRAND TOTALS	\$476,167,581	\$627,964,299



Appendix 2: Total Operating Cost to accuracy of +-25%

Item	Unit	AUD
Mining		
Waste	\$/t	2.60
Ore	\$/t	2.77
Grade Control on Ore	\$/t	0.20
Administration	\$/t	1.60
Total Mining Cost / t Ore	\$/t	7.03
Total mining Cost / t Moved	\$/t	3.61
Total Mining Cost	\$M	533
Processing		
Rehandle Stockpiles	\$M	10.7
Labour	\$/t	7.75
Power	\$/t	10.43
Consumables	\$/t	1.35
Maintenance	\$/t	4.39
Reagents at 2.5 Mtpa	\$/t	34.96
Reagents at 5.0 Mtpa	\$/t	31.99
Administration	\$/t	1.12
Average Cost / t Processed Years 1 to 4	\$/t	60.20
Average Cost / t Processed Years 5 onwards	\$/t	57.16
Total Processing Cost	\$M	4,370
Product Transport		
V ₂ O ₅	\$/t	138.26
TiO ₂	\$/t	65.90
Fe ₂ O ₃	\$/t	65.90
Total Transport Cost / tonne Concentrate	\$/t	77.45
Total Transport Cost / tonne Ore	\$/t	25.79
Total Concentrate Transport Cost	\$M	1,958
Total Operating Cost / tonne Ore		
Total Operating Cost	\$M	6,8614

