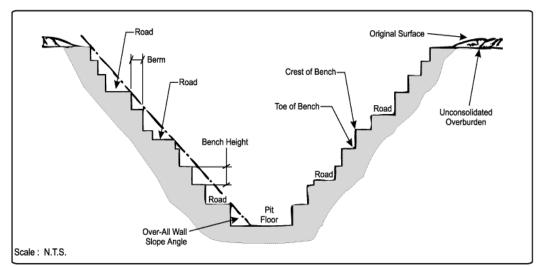


#### OPEN PIT MINING PROCESS

- 1. Basic Open Pit Terminology
- 2. Pickstone Peerless Open Pit Optimisation Input Parameters
- 3. Pickstone Peerless Open Pit Optimisation Targets & Constraints
- 4. Pickstone Peerless Open Pit Optimisation Results
- 5. Pickstone Peerless Oxide Production Plan Summary
- 6. The Open Pit Optimisation Process (Net Present Value ('NPV') Optimisation)
  - 1. Define an Economic Model
  - 2. Ultimate (Optimal) Pit Shell Creation
  - 3. Practical Mining Sequence
- 7. Glossary of Terms



### BASIC OPEN PIT TERMS



Potential Rock Fall Movement

The various Pit Parameters have defined through independent studies undertaken primarily by Open House Management Solutions ("OHMS") and Minxcon Consulting.

OHMS is a geotechnical group and have defined the parameters for;

- Overall Wall Slope Angle (Oxide)
- Berm Width (Oxide)
- Face (Batter) Angle (Oxide)
- •Analysed Potential Slope Failure and Rock falls

Minxcon are mining consultants and have defined the following design parameters;

- Road Width
- Dilution and Recovery Parameters

# RESOURCES PLC

#### INPUT OPTIMISATION PARAMETERS

The following input parameters were utilised for the optimisation process;

- Gold Price \$1,300 per ounce / \$41.794 per gram
- Mining Cost (Ore) \$2.50 per tonne
- Mining Cost (Waste)- \$2.40 per tonne
- Mining Cut-Off Grade (g/t): 1 12 month period: 1.25 gram per ton
- Mining Cut-Off Grade (g/t): 13 end period: 1.00 gram per ton
- Oxide Overall Slope Angle : 35 degrees
- Sulphide Overall Slope Angle: 40 degrees
- Bench Height: 5.0 metres
- Batter (Face) Angle (Oxide): 70 degrees
- Batter (Face) Angle (Sulphide): 80 degrees
- Berm Width (Oxide): 4.0 metres
- Berm Width (Sulphide): 3.0 metres
- Road (Ramp) Width (Single Lane Traffic): 8.0 metres
- Road (Ramp) Width (Dual Lane Traffic): 13.0 metres
- Plant Operating Cost: \$26.50 per ton milled
- Processing Recovery: 88% on Oxide ore only

# RESOURCES PLC

#### MINING STRATEGY

#### **INITIAL 12 MONTH PERIOD**

- A mining cut off grade of 1.25 grams per ton will be applied to the mining activities
- The oxide portion of the orebody will be extracted initially down to a maximum depth from surface of approximately 20 metres in the first 12 months.
- All oxide ore material and any incidental sulphide ore material between the grade range of 0.50 grams per ton and 1.25 grams per ton will be placed on a Low Grade Stockpile adjacent to the plant
- All the benches mined in the initial 12 month period will be grade control drilled before mining commences

#### POST INITIAL 12 MONTH PERIOD UNTIL DEPLETION OF OXIDE RESOURCE

- A mining cut off grade of 1.00 grams per ton will be applied to the mining activities
- The oxide portion of the orebody will be extracted initially down to a maximum depth from surface of approximately 60 metres by the end of oxide related mining activities.
- All oxide ore material and any incidental sulphide ore material between the grade range of 0.50 grams per ton and 1.00 grams per ton will be placed on a Low Grade Stockpile adjacent to the plant
- Benches will be grade control drilled timeously to allow for planning and scheduling
- Test work on sulphide ore material will be ongoing in order to refine geotechnical pit design parameters



### OPTIMISATION TARGETS AND CONSTRAINTS

#### **TARGETS**

- The processing facility is capable of 10,000 tonnes per month of Oxide ore in the first 12 months of operation and thereafter will increase to 20,000 tonnes per month until oxide depletion.
- The Payback period for Capital Expenditure should be less than 12 months.
- All ore material between the grade range of 0.5 g/t 1.25 g/t will be stockpiled on a Low Grade stockpile for processing in the future.

#### **CONSTRAINTS**

- The Burnett Shaft must stay protected to;
  - Provide process water for the plant;
  - Allow possible underground access in the future (can be used as a ventilation shaft).
- Open Pit mining cannot encroach to within 20 metres of the Mombe River in the first 12 month period to allow for a river canal diversion to be put in place;
- Open Pit mining cannot progress past the public road between the Mombe River and the Mining
  Office as the canal diversion must stay in place until oxides depleted. Once Sulphides are exploited, a
  pumped type river diversion will be required.
- A road diversion of the public road between Chegutu and Ngezi is required to;
  - Avoid mine traffic and public traffic mingling.
  - A bridge needs to be constructed for the new road diversion crossing the Mombe River.
- The area to the East of the Mombe River is predominantly Inferred Resources (drill hole line spacing's of 60m – 80m) and has been excluded from optimisation. Areas under current tailings dumps have been excluded from optimisation

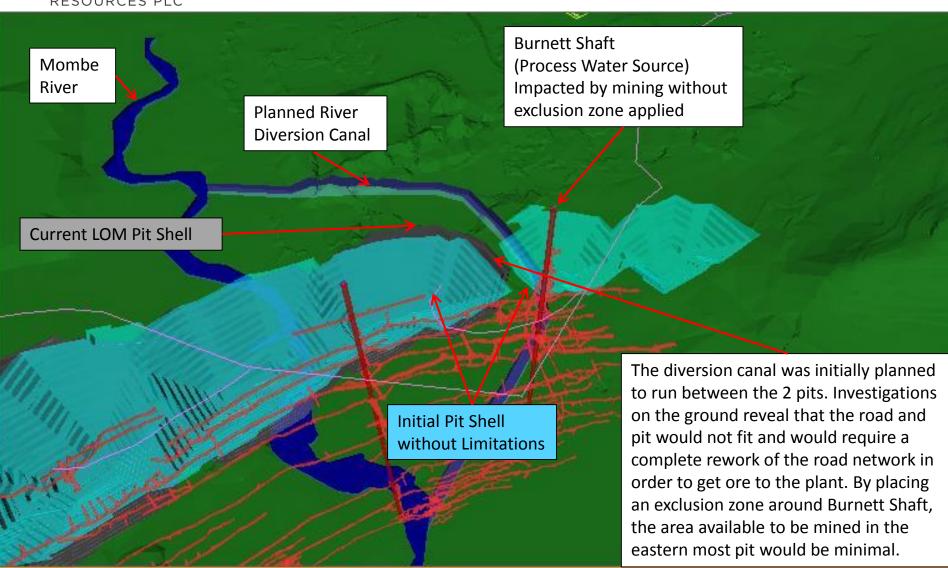


# OPTIMISATION TARGETS AND CONSTRAINTS – BURNETT SHAFT



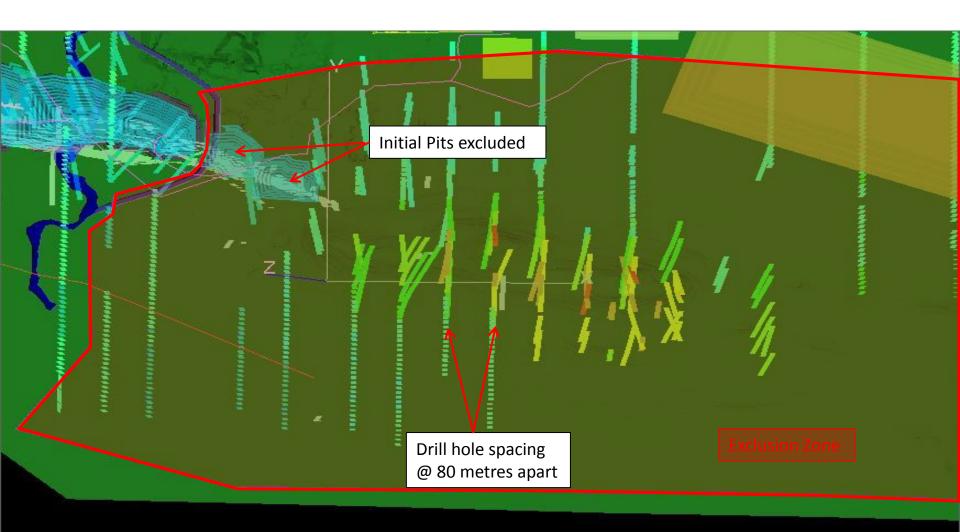


# OPTIMISATION TARGETS AND CONSTRAINTS – RIVER DIVERSION





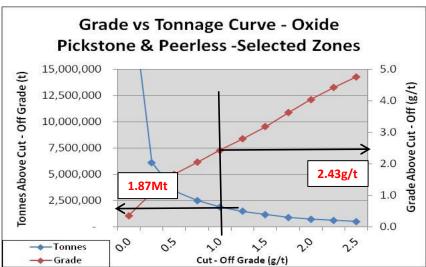
### OPTIMISATION TARGETS AND CONSTRAINTS – EXCLUSION ZONES





### AVAILABLE OXIDE MINERAL RESOURCES AFTER EXCLUSION ZONES APPLIED

	PROGRESSIVE VALUES ABOVE CUT-OFF GRADE					
Cut - Off Grade (g/t)	Progressive Tonnes	Progressive Grams	Progressive Ounces	Progressive Grade		
-	24,263,102	8,572,027	275,597	0.35		
0.25	6,098,016	6,562,805	210,999	1.08		
0.50	3,374,588	5,633,164	181,111	1.67		
0.75	2,488,004	5,087,426	163,565	2.04		
1.00	1,873,760	4,555,779	146,472	2.43		
1.25	1,472,745	4,106,381	132,023	2.79		
1.50	1,158,446	3,675,687	118,176	3.17		
1.75	900,237	3,259,906	104,808	3.62		
2.00	728,774	2,939,984	94,523	4.03		



Total available oxide ounces after Exclusion = 146Koz @ a 1.00 g/t mining cut-off grade.

LOM plan currently in place extracts

111Koz at an average mined grade of 2.72 g/t

The area to the east of the Mombe River which has been excluded due to predominantly Inferred Mineral Resource Status, may potentially be scheduled for extraction once the Mineral Resource Classification is improved. This would entail additional exploration drilling on line spacing's of 40 metres or less.



### SUMMARY OF PRODUCTION PLAN

		OXIDE ORE ONLY				
		12 Month Mining Plan	Life of Mine Mining Plan	TOTAL		
Ore Processing Rate	tpm	10,000	20,000	10,000 - 20,000		
Ore Tonnes Mined	t	119,219	1,149,511	1,268,730		
Waste Tonnes Mined (inc Low Grade)	t	322,198	8,807,657	9,129,855		
Total Tonnes Mined	t	441,418	9,957,168	10,398,586		
Low Grade Stockpile Tonnes	t	72,924	593,665	666,589		
Stripping Ratio (Ore: Waste (inc Low Grade))		2.70	7.66	7.20		
Mining Cut-Off Grade Applied	g/t	1.25	1.00	1.00 - 1.25		
Average Mining Grade	g/t	3.42	2.64	2.72		
Low Grade Stockpile Grade	g/t	0.86	0.72	0.73		
Recovered Content	kg	341,499	2,540,370	2,881,869		
Recovered Content	oz	10,979	81,675	92,654		
Recovery Grade	g/t	2.86	2.21	2.27		

- Low Grade Stockpile tonnes comprises ore material (oxide only) of between 0.50 1.25 g/t in the initial 12 month period and between 0.50 1.00 g/t for the remainder of the period.
- Factors included in the Basic Mining Equation ("BME") are as follows;
  - Geological Losses 2%
  - Ore Losses 3%
  - Ore Dilution 7% (derived from waste tons)
  - Waste Dilution 2%
  - Mine Call Factor 100%
  - Processing Recovery 88%



### SITE PLAN OVERVIEW OF 12 MONTH MINING PLAN





# SITE PLAN OVERVIEW OF LIFE OF MINE (OXIDE ONLY) MINING PLAN WITH 12 MONTH PIT SHELLS





### THE OPEN PIT OPTIMISATION PROCESS

RESOURCES PLC Define an Economic Model Create Nested Lerch-Grossman Pits Create Ültimate Pit OES Schedule Pushbacks

 Encodes a resource model with a value representing the cost of extraction, cost of processing and expected revenue derived from a block of ground

- Generates a initial pit shells for the given set of economic parameters. Does not take into account the practicality of mining non contiguous blocks.
- Follows the first rule of NPV Optimisation,
   Mine the highest value blocks first'

 Create Mining Pushbacks in order to alter the initial mining sequence to obtain a practical and logical extraction sequence in line with any prescribed targets



### DEFINE AN ECONOMIC BLOCK MODEL

An Economic Model is, effectively, a geological block model containing additional supporting information relating to the 'value' of a particular block of ore.

The Economic Model is defined by setting cost and price parameters for the life of the mine and then calculating an intrinsic value per processing method of each block in a geological block model as a function of its geo-metallurgical attributes. The value is usually calculated by NPV Scheduler as part of the definition of the economic model.

The parameters used to calculate the block values are;

- the selling price of the commodity or commodities recovered from processing
- a unit cost of mining (ore and waste) and a unit cost of processing (ore) and any adjustment factors which apply
- dilution and recovery factors for the ore
- an additional cost for processing each unit of a commodity if required

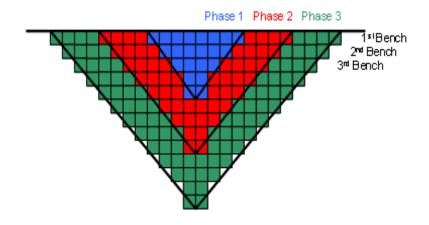
Example of a Value Model									
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300	-3240	-3240	-3240	-3240	-3 <b>6</b>	-3240	-3240	-3240	
622	-3240	-3240	-3240	-3240	-3840	-3240	-3240	3 -3240	
160850	78681	-3240	-3240	-3240	-3240	-3240	-3240	-3240	
204462	319301	255236	62875	-3240	-3240	-3240	-3240	-3240	J
7975150 47346	204750	352130	493427	90115	-3240	-3240	-3240	797515 -3240	U.
-3482	-3482	174429	555425	473269	228725	12813	-3240	-3240	
-3482	7915	27956	145746	451871	422462	316430	10964	-3240	
-3482	-3482	-3482	-3482	417277	414052	373562	401521	30508	
-720	3412	-35	-3482	107244	185183	204830	257810	229529	I
7975125 20503	36960	27759	13052	33565	21953	-813	195557	797512 215552	٦.
-3482	12918	18063	16535	-3482	-3482	-3482	50800	103895	Ī
-362	-3482	-3482 (	3482	-3482	-3/82	-3482	-3307	3 -3384	I
- 360	-3480	-3482	-3482	-3482	-382	-3482	-3240	3 -3248	
adan	2200	2.470	2402	2402	2402	2442	ankne	Looke	ī



### ULTIMATE PIT DETERMINATION

- A series of nested pits which mines the 'highest value' ore first
- Determines an 'Ultimate Pit' shape for the given set of commodity prices, mining cost and the basic engineering constraints applied
- As the input economic and geotechnical parameters are varied, the Ultimate Pit shape can vary, sometimes dramatically, as various thresholds are reached and the number of economic blocks increase or decrease.

In the diagram to the right, the blue area (the smallest pit), is the one that represents the *best* value that is possible in the early stages of mining as it is the pit that would still be valuable even under the *worst* economic conditions (that is, a low commodity price). The green (largest) pit represents the pit with the longest life under the *best* economic conditions.

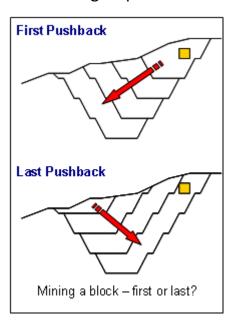


The difference between each pit shell and the next is considered to be a "phase". Considering that <u>realizing the best value first is a basic principle of maximizing NPV</u>, the order of the phases represents the first <u>high level</u> categorization of the value and is the first stage in determining an optimal and practical Mining Schedule.



### DEFINING A PRACTICAL MINING SEQUENCE WITH BEST VALUE

- A 'Pushback' represents an area that can be mined in a single continuous operation as defined within the Ultimate Pit.
- The basic objective is to create a pushback shape which attempts to meet defined primary targets, such as ore tonnage, stripping ratios or mined grade.
- Multiple pushbacks can be generated, thereby catering for highly selective mining in terms of set targets.
- It further represents a practical mining shape as opposed to a value derived shape from the Lerch –
   Grossman Optimal Pits Phases
- Eliminates or reduces the frequency of inter pit moves when compared to the Ultimate Pit mining sequence
- The Scheduler finds a practical schedule for mining the pushbacks. For the highest NPV it would theoretically be best to mine the pushbacks in sequence, one at a time. Unfortunately, this strategy is rarely practical because it does not satisfy targets such as ensuring a steady output of ore at <u>manageable strip ratios</u>, nor does it satisfy other possible requirements like <u>ore blending</u> or contamination control.
- The scheduler can be set to target mining rates, truck hours, mill throughput, stripping ratios, mining grade etc.
- The result is a long term mine schedule which is <u>strategic</u> with respect to NPV, <u>practical</u> with respect to mining shape and pit slope requirements and <u>achievable</u> with respect to the mining equipment fleet and the ore processing capability in short an optimal combination of maximum NPV within a practical, workable schedule.





#### GLOSSARY OF TERMS

- <u>Mining Cost</u> The unit cost in USD for the Drill and Blast based on a specified blast hole pattern and the Load, Haul and Dump of material at the plant (ore) and Waste Rock Dump (waste)
- Mining Cut-Off Grade (g/t) The grade of the ore in the open pit at which point the decision is made to haul the material to the processing plant, low grade stockpile or the waste rock dump
- Bench Elevation defining the working level of the open pit. In this case the bench elevations are in 5 metre increments
- Batter (Face) Angle The angle defining the maximum allowable slope between two bench elevations
- Berm A minimum horizontal allowable distance between the beginning and the end of two distinct benches
- Road (Ramp) A road defined at a specified gradient and width allowing vehicle access into the open pit
- <u>Resource Model</u> A block model representing the expected grade value, rock type, oxidation state and various other derived properties from the exploration stage
- <u>NPV</u> Net Present Value, the difference between the present value of cash inflows and the present value of cash outflows. NPV is used in capital budgeting to analyze the profitability of an investment or project.
- **Pushback** The planned progression of mining a series of nested pits.
- Nested Pit A pit shell defining an accumulation of ore blocks to be mined in a contiguous manner
- <u>Ultimate Pit</u> The final pit limits define what is economically mineable from a given deposit It identifies which blocks should be mined and which ones should be left in the ground
- <u>Lerch Grossman Optimal Pits</u> An algorithm developed to design the contour of a pit so as to maximise the difference between total mine value of the ore extracted and the total extraction cost of ore and waste.
- Stripping Ratio The ratio of the volume of overburden (or waste material) required to be handled in order to extract some volume of ore.
- Oxide Ore Ore minerals comprised of oxide compounds typically resulting in simplistic ore processing methods
- <u>Sulphide Ore</u> Ore minerals comprised predominantly of sulphidic compounds typically resulting in more complex ore processing methods when compared to oxide ores
- Geological Losses Ore lost due to variable geological features such as unknown faulting
- Ore Losses Losses of ore due to spillage, cross tramming of ore as waste and grade control
- <u>Ore Dilution</u> Dilution from waste material introduced to ore trucked to plant. Typically from poor mining practice, poor grade control procedures and cross tramming of waste to plant as ore
- Waste Dilution Unplanned for diluting material typically sourced from over break of pit outline, falls of ground and cross tramming
- <u>Mine Call Factor</u> The ratio between the ore contents accounted for from the grade control accounting model versus the final gold accounting from the plant
- Processing Recovery The ratio of the ore contents fed into the plant versus the final contents produced