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# MetalsTech Ltd

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# Contents

Pivoting From Lithium To Gold.....	1
Key Points .....	1
Valuation Range from A\$0.18/sh to A\$1.73/sh .....	1
Investment Proposition .....	2
Sturec Gold Project .....	9
Alternative Scenarios to the SRK 2013 PFS Base Case .....	21
Capital Structure And Share Register.....	24
Board And Management .....	24



**Note:** This report is based on information provided by the company as at January 2020

## Investment Profile

Share Price (\$) as at 10 January 2020	0.036
Issue Capital:	
Ordinary Shares (M)	116.95
Options (M)	18.20
Performance Shares	23.75
Fully Diluted (M)	158.90
Market Capitalisation (M)	4.21
12 month L/H (\$)	0.012 - 0.125

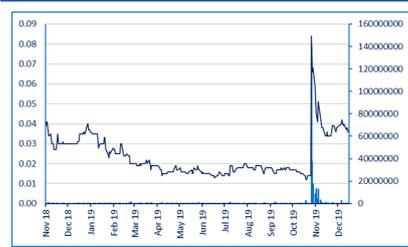
## Board and Management

**Directors:**  
 Russell Moran – Executive Chairman  
 Gino D’Anna – Executive Director  
 Dr Qingtao Zeng - Technical Director (Geology)  
 Noel Obrien – Technical Director (Metallurgy)

**Management:**  
 Paul Fromson – CFO and Company Secretary

Major Shareholders	Undiluted
Natres Services (Russell Moran)	16.1%
Rachel D’Anna (Gino D’Anna)	11.7%
BCC HK International Trade Co	8.6%
Celtic Capital/Sunset Capital	5.0%

## Share Price Performance



The investment opinion in this report is current as at the date of publication. Investors and advisers should be aware that over time the circumstances of the issuer and/or product may change which may affect our investment opinion.

## PIVOTING FROM LITHIUM TO GOLD

MetalsTech has acquired the well defined Šturec Gold Project in Slovakia for A\$0.75M plus royalties, and has sufficient cash on hand to complete this transaction.

If the project was almost anywhere else in the world, it could command a valuation of between A\$0.18/sh and A\$0.37/sh initially based on peer comparisons, rising in time as the development funding was put in place, to over A\$1.00/sh on either peer comparisons or NPV based valuation.

However, the project is located in Slovakia, where the traditional cyanide processing route proposed in the historical PFS is unlikely to be permitted due to a parliamentary ban on the process in 2014. Navigating approvals will be a challenge, which in part explains why MetalsTech has been able to acquire the deposit and surrounding exploration potential on such attractive terms. In 2020, alternative processing options are more readily available and is hoped to enable the company to overcome any external stakeholder objections.

For shareholders, the asset is both an option on the possibility that MetalsTech will be able to obtain approval to operate a successful mine and exposure to large gold endowment with potential to significantly expand its resource base.

## KEY POINTS

### Šturec is a robust gold deposit, which if permitted would substantially re-rate MetalsTech

The value of the Šturec Gold Project is size and low All In Sustaining Cost of US\$574/oz, based on the very low strip ratio of 2.3:1 according to the SRK 2013 PFS. Our Base Case financial model assumes higher costs and royalties, and still has a low AISC of US\$661/oz (A\$945/oz).

**Geological uncertainty minimised** – The Šturec Gold Project has sufficient reserves to support a gold project on the assumptions in the PFS. The Reserves are JORC 2004, not the current JORC 2012 standard, but we consider the work done to date to be of sufficient standard to minimise geological risk.

**Obtaining development approval is a core share price driver** – The PFS is based on a cyanide processing technology widely used all over the world. This technology was banned in Slovakia and MetalsTech will have to complete a BFS using an alternative technology or processing strategy. MetalsTech will need to build community trust, manage the hearts and minds of the locals and navigate the regional political process.

**Significant upside to the Šturec endowment** – The Šturec Gold Project has historically produced more than 1.5Moz of gold and 6.7Moz of silver equivalent to more than A\$3.4 billion in metal production at today's prices. It currently hosts an open cut JORC (2004) Resource of 25.1Mt @ 1.64g/t AuEq for 1.32Moz AuEq and given epithermal deposits like this have a reputation for getting much bigger, there is significant upside to the exploration story.

**Range of financing options are likely to be available** – if mine approvals are obtained, we would expect a substantial re-rating of MetalsTech that would support a widening of financing options. In addition to traditional equity markets, MetalsTech should be able to secure traditional debt (senior and mezzanine), equipment and processing facility finance, as well as sell a minority equity interest in the project and/or sell a royalty stream to fund development of the mine.

## VALUATION RANGE A\$0.18/SH TO A\$1.73/SH

Assuming open cut mining approvals can be obtained, we have a valuation range on peer comparison of A\$0.18/sh to A\$1.11/sh and funded NPV of A\$0.56/sh to A\$1.73/sh, at current gold prices. The lower end of the range will be more relevant initially, and the upper end will potentially become more relevant depending on final costings, funding outcomes and de-risking.

**Please note our valuation assumed the project is approved for development, which is uncertain, and is based on cost figures as presented in the SRK 2013 PFS produced for Arc Minerals, which are likely to be revised in the course of producing a Bankable Feasibility Study. As a result, the costs, and hence the valuation, should be treated as being indicative only.**

## INVESTMENT PROPOSITION

### KEY BACKGROUND TO INVESTMENT

- ◆ MetalsTech has acquired 100% of the Šturec Project tenements from ARC Minerals Ltd.
- ◆ The tenements comprise 11.8km<sup>2</sup> Kremnica Mining Licence.
- ◆ Advanced gold asset with an existing Pre-Feasibility Study completed by SRK Consulting in 2013.
- ◆ Open cut JORC (2004) Resource of 25.1Mt @ 1.64g/t AuEq for 1.32Moz AuEq estimated by Snowden Mining Industry Consultants (2012 Snowdens Resource Report).
- ◆ Open cut JORC (2004) Proven and Probable Ore Reserve of 14Mt @ 1.90g/t AuEq for 873koz AuEq estimated by SRK Consulting (2013 Pre-Feasibility Study).
- ◆ Historically has produced over 1.5Moz of gold and 6.7Moz of silver.
- ◆ Opportunity to apply modern processing strategy to a historically significant gold deposit, in order to progress the previously stalled project approval process.
- ◆ Significant exploration upside exists along strike of the main Šturec defined resource as well as down dip / plunge of the main orebody.

### ATTRACTIVE ACQUISITION TERMS FOR ŠTUREC

- ◆ MetalsTech exercised its option to acquire Šturec on 30 Dec 2019, so Arc has or will receive two cash payments namely A\$450,000 within 10 business days of a formal SPA being executed followed by a second payment of A\$300,000 six months later, bringing the total cash proceeds payable to Arc to A\$750,000 (~US\$500,000).
- ◆ The Resource Upgrade Royalty - If, within 2 years of the acquisition, the Šturec open cut JORC Indicated and Measured Resource exceeds 1.5 million ounces gold equivalent at a grade greater than 2.5g/t (inclusive of recoverable Ag equivalent), MetalsTech will pay Arc a further A\$2 royalty per additional ounce of gold equivalent. This royalty is capped at 7 million ounces of gold equivalent.
- ◆ Any consideration due under the Resource Upgrade Royalty may be satisfied in such form of consideration or instrument acceptable to MetalsTech, at its sole discretion (including, but not limited to cash or shares in MetalsTech).
- ◆ As at 30 September 2019, MetalsTech had A\$653,000 in cash on deposit and a debt of A\$400,000. This was boosted by a payment from the Quebec Tax Authority in respect of R&D incentives of A\$1.75M, on 4 October 2019, so at that date, MetalsTech would have had A\$1.9M net cash on hand, with A\$750,000 to pay for Šturec over six months, and planned outgoings in the September 5B in respect of the December 2019 quarter of A\$600,000.

### VALUATION AS AN OPTION

- ◆ Significant leverage to a \$4M Question - We estimate the cost of completing a BFS using the Thiosulphate processing route and navigating the approval process to be around A\$4M. If the outcome of the approvals process is positive, then the company moves into a whole new world valuation wise.
- ◆ The major stages of valuation re-rating are:
  - Market recognition of improved wealth creation potential in moving from lithium to gold
  - Technical delivery of an alternative processing technology with acceptable recoveries and costs
  - Delivery of a revised Bankable Feasibility Study (BFS) which de-risks costs, and possibly reduces the required pre-production capex.
  - Receipt of approval to build and operate the project
  - Completion of funding package to finance project construction
  - Completion of construction and successful ramp up of production
- ◆ The potential value range if the project is approved is up to A\$356M at current gold prices – Until the project obtains approvals, it won't reach its valuation potential. However, if certain milestones are achieved prior to receiving approvals, these could provide the market with comfort and potentially generate positive share price momentum.
- ◆ Significant news flow – Obtaining the approvals could take 2 years or so. During that time there will be information that de-risks the project from a cost perspective, including:

- Metallurgical test work on the alternative processing technology
- Resource expansion subject to exploration success
- Completion of the BFS and a de-risking of the capital and operating costs
- Possible reduction in processing plant capex cost (3x cost of comparative projects)

**Table 1 Forecast growth in issued shares until prior to potential project funding**

	Million
Current Shares on Issue	116.95
Conversion of Performance Shares	23.75
Issue to raise \$2M in FY2020 @ 5cps	40.00
Issue to raise \$2M in FY2021 @ 8cps	25.00
Issued Shares Prior to Funding Development	205.70

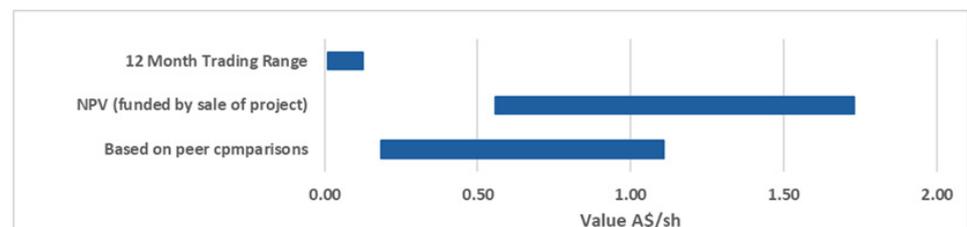
Source: MTC 3B release 27 February 2019, Acquisition release 20 November 2019, IIR estimates

- ◆ We have assumed that the shares on issue grow from 116.95M to 205.7m over the next two years as A\$4M cash is raised to complete the BFS and approvals process, and with the conversion of performance shares. In our valuation, we use the 205.7M shares to convert our valuations into A\$/sh. Share issues are assumed for modelling purposes only and we note from its ASX releases that the company has stated that it is potentially pursuing non equity focused strategic financing options to minimise or avoid shareholder dilution.

**Table 2 Valuation range by method**

	Valuation A\$/sh		Valuation A\$M		Issued Shares M	
	Low	High	Low	High	Low	High
Based on peer comparisons	0.18	1.11	38.0	228.0	205.7	205.7
NPV (funded by sale of project)	0.56	1.73	114.5	356.4	205.7	205.7
12 Month trading range	0.012	0.13	1.4	14.5	117.0	117.0
Memo:						
Reserve valuation A\$/oz LOM Prodn			50	300		

Source: IIR estimates.

**Figure 1 Valuation range by method**

Source: IIR estimates

## PEER COMPARISONS SUGGEST PROJECT VALUATION OF A\$38M TO A\$228M

**Table 3 Enterprise Value: MetalsTech at A\$3/oz production vs A\$49/oz to A\$392/oz**

ASX Listed Companies at Scoping, PFS, DFS or Development stage									
Code	Company	Country	Prodn LOM Koz	Capex A\$M	AISC A\$/oz	Issued M	Cap. A\$M	EV A\$M	EV A\$/oz
CMM	Capricorn	West Aust	822	132	1178	325	403	316	385
TGM	Theta	South Africa	201	49	1091	447	98	97	485
WAF	West African	Burkina Faso	1530	266	929	842	396	492	322
BSR	Bassari	Senagal	174	17	969	2347	35	47	270
EMR	Emerald	Cambodia	762	140	1077	3042	119	104	136
GMD	Genesis	West Aust	356	84	1100	1330	45	37	103
AZM	Azumah	Ghana	538	96	1266	979	32	29	55
NUS	Nusantara	Indonesia	1001	209	1083	168	53	50	49
GPR	Geopacific	PNG	967	198	1033	175	87	44	46
MTC	Metaltech	Slovakia	767	177	1061	117	5	3	3

Source: ASX share prices at 3 January 2020, Company Debt and Cash per Sep. 2019 quarterlies, adjusted for issuance post September. Note Azumah numbers reflect its 57.5% interest in the project

- ◆ All the companies in this comparison are not currently in production, and have a gold project with a published scoping study, PFS or BFS.
- ◆ Some have very high per ounce valuations reflecting the de-risking that comes with having obtained funding and starting to develop their mines (CMM and WAF), while others have relatively small initial capital requirements (TGM, BSR).
- ◆ The remaining companies (i.e. EMR to GPR) trade at between A\$50-100/oz, and are generally more advanced, but MetalsTech could be in a comparable position in 12 months or so, subject to obtaining approval to develop. The Šturec deposit is in the ballpark, with 767Koz Life of Mine production vs 356-1001Koz, AISC of A\$1061/oz vs A\$1033-1266/oz, and capex of A\$177M vs A\$84-209M.
- ◆ Most of these companies mining projects are located outside Australia, making this comparison particularly valid for MetalsTech's Slovakian asset.
- ◆ The Production Ounce metric is the proposed planned production in the DFS/PFS/Scoping Study, and is after mining and metallurgical recoveries.
- ◆ The MetalsTech numbers reflect the existing SRK 2013 PFS with the cyanide based processing route, and not the more conservative estimates we are using in our financial model and valuation. To this extent, the Table 3 is comparing like with like.
- ◆ MetalsTech has an enterprise value of A\$3M and is trading at ~A\$3/oz in the mine plan. If the project was approved for development, on the 2014 PFS economics, Metals Tech would be trading closer to A\$50-100/oz or A\$0.18-0.37/sh.
- ◆ In Figure 1 we have used a range of A\$50/oz to A\$300/oz to reflect both the initial re-rating on completing the BFS and obtaining approval to mine, as well as the second re-rating when project development funding is completed.

**Figure 2 Šturec is middle of the pack in terms of total ounces, pre-production capex and AISC**



Source: Table 3, Note the Šturec Project is the blue dot within each of the grey bars representing the range of the peer group.

## NET PRESENT VALUE

### Introductory comments

- ◆ The discussion on NPV only makes sense if we assume the Šturec project receives development approval. We have not risk adjusted the valuation for the risk of not getting approval. What we are discussing is where the MetalsTech share price would be if the project were approved, and we leave the individual investor to assess the approval risk and their appetite for that risk.
- ◆ The valuation (on the assumption of the project being approved) on a per share basis is very sensitive to how the project development is funded. We looked at funding the project by share issuance, but the problem with that approach is that the valuation expressed on a per share basis becomes a circular argument. Between an issue price of A\$0.05/sh and A\$0.90/sh, the higher the issue price, the higher the valuation, which is unhelpful in forming a view as to what the asset could be worth.
- ◆ All our valuations assume that the project borrows A\$160M in debt and required A\$60M in equity.
- ◆ Our base case assumes that 30% of the project is sold for A\$60M (ie ie equal to our base case NPV), and that is sufficient for MetalsTech to fund its remaining 70% of the project equity contribution without call on the market. We believe this is the appropriate basis for valuation. While the purchaser is paying full price compared to our base case NPV, the transaction is at a 32% discount to the NPV at 5% discount rate, which we believe will apply once the project is in production. It may be that the purchaser will buy 100% ie take over the company, rather than just 30%. In that case, we point to the blocking stake owned by the board, which we believe should allow the board to extract value for shareholders.

- ◆ Our valuation is based on a PFS, which typically has a +/-25% error margin on capex and opex. We added 25% to the PFS capex and opex as our Low Case and assumed a 15% increase of capex and opex in our Base Case. The unchanged PFS is our High Case.
- ◆ Operating gold mining companies listed in Australia typically trade at a share price close to the NPV at spot gold, using a 5% real discount rate, while projects at PFS stage tend to trade closer to a spot priced NPV using a discount rate of 10-15%, in part reflecting the risk of higher costs, as the project moves from PFS to DFS to Construction. Because we have taken such a conservative stand on costs, we believe that using a discount rate of higher than 5% could be double counting the risk adjustment. As a compromise, our Low Case uses a 10% discount rate, rather than the higher 15%.
- ◆ We do not have specific economic and technical performance details for the alternative Thiosulphate processing route, but our preliminary investigations suggest that there will be little difference in capex, opex or recovery. That means the NPV of the cyanide project and Thiosulphate projects are likely to be similar. The costs and performance of Thiosulphate relative to the PFS is a source of risk.

## CONSTRUCTING OUR VALUATION

- ◆ The NPV valuation scenarios include the following differentiating assumptions:
  - High Case - SRK 2013 PFS costs and a 5% discount rate, funded by sale of 16% of the project to provide the non debt component of the project funding.
  - Low Case - 25% higher capex and opex at a 10% discount rate, funded by the sale of 50% of the project to provide the non debt component of project funding.
  - The size of the project stake sold depends on the relative size of the initial capital spend, and the Project NPV. As the capex and opex increase, the NPV falls, and more of the project has to be sold to fund construction. We have assumed A\$60M equity is raised in all cases, which covers the +25% cost Low Case, and more than covers the other scenarios. We assume no tax liability on the sale due to use of appropriate financial structures.
  - Base Case - 15% higher costs, and an 8% discount rate, with the sale of 30% of the project to provide the A\$60M non debt share of the project funding.

## Valuation Outcomes

**Table 4 Comparison of our base case NPV to other scenarios**

Case	Low	Base	High	Streaming
Šturec NPV 100%	120.9	201.1	365.6	157.2
Less share of project sold	-60.0	-60.0	-60.0	0.0
Šturec NPV retained	60.9	141.1	305.6	157.2
Plus Cash from Sale	60.0	60.0	60.0	0.0
Corporate Overhead	-8.0	-9.0	-10.9	-9.0
Cash on hand	2.2	2.2	2.2	2.2
Debt	0.0	0.0	0.0	0.0
Net Working Capital	-0.6	-0.6	-0.6	-0.6
Valuation A\$M	114.5	193.7	356.4	149.8
Equity Issue A\$M	0.0	0.0	0.0	27.1
Adj Valuation	114.5	193.7	356.4	177.0
Post Issue Shares M	205.7	205.7	205.7	305.7
Valuation A\$/sh	0.56	0.94	1.73	0.58
Total Cost A\$M	1145	1053	915	1049
AIC A\$/oz	1493	1372	1193	1367
Silver Credit	163	163	163	0
Net AIC A\$/oz	1657	1536	1357	1367

Source: IIR estimates. The Streaming Case uses our Base Case, but with a streaming sale and equity issue instead of selling a share of the project. AIC is All In Cost = All In Sustaining Cost plus initial capex.

- ◆ Other NPV assumptions include:
  - Flat Gold price of US\$1500/oz, silver price of US\$20/oz, AUDUSD of 0.70.
  - SRK 2013 PFS volumes ie 767Koz of gold production over the Life of Mine (LOM)
- ◆ Other non NPV assumptions:
  - The valuation is as at 30 June 2020
  - Cash and debt valued at book value as at June 2020
  - The NPV of the Štured Project is reduced to reflect only MetalsTech's post sale interest, even though that sale is likely to be after June 2020
  - The cash from the sale of the minority stake in Štured is priced equal to the NPV of the stake sold, and is included in the valuation

### STREAM FUNDING IS AN ALTERNATIVE TO SELLING PART OF THE PROJECT

- ◆ The Stream Funding Case assumes the silver stream is sold for an up front payment of US\$30M, so only A\$27M needs to be raised through share equity or minority project sell down with the balance of project finance sourced from traditional debt.
- ◆ A silver stream is where the production of silver is delivered to the owner of the stream, who typically pays cash up front. In this case, the owner of the Štured project would have no economic interest in the silver production. There have been a number of transactions like this over the years, and a number of companies in the business of buying metal streams, with silver being one of the most common. The figure of US\$30M has been determined by reference to other silver streaming deals.
- ◆ We have assumed no project sell-down and that the A\$27M will be raised through the issue of a further 100M shares at \$0.27/sh (therefore a total of 305.7M shares on issue after financing). The issue price is arbitrary, but would be the last piece in the funding package, and we would expect a better market rating given all the de-risking that would have proceeded it.
- ◆ Selling a stream reduces the demand on project equity or the equity market, and the dilution experienced by shareholders. While this is expensive compared to debt, and results in a higher All In Cost per ounce, it is cheaper than equity issuance at any price lower than A\$1.00/sh.
- ◆ The valuation of our Base Case with streaming is A\$0.58/sh vs the Base Case with a project sell down of A\$0.94/sh.

### SENSITIVITY TO GOLD PRICES AND AUDUSD RATES

- ◆ This assessment is based on our Base Case (ie +15% on PFS capex and opex costs, 8% discount rate, US\$1500oz AUDUSD 0.70). The valuation is expressed in A\$/share after a sale of the percentage of the project indicated in the lower half of the table, to fund A\$60M in equity related to the project finance.
- ◆ The outstanding feature is that the NPV is positive, and well above the current MetalsTech share price, for all scenarios, including a US\$1300/oz gold price and an AUDUSD exchange rate of 0.80.

**Table 5 Valuation is very sensitive to the US\$ gold price, less sensitive to the AUD**

Base Case: 8% disc, costs 15% above PFS						
Gold Price US\$/oz	1300	1400	1500	1600	1700	1800
AUSUSD	NPV in A cps					
0.60	68.5	90.2	111.9	133.6	155.3	176.9
0.65	62.3	82.3	102.4	122.4	142.4	162.4
0.70	57.0	75.6	94.2	112.8	131.3	149.9
0.75	52.4	69.8	87.1	104.4	121.8	139.1
0.80	48.4	64.7	80.9	97.2	113.4	129.7
Equity in Project that must be sold at NPV to Fund Project						
0.60	41%	31%	25%	21%	18%	16%
0.65	44%	34%	28%	23%	20%	18%
0.70	48%	37%	30%	25%	22%	19%
0.75	52%	40%	32%	27%	23%	20%
0.80	56%	43%	35%	29%	25%	22%

Source: IIR estimates

## OPTIMISATION UPSIDE? SRK PFS PLANT CAPEX IS 3X PEER AVERAGE

Table 6 Breakdown of pre production capital expenditure among peer group

Pre Production Costs									
Code	Company	Capacity Mtpa	Mine A\$M	Process Plant A\$M	Tailings Storage A\$M	Infra-structure A\$M	Owners Cost A\$M	Other A\$M	Process Plant A\$/tpa
CMM	Capricorn	3.0	0.0	<b>88.1</b>	0.0	33.2	14.2	0.0	<b>29.4</b>
WAF	West African	2.2	59.9	<b>93.4</b>	0.0	65.3	46.0	0.0	<b>42.5</b>
EMR	Emerald	2.0	6.3	<b>64.6</b>	0.0	44.7	23.7	0.0	<b>32.3</b>
GMD	Genesis	0.8	0.0	<b>27.9</b>	7.5	7.5	17.6	9.1	<b>34.9</b>
AZM	Azumah	2.3	16.4	<b>56.9</b>	12.7	9.3	42.9	13.7	<b>24.7</b>
NUS	Nusantara	2.5	24.0	<b>70.9</b>	17.1	35.1	42.0	18.0	<b>28.3</b>
GPR	Geopacific	2.4	30.9	<b>65.0</b>	12.6	33.2	31.9	24.9	<b>27.1</b>
MTC	Metaltech	1.5	3.6	<b>144.0</b>	20.6	1.1	6.0	0.0	<b>96.0</b>

Source: Company DFS/PFS/Scoping studies and all except MetalsTech are dated 2017 to 2019. The very low capex projects of TGM and BSR have been omitted.

- ◆ The NPV is also sensitive to the capital cost and it is worth pointing out how expensive the PFS cost estimate for the Process Plant is. The average of the comparable projects is A\$31/tpa of capacity vs A\$96/t for Šturec. If the Šturec plant cost A\$60/tpa less, that would save A\$90M out of the SRK 2013 PFS total pre pre-production capex of A\$176M, and more out of the higher capex scenario we are using as our Base Case.
- ◆ There are reasons why the Šturec plant might be more expensive than the others. The plant cost includes a 5Km conveyor. The crusher must handle the waste so it needs to be 5Mtpa in capacity. The plant is in Slovakia so needs cladding and heating for winter, unlike the other projects.
- ◆ Any reduction in pre-production capex amounts in a dollar for dollar increase in NPV, and reduces the funding effort and shareholder dilution.

## REGIONAL EXPLORATION IS NOT INCLUDED IN OUR VALUATION

- ◆ The lack of approvals to develop the existing project has stifled the interest in exploration that the region deserves.
- ◆ Given the historical production of 1.5Moz and the current 1Moz resource, this represents a 2.5Moz original endowment. Epithermal deposits like this have a history of getting bigger, this represents an extremely prospective exploration target.
- ◆ The current 1Moz Šturec resource is contained in 1.2Km of 3.5Km of mineralised strike, along the Principal Vein System (First Vein System). There is a Second Vein System under the town of Kremnica which is outside the company's licences, but still speaks to the impressive endowment of the region.
- ◆ The exploration potential is discussed in the MetalsTech release of 20 November 2019. In summary, the best known targets include:
  - Wolf – Mineralisation is defined over a strike of 300m, at least 50m deep, with the widest vein being the 30m wide Kirchberger, with similar mineralogy to Šturec.
  - Bratislav – Three major veins have been mined historically, and are north south splays off the Schramen Vein which is the core of the Šturec deposit immediately to the south.
  - South Ridge – Soil survey data suggests that the Šturec deposit extends at least 500m to the south
  - North Šturec – Mapped by coincidence of mineralised outcrops and geochemical anomalies. At surface, the mineralised vein structures are up to 10m wide.
  - Volle Henne – Identified by old workings, soil and rock chip geochemistry and outcropping quartz veins.
  - Katarina – Underneath an ancient open pit, with potential for close to surface mineralisation.
- ◆ If MetalsTech can get approval to mine, any additional ounces discovered will add value to MetalsTech. As a general rule, to find gold, start where a lot of gold has already been found, and with an endowment of 2.5Moz, this tenement package qualifies as a very attractive target.

## APPROVALS PROCESS

### Kremnica has a very long mining history

- ◆ The town of Kremnica lies adjacent to the Šturec project and was built on the profits of gold mining. Kremnica was one of the major sources of gold for the Kingdom of Hungary and the Hapsburg Empire of which it was part. Mining as a major activity ended around 1970 (the tail end of a long period of fixed gold prices and therefore declining profitability).
- ◆ The name Kremnica comes from the Slovak word Kremenina meaning “quartz” the host rock containing the gold mines in the region.
- ◆ Kremnica is a well preserved medieval town with considerable tourist potential, containing some 5306 inhabitants (<https://en.wikipedia.org/wiki/Kremnica>).

### Social challenges

- ◆ There has historically been opposition to mining but this appears to be focussed on preventing the use of cyanide for processing gold ores. The challenge for Metalstech will be to first demonstrate it can operate Šturec economically using a non-cyanide based method of operation and secure social licence.
- ◆ The objections to cyanide use probably stem from an historical tailings dam failure at Baia Mare in Romania in January 2000. As a result of the dam failure, cyanide from a gold mining operation entered the tributaries of the Danube, which forms the western border of Slovakia. There were fish kills, and for a period the water in the tributaries was declared unfit for drinking. The Hungarian water authorities were able to close a dam before the passage of the cyanide, containing its downstream impact. ([https://www.aria.developpement-durable.gouv.fr/wp-content/files\\_mf/FD\\_17265\\_baia\\_mare\\_2000\\_ang.pdf](https://www.aria.developpement-durable.gouv.fr/wp-content/files_mf/FD_17265_baia_mare_2000_ang.pdf)).
- ◆ The previous owner Ortac appears to have made some mistakes in the handling of local issues. In the 2013 PFS, SRK (the report’s author) noted that a group called Astoneco was assisting Ortac in dealing with locals, but its role was poorly defined, and it was perceived as working for Ortec rather than being charged with finding a common ground (2013 PFS Section 13.7.3 to 13.7.5). SRK thought Ortac’s disclosure to the locals was inadequate, and there was no grievance process.
- ◆ SRK also noted that the mayor of Kremnica in 2013 was opposed to mining. We understand that there is a new mayor who is more open to sustainable mining, giving MetalTech a potential fresh start.

### History of existing underground mining permit

- ◆ There is an underground mining permit currently in place for the mining of 4,000 tonnes for metallurgical testing. This permit has been subject to challenge and has been successfully re-instated with the support of the Slovakian Mining Bureau.
- ◆ Arc Minerals (then Ortac) was issued with a permit for an underground mine in 2014 by the Central Mining Bureau.
- ◆ This permit was revoked in the six months to September 2016 by a local court (Arc Interim Financial Report issued 19 December 2016)
- ◆ This was resolved positively with the co-operation of the Mining Bureau which in March 2017 issued an amended underground mining permit. After due consultation, this was finally confirmed in July 2017 allowing the company to commence small scale mining operations (Arc Financial Report for year to March 2017 p2).
- ◆ On the 18th July 2017, the Company re-commenced underground mining activities at Šturec, fulfilling the condition required by Slovak regulations to preserve its right to exploit the ore deposit in the Kremnica Mining Licence Area for a minimum period of three years (Arc Financial Report for year to March 2017 p5).
- ◆ A program of trial underground mining was started, which planned to extract 4,000 tonnes of ore. At September 2017, some 500 tonnes had been extracted and tested, including with the use of non cyanide processing technologies, with encouraging results (Arc Financial Report for year to March 2017 p36).

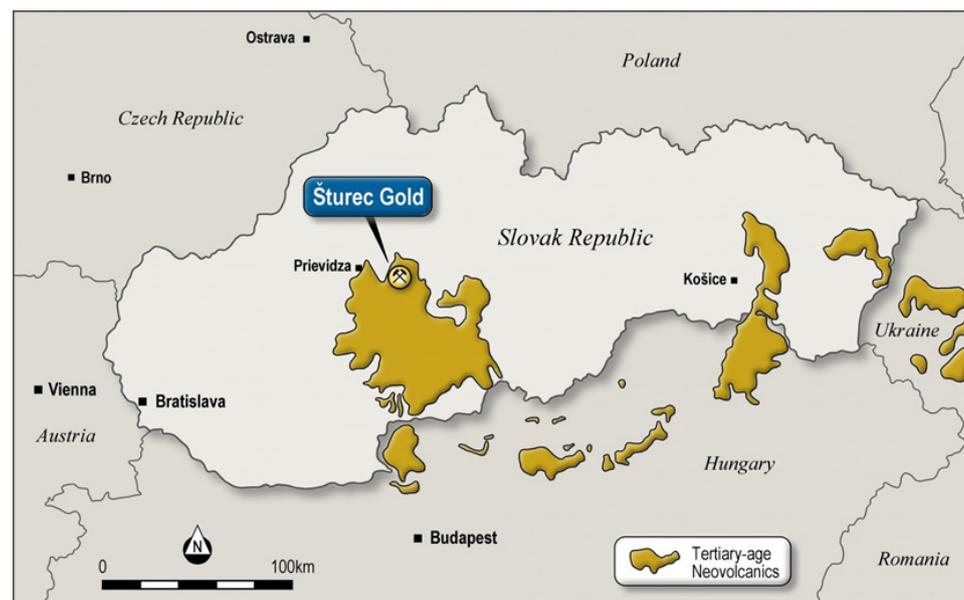
## Approval Pathway

- ◆ Preliminary Environmental Report (PER) is the first step. This should not be too onerous because the owner before Ortac (Tournigan) produced a PER on the project as envisaged in 2005 (Source: SRK 2013 PFS 13.2.2)
- ◆ Environmental and Social Impact Assessment (ESIA) in the second step. We understand that the baseline studies have been started, but at present, this document has not been completed.

## THE ŠTUREC GOLD PROJECT

### Location, background and history

**Figure 3 Šturec Location At Edge of Tertiary Volcanics**



Source: <http://www.metalsstech.net/projects/Šturec-gold-project/>

**Figure 4 General Map of Slovakia**



Source: "Geological survey, resources and properties of the Ag and Au containing ore in the Kremnica-Šturec deposit, Slovakia" - Acta Montanistica Slovaca Rocnik 19(2014), Cislo 4, 192-198

- ◆ The Šturec deposit is located in the foothills of the Carpathian Mountain range that separates Slovakia from Poland, and is between the towns of Kremnica and Lucky and some 17km west of the regional centre Banská Bystrica, and 170km from the capital, Bratislava. The deposit is on the 11.8 km<sup>2</sup> Kremnica Mining Licence Area.

- ◆ The town of Kremnica has a long history of gold mining, going back to the Middle Ages, and the road to the Šturec deposit is called Banska Cesta which means Mining Road. The town's focus today may be more about tourism, so the Šturec Operation will have to integrate appropriately.
- ◆ The recorded mining in the area of this deposit extends from the 8th century to the early 1990s, with historical production totalling 1.5Moz. The Slovak State owned mining company Rudne Bane operated an open pit mine from 1987 to 1992 and produced 50Kt at 1.54g/t. Further exploration was undertaken by Argosy Mining and Tournigan Gold before acquisition by Ortac Resources, which became Arc Minerals.
- ◆ The region is very well served with infrastructure, including power, water, workforce accommodation, hospitals, and communications.
- ◆ Ortac completed a scoping study in 2012 that identified a number of scenarios for development. The SRK PFS of 2013 focussed on the 1.5Mtpa scenario, but there is potential for a lower initial capex start up (i.e. US\$83M vs US\$149M).

**Table 7 Scoping Study Options from 2012 Study**

Ortac Scoping Scenarios	1.5 Mtpa	0.75 Mtpa	2.0 Mtpa
Gold Grade g/t	1.66	1.85	1.46
Contained Gold Koz pa	80	45	94
Contained Gold Total Koz	881	490	1033
Strip Ratio	2.25	1.06	1.75
Mine Life yrs	11	11	11
Capex US\$M	149	83	155

Source: Ortac presentation 10 January 2012  
(<http://academyfinance.ch/gri/companies/OrtacResources.pdf>)

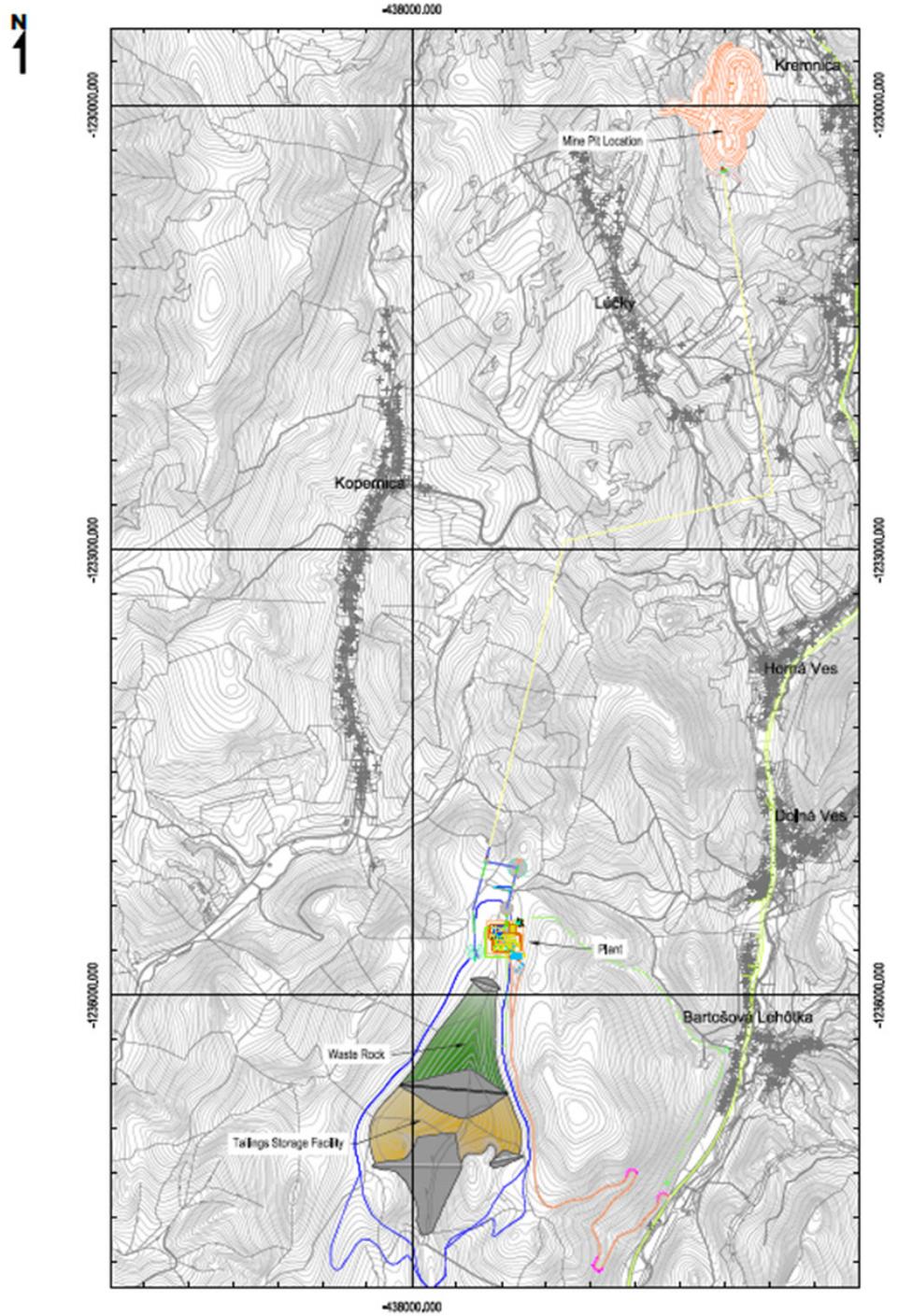
- ◆ The Šturec (Kremnica) Pre-Feasibility Study was completed for then owner Ortac on 8 April 2014 by SRK Consulting. Given the accumulation of modern exploration data since 1995, and the numerous previous studies, SRK has expressed a high degree of confidence in the current PFS.
- ◆ The project has encountered opposition particularly in respect of the use of a cyanide based processing route.
- ◆ The project as currently proposed has an unusual layout, with the ore and waste being crushed on site and conveyed 6Km south to the processing plant and waste management facility, where both the waste rock and tailings will be emplaced. This removes activity from the neighbourhood of the town of Kremnica, to a valley shielded from the towns in the surrounding valleys.
- ◆ Given global issues regarding tailings dam stability, the effort that has gone into the proposed tailings storage facility is impressive, given this was a 2014 design, before the most recent failures.

**Figure 5 Looking east from the Šturec mine location**



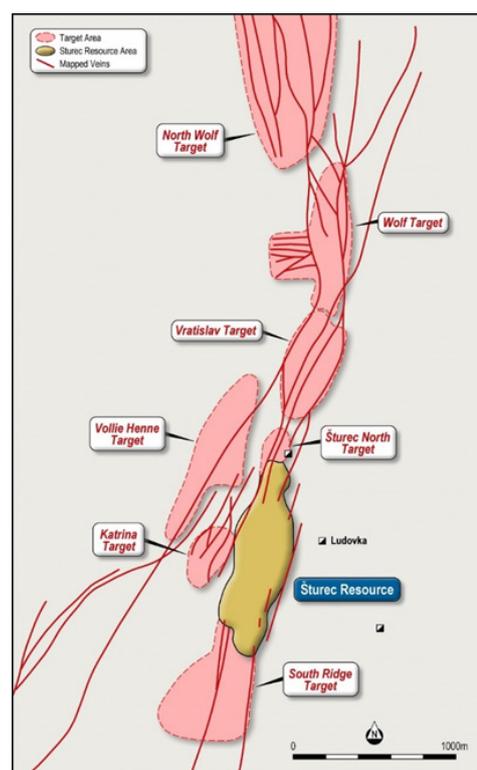
Source: Ortac presentation 2012 (<http://academyfinance.ch/gri/companies/OrtacResources.pdf>)

Figure 6 Planned Project Layout (Conveyor in yellow joins mine in orange to plant)



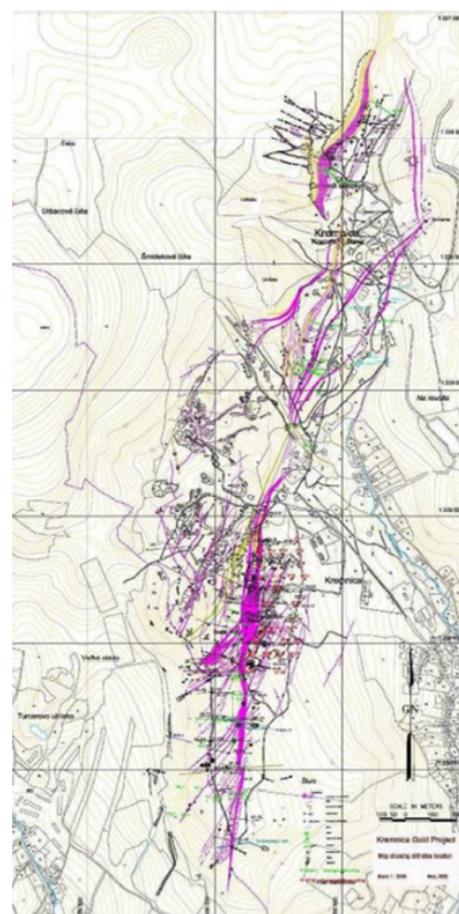
Source: PFS Appendix D1

**Figure 7** The region has considerable exploration potential



Source: Company website

**Figure 8** Principal Vein System, and related vein sets, showing proximity to Kremnica



Source: Company website

- ◆ The Šturec gold mineralisation is part of a large low-sulphidation quartz-sericite-adularia epithermal-hydrothermal system hosted in Tertiary andesite volcanic flows. The main economic zone is continuously mineralised over a strike of 1200m, typically 100-150m wide and extends to a known depth of at least 300m.
- ◆ The deposit can be described as a steeply easterly dipping, N-S striking main quartz vein, with other vein swarms cutting across the main vein in a NNE-SSW direction. At the north end of the Šturec deposit, the interference between these two vein sets creates a steeply easterly dipping vein with a broad hanging wall zone of silicification and argilisation and a narrower footwall zone parallel to the vein. At the southern end of the deposit a discrete vertical main vein is accompanied by a haphazard array of veins and alteration envelopes on the west side under South Ridge.
- ◆ The Principal Vein System (First Vein System) strikes NNE and includes the Šturec deposit. There is a Second Vein System, to the east of the first, but this lies under the town of Kremnica and not considered viable for exploration.
- ◆ The core of the deposit is the Schramen quartz vein, which varies from massive to sheeted in structure. The strike is generally to the north, dipping steeply to the east, with thinning to the north and at depth.
- ◆ The second important element is a northeast striking vein system that joins the northern part of the Schramen vein. This system dips at 45-55 degrees to the east, re-joining the Schramen vein at depth.
- ◆ Gold occurs freely, in non-refractory association with sulphides, and with silver as electrum. Besides electrum, silver occurs in polybasite, pyrargyrite, and argentite. Sulphide minerals are primarily pyrite and marcasite.
- ◆ Average gold grades in the Schramen vein at around 2g/t but can exceed 30g/t. Gold to silver ratio averages 8.5:1 but can vary.
- ◆ The deposit is complicated by pre-existing surface and underground workings; the surface workings are focused within the natural oxide cap whereas the underground workings were within the fresh sulphide zone. However, these workings have accelerated natural

oxidation processes within previously accessed zones of the deposit as they have enhanced both air and water flow through these reactive materials. As a result, intense oxidation is reported as having affected much of the upper parts of the deposit, and underground areas in the vicinity of old workings.

- ◆ The Šturec gold and silver deposit has been studied extensively since 1995 and as a result there is a high degree of confidence in the data presented in this pre-feasibility study. Indeed, many aspects of the project have previously been engineered to pre-feasibility levels in both technical and cost estimation terms.

**Table 8 Reserves and Resources (to JORC 2004 Standard)**

	Kt	Density t/ m <sup>3</sup>	Gold g/t	Silver g/t	Gold Koz	Silver Koz
<b>Reserves (JORC 2004)</b>						
Proven	3084	2.17	1.62	13.05	161	1294
Probable	10881	2.24	1.73	14.55	604	5091
<b>Total</b>	<b>13965</b>	<b>2.23</b>	<b>1.70</b>	<b>14.55</b>	<b>765</b>	<b>6385</b>
Inferred in Mine Plan	3156		0.68	4.64	69	471
<b>Total Mine Plan</b>	<b>17121</b>		<b>1.52</b>	<b>12.46</b>	<b>834</b>	<b>6856</b>
<b>Resources (JORC 2004)</b>						
Open Pit >0.4g/t Cut-off						
Measured	3000	2.17	1.69	13.50	161	1291
Indicated	12400	2.24	1.76	15.20	702	6044
M&I	15400	2.23	1.75	14.90	863	7335
Inferred	9700	2.33	0.89	5.10	279	1587
<b>Total</b>	<b>25100</b>	<b>2.27</b>	<b>1.42</b>	<b>11.10</b>	<b>1141</b>	<b>8922</b>
<b>Underground &gt;2.85g/t Cut-off</b>						
Measured						
Indicated	19	2.34	3.60	23.80	2	14
M&I	19	2.34	3.60	23.80	2	14
Inferred	310	2.34	3.50	19.70	35	196
<b>Total</b>	<b>328</b>	<b>2.34</b>	<b>3.51</b>	<b>20.00</b>	<b>37</b>	<b>211</b>

Source: Snowden Resource Report 2012

- ◆ The Mineral Resources contained within the deposit have been estimated in accordance with the requirements of the JORC Code (2004) by Snowden Group, an independent mining consultant, and reviewed by SRK. SRK has not independently verified the Mineral Resource estimate, it remains a Snowden authored Mineral Resource Statement, but SRK considers the Mineral Resource and associated geological model to be adequate for SRK to conduct mining studies and estimate Ore Reserves in compliance with the requirements of the JORC Code. Overall, SRK considers the approach adopted by Snowden for the Mineral Resource Estimation and classification of the Šturec deposit to be appropriate, sufficiently detailed and in line with international best practice.

## MINING

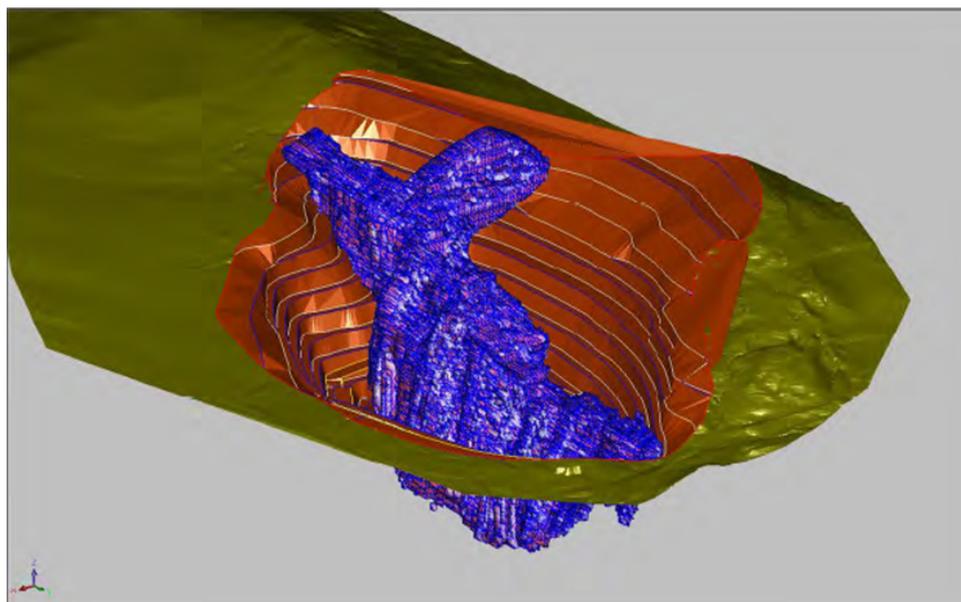
- ◆ The outstanding feature of this deposit is the low ratio of waste to ore of 2.32:1 (tonnes to tonnes). When other open pits around the world are operating at between 6:1 and over 10:1, this is an anomaly, and underwrites the mines relatively low All In Sustaining Cost of US\$661/oz or A\$945/oz, and those costs include our assumption of 15% higher operating costs than the SRK PFS.

### Key Mining Statistics

- ◆ Mining recovery 100%.
- ◆ Mining Dilution 2%.
- ◆ Overall pit wall slope angle is planned to be 30° in overburden and 50-55° in fresh rock except for a footwall clay zone and highly argillic altered andesites, where the slope angle reduces to 43°.
- ◆ Bench heights 20m and berm widths 10m, with a 20m wide dual lane haul ramp at 1 in 10.

- ◆ The strike length is 930m. The deepest point is 500m RL vs the surface RLs which range from 750m to 800m, ie the pit will be 250-300m deep. At the widest point the pit will be 660m wide.

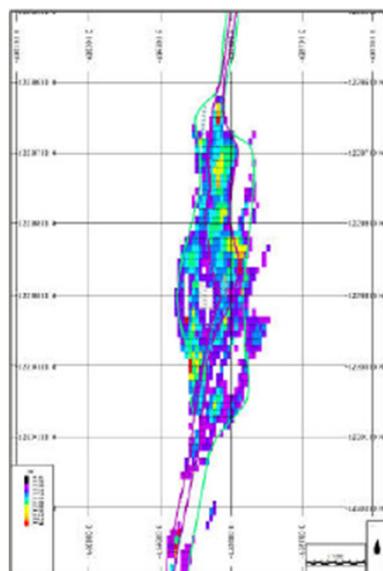
**Figure 9 Šturec orebody within the planned open pit**



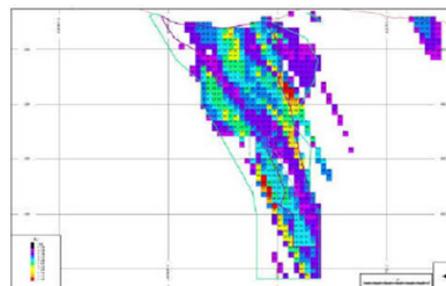
Source: SRK 2013 PFS

- ◆ SRK believes the pit slope recommendations provided for the mine design are based on sound data and modelling techniques and are suitable for a pre-feasibility level of study. However, the amount of geotechnically logged data is limited when compared with the requirements of a bankable study. Subsequent studies, including further ground investigations, will improve the confidence in the data, which will then lead to improved pit slope angles and thus project economics.
- ◆ The open pit will encounter previously operated underground stope voids and operating levels. In the last 20 years, the industry has gained a lot of experience in operating around such voids.
- ◆ Ground water control seen as critical of pit wall stability.
- ◆ Ground water control is assisted by the existence of a series of historical dewatering adits (the Heritage Adits) constructed underneath the deposit. These still very effectively dewater the deposit.
- ◆ Water and water quality management will have to be a core operating skill for this operation.

**Figure 10 Plan view of Tourigan 2007 PFS Block Model**



**Figure 11 Cross Section of Tourigan 2007 Block Model**



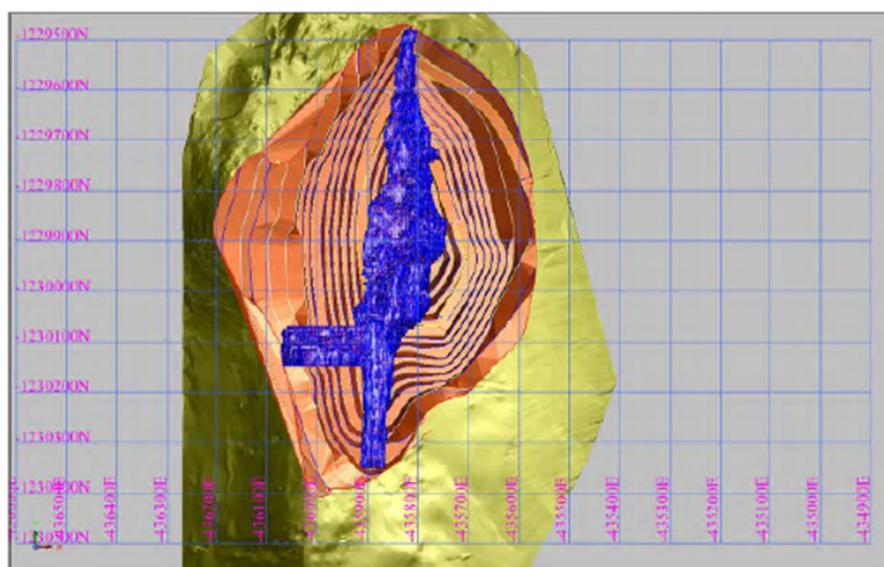
Source for both figures: Tourigan Resources 43-101 Feasibility Study (PFS) 5 July 2007

The purple is the major veins, the green is the andesite/stockwork boundary, and the voids are grey.

The grid spacing is 100m in the vertical, and 200m by 200m in plan.

The low stripping ratio is a function of the orebody being oval in plan and wider at the top than at the bottom, at least on current drilling.

**Figure 12 Orebody and final pit shell in plan view**



Source: SRK 2013 PFS Fig 10.5

## PROCESSING

- ◆ The 2013 PFS is based on a processing using a cyanide route. This is the base case on which the PFS and our financial modelling is based.
- ◆ A more environmentally friendly and probably more acceptable technology is the Thiosulphate Process, which has been around for 15 years but has only been installed in one operation globally, being Barrick's Goldstrike operation in Nevada, USA. There is only partial guidance as to the recovery or cost differences, but initial indications are that there may not be much change from the PFS base case.
- ◆ As a fall back option, the deposit could be mined and processed to a gold rich concentrate stage, and the concentrate trucked to a neighbouring jurisdiction such as Poland, 100Km away, where the concentrate could be sold to a smelter, or processed to bullion using a cyanide processing facility owned by either MetalsTech or a third party. The downside of this approach is lower recovery, so it would reclaim but not maximise the deposit's value.

## PROCESSING AS OUTLINED IN THE PFS

- ◆ Test work indicates that ore from the Šturec deposit is amenable to whole ore cyanide leaching, with recoveries depending on the mineralisation type. Oxide ores give the highest gold recovery, in a range of 92% - 96%, and the lowest recoveries are seen in the sulphide ores, with recoveries as low as 82 % in some samples. SRK, however,

considers the quality and level of metallurgical test work and associated cost estimates to be appropriate for a pre-feasibility level of study. Further test work to assess variability across the deposit may yield positive benefits and could be used to optimise the leach circuit design through investigating the possibility of reducing residence time. SRK also recommends investigating CIL processing over CIP in order to reduce the capital cost of the plant.

- ◆ Based on both the desire to minimise the visual impact of the project on Kremnica town and Lucky village, and in order to be able to locate the process plant and Waste Management Facility within the same watershed, the process plant is to be located approximately 5 km to the south of the open pit. Both ore and waste are to be crushed at the primary crusher located adjacent to the pit, then the primary crushed material will be conveyed to the process plant site.
- ◆ At the plant site, ore will be directed to the secondary crushing circuit, and waste will be directed to a radial stacker adjacent to the Waste Management Facility. Both Potentially Acid Generating (“PAG”) and Not Potentially Acid Generating (“NPAG”) waste rock has been identified. PAG waste will be trucked from the stockpile and stored within the confines of the Waste Management Facility, and NPAG waste will be used to build the walls of the Waste Management Facility.
- ◆ Comminution of the ore will be by a further two stages of crushing – the third stage in closed circuit – followed by a single stage of grinding in a ball mill, operating in closed circuit with cyclones. The Bond Crushing Work index is 11kWh/t and the Grinding Bond Work Index is 15-17.6kWh/t. Power is costed at US\$0.081/kWh and will be subject to market conditions.
- ◆ A gravity circuit will treat a portion of the cyclone underflow, with the concentrate from the centrifugal concentrator reground then processed in an Intensive Cyanidation circuit, producing a leach solution that will be fed to the electrowinning circuit. Tailings from the Intensive Cyanidation circuit will be fed to the CIP circuit.
- ◆ The leach circuit is in a CIP format, with a residence time in the leaching circuit of 48 hours, and a slurry residence time in the adsorption circuit of 6 hours.
- ◆ A thickener will be installed ahead of the CIP circuit, to provide control over the slurry % solids feed to the CIP circuit, and a thickener will be installed following the CIP circuit as a means of conserving cyanide.
- ◆ Final CIP tailings (after thickening) will be treated using the “Inco” SO<sub>2</sub>/air process for cyanide detoxification ahead of disposal into the WMF.
- ◆ Recovery of gold and silver from the loaded carbon will be via an AARL elution circuit, followed by conventional electrowinning and carbon regeneration circuits.
- ◆ In terms of infrastructure, the Šturec project is located close to grid power, good IT and communications, and sufficient process and potable water should be available from a combination of abstraction from the Heritage Adit and purpose drilled boreholes. More detailed studies, including fixing of the site layout, are required to advance the project to the bankable feasibility level with associated capital and operating cost estimates.

#### FEASIBILITY STUDY BASED FINANCIAL MODEL

- ◆ The 2013 PFS was completed within normal PFS levels of accuracy, which means the costings accuracy is +/-25%. As a conservative measure, we have increased the capex and opex by 15% in our Base Case financial model compared with the PFS., and +25% is our Low Case valuation.
- ◆ Our model includes the 2% private royalty (see MTC release 20 November 2019).
- ◆ The SRK PFS modelled the Slovakian royalty at an arbitrary 5% of revenue. Our model uses what we understand to be the actual formula.

**Table 9 Our Financial Life of Mine model in A\$ and US\$ v the PFS in US\$**

Sturec Project	IIR Model IIR Assum	IIR Model PFS Assum	SRK PFS
Waste Moved Kt	39.7	39.7	39.7
Strip Ratio	2.32	2.32	2.32
Ore Mined Kt	17.1	17.1	17.1
Au Grade g/t	1.52	1.52	1.52
Ag Grade g/t	12.5	12.5	12.5
Au Recovery	92%	92%	92%
Ag Recovery	64%	64%	64%
Gold Recovered Koz	767	767	767
Silver Recovered Koz	4388	4388	4388
Capex Pre Prodn \$M	202	142	124
Capex Sustaining \$M	0	0	
Rehab \$M	36	25	22
Total \$M	239	167	146
	A\$	US\$	US\$
Mining Total \$M	168	129	113
Crush & Convey \$M	56	39	34
Processing \$M	464	325	283
Admin \$M	68	47	36
C1 Total	757	541	466
AISC \$/t ore	46.3	33.1	28.5
AISC \$/oz	945	647	574
Gold Price \$/oz	1500	1350	1350
Silver Price \$/oz	20	25	25
AUDUSD	0.70	1.00	1.00
Gold Revenue \$M	1644	1035	1035
Silver Revenue \$M	125	110	109
Revenue Total \$M	1769	1145	1144
Royalties (State)	18	13	57
Royalties (Private)	35	23	na
Royalties Total	54	36	57
Refining Costs	4	4	4
Revenue	1769	1145	1144
Cost	-814	-581	-527
D&A = Capex	-239	-167	-146
EBIT	716	397	471
Tax	-165	-91	-105
NPAT	552	306	366
Free Cash Flow After Tax	552	306	366

Source: SRK 2013 PFS, IIR estimates including a 15% increase in capex and opex costs from the PFS. In addition to the 15% increase, some differences arise because Rehabilitation is treated as capital in this table, and is treated as operating cost in the PFS.

**Table 10 Šturec 2013 PFS Volume and Capex Estimates**

Šturec Project IIR Model	Sum/Ave	Jun-22	Jun-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28	Jun-29
Reserve Kt		13965	13965	12111	10982	9480	7979	6479	3502
Au Grade g/t		2	2	2	2	2	2	2	2
Ag Grade g/t		14	14	15	16	16	16	16	19
Contained Gold Koz		765	765	715	668	583	482	377	262
Contained Silver Koz		6385	6385	6000	5612	4872	4078	3239	2172
Waste Moved Kt	39699			4921	5843	4769	3288	2065	1501
Strip Ratio	2.32			2.65	5.17	3.18	2.19	1.38	0.50
Ore Mined Kt	17121			1854	1130	1501	1501	1500	2977
Au Grade g/t	1.52			0.84	1.29	1.77	2.09	2.17	1.20
Ag Grade g/t	12.5			6.5	10.7	15.3	16.5	17.4	11.1
Contained Gold Koz	834.4			50.2	47.0	85.3	100.7	104.5	115.0
Contained Silver Koz	6856			386	388	740	794	839	1067
Ore in Stockpile Kt				354	0	1	2	2	1480
Au Grade g/t				0.56	0.00	0.00	0.00	0.00	0.49
Ag Grade g/t				4.1	31.1	11.1	9.1	9.1	3.5
Contained Gold Koz				6.4	0.0	0.0	0.0	0.0	23.3
Contained Silver Koz				46	0	0	1	1	168
Ore Processed Kt	17121			1500	1483	1500	1500	1500	1500
Au Grade g/t	0.00			0.91	1.12	1.77	2.09	2.17	1.90
Ag Grade g/t	145.5			7.0	9.1	15.3	16.5	17.4	18.6
Contained Gold Koz	835			44	53	85	101	105	92
Contained Silver Koz	6856			339	434	739	794	839	899
AU Recovery	91.9%			92.9%	92.7%	92.5%	92.2%	91.7%	91.7%
Ag Recovery	64.0%			65.6%	65.3%	65.1%	64.5%	63.4%	63.4%
Gold Recovered Koz	767.0			40.7	49.5	78.9	92.8	95.8	84.1
Silver Recovered Koz	4388			222	284	482	512	532	570
Capex Pre Prodn U\$M	142	48	93						
Rehab A\$M	25			0	0	0	0	0	0
Capex Pre Prodn A\$M	202	69	133	0	0	0	0	0	0
Rehab A\$M	36	0	0	0	0	0	0	0	0
Total A\$M	239	69	133	0	0	0	0	0	0

Source: SRK 2013 PFS, IIR estimates

- ◆ The model time line assumes that obtaining approvals and finance takes 18 months ie to June 2021, and construction takes 2 years to first production.
- ◆ We have only shown the first 8 years of the project due to space limitations. The last year of production is Year 14.
- ◆ Our model and the SRK 2013 PFS have the same volume assumptions.
- ◆ Our Base Case capex is 15% higher than the PFS.

**Table 11 Operating cost calculations**

Sturec Project IIR Model	Sum/ Ave	Jun-22	Jun-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28	Jun-29
Unit Costs US\$/t									
Mining US\$/t Moved	0.00	2.28	2.28	2.28	2.28	2.28	2.28	2.28	2.28
Crush/Convey US\$/t	0.00	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Processing US\$/t	0.00	18.99	18.99	18.99	18.99	18.99	18.99	18.99	18.99
Admin US\$/t				3.77	3.81	3.77	3.77	3.77	3.77
Unit Costs A\$/t Milled									
Mining A\$/t Moved	0.00	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
Crush/Convey A\$/t	0.00	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29
Processing A\$/t	0.00	27.12	27.12	27.12	27.12	27.12	27.12	27.12	27.12
Admin A\$/t	0.00			5.38	5.44	5.38	5.38	5.38	5.38
Mining Waste A\$M	129	0	0	16	19	16	11	7	5
OP Mining Ore A\$M	39	0	0	4	3	3	3	3	7
Mining Total A\$M	168	0	0	20	22	19	14	10	12
Crush & Convey A\$M	56	0	0	6	4	5	5	5	10
Processing A\$M	464	0	0	41	40	41	41	41	41
Admin A\$M	68	0	0	6	6	6	6	6	6
C1 Total	757	0	0	73	71	70	65	61	68
AISC A\$/oz	945	0	0	1712	1360	798	623	552	684

Source: SRK 2013 PFS, IIR estimates Note AISC include the royalties shown in Table 12

- ◆ Our Base Case costs are 15% higher than the SRK 2013 PFS. There is no allowance for inflation, of either commodity prices nor unit operating costs, which we believe is appropriate for valuing gold companies.
- ◆ There is no sustaining capital in the PFS numbers, because the mining plant is assumed to be owned by contractors, and the costs of maintaining the plant and lifting the height of the tailings dam are included in the operating costs (US\$6.05M pa for tailings per SRK 2013 PFS Section 8.5.2)
- ◆ The State Royalties are shown on the next page. The basis used in our model is more favourable than used in the SRK 2013 PFS. According to the Tournigan 2007 PFS, the Slovakian Government levies a royalty for mining silver and gold. The royalties for the minerals mined are calculated as follows:
  - Royalty for the Minerals Mined =  $(MC/TC) \times R \times \text{rate (in \%)}$
- ◆ Where:
  - MC (costs for mining the minerals) = the expenses (direct and indirect) related to opening, preparing, mining, and liquidating the mining area, as well as the cost of transporting the mineral to the processing plant
  - TC (total costs for preparing the product from the mined minerals) = MC and other expenses related to processing the minerals
  - R (revenue for the product prepared from mined minerals) = the revenues for the products sold as well as for products retained for own use
  - The rate (from 0.1% to 10%) depends on the type of mineral that is mined. For silver and gold, the rate is 5%.

**Table 12 Calculation of Revenues, Profit & Loss, and Cash Flow**

Sturec Project IIR Model	Sum/Ave	Jun-22	Jun-23	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28	Jun-29
Gold Sales Koz	767.0	0.0	0.0	40.7	49.5	78.9	92.8	95.8	84.1
Silver Sales Koz	4388	0	0	222	284	482	512	532	570
Gold Price US\$/oz	1500	1500	1500	1500	1500	1500	1500	1500	1500
Silver Price US\$/oz	20	20	20	20	20	20	20	20	20
AUDUSD	1	1	1	1	1	1	1	1	1
Gold Price A\$/oz	2143	2143	2143	2143	2143	2143	2143	2143	2143
Silver Price A\$/oz	29								
Inflation		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Tax Rate		23%	23%	23%	23%	23%	23%	23%	23%
Gold Revenue Koz	1644	0	0	87	106	169	199	205	180
Silver Revenue Koz	125	0	0	6	8	14	15	15	16
Revenue A\$M	1769	0	0	94	114	183	213	220	197
Royalties (State 5%)	18	0	0	1	2	2	2	2	2
Royalties (Private 2%)	35	0	0	2	2	4	4	4	4
Royalties Total	54	0	0	3	4	6	7	6	6
Refining Costs	4	0	0	0	0	0	0	0	0
Revenue	1769	0	0	94	114	183	213	220	197
Cost	-814	0	0	-76	-75	-77	-72	-68	-74
EBITDA	955	0	0	18	39	106	141	152	123
D&A	-239	0	0	-13	-15	-25	-29	-30	-26
EBIT	716	0	0	5	23	82	112	123	97
Tax	-165	0	0	-1	-5	-19	-26	-28	-22
NPAT	552	0	0	4	18	63	86	94	74
Sustaining Capex A\$M	0	0	0	0	0	0	0	0	0
Salvage Value A\$M	0	0	0	0	0	0	0	0	0
Rehabilitation A\$M	36	0	0	0	0	0	0	0	0
Pre Prodn Capex A\$M	202	69	133	0	0	0	0	0	0
Cash Flow Pre tax	716	-69	-133	18	39	106	141	152	123
Pre Tax NPV		322	417	584	613	623	567	472	357
Cash Flow Post Tax	552	-69	-133	16	33	87	115	124	100
Post Tax NPV		235	322	481	504	510	464	386	293

Source: SRK 2013 PFS, IIR estimates. Note the project Post Tax NPV of A\$235M at June 2022 is different to the project A\$201M NPV in Table 4 Base Case because of the additional two years of discounting at 8%pa

- ◆ The Slovakian tax rate is as per the SRK 2013 PFS
- ◆ The Private Royalty is as described in the 10 November 2019 MetalsTech announcement p12
- ◆ There is a contingent payment to the project vendors of A\$2/oz for any increase in the JORC 2012 Measured and Indicated Resource above 1.5Moz at over 2.5g/t gold equivalent discovered within the next 7 years, capped at 7Moz. Our model does not include that increase in resources, so our financial model does not include this contingent liability.

## ALTERNATIVE SCENARIOS TO THE SRK 2013 BASE CASE

Table 13 Alternative mine development and processing scenarios

Scenario	2	2	2	2 Conc	3	3	3	3 Conc
<b>Cutoff Aug/t Equiv</b>	<b>0.75</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.75</b>	<b>1.00</b>	<b>2.00</b>	<b>2.00</b>
Data from Tourigan 2007 PFS								
Waste Mt	6.4	7.7	12.2	12.2	19.0	22.1	30.2	30.2
Strip Ratio	0.7	1.0	3.5	3.5	1.2	1.7	6.0	6.0
Ore Mt	9.4	8.1	3.5	3.5	16.3	13.2	5.1	5.1
Gold g/t	1.73	1.89	2.66	2.66	1.62	1.82	2.69	2.69
Silver g/t	13.8	14.9	19.3	19.3	12.2	13.4	18.6	18.6
IIR Estimates								
Gold Recovery	90%	90%	90%	82%	90%	90%	90%	82%
Silver Recovery	60%	60%	60%	60%	60%	60%	60%	60%
Recovered Gold Koz	470	441	271	247	764	695	394	359
Recovered Silver Koz	2501	2310	1315	1315	3833	3417	1811	1811
Costs from SRK 2013 PFS	0	0	0	0	0	0	0	0
Mining @ US\$1.98/t moved	31	31	31	31	70	70	70	70
Crush/Convey @ US\$2/t ore	19	16	7	7	33	26	10	10
Process @ US\$12.19/t ore	114	98	43	43	149	161	62	62
Tailings @ US\$4.32/t ore	41	35	15	11	70	57	22	15
G&A @ US\$2.99/t ore	28	24	11	11	49	39	15	15
<b>Total US\$M</b>	<b>233</b>	<b>204</b>	<b>107</b>	<b>102</b>	<b>371</b>	<b>353</b>	<b>179</b>	<b>172</b>
IIR Estimates								
Process Plant Capacity Mtpa	1.0	1.0	0.5	0.5	2.0	1.0	0.8	0.8
Project Life years	9.4	8.1	7.0	7.0	8.1	13.2	5.1	5.1
Pre Production Capex US\$M	120	120	75	85	160	120	85	95
Revenue Gold @US\$1500/oz	705	661	407	371	1146	1042	591	538
Revenue Silver @ US\$25/oz	63	58	33	33	96	85	45	45
Gross Revenue US\$M	767	719	440	404	1242	1127	636	584
State Royalty 5%	38	36	22	20	62	56	32	29
Private Royalty 2%	15	14	9	8	25	23	13	12
All In Sustaining Cost US\$M	287	255	138	131	457	432	223	213
All In Cost US\$M	407	375	218	221	617	552	343	333
Cash Flow Pre Tax US\$M	361	344	222	183	625	575	293	251
Tax Rate	23%	23%	23%	23%	23%	23%	23%	23%
Cash Flow Post Tax US\$M	278	265	171	141	481	443	226	193
Capital Efficiency	2.3	2.2	2.1	1.6	3.0	3.7	1.9	1.6
Payback Years	3.0	2.7	2.4	3.0	2.2	3.0	1.9	2.1
All In Sustaining Cost US\$/oz	477	447	387	396	473	499	452	467
All In Cost US\$/oz	733	719	682	760	683	672	756	801

Source: Tournigan 2007 PFS for scenario volumes, SRK 2013 PFS for unit operating costs, IIR estimates. Note the State Royalty is based on total revenue x Mining Costs/Total Costs x 5%. Capital Efficiency is the ratio of post tax cash flow/pre-production capex. 2007 PFS is at <https://www.sec.gov/Archives/edgar/data/1271199/000120445907001067/exh991.htm>

- ◆ The table uses data from two of the studies of this deposit to construct alternative development scenarios. All the options have low All In Sustaining Costs (ie AISC of US\$682-801/oz).
- ◆ In Table 13, the Scenarios 2 and 3 refer to separate pit shells produced by Tournigan. We believe the main difference is that a higher gold price was used in the Scenario 3 vs 2, but the PFS text is not clear and does not provide the gold prices assumed.
- ◆ The Scenario 2 Conc and Scenario 3 Conc takes the highest cutoff grade option for each Scenario and modifies the recoveries to reflect the impact of producing a flotation concentrate in Slovakia and extracting gold bullion outside Slovakia. The recoveries chosen

are based on test work discussed in the Metallurgy section. We have also modified the operating costs.

- ◆ The SRK 2013 PFS is our base case document. At this stage we are assuming that Thiosulphate Processing would generate around the same recoveries, and incur the same capex and opex costs. Thiosulphate Processing is discussed in the Metallurgy Section below.
- ◆ The scenarios discussed in the Mining Section focus on either changing the cut off grade and plant size/capex cost, or change the processing flow sheet to reflect the lower recoveries implied in producing a concentrate at the mine and extracting the gold outside Slovakia.
- ◆ The point of these scenarios is not to propose an alternative to the base case, but rather to demonstrate that MetalsTech has some financially very attractive alternative options to pursue in the event that it needs to, in order to generate positive shareholder returns.
- ◆ The smaller higher grade projects (ie the 2g/t cutoff scenarios) require less pre-production capital, either processing to bullion on site, or concentrating on site for gold extraction elsewhere, and could be a stepping stone to a larger lower grade operation in subsequent years. That is, if MetalsTech needs to make the project smaller, to fit its funding capacity, then it is likely to have the flexibility to do so.

### MINING – GRADE/TONNAGE CURVE PROVIDES MINING OPTIONS

- ◆ The 2012 Snowden Measured and Indicated Resource produced for Ortac of 15.4Mt at 1.75g/t Au and 14.9g/t Ag is similar to the 15.2Mt at 1.79g/t Au and 14.1g/t Ag produced by Beacon Hill Consultants for Tournigan in 2007,
- ◆ This similarity on resource suggests that the Tournigan grade tonnage curve is relevant to the current project. On this basis, we believe it is valid to use the Tournigan 2007 PFS data in conjunction with data from the SRK 2013 PFS. That means there could be a smaller higher grade project as a fall back, in the event that there are approval issues with the currently proposed project. There is also the possibility of an underground only option, avoiding the need for an open pit.

**Table 14 Tournigan 2007 PFS Measured and Indicated Resources**

Cut-off Grade g/t AuEq	Tonnes	Au g/t	Ag g/t	AuEq g/t	Au Ounces	Ag Ounces
0.5	23642143	1.37	11.4	1.54	1040629	8634180
0.8	18807469	1.59	12.8	1.78	959711	7727907
1.0	15153929	1.79	14.1	2.00	870053	6873423
1.5	9566122	2.20	16.6	2.45	675418	5114777
2.0	5802801	2.62	19.2	2.91	489489	3573128
2.5	3250723	3.13	21.3	3.45	327212	2221330
3.0	1799453	3.69	22.9	4.03	213556	1325079
3.5	1010299	4.31	24.1	4.67	139901	782232

Source: Tournigan 2007 PFS p17-42

### METALLURGY – THIOSULPHATE VS PRODUCING A CONCENTRATE

#### The Thiosulphate processing route (i.e. on site at Šturec)

- ◆ The Australian scientific research organization the CSIRO, has spent some A\$15M testing the Thiosulphate process for producing gold for over 15 years. The technology has been purchased by Clean Mining Ltd and that company has set up a demonstration plant near Menzies in the Western Australian gold fields. Clean Mining believe they will be signing a number of contracts for the rollout of the technology in Western Australia over the next 12 months.
- ◆ Barrick have used the ACID POX-CaTS-RIL processing system in their Goldstrike mine since 2014. This is CSIRO technology available through (<https://www.cleanmining.co/>) in WA so readily accessible. The reference to the Barrick operation where they process approximately 13,000 tonnes per day using the Thiosulphate process is <https://www.csiro.au/en/Research/MRF/Areas/Resourceful-magazine/Issue-07/Gold-strike-with-thiosulphate>.

- ◆ Clean Mining claim, in a personal communication with this author, that the process works as well as cyanide in all ore types but is superior than cyanide by 20-30% in low sulphide and carbonaceous ores. Applications are specific to the ore types so there are no currently available benchmark costings. A normal entry point for a Cyanide/Carbon In Leach plant can be US\$20-30m for the leach section of a typical process plant. Clean Mining has designed modular plants, from 10 tph – 40 tph costing in the range of US\$5m to US\$9m. Up to 200 tph (1.5Mtpa) is probably economic in modular format but for bigger mining operations in situ design and construct is likely to have better economics. The 2013 PFS does not specify the process plant capital costs in sufficient detail to assess the cost impact of switching.
- ◆ The front end crushing and grinding remains as in cyanide processing. The Clean Mining solution is within the leaching stage and involves the use of Thiosulphate and then resin/polymer, followed by dewatering depending on dry or wet tails. There are potentially significant cost savings around tailings storage facilities, O&HS, and the corporate liability/risks around managing toxic chemicals.

### PRODUCING A GOLD CONCENTRATE ON SITE, WITH CYANIDATION OUTSIDE OF SLOVAKIA

- ◆ Under this option, a processing route involving flotation would be used to generate a gold concentrate.

**Table 15 Recovery performance using Gravity/Flotation then Cyanide**

Flotation/Cyanidation	Gold			Silver		
	Oxide	Sulphide	Wtd Ave	Oxide	Sulphide	Wtd Ave
<b>Per Tournigan 2007</b>						
Quartz Vein	64.0%	84.0%	77.6%	47.2%	30.4%	37.5%
Breccia	64.0%	84.0%	77.6%	47.2%	30.4%	37.5%
Stockwork	79.7%	92.6%	88.5%	49.2%	46.3%	47.5%
Rubble	64.0%	88.3%	80.6%	47.2%	38.4%	42.1%
Ave	67.9%	87.2%	81.1%	47.7%	36.4%	41.2%
Ortac/Process Research 2012			87.3%			64.0%
Mine Plan	Oxide	Sulphide	Total	Oxide	Sulphide	
<b>Per SRK PFS 2013</b>						
Ore Mt	6.83	10.29	17.12			
Gold Grade g/t	1.21	1.72	1.52			
Silver Grade g/t	13.8	12.5	13.0			
Contained Gold Koz	266	569	835	31.8%	68.2%	0.0%
Contained Silver Koz	3031	4123	7153	42.4%	57.6%	0.0%
Cyanide Recovery	93.0%	91.5%	92.0%	66.0%	63.0%	64.3%

Source: Tournigan 2007 PFS, SRK 2013 PFS

- ◆ We do not have the cost data to comment on the overall economics, but the economics of processing to bullion on site are generally superior, because of the higher recovery. Previous owners have conducted metallurgical tests on flotation recoveries. We have used the older Tournigan 2007 PFS data in Table 13, because it is more comprehensive and more clearly documented than the equivalent data in the SRK study.
- ◆ In the SRK PFS (Section 7.2.5), the test work by Process Research recovered an overall gold recovery of 87.3% from a 2Kg composite sample, but in the text SRK indicated that the overall gold recovery of the Gravity/Flotation/Cyanide was likely to be 10% less than Gravity/Cyanide, ie 82%.
- ◆ Silver recoveries were similar with no material recovery benefit from either process route.
- ◆ A 5-10% lower gold recovery equated to the loss of 42-83Koz of recovered gold, worth at current gold prices around US\$64-126M or A\$91-180M and would require a reduction in capex plus opex of 8-16% to offset.

## CAPITAL STRUCTURE AND SHARE REGISTER

**Table 16 Share Register Structure**

Share Register at 22 September 2019 Adjusted for substantial shareholder changes		
Name	Shares M	%
Natres Services (Russell Moran)	18.80	16.1%
Rachel D'Anna (Gino D'Anna)	13.73	11.7%
BCC HK International Trade Co	10.00	8.6%
Celtic Capital/Sunset Capital	5.87	5.0%
Other Top 20	24.4	20.8%
Top 20	71.04	60.7%
Other	45.91	39.3%
Shares on Issue	116.95	100.0%

Source: 2019 Annual report for shareholdings at 22 September 2019, Substantial release 22 October 2019 for Natres/Talos

- ◆ The Directors Russell Moran and Gino D'Anna, directly or through related parties, have beneficial interests in 27.8% of the company.
- ◆ If all the Performance Rights were converted into shares, then the Board and Management interest in the company would increase to 40.0%.

**Table 17 Options exercise prices all well above the current share price**

Options On Issue, Performance Rights		
Options Expiry	A\$/sh	M
24-Feb-20	0.25	5.8
8-Jul-21	0.25	9.6
1-Aug-20	0.25	0.5
10-Aug-20	0.25	0.5
1-Nov-20	0.3	0.1
1-Nov-20	0.25	1.6
1-Nov-21	0.25	0.1
Existing Performance Rights	0	3.75
New Rights re Acquisition, subject to shareholder approval	0	20.0

Source: 2019 Annual report for shareholdings at 22 September 2019, Štorec Acquisition release 2 November 2019

## RESET OF SHAREHOLDER BASE

- ◆ Since the announcement of the option to purchase the Štorec Gold Project on 20 November 2019, the turnover has amounted to 251M shares, 2.2x the 117M shares on issue.
- ◆ This is an extraordinary volume of trading, and suggests that the register has been considerably refreshed. Turnover in the day of the announcement was 119.7 million shares (117M on issue), and in the following week, 69.6 million shares traded.
- ◆ There was no reported change in the substantial shareholders, who owned 41.4% before the announcement, so that means this massive turnover was concentrated among the owners of 66M shares that turned over 3.7x.
- ◆ All this activity took place between 2.8-12.5 cps on the first day and between 4.1-9.7 cps in the following seven days.

## BOARD AND MANAGEMENT

**Mr Russell Moran -Chairman**

- ◆ Mr Moran has a background in strategic business development in the mining, oil & gas, technology and health sectors and has significant experience in mineral resource development. He is a proven natural resources and technology investor with a track record in building public companies as well as M&A.
- ◆ He is Chairman of 3G Coal Limited, Zinciferous Limited and Wodgina Resources Limited. He was a former Director of software consulting business K2Fly (ASX:K2F) and anthracite coal explorer Atrum Coal Limited (ASX:ATU).

**Mr Gino D'Anna - Director**

- ◆ Mr D'Anna is a founding Director of the Company. He has significant primary and secondary capital markets experience and has extensive experience in resource exploration, public company operations and administration and financial management.
- ◆ He has particular experience in Canadian Government and First Nations relations in the mining sector. Mr D'Anna was a founding shareholder and founding Executive Director of Atrum Coal (ASX: ATU) which is developing the Groundhog Anthracite Project, located in British Columbia, Canada.
- ◆ He is currently a Director of 3G Coal Limited, Non-Executive Director of Metals Australia Limited (ASX: MLS) and K2fly Limited (ASX: K2F) and Director of Lac Grande Gold Pty Ltd.

**Dr Qingtao Zeng - Non Executive Director (Technical - Geology)**

- ◆ Dr Zeng completed a PhD in geology at the University of Western Australia in 2013. He has been engaged as a consulting geologist, principally working with CSA Global based in Perth and has a range of geological and commercial specialities.
- ◆ He has been extensively involved in the lithium exploration and development sector and through his strong network of contacts throughout China has helped clients complete a range of contracts relating to the supply or purchase of lithium in the form of concentrate or direct shipping ores.
- ◆ He is currently a Director of Kodal Minerals Plc.

**Mr Noel O'Brien - Non Executive Director (Technical - Metallurgy)**

- ◆ Mr O'Brien is a metallurgist and lithium processing expert, who is currently a technical adviser to Tawana Resources Limited on its Bald Hill lithium project and Kidman Resources Limited on the Mount Holland lithium project. Previously, Mr O'Brien was a technical consultant to the Galaxy Resources lithium project in Western Australia and the Bikita Minerals lithium project in Zimbabwe.
- ◆ Mr O'Brien was formerly Managing Director in South Africa for SNC-Lavalin Inc, a leading global engineering and construction group, and was responsible for delivering base metal smelter and refinery projects across Africa. Mr O'Brien has a deep understanding of the lithium market and possesses processing expertise in smelting, gravity separation, flotation, leaching and solvent extraction.
- ◆ Mr O'Brien holds a Metallurgical Engineering degree (University of Melbourne) and an MBA (Witwatersrand) and is a Fellow of the AusIMM.
- ◆ He is a Director of Mali Lithium Limited.

**Mr Paul Fromson - CFO/Company Secretary**

- ◆ Mr Fromson, B.Com, CPA, AICD, is a finance professional who has more than 30 years industry experience, including over 23 years with ASX listed resource companies. He has held a variety of senior positions including Company Secretary, Chief Financial Officer and Director in exploration and mining companies.
- ◆ Mr Fromson's resources experience extends over a number of commodities and he has worked on multinational joint ventures such as the Boddington Gold Mine and Worsley Alumina Projects through to a significant gold producer and a variety of exploration companies on projects within Australia and overseas.
- ◆ Mr Fromson brings extensive experience in corporate matters, ASX listing rules and all forms of capital raising.
- ◆ He is a member of the Australian Institute of Company Directors, a Certified Practising Accountant and a Licensed Tax Agent. Mr. Fromson holds a Bachelor of Commerce degree from The University of Western Australia.

**Ms Fiona Paterson - Consultant**

- ◆ Ms Paterson is an experienced risk engineer and corporate governance professional. She has held senior risk engineering roles with Italian oil and gas multinational Eni and was a former Director of K2Fly NL which sold its assets to K2Fly Limited (ASX:K2F). She is a Member of the Australian Institute of Company Directors.

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