

**Arbitration before the International Centre for Settlement
of Investment Disputes**

ICSID Case No. ARB/20/46

Lupaka Gold Corp.

Claimant

v.

Republic of Peru

Respondent

Expert Report of Accuracy

Confidential

1 October 2021

Transactions

Disputes

Crises

Decisions

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Glossary

3400 Level	Elevation at 3,400 metres above sea level
355t/day Scenario	Our valuation scenario assuming an average peak steady state production of c.355t/day
590t/day Scenario	Our valuation scenario assuming an average peak steady state production of c.590t/day
AAG	Andean American Gold Corp.
Acquisition	Claimant's acquisition of AAG (and AAG's subsidiary, IMG) on 1 October 2012
Acquisition Date	1 October 2012
Actual Situation	Claimant's economic wealth resulting from the actual situation
Alleged Breaches	Respondent's acts and omissions in breach of the FTA
ASX	Australian Securities Exchange
AuEq	Gold-equivalent
Blockade	The events on the Blockade Date during which Parán directed men to evict Claimant and its personnel from the premises of the Invicta Project, and blocked access to the mine
Blockade Date	14 October 2018
Buenaventura	Compañía de Minas Buenaventura S.A.A.
But-For Situation	Claimant's economic wealth resulting from the counterfactual situation but for the Alleged Breaches
CAGR	Compound Annual Growth Rate
CAPM	Capital Asset Pricing Model
CIM	Canadian Institute of Mining, Metallurgy & Petroleum
CIMVAL	Canadian Institute of Mining, Metallurgy & Petroleum on the Valuation of Mineral Properties
CIMVAL Code	CIMVAL Code for the Valuation of Mineral Properties
Claimant	Lupaka Gold Corp.
CRP	Country Risk Premium
Crucero Project	The Crucero gold project
DCF	Discounted Cash Flow
DIO	Days Inventory Outstanding
Dispute	ICSID arbitration proceedings ARB/20/46 between Claimant and the Republic of Peru
DPO	Days Payables Outstanding
DSO	Days Sales Outstanding

Early Termination Amount	The lump sum amount due following the notification of the early termination of the PLI Loan
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation
EIA	Environmental Impact Assessment
ERP	Equity Risk Premium
EV	Enterprise Value
FCFE	Free Cash Flow to Equity
FCFF	Free Cash Flow to Firm
FMV	Fair Market Value
FTA	The Canada-Peru Free Trade Agreement
GDXJ	VanEck Vectors Junior Gold Miners ETF
Hochschild	Hochschild Mining plc
IMC	Invicta Mining Corp. S.A.C.
Investment	Claimant's shareholding in IMC and, therefore, its investment in the Invicta Project
Invicta Mine	The Invicta gold mine
Invicta Project	The Invicta gold mine project
Josnitoro Project	The Josnitoro gold project
Kd	Cost of debt
Ke	Cost of equity
Lacsanga	The Rural Community of Lacsanga
LALIVE	LALIVE (London) LLP
Lonely Mountain	Lonely Mountain Resources S.A.C.
Lupaka	Lupaka Gold Corp.
Mallay Acquisition Plan	Claimant's anticipated purchase of the Mallay Plant and subsequent increase of production and processing capacity to c.590t/day
Mallay Plant	Mallay Mining Production Unit
MD&A	Management Discussion & Analysis
MEM	Ministry of Energy and Mines
NI 43-101	Canadian Securities Administrators' National Instrument 43-101
NPV	Net Present Value
Oz.	Troy ounce, equivalent to 31.1035 grams
P&P	Proven and Probable
Pandion	Pandion Mine Finance L.P.
Parán	The Rural Community of Parán

Parties	Claimant and Respondent together
PEA	Preliminary Economic Assessment
PEA Mine Plan	The six-year life of mine plan underlying the economic analysis in the PEA
Peru	Republic of Peru
PEN	Peruvian Sol
PLI	PLI Huaura Holding L.P., an investment vehicle controlled by Pandion
PLI Loan	Prepaid gold purchase agreement with PLI dated 30 June 2017 and amended on 2 August 2017
Red Cloud	Red Cloud Klondike Strike Inc.
Red Cloud Model	Financial model prepared by Red Cloud which updates the SRK Model to reflect the prospective purchase of the Mallay Plant and increase in production to c.590t/d
Report Date	1 October 2021
Respondent	The Republic of Peru
RfA	Request for Arbitration
Santo Domingo	The Rural Community of Santo Domingo de Apache
SRK	SRK Consulting (Canada) Inc.
SRK Model	Financial model prepared by SRK in February 2018 based on the PEA Mine Plan
Tranche 1	The first tranche of the PLI Loan, being USD 2.5m received by Claimant in August 2017
Tranche 2	The second tranche of the PLI Loan, being USD 2.0m received by Claimant in November 2017
Tranche 3	The third tranche of the PLI loan, being USD 2.5m received by Claimant in February 2018
Tribunal	Prof. John R Crook, Mr. Jonathan D. Schiller and Dr. Gavan Griffith QC
TSX-V	TSX-Venture Exchange
Valuation Date	26 August 2019
WACC	Weighted Average Cost of Capital

1 Introduction and instructions

Introduction

- 1.1 This report has been prepared by Accuracy in connection with the ICSID arbitration proceedings (ICSID Case No. ARB/20/46) (the “**Dispute**”) between Lupaka Gold Corp. (“**Lupaka**” or “**Claimant**”) and the Republic of Peru (“**Peru**” or “**Respondent**”).¹
- 1.2 Claimant is a mineral exploration and mining company headquartered in North Vancouver, Canada and publicly traded on the TSX-Venture Exchange (“**TSX-V**”) (ticker: LPK).² On 1 October 2012 (the “**Acquisition Date**”), Claimant acquired 100% of the shares in Andean American Gold Corp. (“**AAG**”) and its wholly-owned³ Peruvian subsidiary, Invicta Mining Corp. S.A.C. (“**IMC**”) (the “**Acquisition**”).⁴
- 1.3 Through this acquisition, Lupaka acquired the Invicta gold mine project (the “**Invicta Project**”), located in the Huaura province in Peru, which had been acquired by IMC in the years 2006 to 2008⁵ (we refer to the mine itself hereafter as the “**Invicta Mine**”). In the remainder of this report we refer to the actions and activities of AAG and IMC, whilst under Claimant’s ownership, as synonymous with those of Claimant.
- 1.4 On 14 October 2018 (the “**Blockade Date**”), the leaders of the Rural Community of Parán (“**Parán**”) directed men to forcibly evict Claimant and its personnel from the premises of the Invicta Project, and subsequently blocked access to the mine (the “**Blockade**”).⁶ The Blockade continued indefinitely and Claimant was never able to regain access to the site.⁷
- 1.5 Following the Blockade, Claimant was unable to produce gold and generate resulting cash flows to enable it to fulfil its financial obligations to creditors, including its obligation to make monthly deliveries of gold to Pandion Mine Finance L.P. (“**Pandion**”) under a prepaid gold purchase agreement with PLI Huaura Holding L.P., an investment vehicle controlled by Pandion (“**PLI**”) (the “**PLI Loan**”).⁸ In July 2019, Pandion transferred its interest in PLI to Lonely Mountain Resources S.A.C. (“**Lonely Mountain**”), a Peruvian mining consortium. Subsequently, Lonely Mountain initiated foreclosure proceedings which resulted in the seizure of Claimant’s shares in IMC and, therefore, of Claimant’s ownership of the Invicta Project.⁹

¹ We refer to Claimant and Respondent together as the “**Parties**”, and the arbitrators Prof. John R Crook, Mr. Jonathan D. Schiller and Dr. Gavan Griffith QC as the “**Tribunal**”.

² Request for Arbitration, paragraph 4. Claimant is also listed on the Frankfurt Stock Exchange (ticker: LQP).

³ Except for one share in IMC held by Mr Gordon Ellis, Claimant’s CEO (Request for Arbitration, paragraph 13). For the purposes of our analysis in this report, we assume AAG to have a 100% shareholding in IMC.

⁴ Request for Arbitration, paragraph 13; AC-01 Lupaka Gold Corp. financial statements for the year ended 31 December 2012, page 12

⁵ Request for Arbitration, paragraph 11

⁶ Request for Arbitration, paragraph 23

⁷ Request for Arbitration, paragraph 24

⁸ Request for Arbitration, paragraph 30

⁹ Request for Arbitration, paragraph 31

- 1.6 Claimant’s case is that Parán’s actions are attributable to Peru under international law,¹⁰ and that the seizure of its investment in the Invicta Project was a direct result of the actions of Parán, together with the omissions of Respondent’s police, prosecutors and central government authorities.¹¹
- 1.7 Consequently, Claimant argues that Respondent unlawfully expropriated Claimant’s investment, in breach of its obligations under the Canada-Peru Free Trade Agreement (“FTA”), causing Claimant to suffer significant losses.¹²
- 1.8 Further background to the Dispute is set out in **Section 3**.

Preparation of this report

- 1.9 The authors of this report are Erik van Duijvenvoorde and Edmond Richards. The authors’ CVs can be found in **Appendix 1**.
- 1.10 We have been assisted in the preparation of this report by staff working under our direction and review. The opinions expressed in this report are, however, our own.
- 1.11 Neither Accuracy in general nor the authors in particular have subjected the information presented in this report to independent verification or audit. This report must not be construed as expressing opinions on technical mining matters or on matters of law, which are outside of the authors’ expertise. We reserve the right to reconsider any opinions given in this report in light of additional information that may be made available to us in the future.
- 1.12 Some of the documents considered in the preparation of this report were originally in Spanish and have been translated (either wholly or in part) into English. The authors do not speak or read Spanish so, where translations have been provided to us by Counsel, we have relied upon these translations and have not sought to verify them.
- 1.13 Where appropriate, amounts shown in this report are after rounding. Totals may therefore appear subject to immaterial rounding differences.
- 1.14 The report has been prepared in connection with the Dispute and its intended audience comprises Claimant and Respondent and their respective advisors, as well as the Tribunal and its assistant. Whilst we understand that this report will be made public pursuant to the terms of the Procedural Order, it should not be relied upon by any parties other than the intended audience.

¹⁰ Request for Arbitration, section 5

¹¹ Request for Arbitration, section 3

¹² Request for Arbitration, section 6

Independence

- 1.15 We confirm that we are aware of no issue that would constitute a conflict of interest or detract from providing a wholly independent opinion in relation to this matter. In particular, the authors have not worked for the Parties prior to this current engagement. We disclose the following prior connections with the Parties' legal advisors and the Tribunal:
- a) Erik van Duijvenvoorde has previously provided evidence before a three-person tribunal in which Prof. John R Crook was a member (one instance, 2018), and was assisted in that engagement by a team comprising Edmond Richards. There is an additional hearing in that matter scheduled for July 2022;
 - b) Erik van Duijvenvoorde has also previously worked with the law firm LALIVE on an ICSID arbitration which culminated in hearings in October 2013. Erik provided evidence on that case before a three-person tribunal in which Dr. Gavan Griffith QC presided; and
 - c) Edmond Richards has previously worked with the law firm LALIVE (one instance, 2017).
- 1.16 Our expert declaration is set out at the end of this report.

Instructions

- 1.17 We are instructed by LALIVE (London) LLP ("**LALIVE**"), counsel for Claimant, to assess damages incurred by Claimant as a result of Respondent's acts and omissions in breach of the FTA (the "**Alleged Breaches**"), as at 26 August 2019 (the "**Valuation Date**"), being the date upon which Lonely Mountain seized Claimant's shares in IMC and, therefore, the effective date upon which Claimant permanently lost its investment in the Invicta Project.
- 1.18 Specifically, we are instructed to assess damages by reference to the fair market value ("**FMV**") of Claimant's lost investments in Peru, in line with Article 812 of the FTA.¹³
- 1.19 We are further instructed to apply pre-award interest at a rate of LIBOR +2% to bring forward our assessment of damages to 1 October 2021 (the "**Report Date**"), as a proxy for a hypothetical award date. Our calculation of pre-award interest would therefore need to be updated in order to reflect the date of any actual arbitral award.

Sources of information

- 1.20 In assessing damages, we have relied upon the analyses and opinions of SRK Consulting (Canada) Inc. ("**SRK**"), a leading international mining consulting firm, in particular:
- a) An independent Preliminary Economic Assessment ("**PEA**") level technical report for the Invicta Project filed on 13 April 2018 and prepared following Canadian Securities Administrators' National Instrument 43-101 ("**NI 43-101**") guidelines; and

¹³ Canada-Peru Free Trade Agreement, Article 812

- b) A financial model (the “**SRK Model**”), based on a six-year life of mine plan and average daily production of c.355t/day, which underpins the economic analysis detailed in the PEA (the “**PEA Mine Plan**”).

1.21 For the purposes of this report, we have also considered, *inter alia*:

- a) Claimant’s financial statements, annual reports, management discussion & analysis (“**MD&A**”) papers and other publicly available filings and announcements;
- b) A financial model prepared by Red Cloud Klondike Strike Inc.¹⁴ (“**Red Cloud**”), a market dealer focused on the junior resource sector, which updates the SRK Model to reflect the prospective purchase of the Mallay Mining Production Unit (the “**Mallay Plant**”) and an increase in production to c.590t/day over a seven-year period (the “**Red Cloud Model**”);
- c) Relevant publicly available macroeconomic, financial and industry data; and
- d) Other *ad hoc* analysis, management information and documentation provided by Claimant.

1.22 The key sources of information used in the preparation of this report are listed in **Appendix 2**.

Structure of this report

1.23 The structure of the rest of this report is as follows:

- **Section 2:** Summary of damages
- **Section 3:** Background to the Dispute
- **Section 4:** Damages Framework
- **Section 5:** Our assessment of the FMV of Claimant’s Investment under the 355t/day Scenario
- **Section 6:** Our assessment of the FMV of Claimant’s Investment under the 590t/day Scenario
- **Section 7:** Summary of damages at the Valuation Date
- **Section 8:** Other indicators of the value of the Invicta Project
- **Section 9:** Conclusion on damages
- **Section 10:** Experts’ declaration

¹⁴ Renamed as Red Cloud Securities in September 2019

2 Summary of damages

- 2.1 Claimant's position is that Respondent's Alleged Breaches of its obligations under the FTA resulted in the unlawful expropriation of the entirety of Claimant's shareholding in IMC and, therefore, its investment in the Invicta Project, causing Claimant to suffer significant losses.¹⁵
- 2.2 In October 2018, the Parán community sent men to blockade the premises of the Invicta Project and prevent Claimant from accessing the area. The blockade, and Respondent's alleged failure to resolve it, led to one of Claimant's creditors, Lonely Mountain, foreclosing on Claimant's shares in IMC, resulting in the permanent loss of Claimant's investment in Peru.¹⁶
- 2.3 We are instructed to assess damages incurred by Claimant as a result of Respondent's Alleged Breaches as at 26 August 2019, the Valuation Date, being the effective foreclosure date.¹⁷ We are further instructed to assess damages by reference to the fair market value (FMV) of Claimant's Investment in Peru, in line with Article 812 of the FTA, and to apply pre-award interest at a rate of LIBOR +2% to the Report Date, being 1 October 2021.¹⁸
- 2.4 In assessing damages, we also give consideration to the principle of full reparation, namely that damages should seek to put Claimant in the financial position it would have been in absent the Alleged Breaches, as well as guidance from the Canadian Institute of Mining, Metallurgy & Petroleum on the Valuation of Mineral Properties (CIMVAL).¹⁹
- 2.5 In April 2018, a preliminary economic assessment (PEA) of the Invicta Project was published by SRK, a leading mining and exploration consulting firm. The PEA quantified the Invicta Project's indicated resource base to be c. 3 million tonnes of ore at an average grade of 5.78g/t, applying a 3.0g/t cut-off grade. The PEA also defined an initial mine plan, based upon six years of operations at a daily ore mining capacity of c.355 t/day. The PEA Mine Plan covered approximately one-third of the Invicta Project's resource base, and was valued by SRK at USD 43.4m.²⁰
- 2.6 As at 14 October 2018, the Blockade Date, Claimant was in advanced negotiations to acquire the Mallay Plant, which would have lowered processing costs and enabled Claimant to increase output to c.590t/day over a seven-year period. A financial model prepared by Red Cloud, a market dealer focused on the junior resource sector, valued the resulting mine plan at USD 86.3m.²¹

¹⁵ Paragraph 3.55

¹⁶ Paragraphs 3.44-3.53

¹⁷ Paragraph 1.17

¹⁸ Paragraphs 1.18-1.19

¹⁹ Paragraphs 4.2-4.3 & 4.23-4.27

²⁰ Paragraphs 3.23-3.30

²¹ Paragraphs 1.21 & 3.38-3.43

- 2.7 We assess the FMV of Claimant’s investment under two alternative operational scenarios; the 355t/day Scenario and the 590t/day Scenario.
- 2.8 Our valuation of the 355t/day Scenario relies upon the SRK Model of the PEA Mine Plan. We make various adjustments to the SRK Model to reflect the passage of time between April 2018 and the Valuation Date, as well as our view on certain valuation assumptions. In the former category, the main adjustments relate to updated metal price expectations and the updated status of pre-production works, which generally increase SRK’s valuation. In the latter category, we apply our own working capital and discount rate assumptions, which generally reduce SRK’s valuation. Our resulting valuation of the 355t/day Scenario is USD 44.2m.²²
- 2.9 Our valuation of the 590t/day Scenario is based on the Red Cloud Model of the updated mine plan following the intended acquisition of the Mallay Plant.²³ In addition to applying the adjustments to the SRK Model summarised above, we also adjust the Red Cloud Model to reflect the average resource grade of the Invicta Project as a whole and increase the discount rate as compared to the 355t/day Scenario to reflect the (limited) additional uncertainty associated with the 590t/day Scenario. These additional adjustments generally decrease Red Cloud’s valuation. Our resulting valuation of the 590t/day Scenario is USD 63.6m.²⁴
- 2.10 We are instructed that damages owed to Claimant should be offset by the value of the debts that would have been settled with PLI in the But-For Situation, which were claimed (and settled through foreclosure) in the Actual Situation and amounted to USD 15.9m. Our assessment of Claimant’s damages as at the Valuation Date is therefore USD 28.3m in the 355t/day Scenario and USD 47.7m in the 590t/day Scenario.²⁵
- 2.11 We benchmark our damages assessments to other indicators of value of the Invicta Project, including Claimant’s market capitalisation, Claimant’s sunk costs, and the value implied by transactions relating to other gold mining projects. Our assessments are broadly consistent with these benchmarks.²⁶
- 2.12 Including pre-award interest to the Report Date, we assess damages to be USD 29.9m in the 355t/day Scenario and USD 50.5m in the 590t/day Scenario.²⁷

²² Section 5

²³ The Red Cloud Model includes cash flows relating to financing provided by PLI. Given that we assess the value of Claimant’s investment on a Free Cash Flow to Firm (FCFF) basis (see Section 4), we remove such cash flows from our own calculations. No such adjustment was required for the SRK Model, which was already prepared on an FCFF basis.

²⁴ Section 6

²⁵ Section 7

²⁶ Section 8 and paragraphs 9.1-9.12

²⁷ Paragraphs 9.13-9.15

Table 2.1. Summary of damages

USDm	355t/day Scenario	590t/day Scenario
FMV of Claimant's Investment at the Valuation Date	44.2	63.6
Debts to be settled with PLI in the But-For Situation	(15.9)	(15.9)
Total damages at the Valuation Date	28.3	47.7
Interest to Report Date	1.7	2.8
Total damages at the Report Date	29.9	50.5

Source: Appendix 5, tab "Table 2.1"

3 Background to the Dispute

Introduction

- 3.1 A comprehensive background to the Dispute is detailed in Claimant’s Request for Arbitration (“RfA”) dated 21 October 2020.
- 3.2 In this section, we summarise the facts of the Dispute that are relevant to our assessment of damages.
- 3.3 This summary is not intended to be contentious, nor is it intended to be an exhaustive description of all matters relating to the Dispute, some of which fall outside of the scope of our instructions and/or which we may not be aware of.

Claimant’s acquisition of the Invicta Project and its development (2012-2018)

- 3.4 The Invicta Project is located in the Peruvian province of Huaura, situated approximately 120 kilometres north-east of Lima, the capital of Peru. The project comprises six mining concessions, which cover a total area of c.4,700 hectares.²⁸
- 3.5 Whilst mining activities within the wider area dated back to the 1960s, the concession areas of the Invicta Project were formally defined in 1996-97,²⁹ following which various mining companies started carrying out exploration activities.³⁰
- 3.6 In the years 2006 to 2008, the concessions of the Invicta Project were acquired by IMC.³¹
- 3.7 On 1 October 2012, Claimant took ownership of the Invicta Project by way of its acquisition of AAG, which in turn owned IMC.³²
- 3.8 The Acquisition was completed for a total consideration of CAD 26.7m, of which CAD 10.3m was allocated to the mineral properties associated with the Invicta Project, as set out in the purchase price allocation performed at the time and reproduced below.

²⁸ AC-02 SRK Consulting PEA dated 13 April 2018, page iv

²⁹ With one being defined in 2006 (Request for Arbitration, paragraph 10)

³⁰ Request for Arbitration, paragraph 10

³¹ Request for Arbitration, paragraph 11

³² As noted in footnote 3, Claimant’s CEO owned one share in IMC, with the remainder wholly-owned by AAG. For the purposes of this report we assume that AAG had a 100% shareholding in IMC.

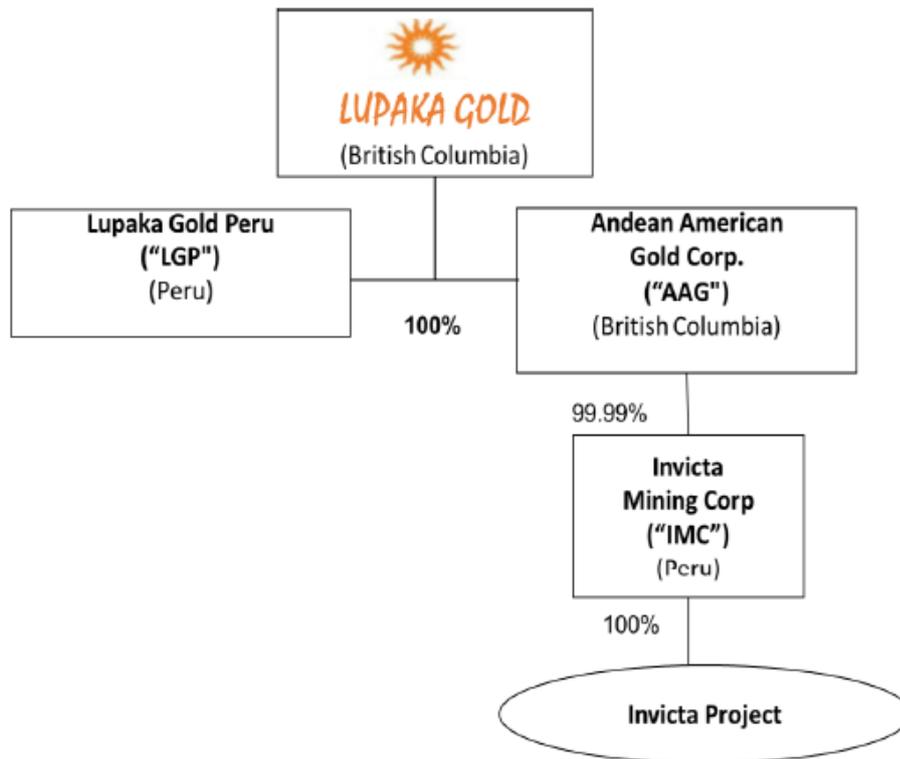
Table 3.1. Purchase Price Allocation for Claimant’s Acquisition of AAG

CADm	
36,989,318 Lupaka common shares	25.9
Transaction costs	0.8
Purchase price	26.7
Net assets acquired	
Cash and cash equivalents	13.5
Other current assets	0.2
Investment in Southern Legacy Minerals Inc	4.0
Plant and equipment	0.6
Current liabilities	(1.8)
Mineral properties	10.3
Net assets acquired	26.7

Source: AC-01, page 13

3.9 The ownership structure of the Invicta Project following the Acquisition is set out in the figure below.³³

Figure 3.1. Ownership structure of the Invicta Project following Claimant’s Acquisition of AAG in October 2012



Source: Request for Arbitration, paragraph 13

³³ Request for Arbitration, paragraph 13

- 3.10 An Environmental Impact Assessment (“**EIA**”) had been submitted by IMC in 2008, and subsequently approved by the Ministry of Energy and Mines (“**MEM**”) in 2009.³⁴ Following the Acquisition, Claimant began obtaining authorisations and permits from the relevant Peruvian authorities in order to develop the Invicta Project, including the granting of a mining operations certificate on 30 November 2017 allowing IMC to continue developing the Invicta Project and start preparations for exploitation activities.³⁵
- 3.11 We understand that, by September 2018, development works had been materially completed.³⁶ On 7 September 2018, Claimant requested that the MEM undertake an inspection of the completed works so that it could obtain an authorisation to move beyond preparation and development activities and exploit the mine.³⁷

Claimant’s other projects

- 3.12 Over the period of its ownership of the Invicta Project, Claimant held interests in two other gold projects, the Crucero gold project (“**Crucero Project**”) and the Josnitoro gold project (“**Josnitoro Project**”).
- 3.13 By the time of the Blockade in October 2018, Claimant’s interest in these projects had ended, and the Invicta Project materially represented Claimant’s only asset.

Crucero Project

- 3.14 Effective 19 January 2012, Claimant gained 100% control of the Crucero Project, located in south-east Peru.³⁸
- 3.15 At the time of acquisition, the Crucero Project comprised three mining concessions held under a 30-year assignment expiring in September 2038 and two petition-stage claims for mining concessions that were in process.³⁹
- 3.16 On 20 November 2017, Claimant sold its entire interest in the Crucero Project to Goldmining Inc. for a total consideration of USD 5.72m.⁴⁰

³⁴ Request for Arbitration, paragraph 14

³⁵ Request for Arbitration, paragraph 18

³⁶ Witness Statement of Gordon Ellis, paragraph 39; Witness Statement of Julio Félix Castañeda Mondragón, paragraph 27

³⁷ Request for Arbitration, paragraph 19

³⁸ AC-01 Lupaka Gold Corp. financial statements for the year ended 31 December 2012, page 12

³⁹ AC-01 Lupaka Gold Corp. financial statements for the year ended 31 December 2012, page 15

⁴⁰ AC-03 Lupaka Gold Corp. financial statements for the year ended 31 December 2018, page 15

Josnitoro Project

3.17 On 31 March 2014, Claimant entered into a definitive option agreement with Hochschild Mining plc (“**Hochschild**”) to earn a 65% interest in the Josnitoro Project, an exploration stage gold and copper project comprising 19 concessions in southern Peru. In March 2018, the option lapsed without having been exercised by Hochschild.⁴¹

Financing of the Invicta Project

3.18 On 30 June 2017 (and subsequently amended on 2 August 2017),⁴² Claimant entered into a loan agreement with PLI (an investment vehicle controlled by Pandion) in order to fund the continued development, and commence production, of the Invicta Project through pre-paid gold forward purchase agreements.⁴³

3.19 Under this agreement, Claimant received total gross proceeds of USD 7m, paid in three tranches:⁴⁴

- a) USD 2.5m received in August 2017 (“**Tranche 1**”), which we understand was paid net of USD 0.9m in lender fees,⁴⁵
- b) USD 2.0m received in November 2017 (“**Tranche 2**”); and
- c) USD 2.5m received in February 2018 (“**Tranche 3**”).

3.20 Each tranche had a term of 60 months, which included a 15-month grace period.⁴⁶ We understand that PLI applied a fixed interest rate to the amount lent to Claimant, resulting in total interest payments of USD 4.3m over the full term of the loan.⁴⁷

3.21 Following the grace period, Claimant was to deliver to PLI specified quantities of gold for each tranche over a period of 45 months, for which PLI would pay Claimant the market price less a discount of USD 500 per ounce (“**oz.**”),⁴⁸ with an equivalent value as follows:⁴⁹

- a) Tranche 1: 187 oz./month x 45 = 8,415 oz. x USD 500 = USD 4.2m (monthly payments starting December 2018)
- b) Tranche 2: 139 oz./month x 45 = 6,255 oz. x USD 500 = USD 3.1m (monthly payments starting March 2019)

⁴¹ AC-03 Lupaka Gold Corp. financial statements for the year ended 31 December 2018, page 15

⁴² AC-04 Second Amended and Restated Pre-Paid Gold Purchase Agreement dated 2 August 2017

⁴³ AC-03 Lupaka Gold Corp. financial statements for the year ended 31 December 2018, page 20

⁴⁴ AC-04 Second Amended and Restated Pre-Paid Gold Purchase Agreement dated 2 August 2017, Section 7(1)(a)

⁴⁵ I.e. the net amount received was USD 1.6m. AC-04 Second Amended and Restated Pre-Paid Gold Purchase Agreement dated 2 August 2017, Section 7(1)(b); AC-03 Lupaka Gold Corp. financial statements for the year ended 31 December 2018, page 20.

⁴⁶ AC-03 Lupaka Gold Corp. financial statements for the year ended 31 December 2018, page 20

⁴⁷ AC-05 Lupaka presentation, “*Invicta Mining Suite for Difference*” dated September 2019, page 5

⁴⁸ All references to ounces (oz.) in this report are to troy ounces, at a conversion rate of 1 troy ounce to 31.1035 grams.

⁴⁹ AC-04 Second Amended and Restated Pre-Paid Gold Purchase Agreement dated 2 August 2017, Section 1 & Section 7(2); AC-05 Lupaka presentation, “*Invicta Mining Suite for Difference*” dated September 2019, page 5

c) Tranche 3: 178 oz./month x 45 = 8,010 oz. x USD 500 = USD 4.0m (monthly payments starting June 2019)

i.e. a total of 22,680 oz. for an equivalent value of USD 11.3m (of which USD 7m in principal and USD 4.3m in interest) over the full term of the PLI Loan.

3.22 In addition, PLI also benefitted from upside participation, whereby Claimant and PLI would have shared the incremental profits arising where metal prices rose above a predetermined market price. PLI's share of the upside was 30%, and was to be calculated on a monthly basis, based on monthly payable production volumes and prices as determined pursuant to the applicable mineral offtake agreements.⁵⁰

The April 2018 Preliminary Economic Assessment

3.23 On 13 April 2018, a Preliminary Economic Assessment (PEA) for the Invicta Project was prepared by SRK, a leading mining and exploration consulting firm. The PEA audited and updated a previous mineral resource model prepared by SRK in April 2012, before Claimant's acquisition of the Invicta Project.⁵¹

3.24 The Invicta Project comprised four primary zones or "veins": Atenea, Pucamina, Dany, and Zone 4,⁵² as well as one other zone, Ydalias.⁵³

3.25 Based on a 3.0g/t gold-equivalent (or "AuEq") cut-off grade, the PEA identified:⁵⁴

- a) A total indicated tonnage of c.3 million tonnes at 5.78g/t gold-equivalent, for a gold-equivalent contained metal of 558k oz.; and
- b) An additional inferred tonnage of 0.58 million tonnes at 5.29 g/t gold-equivalent for a gold-equivalent contained metal of 98k oz.

Table 3.2. Condensed Mineral Resource Statement of the Invicta Project as at 28 February 2018

Category	Tonnes (000s)	Metal Grade						Contained Metal (000s)						
		AuEq (g/t)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	AuEq (oz)	Au (oz)	Ag (oz)	Cu (lb)	Pb (lb)	Zn (lb)	
Measured	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indicated	2,999	5.78	4.07	24.81	0.60	0.36	0.42	558	392	2,392	39,739	23,678	27,977	
Mea. + Ind.	2,999	5.78	4.07	24.81	0.60	0.36	0.42	558	392	2,392	39,739	23,678	27,977	
Inferred	577	5.29	4.91	5.49	0.10	0.11	0.15	98	91	102	1,311	1,365	1,939	

Source: AC-02, Table i, page vi

⁵⁰ AC-04 Second Amended and Restated Pre-Paid Gold Purchase Agreement dated 2 August 2017, Section 7(4)

⁵¹ AC-02 SRK Consulting PEA dated 13 April 2018, page v

⁵² AC-02 SRK Consulting PEA dated 13 April 2018, page 122

⁵³ AC-02 SRK Consulting PEA dated 13 April 2018, e.g. page 119

⁵⁴ AC-02 SRK Consulting PEA dated 13 April 2018, page vi

- 3.26 The PEA's six-year operating plan considered only a portion of the total mineral resources at the Invicta Project, and was based on the underground extraction of indicated and inferred mineral resources from the Atenea vein of the Invicta Mine at the level below the surface at an elevation of 3,400 metres above sea level ("**3400 Level**").⁵⁵ The Atenea vein contained indicated as well as inferred resources and was understood to be a higher-grade mineralisation than the other veins.⁵⁶
- 3.27 The PEA Mine Plan was developed "*with the objective of generating a positive cash flow from a low-cost operation while simultaneously re-investing in and further evaluating the deposit to potentially expand production in future*".⁵⁷
- 3.28 The potential minable material per the PEA Mine Plan was estimated at 670kt, averaging a gold-equivalent grade of 8.58 g/t.⁵⁸
- 3.29 The PEA was also accompanied by a financial model prepared by SRK (the SRK Model), which set out an initial valuation of the Invicta Project based on the six-year PEA Mine Plan. Assuming production of c.355t/day, the SRK Model computed a post-tax net present value ("**NPV**") of the Invicta Project of USD 43.4m.⁵⁹
- 3.30 In preparing this report, we have not audited or otherwise verified the SRK Model and we have not had access to SRK. A factual overview of the assumptions and outputs of the SRK Model is set out in **Appendix 3**.

Sampling and pre-production activities

- 3.31 Following the Acquisition, Claimant commissioned various reports and studies in relation to the Invicta Mine, and carried out a number of pre-production activities. These are set out in detail in Claimant's witness statements⁶⁰ and press/corporate filings, and we do not discuss these in detail here. However, we understand that pre-production activities included:
- a) Numerous metallurgical tests (in addition to previous tests carried out before the Acquisition);
 - b) Two bulk samples⁶¹ in 2015, for 342t and 520t respectively;⁶²

⁵⁵ AC-02 SRK Consulting PEA dated 13 April 2018, page 121

⁵⁶ AC-02 SRK Consulting PEA dated 13 April 2018, page 122. "Indicated resources" signifies a higher level of geological confidence compared to "inferred resources"; see Section 4.

⁵⁷ AC-06 Lupaka Gold Corp. management discussion and analysis for the year ended 31 December 2018, page 8

⁵⁸ AC-02 SRK Consulting PEA dated 13 April 2018, page 121

⁵⁹ At a discount rate of 5%. The SRK Model also uses an alternative discount rate of 8%, which gives a post-tax NPV of USD 40.6m. The NPV of USD 43.4m, using a 5% discount rate, is the NPV figure directly referenced in the body of the PEA (for example, AC-02 SRK Consulting PEA dated 13 April 2018, pages ix, xi and 161). Accordingly, this is the figure we reference throughout this report.

⁶⁰ For example, Witness Statement of Eric Edwards, Section 5.1

⁶¹ "*Often the last stage of physical sampling when exploring for mineral deposits, a bulk sample can take the form of a relatively large pit or cutting and the purpose is to confirm the quality and grade of a mineral deposit on a larger scale than is possible with other exploration methods*" (AC-07 Canadian Mineral Resources, Definition of bulk sampling)

⁶² AC-06 Lupaka Gold Corp. management discussion and analysis for the year ended 31 December 2018, pages 19-20

- c) During 2018, pre-production runs were processed at Coriland, Huancapeti and Huari toll processing plants, using stockpiled materials outside of the mine;⁶³ and
 - d) Also during 2018, other channel sampling⁶⁴ activities were carried out within the underground workings.
- 3.32 The 2018 PEA anticipated recoveries and grades which we understand were generally in line with previous sampling activities, all of which were taken from the same vein at the same location.⁶⁵

Operational performance during 2018 and the proposed acquisition of the Mally Plant

- 3.33 On 21 August 2018, Claimant announced that the processing of mineralised development material from the Invicta Mine had recently commenced and that the first concentrates had been successfully produced.⁶⁶ Approximately 6,500t of mineralised development material was transported to two local toll milling facilities, of which 1,900t had been processed at the date of the announcement.
- 3.34 According to Claimant, an additional 6,000t of mineralised development material was to be transported to a third toll milling facility for processing during September 2018, and an inspection by the MEM for the mining exploitation license was expected to be completed before the end of October.⁶⁷
- 3.35 However, a review of Claimant’s monthly reporting shows a shortfall in actual versus budgeted mining and processing during 2018, as shown by the two figures below.

⁶³ Witness Statement of Julio Félix Castañeda Mondragón, paragraph 87; AC-06 Lupaka Gold Corp. management discussion and analysis for the year ended 31 December 2018, page 20

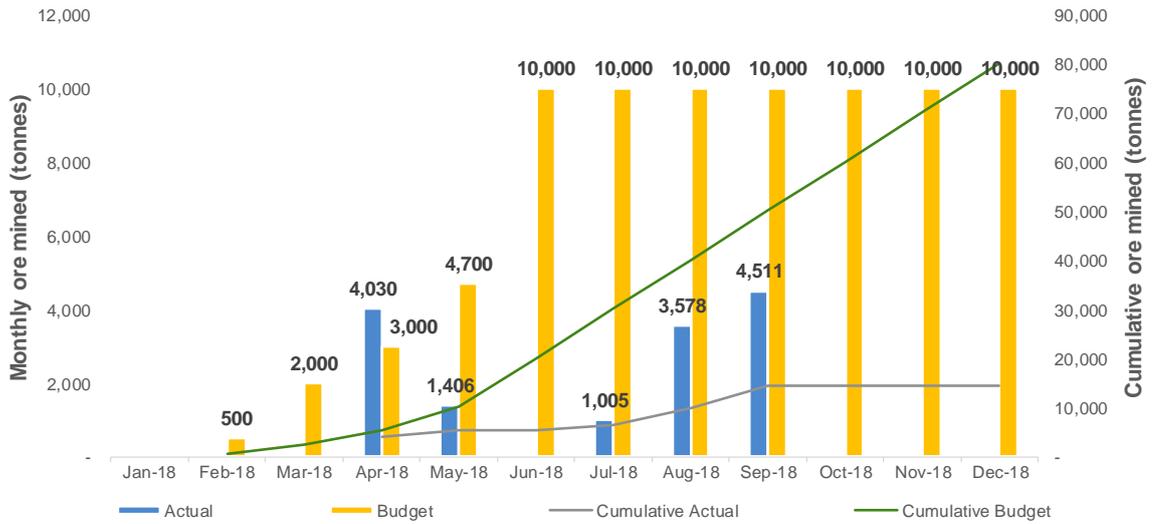
⁶⁴ AC-08 ICMJ’s Prospecting and Mining Journal, *Understanding sampling techniques* (“Channel sampling is used for veins and other structures exposed on the surface and the objective is to cut a linear channel across the vein or orebody in order to obtain the most representative sample possible for the designated interval”)

⁶⁵ Witness Statement of Julio Félix Castañeda Mondragón, paragraph 25

⁶⁶ AC-09 Newsfile, *Lupaka Commences Toll Processing of Mineralized Development Material from Invicta*, 21 August 2018

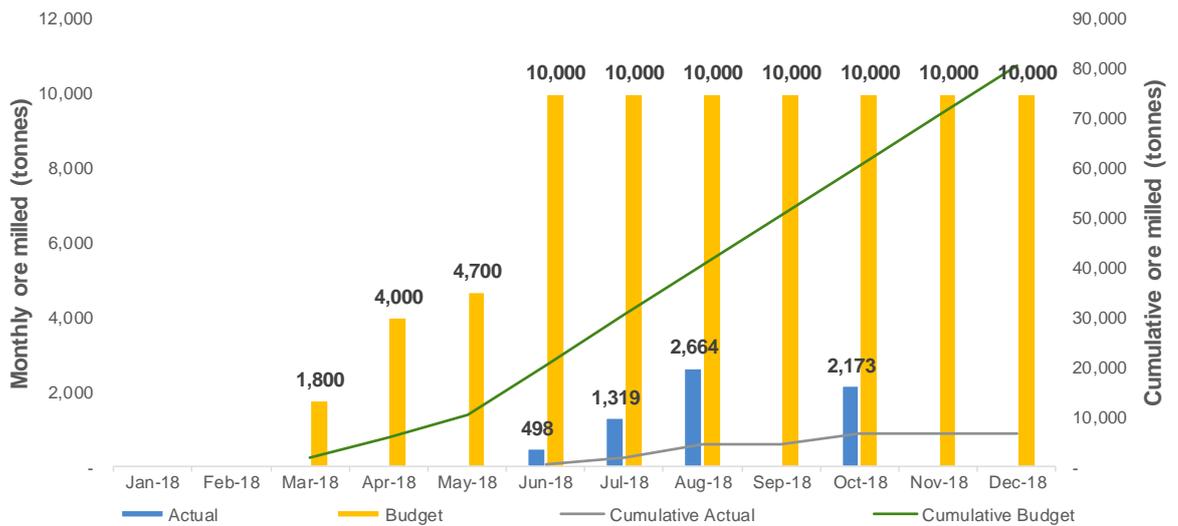
⁶⁷ AC-09 Newsfile, *Lupaka Commences Toll Processing of Mineralized Development Material from Invicta*, 21 August 2018

Figure 3.2. Budget v Actual Ore Mined at the Invicta Project (Jan-Dec 2018)



Source: AC-10, section 6

Figure 3.3. Budget v Actual Ore Milled at the Invicta Project (Jan-Dec 2018)



Source: AC-10, section 6

3.36 In total, Claimant had budgeted 60,500 tonnes of ore to be mined and processed between February and October 2018. In reality, only 14,770 tonnes were mined and 6,654 tonnes were processed as part of the pre-production runs described above.⁶⁸

⁶⁸ AC-10 Invicta Project Monthly Report, October 2018, section 5

3.37 Our understanding is that shortfalls in volumes mined and processed up to October 2018 were largely due to challenges experienced with third-party toll processing, as explained by minutes from a meeting of Claimant’s board on 27 September 2018:⁶⁹

“[...] ore has been shipped, using both community trucks and the contractor to the Huancapeti mill on the predetermined date. The mill, in turn, has displaced the ore and moved the start date out 1 month, being subject to prevailing mechanical failures. As a result, the estimated 6,000 tonnes of processed ore has been reduced to 2,000 tonnes for the month of October. In addition, permits for the mill do not cover our processing requirements and are being applied for. Mr. Ansley stated that out of the 4 toll mills selected, none are fulfilling their contracts”

3.38 In order to address these issues, Claimant identified a number of potential additional processing facilities in the vicinity of the Invicta Mine, each with its own advantages and disadvantages, which were weighed carefully.⁷⁰ Claimant’s preferred option was the acquisition of the Mallay Plant, which was located approximately 100km from the mine.⁷¹ Claimant anticipated that the acquisition of the Mallay Plant would provide a number of benefits, including:⁷²

- a) Increased production rates, which would have generated greater cash flow leading to a quicker return on investment and increased profitability;
- b) Lower unit processing costs, as Claimant would not have to rely on tolling agreements with nearby third-party plants. This would have streamlined the production process and allowed Claimant greater control over its mining operations; and
- c) Lower transportation costs, given the proximity of the Mallay Plant to the Invicta Project.

3.39 As part of the due diligence process, Claimant commissioned a due diligence report on the Mallay Plant which concluded that operating costs for the plant were reasonable and confirmed Claimant’s view that it was a “*very good prospect*” at the right price.⁷³

⁶⁹ AC-11 Lupaka Gold Corp., minutes of the board meeting dated 27 September 2018, page 1

⁷⁰ Witness Statements of Julio Félix Castañeda Mondragón, paragraphs 80-89 and Eric Edwards, paragraph 56

⁷¹ Witness Statement of Julio Félix Castañeda Mondragón, paragraph 9

⁷² Witness Statement of Julio Félix Castañeda Mondragón, paragraphs 90-95

⁷³ Witness Statement of Eric Edwards, paragraph 58 & 61

3.40 Per the 27 September 2018 board meeting minutes:⁷⁴

- a) Draft contracts for the purchase of the Mally Plant were “*substantially complete*”;⁷⁵ an announcement was to be made to the stock market on 16 October 2018, with closing anticipated before the end of the year;⁷⁶
- b) Consideration for the purchase was to be USD 10.4m, paid through a mixture of cash and shares. In addition, Claimant would provide a bank guarantee letter in connection with the Mally mine closure plan for up to USD 4.6m and would pay a further USD 1.9m in VAT;⁷⁷
- c) Additional funding of USD 13m was to be agreed with PLI, pursuant to a third amendment to the PLI Loan;⁷⁸ and
- d) Completion of the transaction was predicated on the approval of the Mally community.⁷⁹

3.41 We understand that the Invicta Mine’s gold and silver resources were contained within lead, zinc and copper concentrates; however, the Mally Plant had only lead and zinc concentrate processing capabilities. Accordingly, discussions were commenced with a view to adding a copper concentrate functionality, at an estimated capital cost of USD 350k to USD 470k.⁸⁰

3.42 The SRK Model was subsequently updated by Red Cloud in order to reflect the prospective purchase of the Mally Plant, including an estimate of the additional capital expenditure required and assuming an immediate increase in production and processing capacity from c.355t/day to c.590t/day. Based on these updates, the Red Cloud Model calculated a post-tax NPV of the Invicta Project of USD 86.3m.⁸¹

3.43 As a result of the blockade of the Invicta Mine, detailed below, Claimant’s acquisition of the Mally Plant was never completed.

⁷⁴ AC-11 Lupaka Gold Corp., minutes of the board meeting dated 27 September 2018, pages 2-3

⁷⁵ AC-12 Draft purchase agreement for the acquisition of the Mally Plant

⁷⁶ See also the Witness Statement of Gordon Ellis, paragraph 52 (“*We planned to sign the contract on 15 October 2018 and make a market announcement of the Mally transaction on 16 October 2018 before markets opened*”) and the Witness Statement of Julio Félix Castañeda Mondragón, paragraph 98 (“*IMC and Buenaventura had agreed on the terms of IMC’s acquisition of the entire Mally mining production unit, including its processing plant, mining concessions and transferable permits to operate*”).

⁷⁷ AC-12 Draft purchase agreement for the acquisition of the Mally Plant, paragraphs 1.6 & 4.1-4.2

⁷⁸ AC-13 Draft Amendment and Waiver No.3 to the Second Amendment and Restated Pre-Paid Forward Gold Purchase Agreement dated 26 September 2018; Witness Statement of Julio Félix Castañeda Mondragón, paragraph 99

⁷⁹ On 11 March 2019, Claimant received an email from Compañía de Minas Buenaventura S.A.A. (“**Buenaventura**”), the seller of the Mally Plant, advising that Buenaventura had reached an agreement with the Mally community, who were ready to transfer the lease agreement (albeit Claimant was not in a position to complete the purchase in light of the ongoing Blockade) (AC-14 Email from Will Ansley dated 26 January 2020)

⁸⁰ Witness Statement of Julio Félix Castañeda Mondragón, paragraphs 81 & 83; AC-11 Lupaka Gold Corp., minutes of the board meeting dated 27 September 2018

⁸¹ AC-15 Red Cloud Model, at a discount rate of 5%. As was the case in the SRK Model, the Red Clouds Model also uses an alternative discount rate of 8%, which gives a post-tax NPV of USD 78.1m. As explained in footnote 59, in order to be consistent with the PEA, we reference the NPV of USD 86.3m, at a discount rate of 5%, throughout this report.

The Blockade of the Invicta Mine and subsequent events (2018-2019)

The Blockade of the Invicta Mine

- 3.44 Under Peruvian law, a distinction is made between surface land and subsoil, and a surface rights agreement is typically signed with the landowner where a miner intends to construct its mine infrastructure.⁸²
- 3.45 We understand that the mine site for the Invicta Project extended across the respective territories of two communities, the Rural Community of Santo Domingo de Apache (“**Santo Domingo**”) and the Rural Community of Lacsanga (“**Lacsanga**”), and bordered land belonging to Parán.⁸³ In 2010, IMC reached an agreement for surface rights with Santo Domingo,⁸⁴ and Claimant secured an additional agreement with Lacsanga in 2017.⁸⁵ According to Claimant, the agreement with Lacsanga meant that the Invicta Project could proceed without the need for a further surface rights agreement with Parán, as it could locate its mine infrastructure and upgrade the access roads in either location.⁸⁶
- 3.46 On 19 June 2018, Parán organised the armed invasion of the Invicta Project, causing the temporary suspension of operations until Parán withdrew from the premises.⁸⁷
- 3.47 On 14 October 2018 (the Blockade Date), Parán sent men to the premises of the Invicta Project, forcing Claimant’s personnel from the area and subsequently blocking access routes (which we understand were situated exclusively on Lacsanga’s communal land) to the mine. The blockade continued indefinitely, during which time Parán upgraded the road from the mine through its own land, and took and sold Claimant’s stockpiled ore.⁸⁸
- 3.48 According to Claimant, despite repeated requests for assistance from Peruvian police forces, local prosecutors and the central government, no substantive measures were taken to evict Parán’s forces and return the mine to Claimant.⁸⁹ Consequently, we understand that Parán remained, and to this day remains, in possession of the Invicta Mine.⁹⁰

⁸² Request for Arbitration, paragraph 12

⁸³ Witness Statement of Gordon Ellis, paragraph 22

⁸⁴ Request for Arbitration, paragraph 12

⁸⁵ Request for Arbitration, paragraph 17

⁸⁶ Request for Arbitration, paragraph 16

⁸⁷ Request for Arbitration, paragraph 22

⁸⁸ Request for Arbitration, paragraphs 23-24

⁸⁹ Request for Arbitration, paragraphs 26-29

⁹⁰ Witness Statement of Gordon Ellis, paragraph 49

Termination of the PLI loan and foreclosure proceedings

- 3.49 We understand that, at the time of the blockade in October 2018, Claimant had materially completed development of the Invicta Mine and was close to commencing production.⁹¹ However, as a result of the blockade and the failure of the Peruvian authorities to resolve the situation, it was unable to produce gold and generate cash flows to enable it to repay its debts, including fulfilling its obligation to make gold deliveries under the PLI Loan.⁹²
- 3.50 On or around 1 July 2019, Pandion transferred its interest in PLI to Lonely Mountain, a Peruvian Mining consortium, subsequent to which Lonely Mountain sought to enforce its rights under the PLI Loan.⁹³
- 3.51 On 2 July 2019, PLI notified Claimant of the early termination of the PLI Loan and requested immediate payment of USD 15.6m.⁹⁴ The debt claimed was increased to USD 15.9m on 24 July 2019.⁹⁵
- 3.52 Lonely Mountain then foreclosed on the shares of IMC, resulting in it seizing Claimant's shares in IMC on 26 August 2019 and taking control of the Invicta Project.⁹⁶
- 3.53 On 22 July 2020, Claimant,⁹⁷ PLI and IMC entered a Mutual Release agreement which released the parties to the agreement from all outstanding claims between said parties, including any claim relating to the PLI Loan.⁹⁸ We understand, therefore, that PLI has no recourse to claim further amounts from Claimant subsequent to any future award.

Claimant's position

- 3.54 Claimant's case is that Parán's actions are attributable to Peru under international law,⁹⁹ and that the seizure of its investment was perpetuated by the actions of the Parán community, together with the omissions of Respondent's police, prosecutors and central government authorities.¹⁰⁰

⁹¹ At the time of the Blockade, the only outstanding requirements were (i) the approval of an amendment to the mine closure plan; and (ii) the inspection of the completed development works. Accordingly, the Invicta Project was "virtually ready to enter the exploitation phase" before the Blockade. (Witness Statement of Julio Félix Castañeda Mondragón, paragraphs 21-22 & 27).

⁹² Request for Arbitration, paragraph 30

⁹³ Request for Arbitration, paragraph 31

⁹⁴ AC-16 Notice of Acceleration dated 2 July 2019

⁹⁵ AC-17 Notice of enforcement of the Pledge over IMC's shares dated 24 July 2019

⁹⁶ Request for Arbitration, paragraph 31

⁹⁷ And related parties, including AAG.

⁹⁸ AC-18 Mutual Release dated 22 July 2020

⁹⁹ Request for Arbitration, section 5

¹⁰⁰ Request for Arbitration, section 3

3.55 Consequently, Claimant’s position is that Respondent’s Alleged Breaches of its obligations under the FTA resulted in the unlawful expropriation of the entirety of Claimant’s shareholding in IMC and, therefore, its investment in the Invicta Project (the “**Investment**”),¹⁰¹ causing Claimant to suffer significant losses.¹⁰²

¹⁰¹ Our definition of Claimant’s Investment is consistent with that set out at paragraph 40 of the RfA.

¹⁰² Request for Arbitration, section 6

4 Damages Framework

Introduction

- 4.1 In this section, we set out our approach to assessing the damages suffered by Claimant as a result of Respondent’s Alleged Breaches.

The principle of full reparation in international arbitration

- 4.2 We understand that, under international law, states are required to provide “full reparation” to investors for harm caused by wrongful acts.¹⁰³ We further understand that the seminal case guiding the principle of full reparation was the *Chorzów Factory* decision of the Permanent Court of International Justice, which set out that:

*“[...] reparation must, as far as possible, wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed”.*¹⁰⁴

- 4.3 Therefore, damages in relation to the Dispute should seek to put Claimant in the position it would have been in but for the actions or omissions of Respondent. Applying the principle of full reparation, damages should correspond to the difference between Claimant’s economic wealth resulting from the counterfactual situation but for the Alleged Breaches (the “**But-For Situation**”), less Claimant’s economic wealth resulting from the actual situation (the “**Actual Situation**”).

$$\begin{array}{rcccl}
 \text{Damages} & = & \text{But-For Situation} & - & \text{Actual Situation} \\
 & & \text{Economic wealth} & & \text{Economic wealth} \\
 & & \text{resulting from the} & & \text{resulting from the} \\
 & & \text{expected situation} & & \text{actual situation}
 \end{array}$$

The valuation standard stipulated by the FTA

- 4.4 Article 812 of the FTA sets out that, in the case of the expropriation of an investment:¹⁰⁵

“compensation shall be equivalent to the fair market value of the expropriated investment immediately before the expropriation took place”.

- 4.5 Whilst the above article applies specifically in the case of a lawful expropriation, the fair market value (FMV) standard is also a commonly applied standard for the calculation of damages in the context of an unlawful expropriation.

¹⁰³ AC-19 *The Guide to Damages in International Arbitration 2016*, Chapter 6, page 91

¹⁰⁴ AC-20 *Collection of Judgements, No. 13 Case concerning the factory at Chorzów*, 13 September 1928, page 47

¹⁰⁵ Canada-Peru Free Trade Agreement, Article 812

- 4.6 FMV is defined as the price, expressed in cash or equivalents, at which an asset would change hands between a hypothetical buyer and seller, acting at arm's length in an open market, where the parties are knowledgeable, informed, prudent and under no compulsion to transact.¹⁰⁶

Overview of approaches for calculating FMV

- 4.7 There are three primary approaches for the valuation of business interests: (i) the income approach, (ii) the market approach; and (iii) the cost approach. The most appropriate approach is dependent on the basis of value (or valuation standard), the availability of information and market practices.

Income approach

- 4.8 The income approach is a valuation methodology based on the expected cash flows of entities or assets.
- 4.9 The most widely used income approach is the discounted cash flow (“**DCF**”) methodology, which is based on the fundamental principle that the value of an asset (in this case, Claimant's Investment in Peru) is equal to the present value of cash flows that the asset is expected to generate in the future.
- 4.10 The DCF approach considers the underlying characteristics of the asset to be valued and typically incorporates a number of separately quantifiable assumptions. Unlike other approaches, it does not depend on the subjective identification of comparable businesses and excludes the impact of accounting estimates.
- 4.11 Consequently, in cases where expected cash flows can be reliably estimated, the DCF approach is often the preferred valuation approach.
- 4.12 There are two principal approaches to calculating the free cash flows of a business:¹⁰⁷
- a) Free Cash Flow to Firm (“**FCFF**”): this approach represents the cash flows available to make principal and interest repayments to debt holders and dividend payments to shareholders. Future cash flows are discounted to reflect the inherent riskiness of an entity. This approach is typically used when trying to value the debt and equity combined of an entity (i.e. total enterprise value).
 - b) Free Cash Flow to Equity (“**FCFE**”): this approach represents the cash flows available to make dividend payments to ordinary shareholders only, and is typically adopted when valuing equity interests.

¹⁰⁶ This definition of FMV is consistent with the guidance of both international valuation councils (e.g. AC-21 International Valuation Standards effective 31 January 2020, page 23) and industry-specific valuation committees (e.g. AC-22 CIMVAL Standards and Guidelines for Valuation of Mineral Properties dated 29 November 2019)

¹⁰⁷ AC-23 Pratt and Grabowski, *Cost of Capital: Applications and Examples*, 4th ed., pages 16-18

Market approach

- 4.13 The market approach is a comparative valuation approach based on comparable transactions and publicly quoted share prices. There are three broad categories of market-based valuations:
- a) Transaction multiples of comparable companies;
 - b) Trading multiples of comparable companies; and, in certain cases
 - c) Market capitalisation of the company to be valued itself.

Transaction multiples

- 4.14 Transaction multiples typically seek to value an entity based upon the ratio of value-to-earnings implied by recent transactions involving comparable businesses. The appropriateness of this method is contingent on the availability of comparable transactions, and caution should be exercised where there are fluctuating economic and business conditions, volatile prices or specific payment terms (e.g. deferred or non-cash considerations).
- 4.15 In a mining context, one advantage of using transaction multiples is that companies often purchase the rights to a single, and/or as yet undeveloped, mine. The price a purchaser is willing to pay is dependent, amongst other factors, on the volume of reserves and estimated production costs.
- 4.16 Given that an undeveloped mine has no or negligible earnings, a typical earnings-based transaction multiple would not be appropriate. In such a context, it is possible to use an in-situ resources/reserves transaction approach, which compares the price paid per unit of resources/reserves in a previous transaction to the resources/reserves of the mine being valued.

Trading multiples

- 4.17 Trading multiples seek to calculate the ratio of value of a listed company to a measure of estimated maintainable earnings. Commonly used trading multiples include price-to-earnings and enterprise value (“**EV**”) to earnings before interest, tax, depreciation and amortisation (“**EBITDA**”).
- 4.18 Trading multiples depend on two key factors:
- a) The identification and selection of comparable companies; and
 - b) The homogeneity of the earnings measure used.
- 4.19 In addition, specific industry multiples may also be used. For example, in the mining industry, a common approach is to consider the ratio of value to the quantity of natural resources.

Market capitalisation

- 4.20 In some contexts, the market capitalisation of a listed company can be considered representative of the market value of the equity of that company, subject to certain conditions and adjustments. In principle, in a fully efficient and liquid market, the share price should reflect all information about the company which is publicly available to the market. On this basis, the market capitalisation should, theoretically, represent the equity value of all of a company’s activities.

Cost approach

- 4.21 The cost approach is based upon the logic that a hypothetical buyer would not pay more for an asset than it would cost them to replicate that asset, either by reproducing it themselves or buying a replacement. This approach departs from the historical cost or accounting book value of an asset and seeks to revalue the asset at a realisable market value.
- 4.22 In practice, the value of a business is usually greater than the sum of its identified assets and liabilities. The cost approach excludes future income generation and growth beyond the valuation date and does not capture the value of intangible assets. Consequently, this approach is commonly used to provide a floor for the value of a business, or, alternatively, in specific situations such as a liquidation, where a company is no longer a going concern.

CIMVAL guidance on the valuation of mineral properties

- 4.23 Guidance for the valuation of mineral properties is published by the Special Committee of the Canadian Institute of Mining, Metallurgy & Petroleum (“**CIM**”) on the Valuation of Mineral Properties (“**CIMVAL**”) (the “**CIMVAL Code**”).¹⁰⁸

Classification of mineral properties

- 4.24 According to CIMVAL, the appropriate approach for the valuation of mineral properties depends on the stage of exploration and of development of that property. The CIMVAL Code defines four categories of mineral properties:¹⁰⁹
- a) **“Exploration Property** means a Mineral Property that does not contain Mineral Reserves or Mineral Resources and for which economic viability has not been demonstrated”.
 - b) **“Mineral Resource Property** means a Mineral Property that contains a Mineral Resource as defined in the CIM Definition Standards, as defined in National Reporting Standards or other estimates of quantity and grade of mineralisation that are reconciled with the CIM Definition Standards.”

¹⁰⁸ AC-22 CIMVAL Code for the Valuation of Mineral Properties dated 29 November 2019

¹⁰⁹ AC-22 CIMVAL Code for the Valuation of Mineral Properties dated 29 November 2019, section 3.3.3., and defined further in Section 4

- c) **“Development Property** means a Mineral Property that contains Mineral Reserves and/or Mineral Resources and for which economic viability has been demonstrated by a Feasibility Study or Pre-Feasibility Study and includes a Mineral Property that has a current positive Feasibility Study or Pre-Feasibility Study but that is not yet in production.”
- d) **“Production Property** means a Mineral Property with an operating mine, with or without a processing plant, which has been fully commissioned and is in production”.

4.25 The classifications above refer to both mineral resources and mineral reserves, which are distinguished by CIM as per the following definitions:¹¹⁰

- a) **“A Mineral Resource** is a concentration or occurrence of solid material of economic interest in or on the earth’s crust in such form, grade or quantity that there are reasonable prospects for eventual economic extraction [...] known, estimated or interpreted from specific geological evidence and knowledge, including sampling”.

Mineral resources are further divided into inferred, indicated and measured mineral resources, in increasing order of geological confidence.

- b) **“A Mineral Reserve** is the economically mineable part of a measured and/or Indicated Mineral Resource [...] and is defined by studies at pre-feasibility or feasibility level.”

Mineral Reserves are further divided into probable and proven mineral reserves, by increasing order of confidence.

4.26 CIMVAL guidance notes that there are “no clear-cut boundaries” between categories of mineral properties, and that “it may be difficult to classify some Mineral Properties so they fit in only one specific category”.¹¹¹

4.27 At the Mineral Resource Property stage, two of the biggest obstacles to the commencement of production are (i) the obtaining of financing, often contingent upon the completion of a bankable feasibility study;¹¹² and (ii) an often highly capital-intensive construction period,¹¹³ which can lead to delays and cost overruns that adversely impact the project economics.

¹¹⁰ AC-24 CIM Definition Standards for Mineral Resources & Mineral Reserves dated 19 May 2014, pages 4 & 6

¹¹¹ AC-22 CIMVAL Code for the Valuation of Mineral Properties dated 29 November 2019, section 3.3.3.

¹¹² AC-25 IG, *Lifecycle of a mine: a step-by-step guide to mining commodities*, 30 May 2018

¹¹³ AC-26 Centre for Energy, Petroleum and Mineral Law and Policy, University of Dundee, *Mining Industry Overview*, Chapter 6: Life cycle of a mining project

Classification of the Invicta Project

- 4.28 In this case, even before the Acquisition, Claimant considered the Invicta Project to be of a “*reasonably low risk profile*” from a technical standpoint. Several technical and economic reports, which had been commissioned by the previous owners, confirmed the extent of the mineralisation at the Project. Furthermore, the Invicta Project had obtained various regulatory approvals, had concluded agreements with the rural communities, and already had some infrastructure in place,¹¹⁴ which was “*highly attractive*” to Claimant.¹¹⁵
- 4.29 After acquiring the Invicta Project, Claimant carried out further geological, metallurgical and engineering studies, including a detailed sampling and mapping programme.¹¹⁶ Claimant carried out metallurgical testing on bulk quantities (production-type testing) in addition to on smaller quantities, which we understand is relatively uncommon for a mine at the same stage as the Invicta Project.¹¹⁷
- 4.30 We understand that Claimant did not intend on commissioning a feasibility study before commencement of production, given that it had materially completed all required development works by September 2018 and had already obtained third-party financing via the PLI Loan¹¹⁸ (often the primary reason to obtain a feasibility study). By that stage, the commencement of production was contingent primarily upon Claimant obtaining final authorisations to exploit the Invicta Mine.¹¹⁹
- 4.31 Accordingly, whilst the Invicta Project did not have proven reserves or a (pre-) feasibility study, we consider that it was at a more advanced stage than a typical Mineral Resource Property.

Approaches for the valuation of mineral properties

- 4.32 CIMVAL sets out guidelines on which valuation approaches are generally considered appropriate to apply to each category of mineral property, noting that there are “*no clear-cut boundaries*” between categories,¹²⁰ as summarised below.¹²¹

¹¹⁴ Witness Statement of Eric Edwards, paragraph 17

¹¹⁵ Witness Statement of Eric Edwards, paragraph 37

¹¹⁶ Witness Statement of Eric Edwards, paragraphs 40-47

¹¹⁷ Witness Statement of Eric Edwards, paragraph 48

¹¹⁸ Witness Statement of Gordon Ellis, paragraphs 31-34 and 39; Witness Statement of Julio Félix Castañeda Mondragón, paragraph 26

¹¹⁹ Witness Statement of Gordon Ellis, paragraph 39; Witness Statement of Julio Félix Castañeda Mondragón, paragraphs 21-22

¹²⁰ AC-22 CIMVAL Code for the Valuation of Mineral Properties dated 29 November 2019, section 3.3.3.

¹²¹ AC-22 CIMVAL Code for the Valuation of Mineral Properties dated 29 November 2019, Table 1

Table 4.1. CIMVAL valuation approaches by category of mineral property

Approach	Exploration Property	Mineral Resource Property	Development Property	Production Property
Income	No	In some cases	Yes	Yes
Market	Yes	Yes	Yes	Yes
Cost	Yes	In some cases	No	No

Source: AC-22 page 18

- 4.33 CIMVAL provides further comments and rankings for specific valuation methods in relation to their use and acceptance. As set out in the table below, the DCF and comparable transactions approaches are ranked as “primary” methods, whilst market capitalisation is considered to be a “secondary” method.¹²²

Table 4.2. CIMVAL comments on selected valuation methods

Valuation Approach	Valuation Method	Method Ranking	Comments
Income	DCF	Primary	Very widely used. Generally accepted in Canada as the preferred method
Market	Comparable transactions	Primary	Widely used with variations
Market	Net Metal Value or Value per unit of metal	Secondary	Widely used rule of thumb
Market	Market capitalisation	Secondary	More applicable to valuation of single property asset junior companies than to properties

Source: AC-22 page 19; “Comments” column taken from February 2003 edition of CIMVAL guidelines (AC-27, pages 22-23).

Our framework for the assessment of damages incurred by Claimant

Introduction

- 4.34 Under the principle of full reparation, damages correspond to the difference between Claimant’s economic position in the But-For Situation and its economic position in the Actual Situation.
- 4.35 In the Actual Situation, Respondent’s Alleged Breaches resulted in the loss of Claimant’s entire interest in the Invicta Project. Therefore, the value of the Actual Situation is **nil**.
- 4.36 In line with Article 812 of the FTA, we are instructed to assess damages incurred by Claimant as a result of Respondent’s Alleged Breaches by reference to the FMV of its Investment in Peru (i.e. the FMV of the Invicta Project which, materially, is equivalent to the value of Claimant’s shares in IMC) at the Valuation Date.

¹²² AC-22 CIMVAL Code for the Valuation of Mineral Properties dated 29 November 2019, Table 2; AC-27 CIMVAL Code for the Valuation of Mineral Properties dated February 2003, Table 2

- 4.37 Consistent with the principle of full reparation, we also give consideration to debts that would have been settled with PLI in the But-For Situation.

FMV of Claimant's Investment in Peru at the Valuation Date

- 4.38 For the purposes of our damages assessment, we assess the FMV of Claimant's Investment at the Valuation Date using an income (DCF) approach, under two distinct scenarios:

Scenario #1: The 355t/day Scenario

- 4.39 In **Section 5**, we assess the FMV of Claimant's Investment at the Valuation Date assuming an average peak steady state production capacity of c.355t/day (the "**355t/day Scenario**"). The assumptions underpinning this scenario are set out in the PEA, a contemporaneous, independent study prepared to industry standards, and the SRK Model.
- 4.40 For our valuation, we update the SRK Model to reflect prevailing prices and market conditions at the Valuation Date, as well as our assessment of risks attached to the operation of the Invicta Project under this scenario.

Scenario #2: The 590t/day Scenario

- 4.41 In **Section 6**, we present an alternative assessment of the FMV of Claimant's Investment based on an average peak steady state production of c.590t/day (the "**590t/day Scenario**"). This scenario is consistent with Claimant's intentions for the Invicta Project prior to the Blockade, which were to complete its acquisition of the Mallay Plant and thereby increase processing capacity (the "**Mallay Acquisition Plan**").¹²³
- 4.42 Under this scenario, we use the Red Cloud Model, which was prepared during negotiations for the Mallay Plant acquisition to reflect the Mallay Acquisition Plan, as a starting point. The Red Cloud Model is, in effect, an update to the SRK Model, which values the Invicta Project based on a revised production plan and is inclusive of the purchase price of the Mallay Plant. As with the 355t/day Scenario, we update the assumptions of the Red Cloud Model to reflect prevailing prices and market conditions at the Valuation Date.
- 4.43 Due diligence carried out on the Mallay Plant confirmed that the facility was in good working condition¹²⁴ and we understand that significant further capital expenditure was not required.¹²⁵

¹²³ As evidenced by the advanced stage of negotiations for the purchase of the plant; see discussion in **Section 3**.

¹²⁴ AC-28 Mallay Due Diligence Aminpro Report dated 25 November 2014, page 6

¹²⁵ Witness Statement of Eric Edwards, paragraph 58

- 4.44 However, the 590t/day Scenario was not supported by an independent study such as the PEA, resulting in additional uncertainty around the grade and accessibility of the ore as compared to the 355t/day Scenario. To address this additional uncertainty:
- a) We adjust the metal grades assumed by Red Cloud, which were consistent with the grades set out in the PEA Mine Plan, downwards to be reflective of those of the Invicta Project as a whole; and
 - b) We apply a higher discount rate to the 590t/day Scenario than the 355t/day Scenario.
- 4.45 We are not technical mining experts; we have therefore made our adjustments in a manner commensurate with our understanding, with the intention of providing the Tribunal with a prudent valuation of the 590t/day Scenario. Our assumptions and conclusions are based on the information available to us as at the date of this report, and may need to be amended if additional information becomes available.

Adjustment for debts to be settled with PLI in the But-For Situation

- 4.46 In order to reflect the principle of full reparation and put Claimant in the position it would have found itself in in the counterfactual scenario, we are instructed that damages owed to Claimant should be offset by the value of the debts that would have been settled with PLI in the But-For Situation, which were claimed (and settled through foreclosure) in the Actual Situation.
- 4.47 In **Section 7** we deduct this amount from our assessment of the value of Claimant's Investment, in order to compute an overall assessment of damages at the Valuation Date.

Benchmarking of our valuation of Claimant's Investment

- 4.48 In **Section 8**, we benchmark our assessment of the FMV of Claimant's Investment at the Valuation Date to other relevant indicators of value, including:
- a) Claimant's market capitalisation;
 - b) Sunk costs incurred, and subsequently lost, by Claimant in relation to the Invicta Project;
 - c) Gold mining industry transaction multiples; and
 - d) Other contemporaneous valuation evidence in the form of the SRK Model and Red Cloud Model.

Pre-award interest

- 4.49 Where a party is deprived of the payment of an award on the date damages are due, pre-award interest is typically applied in order to make that party whole again, consistent with the principle of "full reparation".
- 4.50 In **Section 9**, we apply pre-award interest to our total damages assessment at the Valuation Date, in order to bring damages forward to the Report Date, as a proxy for a hypothetical award date. Our calculation of pre-award interest will therefore need to be updated in order to reflect the date of any actual arbitral award.

4.51 The FTA stipulates that any award of damages should include interest at a “*commercially reasonable rate*”.¹²⁶ On this basis, we have been instructed to apply pre-award interest at a rate of LIBOR + 2%, on a compound basis.¹²⁷

Tax gross-up

4.52 In our damages assessment, we have not given consideration to the tax consequences of any award. If a future award is taxable in the hands of Claimant it may be necessary to apply a tax gross-up to the overall damages figure.

¹²⁶ Canada-Peru Free Trade Agreement, Article 812

¹²⁷ Since the cash flows of the Invicta Project are denominated in USD, we use USD LIBOR (with a 12m term and compounded annually).

5 Our assessment of the FMV of Claimant’s Investment under the 355t/day Scenario

Introduction

- 5.1 In this section, we set out our assessment of the FMV of Claimant’s Investment in the Invicta Project at the Valuation Date, under the 355t/day Scenario supported by the PEA and SRK Model.
- 5.2 Our detailed calculations are set out in **Appendix 5** to our report.

Annual production under the PEA Mine Plan

- 5.3 We quantify the annual output of the Invicta Project in the 355t/day Scenario by reference to Table iii) of the PEA, which sets out the envisaged annual production schedule under the PEA Mine Plan.

Table 5.1. Summary of production under the PEA Mine Plan by year

Tonnes	2018	2019	2020	2021	2022	2023	Total
Annual production	89,905	124,510	124,949	124,368	123,790	82,291	669,813
Average daily production	257	356	357	355	354	235	319

Source: Appendix 5, tab “Tables 5.1 & 5.2”; AC-02, page vii

- 5.4 In total, production of 670kt of mineralised material was anticipated over the six-year PEA Mine Plan period at a 4.0 g/t AuEq cut-off grade. This corresponded to 185k gold-equivalent ounces¹²⁸ of contained metal at a gold-equivalent grade of 8.58 g/t.¹²⁹
- 5.5 In the table below, we detail the annual grade profile of each metal anticipated by the PEA Mine Plan.

Table 5.2. Grade profile of metals by year under the PEA Mine Plan

Commodity	2018	2019	2020	2021	2022	2023	Weighted average
Au Equivalent Grade - g/t	8.55	8.47	9.20	8.62	7.45	9.45	8.58
Au Grade - g/t	5.70	5.35	5.20	5.58	5.09	6.79	5.54
Ag Grade - g/t	39.84	44.20	57.46	51.86	41.83	21.95	44.34
Cu Grade %	0.7 %	1.0 %	1.2 %	1.0 %	0.7 %	0.3 %	0.9 %
Pb Grade %	0.9 %	0.7 %	0.9 %	0.5 %	0.5 %	1.4 %	0.8 %
Zn Grade %	1.1 %	0.9 %	1.2 %	0.8 %	0.7 %	1.7 %	1.0 %

Source: Appendix 5, tab “Tables 5.1 & 5.2”; AC-29 SRK Model, tab “fin_lupaka”

¹²⁸ Gold-equivalent ounces calculated by reference to the metal prices anticipated by the PEA. As an illustrative example, with reference to **Table 5.2**, the PEA Mine plan assumes a silver price of USD 16.75/oz, equivalent to 1.3% of the gold price of USD 1,300/oz. Accordingly, in 2018, silver contributes 1.3% x 39.84 g/t = 0.51 g/t to the overall AuEq grade of 8.55 g/t.

¹²⁹ AC-02 SRK Consulting PEA dated 13 April 2018, page 168. (185 AuEq k oz./670kt) * 31.013 g/oz = 8.58 g/t.

- 5.6 In the 355t/day Scenario we assume that the PEA Mine Plan would have been achieved and that a total of 670kt of mineralised material would be processed over the six-year period of the PEA Mine Plan.

Consideration of inferred resources in our damages assessment

- 5.7 We understand that the PEA Mine Plan included both indicated and inferred resources.¹³⁰ By definition, inferred resources are less certain geologically than indicated resources; however, we note that:
- a) Inferred resources account for under 20% of Atenea vein resources;¹³¹ and
 - b) The resources included in the PEA Mine Plan represent only a small proportion of total indicated resources for both the Atenea vein and the Invicta Mine as a whole.¹³²
- 5.8 Whilst it is not specified exactly which resources are included in the PEA Mine Plan, for the reasons above, we consider any additional risk associated with the potential inclusion of inferred material to be limited. Accordingly, we do not make a specific adjustment to our valuation in this regard.

Valuation approach

- 5.9 The SRK Model provided a contemporaneous valuation of the Invicta Project under the PEA Mine Plan, using a DCF approach. We set out the key assumptions and outputs of the SRK Model in **Appendix 3**.
- 5.10 CIMVAL guidance sets out that the income approach is appropriate for the valuation of a Development Property, and may be used “*in some cases*” for the valuation of a Mineral Resource Property.¹³³ Given that financing had already been obtained, development works had materially been completed, and that achievement of the PEA Mine Plan did not require significant further capital investment, we understand that Claimant did not intend on commissioning a feasibility study in respect of the Invicta Project.¹³⁴

¹³⁰ AC-02 SRK Consulting PEA dated 13 April 2018, page 160

¹³¹ AC-02 SRK Consulting PEA dated 13 April 2018, page 116. Inferred resources of 535kt compared to 2,516kt of indicated resources, i.e. $535 / (2,516 + 535) = c. 18\%$ of total Atenea vein resources.

¹³² AC-02 SRK Consulting PEA dated 13 April 2018, pages 116-117. 670kt included in the PEA Mine Plan at a 4.0g/t cut-off grade, versus 2,024kt indicated resources for the Invicta Mine as a whole = c.33% of total Invicta Mine indicated resources. Whilst total Atenea vein resources are reported at a different cut-off grade (3.0g/t) to the resources in the PEA Mine Plan (4.0g/t) we note, on an indicative basis, that Atenea vein resources represent c.84% of total Invicta Mine indicated resources at a 3.0g/t cut-off grade ($2,516\text{kt} / 2,999\text{kt} = 84\%$). If the same ratio was applicable at a 4.0 g/t cut-off grade, then the PEA Mine Plan would represent c. 40% of the indicated resources of the Atenea Vein ($670\text{kt} / (84\% \times 2,024\text{kt})$).

¹³³ AC-22 CIMVAL Code for the Valuation of Mineral Properties dated 29 November 2019, Table 1

¹³⁴ Witness Statement of Julio Félix Castañeda Mondragón, paragraph 26

- 5.11 We consider that the SRK Model, the availability of data from sampling and other pre-production activities,¹³⁵ and the stage of development of the project validate the use of an income approach (DCF) to assess the FMV of the Claimant's Investment under the 355t/day Scenario.
- 5.12 For our valuation, we use the SRK Model as a starting point, and, to the extent possible, we challenge and update SRK's assumptions to reflect prevailing prices and market conditions as at the Valuation Date, as well as our assessment of potential risks attached to the realisation of the PEA Mine Plan.
- 5.13 For assumptions requiring technical mining expertise, we have relied upon (i) the assumptions which underpin the PEA (as set out in the SRK Model); and (ii) where relevant, Claimant's management.
- 5.14 In line with the FMV standard, we assess the value of Claimant's Investment in the But-For Situation as a proxy for the value that a hypothetical buyer would have paid in order to acquire the Investment. We assess cash flows under the FCFF approach as this approach represents cash flows available before the servicing of external debt and therefore excludes the impact of Claimant-specific financing under the PLI Loan.
- 5.15 Under the FCFF approach, we calculate the estimated free cash flows to be generated by the Invicta Project as follows:

Revenues

Less: operating costs (excluding non-cash charges such as depreciation)

Less: taxation on profits

Less: changes in working capital

Less: capital expenditure

Date and period of assessment

- 5.16 We assess the FMV of Claimant's Investment as at the Valuation Date of 26 August 2019. In the But-For Situation, we assume that (i) the Blockade would have been lifted; and (ii) all other outstanding requirements (such as obtaining final authorisations for production) would have been satisfied such that Claimant, or a prospective purchaser of the Invicta Project, would have been able to implement the PEA Mine Plan and start production as of the Valuation Date. It is our understanding that this represents a conservative estimate of the date upon which production could have started.¹³⁶

¹³⁵ According to the Witness Statement of Julio Félix Castañeda Mondragón, paragraph 25, "The 2018 PEA anticipated recoveries and grades which were generally in line with the results we had obtained so far from our sampling activities in 2011, 2013, 2014 and 2015, all of which were taken from the same vein at the same location".

¹³⁶ We understand that the Project was "virtually ready to enter the exploitation phase" before the Blockade. (Witness Statement of Julio Félix Castañeda Mondragón, paragraph 27).

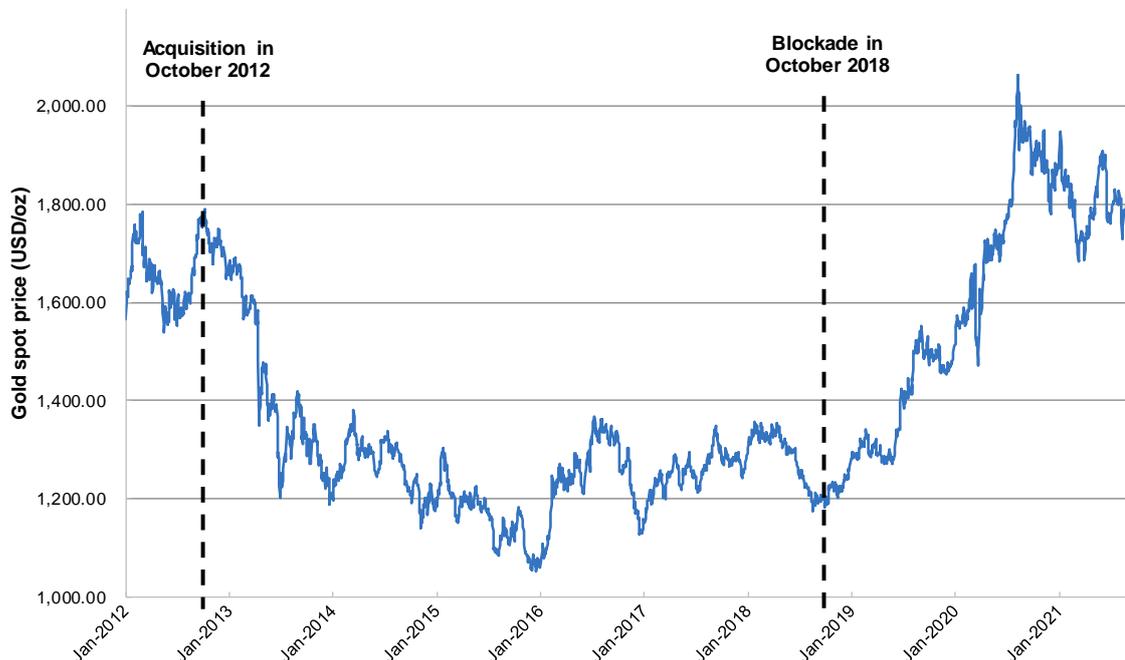
- 5.17 We assess FCFF generated by the Invicta Project over an assumed operating period of six years, in line with the PEA Mine Plan, delaying the start date to the Valuation Date and assuming an end date of 25 August 2025.
- 5.18 Cash flows are calculated by reference to the year of operation (i.e. Years 1 to 6 of the operating period) rather than on a calendar year basis. We discount cash flows on a mid-year basis (i.e. assuming that they occur, on average, mid-way through a given year of operation).

Overview of key assumptions used

Metal prices

- 5.19 In addition to progressing exploration and development activities, changes in metal prices are one of the key drivers of changes in the value of gold mining projects. Following Claimant's acquisition of the Invicta Project in October 2012, gold prices fell, and subsequently Claimant revised the mine plan to be less capital intensive (by not constructing a new processing facility on site) and to focus on higher grade resources (by applying a higher cut-off grade).¹³⁷ Gold prices then stabilised between 2016 and 2018 at around USD 1,250/oz. Since the October 2018 Blockade, gold prices have risen significantly, and, at the end of August 2021, sat at around USD 1,800/oz.

Figure 5.1. Gold prices from January 2012 to August 2021



Source: Capital IQ, Appendix 5, tab "Figure 5.1"

¹³⁷ Witness Statement of Eric Edwards, paragraphs 49-53

- 5.20 We understand that the SRK Model used metal prices provided by Claimant based on market conditions in early 2018.¹³⁸ Metal prices were forecast to remain stable (in real terms) across the duration of PEA Mine Plan.
- 5.21 We update metal prices in order to reflect prevailing market expectations as at the Valuation Date. We derive the appropriate metal price to be used in each year of the forecast using monthly metal futures contract prices as at the Valuation Date. Commodity futures contracts are agreements to buy or sell a predetermined quantity of a commodity at a set price on a specific date. Futures contracts are tradeable derivatives and, from a commercial perspective, reflect the expectations of market participants (i.e. buyers and sellers of metals) as at a given date.
- 5.22 For the purposes of our calculation, we obtain metal futures price data from Capital IQ, a leading global financial intelligence platform.¹³⁹ We calculate the appropriate price to use for each year of our valuation, using the following methodology:
- a) We identify the relevant ticker for monthly futures contracts for each metal, e.g. “GCJ20” represents gold forward contracts for April 2020, “SIZ21” represents silver forward contracts for December 2021,¹⁴⁰ etc.;
 - b) Using the Capital IQ Excel plug-in, we identify available metal futures contracts as at the Valuation Date by applying the following formula `=CIQ("[Ticker]", "IQ_LASTSALEPRICE", "26/08/19")`;
 - c) We calculate the average metal futures price for each metal for each year of our valuation (e.g. for the Year 1 gold price, we take the average of all available gold futures contract prices, as at the Valuation Date, from September 2019 to August 2020); and
 - d) As Capital IQ denotes futures prices in nominal terms, we convert prices into real terms assuming annual inflation of 2%, using a mid-year convention.
- 5.23 As at the Valuation Date, futures contracts were not available for all metals for the entire six-year operating period,¹⁴¹ therefore:
- a) For silver and copper, we calculate the Year 6 price by applying the compound annual growth rate (“CAGR”) for those metals from Year 2 to Year 5; and
 - b) For lead and zinc, we calculate the Years 5 and 6 prices by applying the CAGR for those metals from Year 2 to Year 4.¹⁴²
- 5.24 In the table below, we set out the metal prices used in each year of our forecast (based on the methodology described above), as compared to the prices used in the PEA.

¹³⁸ AC-02 SRK Consulting PEA dated 13 April 2018, page 161

¹³⁹ The Capital IQ platform extracts data on commodities spot and futures pricing from the Commodities Research Bureau.

¹⁴⁰ Forward contracts for the relevant metals are denoted by Capital IQ tickers starting as follows: Gold: “GC”, Silver: “SI”, Copper: “HG”, Lead: “OL”, Zinc: “OX”, followed by the relevant monthly ticker and the year.

¹⁴¹ Due to market convention and/or the availability of data on Capital IQ.

¹⁴² Based on Capital IQ data, CAGR in real terms is negative for all metals beyond Year 2.

Table 5.3. Summary of annual metal prices used in our damages assessment

Commodity	Units	Spot prices as at Valuation Date	Input	Y1	Y2	Y3	Y4	Y5	Y6
Gold	USD/oz	1,527.26	PEA	1,300.00	1,300.00	1,300.00	1,300.00	1,300.00	1,300.00
			Accuracy	1,526.92	1,520.56	1,508.49	1,494.03	1,479.96	1,465.34
Silver	USD/oz	17.66	PEA	16.75	16.75	16.75	16.75	16.75	16.75
			Accuracy	17.65	17.68	17.71	17.56	17.47	17.39
Copper	USD/lb	2.54	PEA	3.00	3.00	3.00	3.00	3.00	3.00
			Accuracy	2.53	2.52	2.49	2.45	2.40	2.37
Lead	USD/lb	0.94	PEA	1.05	1.05	1.05	1.05	1.05	1.05
			Accuracy	0.87	0.92	0.91	0.90	0.89	0.87
Zinc	USD/lb	1.03	PEA	1.25	1.25	1.25	1.25	1.25	1.25
			Accuracy	1.10	0.99	0.97	0.96	0.94	0.92

Source: Appendix 5, tab “Tables 5.3 & 5.4”; AC-29 SRK Model; Capital IQ

5.25 The gold and silver prices used in our assessment, based on prevailing metal futures contracts at the Valuation Date, are higher than those used in the PEA.¹⁴³ As shown by the illustrative table below, they are also higher than contemporaneous broker consensus forecasts; however, they are lower than actual metal spot prices in the period following the Valuation Date, which generally exceeded market expectations. Therefore, whilst we do not benefit from the use of hindsight in our FMV-based damages assessment, our metal prices reflect a conservative estimate of the revenues that Claimant could have realised, but for Respondent’s Alleged Breaches.

Table 5.4. Comparison of metal prices: futures v brokers’ consensus v spot¹⁴⁴

Commodity	Units	Case	Source	Y1	Y2	Y3	Y4	Y5	Y6
Gold	USD/oz	Futures prices	Capital IQ	1,526.92	1,520.56	1,508.49	1,494.03	1,479.96	1,465.34
		Brokers’ consensus (median)	Bloomberg	1,371.97	1,339.61	1,284.79	1,236.28		
		Spot prices	Capital IQ	1,614.30	1,779.61				
Silver	USD/oz	Futures prices	Capital IQ	17.65	17.68	17.71	17.56	17.47	
		Brokers’ consensus (median)	Bloomberg	15.76	15.60	15.44	15.40		
		Spot prices	Capital IQ	17.76	24.91				
Copper	USD/lb	Futures prices	Capital IQ	2.53	2.52	2.49	2.45	2.40	
		Brokers’ consensus (median)	Bloomberg	2.77	2.85	2.86	2.88		
		Spot prices	Capital IQ	2.59	3.73				
Lead	USD/lb	Futures prices	Capital IQ	0.87	0.92	0.91	0.90		
		Brokers’ consensus (median)	Bloomberg	0.85	0.83	0.89	0.93		
		Spot prices	Capital IQ	0.84	0.91				
Zinc	USD/lb	Futures prices	Capital IQ	1.10	0.99	0.97	0.96		
		Brokers’ consensus (median)	Bloomberg	1.13	1.11	1.13	1.16		
		Spot prices	Capital IQ	0.98	1.22				

Source: Appendix 5, tab “Tables 5.3 & 5.4”; Capital IQ; Bloomberg

¹⁴³ This is the result of an increase in gold and silver prices between the date of the PEA and the Valuation Date. By contrast, copper, lead and zinc prices are lower in our assessment than those in the PEA. For illustrative purposes, we note that our updated metal prices result in a reduction in the overall average AuEq grade under the 355t/day Scenario from 8.58g/t in the PEA to 7.81g/t in our model (Appendix 5, tab “*fin_lupaka*”, cell C8, with underlying calculations in the “*Dashboard (ACC)*” tab). This is purely mathematical; the individual annual metal grades used in Appendix 5, which drive our calculation, are consistent with those used in the PEA, and the lower overall AuEq grade does not, in itself, have any impact upon our assessment of damages.

¹⁴⁴ In this table, we show futures prices only in the years for which data is available on Capital IQ (i.e. without extrapolation based on CAGR of the price for each metal). Broker consensus prices are available until 2023 on Bloomberg and are presented on a quarterly or annual basis. For simplicity, we assume that the broker forecast for Q3 to Q2 equates to the corresponding year of the production plan. Spot prices are shown up to 25 August 2021, being the end of Y2 of our model. Spot prices are available for Y1 and Y2 of our forecast only (i.e. up to the Report Date).

Cost base

- 5.26 Direct costs, operating costs and capital costs in the PEA are based on a mixture of industry benchmarks and input provided by Claimant's management to SRK.¹⁴⁵
- 5.27 We set out further detail in relation to costs included in the PEA Mine Plan in our overview of the PEA economic analysis in **Appendix 3**.
- 5.28 For the purposes of our damages assessment, we largely rely upon the contemporaneous cost assumptions of the PEA and those used in the SRK Model. Based upon our discussions with Claimant, we make two updates to the cost base, in relation to (i) pre-production and development capital expenditure; and (ii) closure costs, as described below.

Pre-production & development capital expenditure

- 5.29 The SRK Model includes USD 4.3m of pre-production and development capital expenditure to be incurred in the first year of production,¹⁴⁶ in line with the PEA.¹⁴⁷ This sum represented an estimate of *“the investment to bring the Invicta mine into steady state production”*¹⁴⁸ at the time of the PEA study and included, *inter alia*, improvements to the site road and development and rehabilitation of mine infrastructure.
- 5.30 In fact, Claimant incurred additional development costs of CAD 7.3m¹⁴⁹ (c. USD 5.7m)¹⁵⁰ in 2018. We understand that very little additional capital expenditure was required at the Blockade Date in order to bring the mine to working order, with construction works, including the new access road, materially completed by September 2018.¹⁵¹ The main outstanding requirement for the commencement of production at the Blockade Date related to the receipt of an operating permit following the forthcoming MEM inspection of completed works.
- 5.31 Accordingly, we consider pre-production and development capital expenditure requirements to be **nil** at the Valuation Date in the But-For Situation.

Closure costs

- 5.32 Following the filing of an update to its Mine Closure Plan in 2015, Claimant was required to make annual contributions to fund a mine closure financial guarantee pursuant to a schedule prepared by the MEM.¹⁵²

¹⁴⁵ AC-02 SRK Consulting PEA dated 13 April 2018, Section 20

¹⁴⁶ AC-29 SRK Model, tab “*capex-sum*”

¹⁴⁷ AC-02 SRK Consulting PEA dated 13 April 2018, p. 157, Table 102. We understand from discussions with Claimant that this figure was based on estimates as at 31 December 2017.

¹⁴⁸ AC-02 SRK Consulting PEA dated 13 April 2018, p.156

¹⁴⁹ AC-03 Lupaka Gold Corp. financial statements for the year ended 31 December 2018, page 16

¹⁵⁰ At an average exchange rate for 2018 of CAD 1.2965 to 1 USD (Appendix 8, tab “*Sunk Costs*”).

¹⁵¹ Request for Arbitration, paragraph 19

¹⁵² AC-56 MEM resolution approving amendment to the Mine Closure Plan dated 19 November 2015

- 5.33 We understand from Claimant that it sought to negotiate a deferred payment schedule with the MEM, but that these negotiations were ultimately unsuccessful. For this reason, prior to the Blockade, Claimant intended to pay the annual contributions for 2016, 2017 and 2018 at the end of 2018.
- 5.34 However, the SRK Model was based on the deferred payment schedule. We therefore update it to reflect our understanding of the latest payment schedule as at the Valuation Date.¹⁵³

Inflation

- 5.35 Our projected cash flows are computed on a real basis (i.e. after removing the effects of inflation), in line with the PEA Mine Plan.
- 5.36 For consistency, we apply a real discount rate to bring cash flows back to the Valuation Date, as set out later in this section.

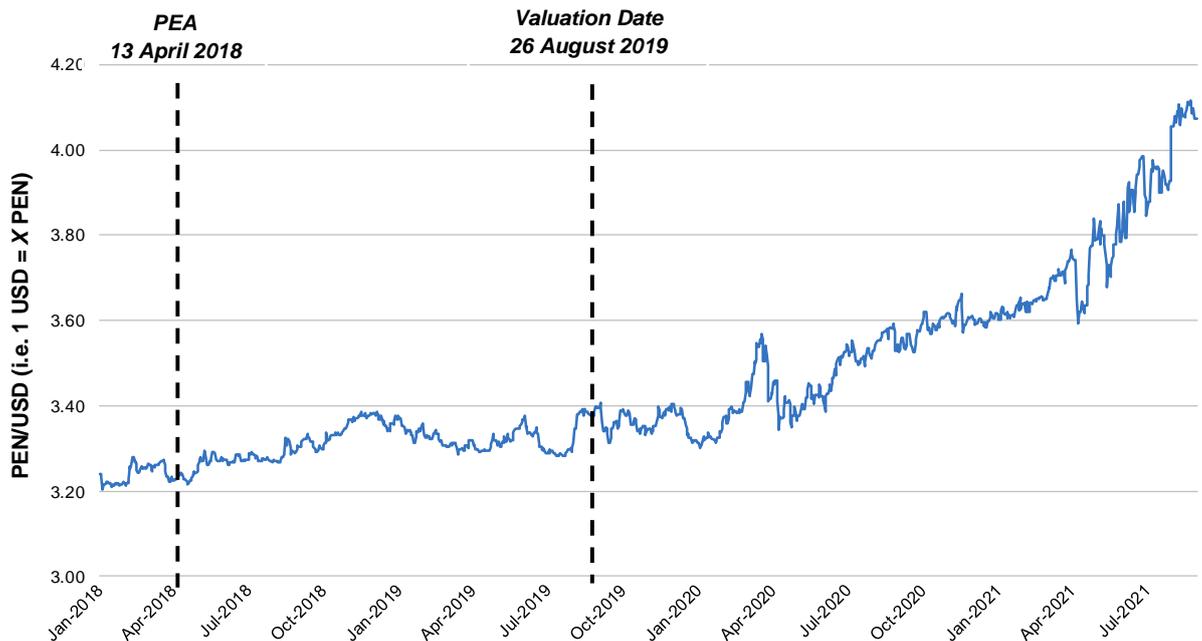
Currency

- 5.37 We understand that revenues from metal sales, as well as some costs such as mining contractor and toll processing costs, were denominated in USD, whilst other direct costs were denominated in Peruvian sol (“**PEN**”).¹⁵⁴ The PEA and the SRK Model were both prepared using USD as the functional currency.
- 5.38 The figure below demonstrates that there was a slight depreciation of the PEN between the date of the PEA and the Valuation Date, following which the PEN has depreciated more markedly.
- 5.39 For the purposes of our damage assessment, we do not model exchange rate fluctuations. However, to the extent that Claimant’s costs were denominated in PEN, exchange rate movements after the Valuation Date would, all else being equal, have been in Claimant’s favour.

¹⁵³ Given that production starts on 26 August 2019 under the “Accuracy” scenario in Appendices 6 and 7, for modelling purposes, we assume that the cumulative costs up to that point (i.e. for the years 2016-2019) are incurred in the first year of production (running from 26 August 2019 to 25 August 2020). We also note that the SRK Model adds a 20% contingency to infrastructure capex, and closure costs are included within this category. However, given the relative certainty of these amounts under the 355t/day Scenario, we remove the contingency from the closure costs under our 355t/day Scenario.

¹⁵⁴ Meanwhile, Claimant’s financial statements are denominated in CAD.

Figure 5.2. USD/PEN exchange rate movements, January 2018 to August 2021



Source: Appendix 5, tab “Figure 5.2”, Capital IQ

Working capital

- 5.40 The SRK Model does not consider changes in project working capital in calculating cash flows.
- 5.41 For completeness, we include an estimate of changes in project working capital in our own assessment of cash flows. Based upon our discussions with Claimant, we assume the following project working capital requirements:
- Days Sales Outstanding (“**DSO**”) of 30 days for 90% of receivables and 60 days for the remainder, (i.e. average DSO of 33 days), calculated as a percentage of gross sales;
 - Days Payables Outstanding (“**DPO**”) of 30 days, calculated as a percentage of offsite and site operating costs; and
 - Days Inventory Outstanding (“**DIO**”) of nil, as all mined rock is assumed to go straight to toll processing facilities.
- 5.42 In our model, we assume that all outstanding receivables and payables are settled in Year 7, following the end of the operating period under the 355t/day Scenario.

Taxation

- 5.43 Whilst we are not tax experts, we consider tax obligations, albeit on a simplified basis, in our DCF valuation.¹⁵⁵
- 5.44 The SRK Model calculates the annual tax liability at a rate of 30% after deducting the depreciation and amortisation charge from operating profits in order to derive an annual taxable income figure. We update the tax rate to the prevailing headline Peruvian corporation tax rate of 29.5% as at the Valuation Date.¹⁵⁶
- 5.45 The SRK Model assumes a tax loss carried forward of USD 1.5m at the start of the PEA Mine Plan period, which it applies to profits generated in order to reduce the amount of tax paid. Lupaka's actual non-capital tax losses in Peru were USD 3.2m at the end of 2018.¹⁵⁷ We therefore update the SRK Model in order to reflect the actual amount of tax losses which could have been used to offset any tax liabilities in the But-For Situation.¹⁵⁸
- 5.46 In addition to the above, in our model we correct what appears to be two formula errors in the SRK Model whereby (i) all tax losses are applied in the first year of production, despite Year 1 taxable income being lower than the carried forward tax loss;¹⁵⁹ and (ii) tax losses incorrectly offset the tax liability line, rather than the taxable profit line.¹⁶⁰

Discount rate

- 5.47 To assess the FMV of Claimant's Investment under the 355t/day Scenario, we discount FCFF back to the Valuation Date in order to account for the risk of unknown future business conditions and the time value of money.
- 5.48 We discount FCFF using an estimate of the cost of capital of a hypothetical gold mining entity operating in Peru, assuming that the project would be financed by a hypothetical investor using a mixture of equity and debt.

¹⁵⁵ Since we are instructed to assess the FMV of Claimant's Investment in Peru, we have not considered the impact of withholding taxes, if applicable, within our damages assessment.

¹⁵⁶ AC-30 KPMG Corporate Tax Rates Table. The Peruvian headline corporation tax rate has remained consistent at 29.5% between 2017 and 2021. For the purposes of our assessment we assume that this rate will continue to apply to the end of our projection in 2025.

¹⁵⁷ AC-03 Lupaka Gold Corp. financial statements for the year ended 31 December 2018, page 30

¹⁵⁸ Tax losses in Peru can be offset against (i) net income generated within 4 years after the year of loss; or (ii) 50% of net income generated in fiscal years after the year of loss, with no time limit (AC-31 PwC Worldwide Tax Summary, Peru – Corporate Deductions). In our But-For Scenario, we assume that the entirety of the USD 3.2m tax loss would be offset against profits in Year 1 of the 355t/day Scenario.

¹⁵⁹ In the original SRK Model, Year 1 taxable income is USD 1.2m, compared to carried forward tax losses of USD 1.5m. In our updated 355t/day Scenario, taxable income in Year 1 is higher than the updated tax loss of USD 3.2m, and this formula error would have no impact.

¹⁶⁰ *Ceteris paribus*, correcting for this error increases the amount of tax paid in the years the tax losses are applied, and therefore reduces the valuation.

- 5.49 We use a discount rate of 11.1% (in real terms, consistent with the FCFF), calculated as follows:
- A sector average cost of capital of 7.8% (after adjusting for a country risk premium for Peru of 1.4%); plus
 - An additional risk premium of 3.3% to reflect a level of uncertainty attached to future cash flows, given that production based on the PEA Mine Plan had not yet commenced.
- 5.50 We set out our discount rate calculation in further detail in **Appendix 4**.
- 5.51 We discount forecast cash flows assuming that these cash flows occur evenly throughout the year (i.e. discounting using a mid-year approach).

Summary of our FMV assessment at the Valuation Date under the 355t/day Scenario

- 5.52 Using a DCF methodology, we assess the post-tax NPV of FCFF generated by the Invicta Project at the Valuation Date under the 355t/day Scenario, which corresponds to the FMV of Claimant's Investment under such a scenario, to be USD 44.2m,¹⁶¹ as summarised below. Our detailed calculation of cash flows is set out in **Appendix 5**.

Table 5.5. Summary of the FMV of Claimant's Investment under the 355t/day Scenario

USDm	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Post-tax cash flows	8.9	8.8	12.3	12.5	8.2	8.0	1.3
Discount factor	94.9 %	85.4 %	76.9 %	69.2 %	62.3 %	56.1 %	50.5 %
Discounted cash flows	8.4	7.5	9.4	8.6	5.1	4.5	0.6
Post-tax NPV	44.2						

Source: Appendix 5, tab "Table 5.5"

Note: Cash flows in Year 7 relate to the release of working capital following the end of the production period.

Sensitivity of our calculation of FMV under the 355t/day Scenario

- 5.53 To illustrate the sensitivity of our calculation of FMV under the 355t/day Scenario to underlying assumptions, we have performed a sensitivity analysis on key inputs, as follows:
- We show the impact of adjusting the metal prices used in our model to align with (i) broker consensus forecasts at the Date of Valuation; and (ii) actual spot prices since the Date of Valuation;¹⁶² and
 - We vary the discount rate in increments of 2.5%, to a maximum of (+/-) 5%.

¹⁶¹ USD 54.5m pre-tax

¹⁶² Broker consensus forecasts are available on Bloomberg until the end of 2023, whilst spot prices are available only to the Date of Report. For the purposes of our sensitivity (i.e. on an illustrative basis) we assume that metal prices would remain constant in real terms after the last year of the production scenario for which data is available. Broker forecasts are shown only on a quarterly or annual basis; for simplicity, we take the weighted average of two calendar years as representative of the corresponding year of our model (e.g. the figure for Y2 is the average of 2020 and 2021 broker forecasts. The spot prices (from Capital IQ) and broker consensus forecasts (from Bloomberg) can be found in the tabs "Capital IQ – Actual" and "Bloomberg – Consensus" of Appendices 6 and 7 to our report.

5.54 The results of our sensitivity analysis are set out in the tables below.

Table 5.6. Sensitivity of FMV under the 355t/day Scenario to changes in metal prices

Case	Source	NPV (USDm)
Futures prices	Capital IQ	44.2
Brokers' consensus	Bloomberg	36.5
Spot prices	Capital IQ	63.8

Source: Appendix 5, tab "Tables 5.6 & 5.7"

Table 5.7. Sensitivity of FMV under the 355t/day Scenario to changes in discount rate

Case	Discount Rate	NPV (USDm)
Base Case	11.1 %	44.2
Base Case + 2.5%	13.6 %	41.6
Base Case + 5.0%	16.1 %	39.3
Base Case - 2.5%	8.6 %	47.1
Base Case - 5.0%	6.1 %	50.3

Source: Appendix 5, tab "Tables 5.6 & 5.7"

- 5.55 The resulting values demonstrate that our assessment of FMV is sensitive to changes in metal prices. On average, broker consensus forecasts are lower than futures prices in this case, and would result in a lower FMV, whilst actual spot prices between the Date of Valuation and the Date of Report are higher than contemporaneous futures prices and would therefore result in a higher FMV.
- 5.56 On the other hand, our assessment is not particularly sensitive to changes in discount rate, largely as a result of the relatively short assumed six-year operating period.

6 Our assessment of the FMV of Claimant’s Investment under the 590t/day Scenario

Introduction

- 6.1 In this section, we set out an alternative assessment of the FMV of Claimant’s Investment in the Invicta Project at the Valuation Date, under the 590t/day Scenario.
- 6.2 Our detailed calculations are set out in **Appendix 6** to our report.

Annual production under the Mallay Acquisition Plan

- 6.3 As at the Blockade Date, Claimant was in the process of acquiring the Mallay Plant, which would have enabled mining to occur at a higher daily tonnage than envisaged in the PEA Mine Plan.
- 6.4 Claimant engaged Red Cloud to update the SRK Model to reflect the anticipated financial consequences of the Mallay Acquisition Plan, including the benefits of increased production and lower unit processing and transport costs, as well as the cash flows relating to the plant acquisition cost of USD 10.4m and related financing.
- 6.5 The Red Cloud Model assumes that, under the Mallay Acquisition Plan, Claimant would have been able to achieve production of c.590t/day over a seven-year period (total production of 1,367kt), as set out in the production schedule below.

Table 6.1. Summary of production under Mallay Acquisition Plan by year

Tonnes	2018	2019	2020	2021	2022	2023	2024	Total
Annual production	89,905	212,835	212,835	212,835	212,835	212,835	212,835	1,366,916
Average daily production	250	591	591	591	591	591	591	542

Source: Appendix 6, tab “Table 6.1”; AC-15 Red Cloud Model

- 6.6 We detail other updates made by Red Cloud to the original SRK Model in **Appendix 3**.

Our approach to assessing FMV under the 590t/day Scenario

- 6.7 Under the 590t/day Scenario, we continue to assess the FMV of Claimant’s Investment using an income (DCF) approach.
- 6.8 We use the Red Cloud Model as a starting point, and make a number of adjustments to the assumptions used by Red Cloud, as detailed below.

Adjustment to assumed metal grades in the Red Cloud Model

- 6.9 The PEA Mine Plan anticipated total production of 670kt of mineralised material at 4.0 g/t AuEq cut-off grade, equivalent to a total metal content of 185k gold-equivalent ounces at a gold-equivalent grade of 8.58 g/t.¹⁶³
- 6.10 The Red Cloud Model assumed the same grade profile in each year of mining activity. This resulted in a total metal content of 368 k oz. AuEq at a grade of 8.38 g/t.¹⁶⁴

Table 6.2. Summary of Red Cloud Model assumed production by metal at a 4.0g/t AuEq cut-off grade¹⁶⁵

Metal	Tonnes (000's)	Metal grade Unit	Contained metal Unit	Contained metal (AuEq k oz)
Gold		5.45 g/t	239 k oz	239
Silver		42.13 g/t	1,851 k oz	24
Copper		0.8%	24,664 k lb	57
Lead		0.8%	23,065 k lb	19
Zinc		1.0%	30,804 k lb	30
Gold equivalent	1,367	8.38 g/t		368

Source: AC-15 Red Cloud Model, tab "Iomp"; Appendix 6, tab "Tables 6.2 & 6.3"

- 6.11 We sought to compare these grade assumptions to the overall grades of the Invicta Project resource base as a whole.
- 6.12 The PEA only provides a breakdown by metal at a cut-off grade of 3.0 g/t. However, the PEA also includes a cut-off grade sensitivity table which, while not a formal resource statement, indicates that the Invicta Project contains 2,024kt of indicated mineralised material at a gold-equivalent cut-off grade of 4.0 g/t, corresponding to 449k gold-equivalent ounces of contained metal at an average gold-equivalent grade of 6.90 g/t.¹⁶⁶
- 6.13 Therefore, the assumed metal grades of the resources considered within the Red Cloud Model (8.38g/t) are higher than the average grades for the Invicta Project as a whole (6.90g/t).
- 6.14 In the absence of a report from Red Cloud justifying the basis for this assumption, we consider it more prudent to apply the average grade for the Invicta Project as a whole to the Mallay Acquisition Plan.

¹⁶³ Paragraph 5.4 of our report

¹⁶⁴ Metal grades for Years 1 to 6 of the Red Cloud Model are the same as in the PEA Mine Plan. The average overall grade of 8.38g/t is slightly lower than in the PEA Mine Plan (8.58t/g), as the Red Cloud Model includes metal grades for Year 7 of production under a c.590t/day scenario which are lower than the average for the previous years (partially offset by a different weighting of assumed annual production under the Mallay Acquisition Plan).

¹⁶⁵ We note what appears to be an error in the Red Cloud Model, whereby the AuEq grade for Year 7 is calculated incorrectly (AC-15, tab "Iomp", cell K40, which uses a formula which is inconsistent with other years). As a result, the overall average AuEq grade in cell C8 of the "fin_lupaka" tab of AC-15 is incorrectly shown as 8.07g/t, rather than 8.38g/t (this figure is shown correctly in cell C40 of the "Iomp" tab). This has no impact on the overall valuation, which is driven by individual annual metal grades. However, for illustrative purposes, we correct for this error under both the Red Cloud and Accuracy scenarios in our Appendix 6 (see "Metal grades" workings in tab "Dashboard (ACC)").

¹⁶⁶ AC-02 SRK Consulting PEA dated 13 April 2018, page 117, Table 78

- 6.15 Both the SRK Model and the Red Cloud Model require a breakdown of the grade by metal as an input. As the PEA does not provide such a breakdown at a cut-off grade of 4.0 g/t, it was necessary to calculate an estimate.
- 6.16 To estimate the breakdown by metal at a cut-off grade of 4.0 g/t, we scaled up the grades by metal reported at a cut-off grade of 3.0 g/t by the ratio of average gold-equivalent grades at 4.0 g/t cut-off grade (6.90 g/t) as compared to at 3.0 g/t (5.79 g/t). We also take into consideration the lower quantity of mined ore at the 4.0 g/t cut-off grade, as well as the difference in metal price and recovery assumptions in the PEA between the contained metal calculations for the PEA Mine Plan and for those of the overall Invicta Project resource statement.
- 6.17 This adjustment results in a total metal content of 305k oz. AuEq under the Mally Acquisition Plan (at a lower average grade of 6.93 g/t), compared to 368k oz. (average grade of 8.38g/t) in the Red Cloud Model.¹⁶⁷ We provide our calculations of the revised grade breakdown by metal in electronic format in **Appendix 6**.¹⁶⁸

Table 6.3. Accuracy-adjusted production by metal under the Mally Acquisition Plan at a 4.0g/t AuEq cut-off grade

Metal	Tonnes (000's)	Metal grade Unit	Contained metal Unit	Contained metal (AuEq k oz)
Gold		4.85 g/t	213 k oz	213
Silver		29.56 g/t	1,299 k oz	17
Copper		0.7%	21,545 k lb	50
Lead		0.4%	12,927 k lb	10
Zinc		0.5%	15,082 k lb	15
Gold equivalent	1,367	6.93 g/t		305

Source: Appendix 6, tab "Tables 6.2 & 6.3"

- 6.18 Our DCF valuation under the 590t/day scenario does not include all of the indicated material reported for the Invicta Project (or even the Atenea deposit)¹⁶⁹ and therefore represents a conservative estimate of the value of the Invicta Project which is consistent with Claimant's contemporaneous plans (i.e. the Mally Acquisition Plan).

¹⁶⁷ We are not technical mining experts; we have therefore made this adjustment in a manner commensurate with our understanding, with the intention of providing the Tribunal with a prudent valuation of the 590t/day Scenario. Our assumptions and conclusions are based on the information available to us as at the date of this report, and may need to be amended if additional information becomes available.

¹⁶⁸ Appendix 6, tab "Metal Grades (ACC)"

¹⁶⁹ The Mally Acquisition Plan assumes total production of 1,367kt at a 4.0g/t cut-off grade, equivalent to c.68% of total Invicta Mine indicated resources (1,367kt/2,024kt = 68%). As noted on an indicative basis in footnote 132, whilst Atenea vein resources are reported at a lower grade of 3.0g/t, they represent c.84% of total Invicta Project resources at that grade (AC-02 SRK Consulting PEA dated 13 April 2018, pages 117 & 119, Tables 78 & 79).

Other updates to the Red Cloud Model

6.19 We further adjust the Red Cloud Model as follows:¹⁷⁰

- a) We update metal prices,¹⁷¹ capex, working capital, and taxation assumptions in line with those used in our assessment of FMV under the 355t/day Scenario in **Section 5**.¹⁷² We additionally forecast prices for Year 7 of the assumed production schedule by applying the CAGR for those metals from Year 2 to Year 5;¹⁷³
- b) Given that we are calculating FCFF, which represent the cash flows available to both debt and equity holders, we exclude Red Cloud’s modelling of cash flows related to additional financing from Pandion (via PLI) and to the upside participation calculation;¹⁷⁴
- c) In the absence of additional information as to what these cash flows represent, we exclude both the “Mallay Cash Flow” and “Head office G&A” line items added by Red Cloud to the SRK Model;¹⁷⁵ and
- d) We discount FCFF using a discount rate of 14.7% (in real terms, consistent with the basis of preparation of the cash flows themselves), calculated as follows:¹⁷⁶
 - i) A sector average cost of capital of 7.8% (after adjusting for a country risk premium for Peru of 1.4%); plus
 - ii) An additional risk premium of 6.9% to reflect the higher level of uncertainty attached to the 590t/day production schedule modelled by Red Cloud, which had not been subject to the same level of detailed technical and financial analysis as the PEA Mine Plan.¹⁷⁷

¹⁷⁰ Our damages assessment does not include any estimate of the possible resale value of the Mallay Plant at the end of the seven-year forecast period. If a reliable estimate of this value were to be available, this should be included as an additional cash inflow at the end of the valuation period, and would therefore, *ceteris paribus*, increase damages.

¹⁷¹ As noted in footnote 143, our updated metal prices result in a reduction in the overall average AuEq grade. Under the 590t/day Scenario, using our metal prices results in the average AuEq grade decreasing from 6.93g/t (Table 6.3) to 6.40g/t (Appendix 6, tab “*fin_lupaka*”, cell C8, with underlying calculations in the “*Dashboard (ACC)*” tab). However, as it is the individual annual metal grades which drive our calculations in Appendix 6, the lower overall AuEq grade does not, in itself, have any impact upon our assessment of damages.

¹⁷² We note that the Red Cloud Model, in line with the SRK Model, adds a 20% contingency to infrastructure capex, and closure costs are included within this category. However, in contrast to the 355t/day Scenario (see footnote 153), under the 590t/day Scenario there is some uncertainty regarding the associated closure costs. Therefore, we consider the 20% contingency to be appropriate and do not remove it from closure costs under our 590t/day Scenario.

¹⁷³ Relevant metals futures contract prices are not available on Capital IQ for Year 6 of our forecast, with the exception of gold. Therefore, we continue to apply the CAGR from Year 2 to Year 5 (Year 2 to Year 4 for lead and zinc) in Year 7 of the 590t/day Scenario.

¹⁷⁴ See paragraph A3.27iii)

¹⁷⁵ See paragraphs A3.27v) & A3.27vi). Including these line items would reduce our FMV assessment of the 590t/day Scenario from USD 63.6m to USD 59.5m, a decrease of USD 4.1m.

¹⁷⁶ See Table A4.1 in Appendix 4.

¹⁷⁷ We are not technical mining experts; we have therefore made our adjustments in a manner commensurate with our understanding, with the intention of providing the Tribunal with a prudent valuation of the 590t/day Scenario. Our assumptions and conclusions are based on the information available to us as at the date of this report, and may need to be amended if additional information becomes available.

Summary of our FMV assessment at the Valuation Date under the 590t/day Scenario

- 6.20 Using a DCF methodology, we assess the post-tax NPV of FCFF generated by the Invicta Project at the Valuation Date under the 590t/day Scenario, which corresponds to the FMV of Claimant's Investment under such a scenario, to be USD 63.6m.¹⁷⁸ Our detailed calculation of cash flows is set out in **Appendix 6**.

Table 6.4. Summary of the FMV of Claimant's Investment under the 590t/day Scenario

USDm	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Post-tax cash flows	(5.6)	12.4	21.7	22.5	20.4	19.3	20.0	3.2
Discount factor	93.4 %	81.4 %	71.0 %	61.9 %	54.0 %	47.1 %	41.0 %	35.8 %
Discounted cash flows	(5.2)	10.1	15.4	13.9	11.0	9.1	8.2	1.2
Post-tax NPV	63.6							

Source: Appendix 6, tab "Table 6.4"

Note: Cash flows in Year 8 relate to the release of working capital following the end of the production period.

- 6.21 The difference of USD 19.4m¹⁷⁹ between our FMV assessments under the 355t/day Scenario and 590t/day Scenario, in effect, corresponds to our estimate of the upside of the Mallay Acquisition Plan which Claimant intended on realising at the Blockade Date.

Sensitivity of our calculation of FMV under the 590t/day Scenario

- 6.22 For illustrative purposes we apply sensitivities to our FMV for metal price and discount rate assumptions in the same way as we do for the 355t/day Scenario:

Table 6.5. Sensitivity of FMV under the 590t/day Scenario to changes in metal prices

Case	Source	NPV (USDm)
Futures prices	Capital IQ	63.6
Brokers' consensus	Bloomberg	51.8
Spot prices	Capital IQ	92.9

Source: Appendix 6, tab "Tables 6.5 & 6.6"

Table 6.6. Sensitivity of FMV under the 590t/day Scenario to changes in discount rate

Case	Discount Rate	NPV (USDm)
Base Case	14.7 %	63.6
Base Case + 2.5%	17.2 %	58.3
Base Case + 5.0%	19.7 %	53.5
Base Case - 2.5%	12.2 %	69.7
Base Case - 5.0%	9.7 %	76.5

Source: Appendix 6, tab "Tables 6.5 & 6.6"

¹⁷⁸ USD 85.2m pre-tax

¹⁷⁹ USD 63.6m – USD 44.2m = USD 19.4m

6.23 As demonstrated previously, our assessment is sensitive to metal price assumptions, but not particularly sensitive to changes in the discount rate.

7 Summary of damages at the Valuation Date

Adjustment for debts to be settled with PLI in the But-For Situation

- 7.1 In the previous sections, we calculate the FMV of Claimant's Investment at the Valuation Date under the 355t/day Scenario to be USD 44.2m and under the 590t/Day Scenario to be USD 63.6m.
- 7.2 We are instructed that damages owed to Claimant should be offset by the value of the debts that would have been settled with PLI in the But-For Situation.
- 7.3 On 2 July 2019, PLI notified Claimant of the early termination of the PLI Loan on the basis that Claimant was in default of the agreement and requested immediate payment of a lump sum amount in accordance with the terms of the agreement (the "**Early Termination Amount**").¹⁸⁰ The debt claimed was USD 15.6m,¹⁸¹ which was increased to USD 15.9m on 24 July 2019.¹⁸²
- 7.4 Subsequently, Lonely Mountain (to which Pandion transferred its interest in PLI in July 2019), sought to enforce its contractual rights by seizing IMC's shares on the Valuation Date. On 22 July 2020, Claimant, PLI and IMC then entered into a Mutual Release agreement, which released the parties to the agreement from all outstanding claims between said parties, including any claim relating to the PLI Loan. Accordingly, in the Actual Situation, the Early Termination Amount was effectively settled through foreclosure; no further cash amounts were paid and no further sums are owed by Claimant in this regard.
- 7.5 We understand that, under the terms of the PLI Loan agreement, the same formula to calculate the Early Termination Amount applies equally to (i) termination upon default and (ii) voluntary termination of the PLI Loan.¹⁸³
- 7.6 We consider that the fact that an Early Termination Amount of USD 15.9m was claimed by PLI in the Actual Situation provides a contemporaneous indicator of amount that Claimant would have had to pay to PLI to settle the early termination of the PLI Loan in the But-For Situation.
- 7.7 Therefore, we deduct USD 15.9m from our assessment of the FMV of Claimant's Investment in Peru in order to derive an overall damages assessment representing the total losses suffered by Claimant at the Valuation Date.

¹⁸⁰ AC-04 Second Amended and Restated Pre-Paid Gold Purchase Agreement dated 2 August 2017, Section 5(8)

¹⁸¹ AC-16 Notice of Acceleration dated 2 July 2019

¹⁸² AC-17 Notice of enforcement of the Pledge over IMC's shares dated 24 July 2019

¹⁸³ AC-04 Second Amended and Restated Pre-Paid Gold Purchase Agreement dated 2 August 2017, Section 5(8)

Overall summary of damages at the Valuation Date

- 7.8 Overall, we calculate damages at the Valuation Date of USD 28.3m in the 355t/day Scenario and USD 47.7m in the 590t/day Scenario. Our damages figures comprise the lost value of Claimant’s Investment in Peru, less amounts that would have been paid by Claimant to PLI in order to settle the early termination of the PLI Loan in the But-For Situation.

Table 7.1. Overall summary of damages at the Valuation Date

USDm	355t/day Scenario	590t/day Scenario
FMV of Claimant's Investment at the Valuation Date	44.2	63.6
Adjustment for debts to be settled with PLI in the But-For Situation	(15.9)	(15.9)
Total damages at the Valuation Date	28.3	47.7

Source: Appendix 5, tab “Table 7.1”

8 Other indicators of the value of the Invicta Project

8.1 In this section, we benchmark our total damages assessment at the Valuation Date of USD 28.3m in the 355t/day Scenario and USD 47.7m in the 590t/day Scenario, to other indicators of value:

- a) Claimant’s market capitalisation;
- b) Sunk costs incurred, and subsequently lost, by Claimant in relation to the Invicta Project;
- c) Relevant gold mining industry transaction multiples; and
- d) Other contemporaneous valuation evidence (the SRK Model and Red Cloud Model).

Claimant’s market capitalisation

Introduction

8.2 During the relevant period, Claimant was listed on the TSX-V, a Canadian stock exchange for emerging companies.

8.3 CIMVAL guidance identifies the use of an entity’s market capitalisation as a “secondary” market-based valuation technique.¹⁸⁴ Given that the Invicta Project represented Claimant’s core asset at the Blockade Date, the publicly traded price of Claimant’s shares immediately prior to this date represents an indicator of the value of the Invicta Project at the time.

8.4 We perform an illustrative assessment of the value of the Invicta Project at the Valuation Date based on our projection of Claimant’s market capitalisation were the impact of Respondent’s Alleged Breaches to be reversed. Our corresponding workings are provided in electronic format in **Appendix 7**.

Deterioration in Claimant’s share price following the Parán blockade

8.5 A public announcement was made by Claimant on 25 October 2018, shortly after the Blockade Date, informing the market that operations at the Invicta Project had been impacted by the illegal demonstration by Parán.¹⁸⁵

8.6 On 25 October 2018, the date of the announcement, Claimant’s share price was CAD 0.175. On the following day, the share price had fallen to CAD 0.145, resulting in an overnight decrease in market capitalisation of CAD 3.7m (from CAD 21.4m to CAD 17.7m).¹⁸⁶

¹⁸⁴ Table 4.2 of this report.

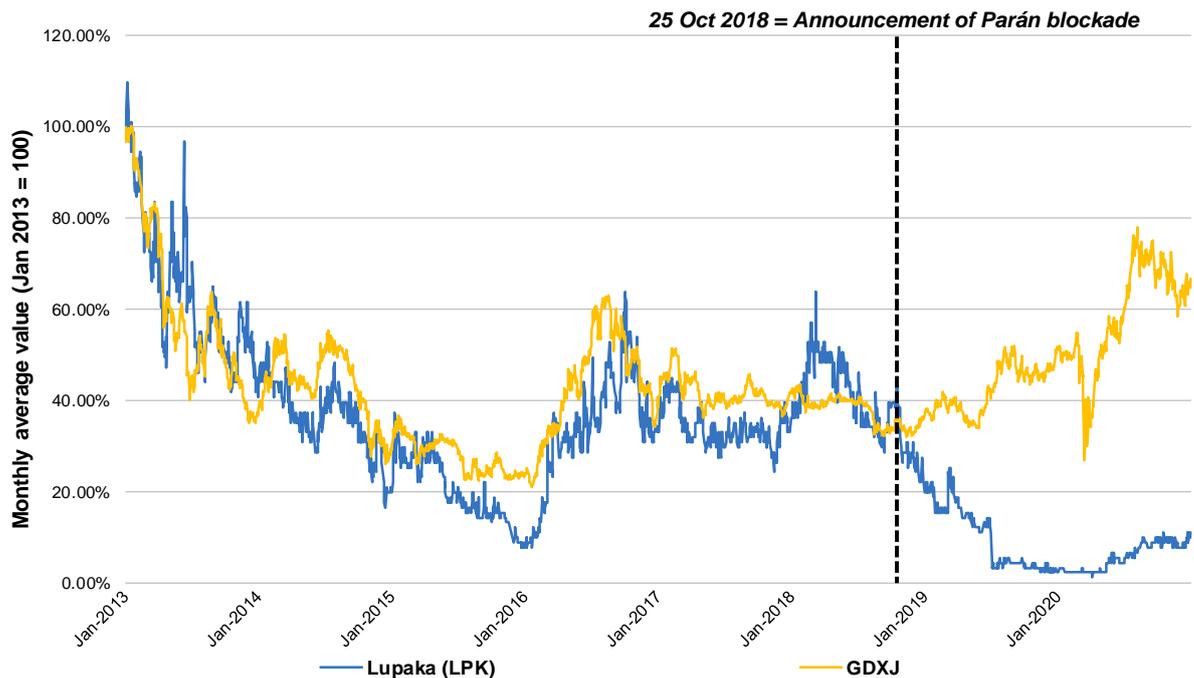
¹⁸⁵ AC-32 Lupaka Gold Corp., *Invicta Project Impacted by Illegal Demonstration*, 25 October 2018

¹⁸⁶ I.e. an overnight decrease in market capitalisation of 17.1% following the announcement. Market capitalisation on a given date is defined as *number of outstanding shares x share price*.

8.7 By the Valuation Date, ten months later, Claimant’s share price had fallen to CAD 0.02, and its market capitalisation had fallen to CAD 3.0m (USD 2.2m)¹⁸⁷, representing an overall decrease of 86%, or CAD 18.4m)¹⁸⁸ in market capitalisation since the announcement of the blockade.

8.8 The figure below shows movements in Claimant’s share price between January 2013 (shortly after the Acquisition) and the end of 2020 in comparison to those of the VanEck Vectors Junior Gold Miners ETF (“GDXJ”).¹⁸⁹

Figure 8.1. Comparison of movements in Claimant’s share price with the GDXJ, 2013 to 2020



Source: Appendix 7, tab “Figure 8.1”, Capital IQ

8.9 The figure above demonstrates a broad correlation between Claimant’s share price and the GDXJ until the announcement of the Blockade on 25 October 2018.¹⁹⁰

¹⁸⁷ At an exchange rate of 1.3273 CAD to 1 USD on the Valuation Date (Appendix 7, tab “CAD per USD”)

¹⁸⁸ CAD 21.4m – CAD 3.0m = CAD 18.4m

¹⁸⁹ AC-33 GDXJ Factsheet dated 31 March 2021. The GDXJ “seeks to replicate as closely as possible, before fees and expenses, the price and yield performance of the MVIS Global Junior Gold Miners Index (MVGDXJTR), which is intended to track the overall performance of small-capitalization companies that are involved primarily in the mining for gold and/or silver”, therefore representing a relevant benchmark for movements in Claimant’s share price

¹⁹⁰ Albeit it is not possible to distinguish the impact of the Invicta Project on Claimant’s share price from that of Claimant’s other projects prior to March 2018, when the option for the Josnitoro Project expired.

- 8.10 Following this announcement, the two lines diverge; the GDXJ rose significantly in 2019 and 2020 (with a blip at the onset of the COVID-19 pandemic in early 2020), whilst Claimant's share price continued to fall following the announcement before dropping to CAD 0.02 on 3 July 2019, the date upon which Claimant announced the receipt of a Notice of Acceleration from PLI, indicating the commencement of foreclosure proceedings and the early termination of the PLI Loan.¹⁹¹
- 8.11 The previous broad correlation of Claimant's share price to the GDXJ suggests that the subsequent fall in price was the result of factors unrelated to broader gold market movements. We have performed a high-level review of Claimant's market announcements in 2018 and 2019, and do not identify any events that could have resulted in such a marked fall in share price outside of those events which form the basis for this Dispute.
- 8.12 Consequently, the sharp overnight fall in Claimant's share price following the announcement of the Blockade, followed by a consistent and marked decline until the loss of Claimant's Investment, demonstrates that Claimant's share price was irremediably and negatively affected by Respondent's Alleged Breaches.

Illustrative assessment of Claimant's market capitalisation in the But-For Situation

- 8.13 As an illustration of the value of Claimant's Investment but for Respondent's Alleged Breaches, we assess Claimant's hypothetical market capitalisation as at the Valuation Date as follows:
- a) We apply the percentage movement in the GDXJ between 25 October 2018 and the Valuation Date (26 August 2019) to Claimant's market capitalisation of CAD 21.4m on 25 October 2018; and
 - b) Given that Claimant's Investment represented the entirety of its interest in the Invicta Project, we add a control premium to reflect the additional consideration that a hypothetical investor would pay over a marketable minority equity value in order to own a controlling interest in a company or project.¹⁹²

Claimant's market capitalisation at the Valuation Date in the But-For Situation

- 8.14 Applying the percentage movement of 45.2% in the GDXJ to Claimant's market capitalisation at 25 October 2018, we estimate a market capitalisation of CAD 31.0m, equivalent to USD 23.4m,¹⁹³ as at the Valuation Date in the But-For Situation.
- 8.15 The figure below shows, on an illustrative basis, how Claimant's market capitalisation would have evolved had it followed daily movements in the GDXJ after the Blockade Date, in comparison to how it evolved in the Actual Situation.

¹⁹¹ AC-34 Lupaka Gold Corp. *Lupaka announces receipt of Notice of Acceleration and declaration of early termination from PLI Huaura*, 3 July 2019

¹⁹² Market capitalisation reflects the value of a single share (i.e. a minority shareholding), multiplied by the total number of shares, hence the necessity to apply a control premium in order to reflect the value of the entirety of Claimant's Investment.

¹⁹³ We calculate daily movements in CAD and convert our projected market capitalisation figure as at the Valuation Date at the prevailing spot exchange rate of 1.3273 CAD to 1 USD (Appendix 7, tab "CAD per USD").

Figure 8.2. Illustrative demonstration of Claimant’s market capitalisation had it followed movements in the GDXJ v in the Actual Situation, October 2018 to August 2019¹⁹⁴



Source: Appendix 7, tab “Figure 8.2”; Capital IQ

Application of a control premium to Claimant’s market capitalisation

8.16 We identify the following independent sources of data for the appropriate control premium to apply to Claimant’s market capitalisation:

- a) A *Mergerstat* report dated Q1 2020 which sets out average control premiums by industry based on transactions where 50.01% or more of a company was acquired. The study indicates an average control premium for the mining industry of 56.8% for the five years to 2019, and 50.5% over a ten-year period;¹⁹⁵
- b) A control premium study by RSM based on successful takeover offers and schemes of arrangement completed between 1 July 2005 and 30 June 2016 for companies listed on the Australian Securities Exchange (“**ASX**”). The study indicates a control premium for the metals and mining sector of 35.8%, based on the closing share price of the target company 20 days pre-announcement of the offer.¹⁹⁶

¹⁹⁴ Figures shown in USD terms at the prevailing daily spot exchange rate.

¹⁹⁵ AC-35 Mergerstat, *Control Premium Study*, 1st Quarter 2020, p.8

¹⁹⁶ AC-36 RSM, *Control Premium Study 2017*, p.9

- 8.17 As a prudent estimate, we apply a control premium of 43.2% (being the average of the *Mergerstat* ten-year mining industry average and the figure calculated in the RSM study set out above) to our calculation of Claimant’s market capitalisation in the But-For Situation at the Valuation Date.
- 8.18 Based on the selected control premium, we derive a valuation of Claimant’s Investment in the But-For Situation at the Valuation Date using a market capitalisation methodology, of USD 33.4m.¹⁹⁷

Conclusion

- 8.19 In the Actual Situation, Claimant’s market capitalisation at the Valuation Date was USD 2.2m, compared to our illustrative market capitalisation of USD 23.4m in the But-For Situation based on movements in the GDXJ.
- 8.20 Theoretically, one may be inclined to subtract the market capitalisation in the Actual Situation from the market capitalisation in the But-For Situation (plus control premiums) in order to assess losses incurred by Claimant as a result of Respondent’s Alleged Breaches. However, given that in the Actual Situation Claimant had lost the entirety of its Investment in the Invicta Project at the Valuation Date, we consider that the remaining value attributed to Claimant’s shares beyond this date reflects investors’ hopes of the recovery of some element of value (either through settlement with Respondent or via this arbitration process), rather than the attribution of any value to Claimant’s (now lost) Investment.¹⁹⁸
- 8.21 Our assessment of the FMV of the Invicta Project based on Claimant’s market capitalisation already reflects Claimant’s obligation to pay the Early Termination Amount in respect of the PLI Loan in the But-For Situation, so no further adjustment would be required in this respect to determine Claimant’s damages.
- 8.22 Consequently, under a market capitalisation approach, our illustrative assessment of damages is **USD 33.4m** (inclusive of a control premium) at the Valuation Date.
- 8.23 We consider, however, that this figure represents only an illustrative, but nevertheless prudent, indication of damages incurred by Claimant, for the following reasons:
- a) By using Claimant’s market capitalisation at the date of announcement of the Blockade as a starting point and indexing this against movements in the GDXJ to the Valuation Date, we imply that the value of the Invicta Project in the counterfactual scenario would have changed in line with the market for junior gold miners between the Blockade Date and the Valuation Date. Given that, absent the Alleged Breaches, the Invicta Project would have likely entered into production, its change in value may have outperformed market movements.

¹⁹⁷ USD 23.4m x 1.432 = USD 33.4m

¹⁹⁸ This is consistent with the fact that Lupaka’s share price rose slightly (albeit far below the price prior to the Blockade Date) in the latter half of 2020, during which it secured financing for this arbitration claim (AC-37 Lupaka Gold Corp. *Lupaka Secures Financing for Its Arbitration Claim*, 4 August 2020) and submitted its RfA (AC-38, Lupaka Gold Corp, *Lupaka submits request for arbitration claim against the Republic of Peru*, 28 October 2020).

- b) Market capitalisation is a more relevant indicator of value for mature companies, whose share price movements tend to be less volatile and more liquid than those of small-cap companies.
- c) Market capitalisation reflects investors' perception of Claimant's own capacity to develop the Invicta Project, rather than a hypothetical investor, and does not therefore strictly follow the FMV standard.
- d) Investors may not have had access to privileged information underlying Claimant's future plans (e.g. the prospective acquisition of the Mallay Plant, which was not publicly announced),¹⁹⁹ and the market capitalisation therefore may not have reflected a fully informed view of the potential value of Claimant's Investment.
- e) The starting point of our market capitalisation projection (the Blockade Date) was at a point in time where the Invicta Mine was materially ready to enter into full production, pending the receipt of final authorisations. However, to the extent this had not been communicated to the market, Claimant's share price would not have fully reflected the advanced stage of development of the project. In the But-For Situation, Claimant would have obtained all necessary authorisations and would have commenced production at (or before) the Valuation Date. Consequently, investors' perception of the value of the Invicta Project is likely to have been stronger, resulting in a commensurately higher share price.
- f) The control premium we apply is below the average premium evidenced in the mining industry in the decade to 2019. A higher control premium would lead to a correspondingly higher valuation of the Investment.
- g) We have not made any adjustment for withholding taxes which, if applicable, would be necessary in order to ensure comparability with our FMV assessment.

Claimant's sunk costs

Introduction

8.24 We benchmark our damages assessment in **Section 7** against an indicator of value based on Claimant's sunk costs by:

- a) Identifying costs incurred by Claimant in relation to its Investment between the Acquisition Date and the Valuation Date,²⁰⁰ which were subsequently lost as a result of Respondent's Alleged Breaches; and
- b) Applying interest from the date upon which sunk costs were incurred to the Valuation Date as a proxy for the expected minimum level of return upon those investments.

8.25 We summarise our results below, and set out our workings in further detail in **Appendix 8**.

¹⁹⁹ Witness Statement of Gordon Ellis, paragraph 52

²⁰⁰ We understand from discussions with Claimant's management team that no material further costs were incurred in relation to the Invicta Project beyond the Valuation Date, save for those incurred in direct relation to the ongoing legal proceedings.

Identification of Claimant's sunk costs

- 8.26 We identify two distinct types of costs incurred by Claimant in relation to its Investment:
- The portion of the price paid for the acquisition of AAG's shares on 1 October 2012 which was attributable to the Invicta Project, being CAD 10.3m, equivalent to USD 10.5m at the prevailing daily CAD/USD spot rate;²⁰¹ and
 - Ongoing expenditure incurred by Claimant in relation to the Invicta Project between the Acquisition Date and the Valuation Date.
- 8.27 We identify ongoing expenditure by reference to Claimant's financial statements (and accompanying annual reports/MD&A papers), which clearly detail annual expenditure in relation to Claimant's various projects. Expenditure incurred in relation to the Invicta Project was accounted for in Claimant's accounts as follows:²⁰²
- Prior to receipt of Tranche 1 of the PLI Loan in July 2017, expenditures in relation to the Invicta Project were expensed via the income statement as exploration expenditures; and
 - Following the receipt of Tranche 1 of the PLI Loan, Claimant's management considered that the project was able to proceed with construction and pre-production. Consequently, from August 2017, such expenditures were capitalised to "mineral property under development" on Claimant's balance sheet.
- 8.28 Based on our review of Claimant's financial statements, we identify expenditure incurred in relation to the Invicta Project of USD 14.4m between the Acquisition Date and the Valuation Date.
- 8.29 In total, we calculate Claimant's sunk costs, before the application of interest, to be USD 24.8m, as set out in the table below.

Table 8.1. Summary of Claimant's sunk costs by year (before interest)

USDk	Amount
Acquisition	10,454
2012 (Oct- Dec)	558
2013	1,733
2014	992
2015	1,131
2016	900
2017	2,729
2018	5,651
2019 (Jan-Aug)	663
Total expenditure	24,812

Source: AC-01; AC-03; AC-48 to AC-55; Appendix 8, tab "Table 8.1".

Note: Amounts converted from CAD to USD at the average rate for each given period. Based on discussions with Claimant, all costs in 2019 assumed to occur prior to the Valuation Date

²⁰¹ Table 3.1 of this report. The CAD/USD spot rate was 0.9807 CAD to 1 USD on the Acquisition Date (Appendix 8, tab "CAD per USD")

²⁰² AC-03 Lupaka Gold Corp. financial statements for the year ended 31 December 2018, Note 8, page 16

Application of interest to Claimant’s sunk costs

- 8.30 We apply interest from the date upon which Claimant incurred costs in relation to the Invicta Project to the Valuation Date.
- 8.31 We consider the annual effective interest rate of 10.1%²⁰³ on the PLI Loan to represent an appropriate proxy for the minimum expected return on Claimant’s investments, as Claimant would have wished (at the very least) to service its debts.
- 8.32 In total, we calculate interest of USD 14.7m upon Claimant’s sunk costs up to the Valuation Date.

Conclusion

- 8.33 After applying interest, we assess the value of Claimant’s sunk costs as at the Valuation Date to be USD 39.5m.

Table 8.2. Claimant’s sunk costs by year with interest to the Valuation Date

USDk	Amount	Interest factor	Interest to Valuation Date	Amount with interest to Valuation Date
Acquisition	10,454	94.9 %	9,922	20,375
2012 (Oct- Dec)	558	92.6 %	517	1,075
2013	1,733	81.3 %	1,409	3,142
2014	992	64.6 %	641	1,634
2015	1,131	49.5 %	560	1,690
2016	900	35.7 %	322	1,222
2017	2,729	23.3 %	635	3,364
2018	5,651	11.9 %	673	6,324
2019 (Jan-Aug)	663	3.3 %	22	685
Total sunk costs	24,812	59.2 %	14,700	39,511

Source: Appendix 8, tab “Table 8.2”

Note: Interest is calculated from the mid-point of the stated period until the Valuation Date.

- 8.34 Our damages benchmark based on Claimant’s sunk costs does not reflect Claimant’s obligation to settle its debts with PLI in the But-For Situation. After deducting the Early Termination Amount of USD 15.9m claimed by PLI in July 2019, our benchmark amounts to **USD 23.6m**.²⁰⁴

²⁰³ Based on a principal of USD 7m and a total amount repayable of USD 11.3m over a term of 60 months, or five years, i.e. $((\text{USD } 11.3\text{m}/\text{USD } 7\text{m})^{(1/5)})-1 = 10.1\%$.

²⁰⁴ USD 39.5m – USD 15.9m = USD 23.6m

Transaction multiples

Introduction

- 8.35 To provide further comfort over the reasonableness of our damages assessment using an income approach, we benchmark the multiple implied by our assessment of the FMV of the Invicta Project to other recent gold industry transactions.
- 8.36 The transaction multiples approach is a relative valuation approach that seeks to value a business or asset by reference to recent transactions in comparable businesses or assets.
- 8.37 In a gold mining context, the price a purchaser is willing to pay to acquire a project (or the entity which owns it) is dependent, among other factors, upon the reserves/resources in place, market conditions, the estimated production costs, and the stage of development of the project.
- 8.38 We seek to reflect these factors in our transaction multiples analysis by taking the following steps:
- a) We first identify transactions in gold projects for which sufficient information is available and calculate the price per oz. of reserves/resources for each transaction. To reflect market conditions as at the Valuation Date, we index the transaction multiples by the movement in gold spot prices between the announcement date of each transaction and the Valuation Date.
 - b) We then consider whether there is a relationship between the resulting transaction multiples and the average grade of the reported reserves/resources, as a simplified proxy for the relative production costs of these projects (all else being equal, higher grade ore should result in lower extraction and processing costs per oz. of sellable gold).
 - c) We next calculate the transaction multiples implied by our DCF valuations of the Invicta Project, adjusting for the difference between the stage of development of the Invicta Project and the average stage of development of identified gold mining projects.
 - d) Finally, we compare the transaction multiples implied by our DCF valuations of the Invicta Project to the industry transaction multiples and conclude on the reasonableness of our DCF valuations.
- 8.39 We show the results of these steps below, and set out our detailed analysis in **Appendix 9**.

Identification of gold industry transactions and assessment of multiples

- 8.40 Our industry transactions approach uses data from Capital IQ:
- a) We first applied filters to select mergers and acquisitions for a value over USD 1.0m in the gold industry which closed within the five-year period prior to the Valuation Date (i.e. not earlier than August 2014).

- b) There was insufficient data available to perform a benchmarking exercise against transaction multiples for projects with only reported resources (as opposed to reported resources and reserves).²⁰⁵ We therefore retained transactions with reported proven and probable (“P&P”) gold reserves in either the year of the announcement date of the transactions or, alternatively, the preceding year.
- c) To ensure comparability with our valuation of the entirety of the Invicta Project, we then excluded any transactions which were for a minority share (i.e. less than 50%).

8.41 In total, we identify 26 transactions which satisfy the criteria set out above

8.42 For each transaction, we derive a USD/oz. gold reserves multiple using Capital IQ data on the implied EV, P&P gold reserves and gold grade of the target company. We then index the multiple for each transaction against movements in the gold price between the announcement date of each transaction and the Valuation Date.

8.43 We obtain a median indexed multiple across our sample of transactions of USD 229.5/oz, and a mean of USD 357.1/oz.

Table 8.3. Retained gold industry transactions and resulting multiples

Announcement Date	Target	Transaction Value (USDm)	Percent Sought (%)	Implied EV (USDm)	Prevailing Gold Price (USD/oz)	P&P Gold Reserves (k tonnes)	Grade of Reserves (g/t)	Transaction Multiple (USD/oz)	Indexed Multiple (USD/oz)
14-May-19	Atlantic Gold Corporation	595.4	100.0	568.6	1,297.70	51,950	1.12	304.0	357.7
14-Jan-19	Goldcorp Inc.	13,084.5	100.0	12,912.5	1,291.16	1,807,670	0.90	246.9	292.0
14-Nov-18	Tahoe Resources Inc.	1,390.9	100.0	1,342.5	1,210.78	205,362	0.56	360.5	454.8
24-Sep-18	Barrick Gold (Holdings) Limited	6,515.5	100.0	5,911.8	1,198.46	172,000	3.87	276.2	352.0
19-Mar-18	Klondex Mines Ltd.	468.5	100.0	440.7	1,315.09	3,040	6.38	706.7	820.7
23-Jan-18	Brio Gold Inc.	362.3	100.0	343.0	1,340.26	69,419	1.30	118.2	134.7
12-Jan-18	Primero Mining Corp.	126.8	100.0	105.9	1,336.15	4,100	3.80	211.4	241.6
18-Dec-17	Rio Novo Gold Inc.	21.8	100.0	21.8	1,261.28	27,305	0.87	28.6	34.6
07-Nov-17	AuRico Metals Inc.	239.7	100.0	218.6	1,275.07	107,381	0.54	117.3	140.5
11-Sep-17	Richmont Mines Inc.	763.8	100.0	684.8	1,327.40	2,755	9.00	859.2	988.6
08-Aug-17	Bison Gold Resources Inc.	4.4	100.0	4.1	1,260.52	1,191	1.74	61.1	74.0
28-Jun-17	Avneel Gold Mining Limited	106.6	100.0	95.8	1,247.46	21,700	2.80	49.0	60.0
05-Apr-17	Kula Gold Limited (ASX:KGD)	6.1	85.0	6.9	1,253.48	34,700	0.99	6.2	7.6
29-Sep-16	Newmarket Gold Inc.	720.8	100.0	650.9	1,319.59	7,838	3.05	846.9	980.2
21-Jul-16	Rio Novo Gold Inc.	8.2	63.0	12.1	1,330.48	27,305	0.87	15.8	18.1
07-Jun-16	Goldrock Mines Corp.	92.1	100.0	89.8	1,243.59	82,533	0.63	53.7	66.0
12-May-16	Goldcorp Kaminak Ltd.	405.8	100.0	389.0	1,263.35	46,400	1.45	179.8	217.4
07-Mar-16	SGO Mining Inc.	263.9	100.0	235.8	1,267.06	976	7.62	985.5	1,187.9
04-Mar-16	True Gold Mining Inc.	168.7	100.0	163.3	1,258.84	33,200	0.89	171.9	208.5
08-Feb-16	Lake Shore Gold Corp.	651.1	100.0	581.1	1,188.84	5,026	4.34	828.5	1,064.4
16-Nov-15	St Andrew Goldfields Ltd.	136.0	100.0	119.3	1,082.56	5,153	5.03	143.2	202.0
02-Sep-15	Polyus Gold International Limited	7,693.5	59.8	9,938.5	1,133.79	894,900	2.23	154.9	208.7
30-Jul-15	Romarco Minerals Inc.	661.8	100.0	516.7	1,088.59	30,509	2.06	255.7	358.8
08-Jun-15	NWM Mining Corporation	23.5	100.0	22.6	1,173.89	40,800	0.44	39.1	50.9
13-Apr-15	Alamos Gold, Inc.	765.3	100.0	413.7	1,198.65	46,615	1.16	238.0	303.2
09-Feb-15	Rio Alto Mining Limited	1,141.2	100.0	1,091.9	1,238.89	204,247	0.45	372.0	458.6
Median indexed multiple (USD/oz)									229.5
Mean indexed multiple (USD/oz)									357.1

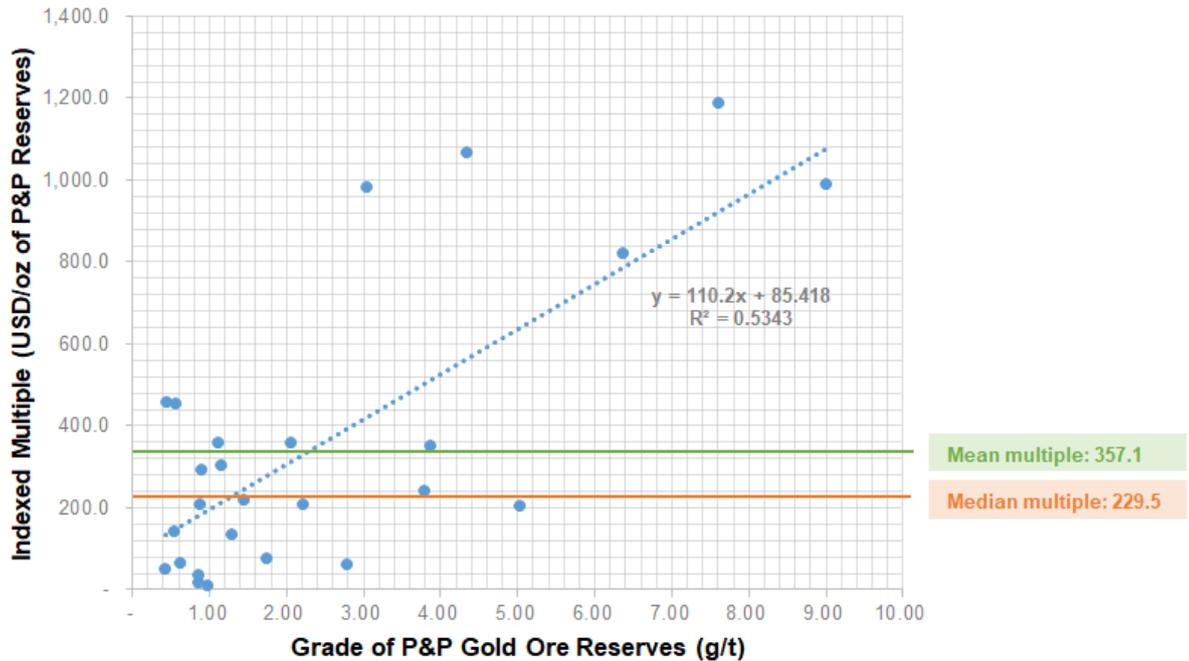
Source: Appendix 9, tab “Table 8.3 & Figures 8.3-8.4”; Capital IQ

²⁰⁵ We identify only 9 transactions which satisfy our search criteria and relate to projects with reported resources only (no reserves). These transactions generate a wide range of multiples with no clear trend (despite the small sample size, multiples range from USD 6.4/oz. to USD 273.9/oz., whilst grades range from 0.58g/t to 12.90g/t – see Appendix 9). As such, we do not consider this sample to be a reliable benchmark for the implied multiple generated by our valuations of the Invicta Project. We note that, were a resource-based (rather than reserves-based) multiple to be used, this would need to be compared against the entire Invicta Project resource base, rather than only the resources of the PEA Mine Plan or the Mallay Acquisition Plan.

Comparison between transaction multiples and grade of reported reserves

8.44 In the figure below, we plot the indexed multiple of each of the transactions in our sample against the average gold grade of their reported reserves.

Figure 8.3. Indexed gold industry transactions multiple v grade of gold ore reserves



Source: Appendix 9, tab "Table 8.3 & Figures 8.3-8.4"

- 8.45 The line of best fit shows a positive correlation between the gold grade and gold reserves multiple of a given project, indicating that investors are willing to pay a higher price per oz. for projects with higher grade resources. This is unsurprising given that, all else being equal, higher grade ore should result in lower extraction and processing costs per oz. of sellable gold.
- 8.46 We note that almost all of the transactions in our sample are for properties with a much lower grade than the Invicta Project, whether by reference to the 355t/day Scenario (8.58g/t) or the 590t/day Scenario (6.93g/t). Given the correlation between grade and multiple, excluding transactions of a low grade from our sample would therefore result in a higher average multiple.
- 8.47 As an illustrative example, were we to include only transactions with a gold reserves grade over 3g/t, the mean and median multiple would increase to USD 729.7/oz. and USD 900.5/oz. respectively.

Benchmarking of our valuation of the Invicta Project

- 8.48 In order to assess the reasonableness of our assessment of the FMV of the Invicta Project under a DCF approach, we calculate an implied multiple based upon our DCF valuation of the Invicta Project under (i) the 355t/day Scenario, (**Section 5**) and (ii) the 590t/day Scenario (**Section 6**) and compare this to the gold industry transaction multiples presented above.
- 8.49 The selected transaction multiples are based on mineral reserves of gold mining projects, whereas the Invicta Project had reported mineral resources only at the Valuation Date.
- 8.50 The production schedules used for our DCF valuations imply that only a certain percentage of Invicta Project resources are converted to economically viable mineral reserves:
- a) In total, the production schedule under the 355t/day Scenario assumes 185k oz. AuEq produced ounces out of a total metal content of 449k oz. AuEq (at a 4.0g/t cut-off grade) for the Invicta Project as a whole. This implies a conversion ratio from resources to reserves of 41.2%.²⁰⁶
 - b) Alternatively, the 590t/day Scenario corresponds to a total of 305k oz. AuEq produced ounces (at a 4.0g/t cut-off grade, after our adjustments),²⁰⁷ which equates to a conversion ratio of 67.9%.²⁰⁸
- 8.51 14 of the 26 gold industry transactions identified related to entities/project that had already commenced production at the transaction date. In order to ensure comparability, we remove the pre-production premium from the discount rate used for our DCF valuations. Using an updated discount rate of 7.8%,²⁰⁹ we obtain the following illustrative post-tax NPVs under each of the two scenarios used for our damages assessment:
- a) Under the 355t/day Scenario, USD 48.1m; and
 - b) Under the 590t/day Scenario, USD 82.3m.
- 8.52 We then derive an implied multiple for both the 355t/day Scenario and the 590t/day Scenario by dividing our updated NPVs against total AuEq produced ounces in each scenario, as shown below.

²⁰⁶ $185k/449k = 41.2\%$

²⁰⁷ Table 6.3

²⁰⁸ $305k/449k = 67.9\%$

²⁰⁹ I.e. the Real WACC shown in **Table A4.1**, before adding a pre-production premium. This step is a purely illustrative step in order to compare our valuation on a like-for-like basis to industry transactions.

Table 8.4. Multiples (USD/oz.) implied by our DCF valuations of the Invicta Project

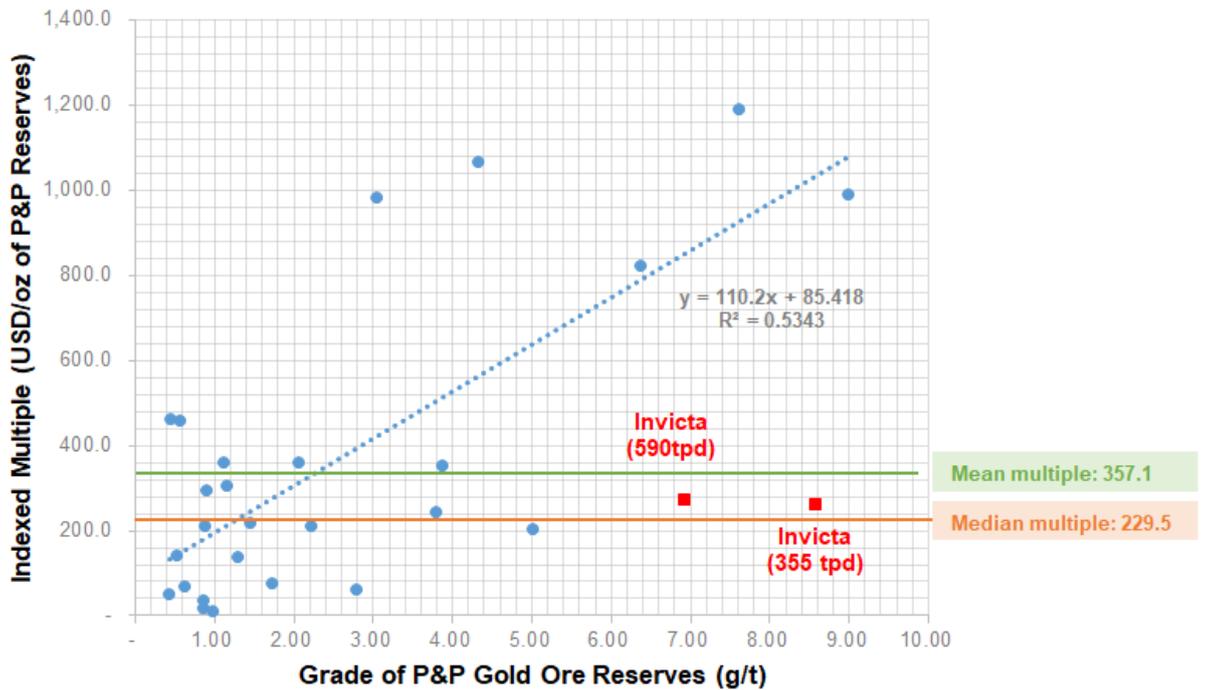
Discount Rate	Post-tax NPV (USDm)	AuEq Resources (k oz)	Grade (g/t)	Multiple (USD/oz)
Scenario #1: 355t/day 7.8% (excl. premium)	48.05	184.71	8.58	260.12
Scenario #2: 590t/day 7.8% (excl. premium)	82.34	304.53	6.93	270.39

Source: Appendix 9, tab “Table 8.4”

Conclusion

8.53 Based upon our DCF valuations, we calculate an implied multiple of USD 260.1/oz. under the 355t/day Scenario, and USD 270.4/oz. under the 590t/day Scenario. As shown in the figure below, both of these multiples lie between the median multiple for gold industry transactions of USD 229.5 /oz. and the mean multiple of USD 357.1 /oz.²¹⁰

Figure 8.4. Invicta Project implied multiples v recent transactions in the gold mining industry



Source: Appendix 9, tab “Table 8.3 & Figures 8.3-8.4”

²¹⁰ Our benchmark using a transaction multiples approach seeks to benchmark the FMV of the underlying asset (i.e. the Invicta Project) against other gold industry transactions. An assessment of damages using a multiples approach would also need to consider Claimant’s obligation to pay the Early Termination Amount in the But-For Situation.

8.54 Considering the relationship between multiples and metal grades suggested by recent gold industry transactions, and the comparatively higher grade of the Invicta Project compared to the majority of industry transactions, our DCF valuations of the Invicta Project appear to be prudent.

Other contemporaneous valuation evidence

8.55 Finally, as a benchmark for the reliability of our assumptions, we can compare our damages assessment to other relevant contemporaneous valuation exercises. Our assessment of the FMV of the Invicta Project is:

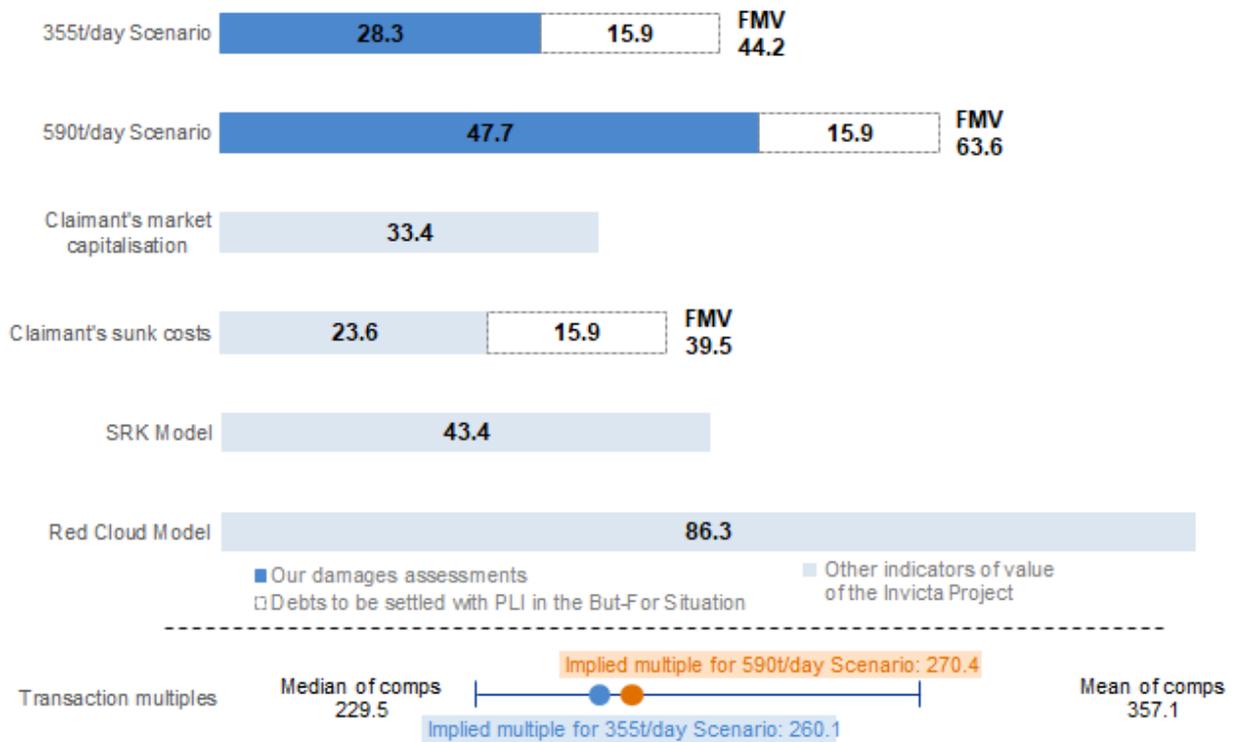
- a) In line with the post-tax NPV computed by the SRK Model under the PEA Mine Plan (USD 43.4m, the figure reported in the PEA, compared to our NPV calculation of USD 44.2m under the 355t/day Scenario). The higher metal prices used in our assessment compared to the SRK Model are, for the most part, offset by a higher discount rate.
- b) Significantly lower than the post-tax NPV computed by the Red Cloud Model under the Mallay Acquisition Plan (USD 86.3m, compared to our NPV calculation of USD 63.6m under the 590t/day Scenario). The lower valuation is, to a large extent, driven by our more prudent estimate of the average metal grades that could have been achieved at a higher production capacity and our higher discount rate.

9 Conclusion on damages

9.1 Using an income approach to compute the FMV of Claimant’s Investment, and after adjusting for debts that would have been settled with PLI in the But-For Situation, we assess damages at the Valuation Date of USD 28.3m in the 355t/day Scenario and USD 47.7m in the 590t/day Scenario.

9.2 In the figure below, we compare our assessment of damages to the other relevant indicators of value of the Invicta Project described in the previous section.

Figure 9.1. Our damages assessments v other indicators of value of the Invicta Project



Source: Appendix 5, tab “Figure 9.1”

Comparison to other indicators of value

Market capitalisation

9.3 Our damages benchmark using Claimant’s market capitalisation lies in between our damages figures under the 355t/day Scenario and the 590t/day Scenario.

- 9.4 CIMVAL guidance states that “*All Mineral Reserves and Mineral Resources on a Mineral Property should be considered in the Valuation of the Mineral Property*”.²¹¹ Theoretically, the market capitalisation approach is aligned with this guidance, as it should value the entirety of the Invicta Project resource base, based on market expectations (the Invicta Project materially being Claimant’s only asset at, and beyond, the Blockade Date).
- 9.5 By contrast, our income approach values only 33% of the Invicta Project’s total indicated mineable material under the 355t/day Scenario, and 68% under the 590t/day Scenario.²¹² The fact that our damages assessment under the 355t/day Scenario is slightly below our assessment using a market capitalisation approach can be rationalised by the fact that the former only seeks to value a small portion of total Invicta Mine resources, and could therefore be considered a prudent estimate of the total value which would be attributed to the Invicta Project.
- 9.6 The 590t/day Scenario, which is grounded in Claimant’s contemporaneous plans to proceed with the Mallay Acquisition Plan, values a greater portion of (albeit far from all) total Invicta Mine resources, and accordingly generates a higher valuation under an income approach.
- 9.7 For the reasons set out in paragraph 8.23 of the previous section, we believe that our illustrative benchmark using a market capitalisation approach represents a prudent indication of damages incurred by Claimant.

Sunk costs

- 9.8 A cost-based approach excludes future income generation and growth and does not capture the value of intangible assets, and is therefore typically used to derive the floor value of an asset under the going concern assumption.
- 9.9 Our damages benchmark based on sunk costs incurred (USD 23.6m) is, therefore, logically below the damages value generated by our income approach under both production scenarios.

Transaction multiples

- 9.10 The implied multiples figures we derive for both the 355t/day Scenario and the 590t/day Scenario are in line with the average reserve-based multiples for recent transactions in the gold mining industry.
- 9.11 Furthermore, Invicta Project resources have a comparatively higher grade than the majority of gold industry transactions, and the multiples implied by our DCF valuation fall below the line of best fit (i.e. appear prudent) compared to the relationship between reserve-based multiples and metal grades suggested by other industry transactions.

²¹¹ AC-22 CIMVAL Code for the Valuation of Mineral Properties dated 29 November 2019, section 3.4.1

²¹² Footnotes 132 & 169 of this report

Other contemporaneous valuation evidence

- 9.12 Our assessment of the FMV of the Invicta Project is (i) in line with the post-tax NPV computed by the SRK Model under the PEA Mine Plan in the 355t/day Scenario; and (ii) significantly lower than that computed by the Red Cloud Model under the Mally Acquisition Plan in the 590t/day Scenario (largely as a result of our more prudent estimate of the average metal grades that could have been realised at a higher production capacity).

Pre-award interest

- 9.13 We have been instructed to apply pre-award interest at a rate of LIBOR +2%, on a compound basis,²¹³ which results in an interest factor of 1.06 from the Valuation Date to the Report Date.
- 9.14 Our corresponding workings are set out in **Appendix 5**.

Conclusion

- 9.15 After applying pre-award interest, we assess damages at the Report Date (as a proxy for a hypothetical award date) of USD 29.9m in the 355t/day Scenario and USD 50.5m in the 590t/day Scenario.

Table 9.1. Overall summary of damages at the Report Date

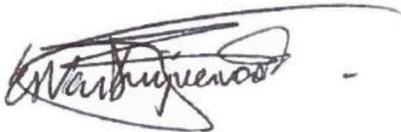
USDm	355t/day Scenario	590t/day Scenario
FMV of Claimant's Investment at the Valuation Date	44.2	63.6
Debts to be settled with PLI in the But-For Situation	(15.9)	(15.9)
Total damages at the Valuation Date	28.3	47.7
Interest factor to Report Date	1.06	1.06
Interest to Report Date	1.7	2.8
Total damages at the Report Date	29.9	50.5

Source: Appendix 5, tabs "Table 9.1" & "Pre-award interest (ACC)"

²¹³ Paragraph 4.51 of this report

10 Experts' declaration

- 10.1 We understand that our duty in giving evidence in this arbitration is to assist the Tribunal to decide the issues in respect of which expert evidence is adduced. We have complied with, and will continue to comply with, that duty.
- 10.2 We confirm that this is our own, impartial, objective, unbiased opinion which has not been influenced by the pressures of the dispute resolution process or by any party to the arbitration.
- 10.3 We confirm that all matters upon which we have expressed an opinion are within our area of expertise. We have indicated in this report where we have relied upon the opinions of experts in other fields.
- 10.4 We confirm that we have referred to all matters which we regard as relevant to the opinions we have expressed and have drawn to the attention of the Tribunal all matters, of which we are aware, which might adversely affect our opinion.
- 10.5 We confirm that, at the time of providing this written opinion, we consider it to be complete and accurate and that it constitutes our true, professional opinion.
- 10.6 We confirm the attribution of the entirety of the report to each author.
- 10.7 We confirm that if, subsequently, we consider this opinion requires any correction, modification or qualification we will notify the parties to this arbitration and the Tribunal.



Erik van Duijvenvoorde

1 October 2021
6 Bevis Marks
London EC3A 7BA



Edmond Richards

1 October 2021
6 Bevis Marks
London EC3A 7BA

Appendix 1 Accuracy CVs

Erik van Duijvenvoorde

Introduction

- A1.1 Erik is a Partner in Accuracy's Forensics, Litigation & Arbitration practice and is based in London and Paris. He has advised clients on business, financial, accounting and valuation issues for more than 25 years. Prior to joining Accuracy in 2010, Erik spent over 2 years at European Capital, a private equity investment fund, where he led the European teams (covering London, Paris, Madrid, Frankfurt) responsible for financial investigations and reviews, valuations and portfolio monitoring. Before continuing his career with European Capital in 2007, Erik gained extensive experience with a Big 4 accounting firm, in both London and Paris, including in their Corporate Recovery Services and Transaction Services teams.
- A1.2 Erik specialises in the assessment of complex damages claims and has provided expert testimony before tribunals constituted under ICC, LCIA, DIFC, NAI, UNCITRAL and ICSID rules. He has further acted as an expert witness in both English High Court and DIFC Court proceedings, as well as expert on large forensic accounting investigations. Erik is listed among the leading arbitration expert witnesses worldwide in *Who's Who Legal: Arbitration*.
- A1.3 Erik has worked on projects in a broad range of industry sectors from energy, mining and infrastructure, to manufacturing, TMT and retail. He acts as expert in a wide variety of dispute situations, including in relation to commercial and joint venture agreements, expropriation, market eviction, intellectual property, restructuring and mergers and acquisitions. He also often deals with the financial aspects of construction dispute cases alongside delay and commercial quantum experts.
- A1.4 Erik qualified as an accountant in England. He has lived and worked in both the United Kingdom and France and has successfully led cross-border engagements in Europe, the Middle East, Africa, North America and Asia. His mother tongue is English and he speaks fluent French.

Selected representative engagements - forensic, litigation and arbitration situations

- A1.5 Appointed as financial and valuation expert to assess damages claimed due to alleged failures in the design and engineering of furnaces at a metal production plant (acting for the Respondent, International Arbitration (ICC), Construction & manufacturing / Mining).
- A1.6 Appointed as financial and valuation expert to assess damages claimed in an investment expropriation case in a Central Asian country (Hot-tubbing, direct and cross-examination, acting for the Claimant, International Arbitration (ICSID), Mining).
- A1.7 Appointed as financial and valuation expert to assess damages claimed in an investment expropriation case in a Central Asian country (direct and cross-examination, acting for the Claimant, International Arbitration (UNCITRAL), Mining).

- A1.8 Appointed as financial and valuation expert to assess damages arising from the alleged expropriation of an airport (acting for the Respondent, International Arbitration (UNCITRAL), Infrastructure).
- A1.9 Appointed as financial and valuation expert to assess damages claimed due to business interruption arising from delay in delivery of a turnkey manufacturing plant in the UK (Direct and cross-examination, acting for the Claimant, International Arbitration (ICC London), Construction & manufacturing).
- A1.10 Appointed as financial and valuation expert to assess an alleged business interruption claim due to the need for remedial works at a warehouse and distribution plant (Acting for the Defendant, Litigation (English High Court), Construction & logistics).
- A1.11 Appointed as financial and valuation expert to assess the losses and profits caused by a breach of contract and related construction delays for a natural gas treatment plant in North Africa (Acting for the Claimant, International Arbitration (ICC Paris), Oil & gas).
- A1.12 Appointed as financial and valuation expert to assess damages claimed in an alleged breach of contract case in Greece (Direct and cross-examination, acting for the Respondent, International Arbitration (ICC Athens), Construction and retail).
- A1.13 Appointed as financial and valuation expert to assess damages claimed in an alleged investment expropriation case in Turkey (Hot-tubbing, direct and cross-examination, acting for the Respondent, International arbitration (ICSID), Real estate and construction).
- A1.14 Appointed as financial and valuation expert to assess the losses and profits caused by a breach of contract and related construction delays for an oil refinery in North Africa (Acting for the Claimant, International Arbitration (ICC Paris), Oil & gas).
- A1.15 Appointed as financial and valuation expert to assess damages caused in a post M&A dispute in Poland (Acting for the Claimant, International Arbitration (ICC Paris), TMT).
- A1.16 Appointed as financial and valuation expert to assess alleged damages caused by abuses of market position in a Middle Eastern country (Acting for the Plaintiff, Pre-litigation, TMT).
- A1.17 Appointed as financial and valuation expert to assess the losses and profits in a breach of contract dispute involving anti-competitive treatment of a distributor in the Middle East (Acting for the Claimant, International Arbitration (DIFC-LCIA), Electronic equipment).
- A1.18 Appointed as expert to assist GE Energy in evaluating business interruption claims brought against subsidiary companies (Acting for the Defendant, Pre-litigation, Power & energy).
- A1.19 Appointed as financial and valuation expert to assess damages claimed in an alleged investment expropriation case in Eastern Europe (Acting for the Claimant, Pre-arbitration, Energy).
- A1.20 Appointed as financial and valuation expert to assess the losses and profits caused by a breach of contract (Acting for the Claimant, International Arbitration (ICC Copenhagen), Energy).

- A1.21 Appointed as financial and valuation expert to assess lost profits caused by a breach of a long-term distribution contract (Direct and cross-examination, acting for the Respondent and Counter-claimant, International Arbitration (NAI, Rotterdam), Boats & yachts).
- A1.22 Appointed as financial and valuation expert to assess the losses and profits caused by a breach of terms of a Korean joint venture agreement (Direct and cross-examination, acting for the Claimant, International Arbitration (ICC Tokyo), Automotive).
- A1.23 Appointed as joint expert in a post-M&A dispute (Expert determination, Aerospace).
- A1.24 Appointed as financial and valuation expert to assess damages claimed in a dispute in Asia between JV partners (Acting for the Claimant, International Arbitration (ICC Paris), Food & beverage).
- A1.25 Appointed as financial and valuation expert to assess the losses and profits caused by equipment defects (Acting for the Claimant, International Arbitration (ICC Paris), Automotive).
- A1.26 Appointed as financial and valuation expert to assess alleged damages claimed in a post-M&A dispute in Brazil (Acting for the Respondent, International Arbitration (ICC Paris), Retail).
- A1.27 Appointed as accounting and financial expert to assess damages claimed in a post-M&A dispute between former JV partners as well as a related unfair dismissal claim. (Direct and cross-examination (two testifying occasions), acting for the Claimant, International Arbitration and Litigation (ICC Paris, DIFC Dubai Courts), Insurance brokerage).
- A1.28 Concurring partner to an expert appointed to assess the losses and profits in a dispute over the winding up of a joint venture entity by one party after being acquired by a competitor (Acting for the Claimant, International Arbitration (ICC Singapore), Maritime and shipping).
- A1.29 Provided oral evidence in a litigation between Bank of New York and an international airline (Dispute as to ownership of aircraft spare parts, New York Bankruptcy Court, two days of cross examination).
- A1.30 Appointed as financial and valuation expert to assess damages arising from breaches of a lease agreement granting usage rights over land in Africa (Acting for the Claimant, Pre-arbitration, Mixed-use development).
- A1.31 Appointed as financial and valuation expert to assess damages claimed in a breach of contract dispute in a Middle Eastern country (Acting for the Claimant, International Arbitration (ICC), Waste management).
- A1.32 Financial expertise provided in the context of the determination of rights to assets in the liquidation of a complex group of companies (Forensic investigation of the affairs of the group concerned, provision of financial analysis to support legal opinion).

- A1.33 Appointed financial expert to investigate certain transactions entered into by a Luxembourg based investment fund to determine eligibility and illiquidity, risk management and due diligence processes and analyse veracity of payments made to third party service providers (Financial investigation of the affairs of the group concerned, potential civil and criminal legal proceedings Luxembourg courts).
- A1.34 Appointed financial expert to investigate potential irregularities in European subsidiaries of a large UK group generating revenues of over €3 billion. Evidenced that fraud had taken place giving rise to a successful insurance claim (Financial investigation of the relevant transactions, Insurance claim, civil and criminal legal proceedings French courts).
- A1.35 Provided expert support in numerous disputes over price adjustment clauses set out in Sale and Purchase Agreements (Analysis of warranty and price adjustment clauses, Negotiation support).

Overview of other professional experience

- A1.36 Valuation Services: As Head of European Capital's Financial Analysis and Compliance Team, Erik supervised the quarterly valuation of the fund's portfolio companies and investments (equity, mezzanine and other debt instruments). This included presentations to investment committees and management of the review of third parties providing professional opinions on the valuations, including the group's auditors. Over 500 valuations conducted over two-year period.
- A1.37 Recovery Services: Managing investigation assignments for companies in difficulty or their lending banks, including Independent Business Reviews, analysing financial position, profitability, cash flows and ability to meet debt repayments and covenant obligations, managing companies in administration and receivership including supervising trading activities and overseeing the sale of businesses and assets.
- A1.38 Transaction Services: Erik has extensive experience of assisting clients seeking to divest and/or acquire businesses. His expertise ranges from buy-side due diligence and vendor due diligence to advice on price adjustments and warranty clauses, as well as the review of completion accounts.
- A1.39 Audit: Erik gained experience in audit at, amongst others, a Big 4 accounting firm where this included dealing with the audit of start-up and high growth businesses.

Edmond Richards

Introduction

- A1.40 Edmond is a qualified accountant with the Institute of Chartered Accountants in England and Wales (ACA) and is based in the London office of Accuracy. Edmond specialises in litigation and arbitration assignments and giving expert opinions in loss of profits and contentious valuation cases. He has also advised on non-contentious valuations, investigations, strategic decision-making and transactions, both sell-side and buy-side.

A1.41 Edmond has a broad range of sector experience including mining, automotive, consumer goods, TMT, energy, utilities, real estate, food processing and software.

Selected representative engagements - forensic, litigation and arbitration situations

A1.42 Appointed as financial and valuation expert to assess damages claimed due to alleged failures in the design and engineering of furnaces at a metal production plant (acting for the Respondent, International Arbitration (ICC), Construction & manufacturing / Mining).

A1.43 Appointed as financial and valuation expert to assess damages claimed due to alleged contractual breaches in the hotel franchising sector (acting for the Claimant, International Arbitration (LCIA), Retail & Leisure).

A1.44 Appointed as financial and valuation expert to assess damages claimed due to alleged contractual breaches in the sports rights sector (acting for the Claimant, International Arbitration (SCAI), Sports).

A1.45 Assessment of damages in an expropriation claim in the mining sector in Central Asia under ICSID rules (acting for the Claimant, International Arbitration (ICSID), Mining).

A1.46 Assessment of damages in an expropriation claim in the mining sector in Central Asia (acting for the Claimant, International Arbitration (UNCITRAL), Mining).

A1.47 Assessment of damages in a post-M&A dispute in the automotive sector (acting for the Claimant, International Arbitration (ICC), Automotive)

A1.48 Assessment of damages in relation to an ICC arbitration in the sports rights sector (acting for the Respondent, International Arbitration (ICC), Sports).

A1.49 Assessment of damages in relation to a Singapore Commercial Court joint-venture dispute in the chemicals sector in Asia (acting for the Plaintiff, Litigation (Singapore Commercial Court), Chemicals).

A1.50 Assessment of damages in an ICC arbitration relating to a joint-venture dispute in the manufacturing sector in Asia (acting for the Respondent, International Arbitration (ICC), Automotive).

A1.51 Assessment of damages in a VIAC arbitration relating to a disputed earn-out in the media sector in Eastern Europe (acting for the Claimant, International Arbitration (VIAC), TMT).

A1.52 Assessment of damages in a dispute between a manufacturer and distributor in the marine equipment sector (acting for the Respondent, International Arbitration (NAI), Boats & yachts).

A1.53 Assessment of damages in a post-M&A dispute in the franchising sector in the Middle East (acting for the Respondent, International Arbitration (ICC), Food & beverage).

A1.54 Assessment of damages in a DIFC arbitration relating to the alleged breaches of a distribution agreement by a global consumer electronics manufacturer (acting for the Claimant, International Arbitration (LCIA-DIFC), Consumer electronics).

- A1.55 Assessment of damages in an ICC arbitration relating to the supply of allegedly defective consumer electronic goods (acting for the Claimant, International Arbitration (ICC), Consumer electronics).
- A1.56 Assessment of damages in an ICC arbitration relating to alleged breaches of contract in the manufacturing sector (acting for the Claimant, International Arbitration (ICC), Construction & manufacturing).
- A1.57 Expert advice in relation to an investigation into allegations of fraudulent payments and corruption in the Eastern European subsidiary of a utilities provider.
- A1.58 Assessment of damages in relation to a potential arbitration in the waste management sector in the Middle East (acting for the Claimant, Waste management).
- A1.59 Assessment of damages in an ICC arbitration claim in the aviation sector resulting from the unavailability of an aircraft (acting for the Respondent, International Arbitration (ICC), Aviation).
- A1.60 Expert advice in relation to an investigation into the alleged misappropriation of pension fund assets invested in a Luxembourg-registered unit trust.
- A1.61 Assisted the expert in a German DIS arbitration claim arising from a post-deal dispute in the alternative energy sector (acting for the Claimant, International Arbitration (DIS), Energy).
- A1.62 Expert valuation in a UK litigation arising from the non-consensual restructuring of a major European car parts manufacturer (acting for the Claimant, Litigation (UK Commercial Court, Automotive)).
- A1.63 Assessment of damages in an ICC arbitration arising from the delayed implementation of a software solution in a major European advertising firm (acting for the Respondent, International Arbitration (ICC), Software).
- A1.64 Assessment of damages in a dispute between joint-venture partners concerning an expropriated LPG plant in Central Asia (acting for the Claimant, International Arbitration (UNCITRAL), Oil & gas).
- A1.65 Assessment of damages in a dispute in the construction sector over the theoretical value of three mixed-use (commercial, residential and industrial) developments in Asia (acting for the Claimant, International Arbitration (PCA), Construction & manufacturing).
- A1.66 Expert advice in a matrimonial dispute involving the valuation of numerous Far Eastern entities held via a complex corporate structure (acting for the Defendant, Litigation (Hong Kong Court)).
- A1.67 Assessment of damages in a Swiss Rules arbitration concerning a major Russian aluminium producer in a dispute relating to the failure of a joint venture in Tajikistan (acting for the Claimant, International Arbitration (Swiss Rules), Construction & manufacturing).
- A1.68 Expert advice in relation to an alleged cartel within the automotive component industry.

A1.69 Assessment of damages acting for the plaintiff in the valuation of a minority shareholding in a Russian integrated oil and gas company (acting for the Claimant, Litigation (UK High Court), Oil & gas).

Overview of other professional experience

A1.70 Assisted in the provision of a fairness opinion in relation to Altice's offer to purchase the minority shareholding in its subsidiary SFR.

A1.71 Review of the valuation and funding requirements in relation to the proposed acquisition of an EPC business by a conglomerate based in the Middle East.

A1.72 Valuation of a media rights catalogue, required under the terms of the company's loan agreement.

A1.73 Assisted Michelin in its acquisition of the online tyre retailer BlackCircles.com by providing an initial valuation of the target and advice during the offer process.

A1.74 Assisted a global civil engineering firm in its acquisition of a UK-based engineering software provider.

A1.75 Financial due diligence for Michelin in its acquisition of the online tyre retailer BlackCircles.com.

A1.76 Helped provide vendor assistance to a French software company during a management buy-out process.

A1.77 Assisted in the review of a budget and business plan preparation for an air transport provider.

A1.78 Assisted in the review of a contract for a global transport company and assessment of the financial consequences of alternative scenarios.

A1.79 Assisted in a global strategy review for multinational brewing company.

Appendix 2 Sources of information

Table A2.1. Documents used in the preparation of this report

Exhibit #	Document
	Request for Arbitration dated 21 October 2020
	Canada-Peru Free Trade Agreement
	Witness Statement of Eric Edwards dated 1 October 2021
	Witness Statement of Gordon Ellis dated 1 October 2021
	Witness Statement of Julio Félix Castañeda Mondragón dated 1 October 2021
AC-01	Lupaka Gold Corp. financial statements for the year ended 31 December 2012
AC-02	SRK Consulting PEA dated 13 April 2018
AC-03	Lupaka Gold Corp. financial statements for the year ended 31 December 2018
AC-04	Second Amended and Restated Pre-Paid Gold Purchase Agreement dated 2 August 2017
AC-05	Lupaka presentation Invicta Mining Suite for Difference dated September 2019
AC-06	Lupaka Gold Corp. management discussion and analysis for the year ended 31 December 2018
AC-07	Canadian Mineral Resources, <i>Bulk sampling</i>
AC-08	ICMJ's Prospecting and Mining Journal, <i>Understanding sampling techniques</i>
AC-09	Newsfile, <i>Lupaka Commences Toll Processing of Mineralized Development Material from Invicta</i> dated 21 August 2018
AC-10	Invicta Project Monthly Report dated October 2018
AC-11	Lupaka Gold Corp. Minutes of the board meeting dated 27 September 2018
AC-12	Draft purchase agreement for the acquisition of the Mallay Plant
AC-13	Draft Amendment and Waiver No.3 to the Second Amended and Restated Pre-paid Forward Gold Purchase Agreement dated 26 September 2018
AC-14	Email from Will Ansley dated 26 January 2020
AC-15	Red Cloud Model
AC-16	Notice of Acceleration dated 2 July 2019
AC-17	Notice of enforcement of the Pledge over IMC's shares dated 24 July 2019
AC-18	Mutual Release dated 22 July 2020
AC-19	Global Arbitration Review, <i>The Guide to Damages in International Arbitration</i> 2016
AC-20	<i>Collection of Judgements, No.13 Case concerning the factory at Chorzów</i> dated 13 September 1928
AC-21	International Valuation Standards effective 31 January 2020
AC-22	CIMVAL Code for the Valuation of Mineral Properties dated 29 November 2019
AC-23	<i>Cost of Capital Applications and Examples</i> , Pratt and Grabowski, 4th ed., pages 16-18
AC-24	CIM Definition Standards for Mineral Resources & Mineral Reserves dated 19 May 2014
AC-25	IG, <i>Lifecycle of a mine, a step-by-step guide to mining commodities</i> dated 30 May 2018
AC-26	Centre for Energy, Petroleum and Mineral Law and Policy, University of Dundee, <i>Mining Industry Overview, Chapter 6 Life cycle of a mining project</i>
AC-27	CIMVAL Code for the Valuation of Mineral Properties dated February 2003
AC-28	Mallay Due Diligence Aminpro Report dated 25 November 2014
AC-29	SRK Model
AC-30	KPMG Corporate Tax Rates Table
AC-31	PwC Worldwide Tax Summary, Peru - Corporate Deductions
AC-32	<i>Invicta Project impacted by illegal demonstration</i> dated 25 October 2018
AC-33	GDXJ Factsheet dated 31 March 2021

AC-34	Lupaka Gold Corp., <i>Lupaka announces receipt of Notice of Acceleration and declaration of early termination from PLI Huaura</i> dated 3 July 2019
AC-35	Mergerstat, <i>Control Premium Study</i> , 1st Quarter 2020
AC-36	RSM, <i>Control Premium Study 2017</i>
AC-37	Lupaka Gold Corp., <i>Lupaka secures financing for its arbitration claim</i> dated 4 August 2020
AC-38	Lupaka Gold Corp., <i>Lupaka submits request for arbitration claim against the Republic of Peru</i> dated 29 October 2020
AC-39	Damodaran data on WACC dated January 2019
AC-40	Damodaran data on WACC dated January 2020
AC-41	Damodaran data on betas dated January 2019
AC-42	Damodaran data on betas dated January 2020
AC-43	Damodaran data on CRP dated January 2019
AC-44	Damodaran data on CRP dated January 2020
AC-45	Dimson, Marsh and Staunton, <i>Equity Premia around the World</i> dated 19 July 2011
AC-46	Fama and French, <i>The Equity Premium</i> dated April 2002
AC-47	Lawrence Devon Smith, <i>The RADR Paradox-Discount Rates: Risk, & Long Life Projects</i> , 2016
AC-48	Lupaka Gold Corp. 2012 Annual Report
AC-49	Lupaka Gold Corp. 2013 Annual Report
AC-50	Lupaka Gold Corp. 2014 Annual Report
AC-51	Lupaka Gold Corp. management discussion and analysis for the year ended 31 December 2015
AC-52	Lupaka Gold Corp. management discussion and analysis for the year ended 31 December 2016
AC-53	Lupaka Gold Corp. management discussion and analysis for the year ended 31 December 2017
AC-54	Lupaka Gold Corp. financial statements for the year ended 31 December 2017
AC-55	Lupaka Gold Corp. financial statements for the year ended 31 December 2019
AC-56	MEM Resolution approving amendment to the Mine Closure Plan

Appendix 3 Overview of PEA economic analysis

Introduction

- A3.1 An economic analysis of the Invicta Project based on the SRK Model can be found in Chapter 21 of the PEA.
- A3.2 We describe the approach and set out the key assumptions and outputs of the SRK Model in the remainder of this section.

Valuation approach

- A3.3 The SRK Model, based on the six-year PEA Mine Plan, provides a contemporaneous valuation of the Invicta Project using a DCF approach. This entails the projection of yearly cash inflows (revenues) and outflows such as operating costs, capital expenditure, and taxes.²¹⁴
- A3.4 The SRK Model discounts these net annual cash flows on a mid-year basis in order to calculate the NPV of PEA Mine Plan resources.²¹⁵
- A3.5 At a high level, annual cash flows to be generated under the PEA Mine Plan are calculated as follows:
- i) Gross revenues
 - ii) Less: offsite costs and royalties
 - iii) Less: operating costs (excluding non-cash expenses such as depreciation)
 - iv) Less: taxation on profits
 - v) Less: capital expenditure

²¹⁴ AC-02 SRK Consulting PEA dated 13 April 2018, page 160

²¹⁵ The PEA states that the valuation date is 1 January 2018 (AC-02, page 160). However, we note that, due to use of the “XNPV” formula, the valuation date of the SRK Model is effectively 30 June 2018. The “XNPV” formula does not discount the initial cash flow and discounts all subsequent cash flows back to the date of the first cash flow.

Overview of model assumptions

- A3.6 Below, we set out some of the key assumptions underlying the SRK Model. In preparing this report, we have not audited or otherwise verified the SRK Model and we have not had access to SRK; this subsection is non-exhaustive and is intended to be factual, based on our understanding of the SRK Model.
- A3.7 In **Section 5**, we detail the updates we have made to SRK’s assumptions for the purpose of our damages assessment.

Metal prices

- A3.8 Metal prices in the SRK Model are provided by Claimant based on market conditions in early 2018,²¹⁶ and are forecast to remain stable across the PEA Mine Plan period (see **Table 5.3** of this report).

Production schedule & metal grades

- A3.9 The SRK Model assumes total production of 669,813 tonnes at a 4.0 g/t AuEq cut-off grade, based on production of c.355t/day over the PEA Mine Plan period (see **Table 5.1** of this report).²¹⁷
- A3.10 This corresponded to 185k gold-equivalent ounces²¹⁸ of contained metal at a gold-equivalent grade of 8.58 g/t.²¹⁹
- A3.11 The annual grade profile for each metal as anticipated by the PEA Mine Plan is set out in **Table 5.2** of this report.

Offsite costs

- A3.12 Offsite costs, which are deducted from gross revenues to calculate a net smelter return, consist of the following:²²⁰
- i) Fixed fee treatment charge and refining charge per unit of payable metal, which is different for each metal;
 - ii) Handling loss, which is estimated as 0.3% of the gross value of each metal; and
 - iii) Freight and marketing costs of USD 5.0 per tonne.

²¹⁶ AC-02 SRK Consulting PEA dated 13 April 2018, page 161

²¹⁷ AC-02 SRK Consulting PEA dated 13 April 2018, page vii. The SRK Model also assumes an 11% external dilution with an 83% mine recovery. Detailed recoveries by metal can be found in the “*fin_Jupaka*” tab.

²¹⁸ Gold-equivalent ounces calculated by reference to the gold price anticipated by the PEA.

²¹⁹ AC-02 SRK Consulting PEA dated 13 April 2018, page 168. 185 AuEq k oz./670kt) * 31.013 g/oz = 8.58 g/t.

²²⁰ AC-29 SRK Model, tab “*fin_Jupaka*”, rows 229-239

Royalties

- A3.13 In the SRK Model, there are two types of payments incurred at the Invicta Project presented as royalties.²²¹
- A3.14 Both payments are determined using the same basis (net smelter return less mining costs and processing costs), but the rates are different:
- a) The “modified royalty payment” is charged at 4.4%; and
 - b) The “special mining tax payment” is charged at 4.0%.
- A3.15 These payments are deducted from net smelter return to derive a net revenue figure.

Operating costs

- A3.16 The SRK Model estimates total operating costs for the Invicta Project of USD 96.0m, consisting of:²²²
- i) Underground mining and development costs of USD 28.8m, estimated based on third-party contractor rates;
 - ii) Processing costs of USD 25.2m, estimated based on discussions held with local toll processing facilities; and
 - iii) General and administrative costs of USD 42.1m, which consist of trucking and haulage costs estimated based on third-party contractor rates and other G&A costs estimated based on internal estimates and local labour rates.²²³

Depreciation and amortisation

- A3.17 As non-cash expenses, depreciation and amortisation are not deducted from cash flows when estimating the NPV of the Invicta Project and are deducted instead when determining the taxable income generated by the PEA Mine Plan.
- A3.18 Pre-production and sustaining capital expenditures are depreciated on a straight-line basis over a useful economic life of five years and three years respectively.
- A3.19 For amortisation, the SRK Model assumes a pool carried forward of USD 18.0m at the start of the PEA Mine Plan period. This pool is amortised on a straight-line basis over the first four years of the PEA Mine Plan period, resulting in an annual amortisation charge of USD 4.5m.

²²¹ AC-29 SRK Model, tab “*fin_lupaka*”, rows 244 and 245

²²² AC-02 SRK Consulting PEA dated 13 April 2018, page 158; AC-29 SRK Model, tab “*fin_lupaka*”, rows 250-253

²²³ The SRK Model also includes annual payments of USD 0.5m for community relations (USD 3.0m over the six-year life of the PEA Mine Plan) within G&A expenses (row 57, tab “*opex*”). These costs appear to be consistent with those set out in section 5 of the Witness Statement of Julio Félix Castañeda Mondragón (average annual payments of c. USD 0.5m). However, we note that such costs may have been lower in the But-For Situation in the event that an agreement with Parán would not have been required to commence operations.

Taxation

- A3.20 The SRK Model calculates the annual tax liability at a rate of 30% after deducting the depreciation and amortisation charge from operating profits in order to derive an annual taxable income figure.
- A3.21 In addition, the SRK Model assumes a tax loss carried forward of USD 1.5m at the start of the PEA Mine Plan period, which it offsets against the income tax liability in order to reduce the amount of tax paid.

Capital expenditure

- A3.22 Capital expenditure is estimated based on a combination of SRK’s experience, reference projects, budgetary quotes and input from Claimant.²²⁴
- A3.23 The SRK Model forecasts total capital expenditure for the Invicta Project of USD 12.7m, consisting of:²²⁵
- i) Initial pre-production capital expenditure of USD 4.3m incurred in the first year of the PEA Mine Plan period; and
 - ii) Sustaining capital expenditure of USD 8.4m incurred from the second year onwards.

Overview of model outputs

- A3.24 The SRK Model forecasts total post-tax cash flows for the Invicta Project of USD 49.0m, which we set out in the table below.

Table A3.1. Cash flows for the Invicta Project as forecast by the SRK Model

USDm	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Total
Gross revenue	25.3	34.9	37.8	35.5	30.6	25.4	-	-	189.5
Offsite costs	(1.0)	(1.8)	(2.2)	(1.7)	(1.4)	(1.1)	-	-	(9.2)
Royalties	(1.4)	(1.9)	(2.2)	(2.0)	(1.6)	(1.5)	-	-	(10.6)
Net revenue	22.9	31.1	33.4	31.8	27.6	22.9	-	-	169.7
Operating costs	(13.4)	(17.5)	(17.6)	(17.5)	(17.4)	(12.5)	-	-	(96.0)
EBITDA	9.5	13.6	15.8	14.3	10.1	10.4	-	-	73.6
Depreciation	(0.9)	(2.1)	(2.7)	(3.1)	(2.2)	(1.0)	(0.6)	(0.2)	(12.7)
Amortisation	(4.5)	(4.5)	(4.5)	(4.5)	-	-	-	-	(18.0)
EBIT	4.1	7.0	8.6	6.7	7.9	9.4	(0.6)	(0.2)	42.9
Tax	-	(2.1)	(2.6)	(2.0)	(2.4)	(2.8)	-	-	(11.9)
Net income	4.1	4.9	6.0	4.7	5.5	6.6	(0.6)	(0.2)	31.0
+ D&A	5.4	6.6	7.2	7.6	2.2	1.0	0.6	0.2	30.7
- Capital expenditures	(4.3)	(3.7)	(1.7)	(1.2)	(1.2)	(0.6)	-	-	(12.7)
- Change in net working capital	-	-	-	-	-	-	-	-	-
Post-tax cash flows	5.2	7.8	11.5	11.1	6.5	7.0	-	-	49.0

Source: AC-29 SRK Model; Appendix 5, tab “Dashboard (ACC)” (SRK scenario)

²²⁴ AC-02 SRK Consulting PEA dated 13 April 2018, page 156

²²⁵ AC-29 SRK Model, tab “fin_lupaka”, rows 257-268

A3.25 Applying discount rates of (i) 5%; and (ii) 8% to these projected cash flows, the SRK Model computes post-tax net present values for the Invicta Project of USD 43.4m and USD 40.6m respectively.

Red Cloud updates to the SRK Model

A3.26 Claimant engaged Red Cloud to update the SRK Model to reflect the anticipated financial consequences of the Mally Acquisition Plan.²²⁶

A3.27 Based on our understanding, we set out the key updates made by Red Cloud to the original SRK Model below:

- i) Total production increases to 1,366,916 tonnes at production of c.590t/day over a seven-year period (see **Table 6.1** of this report);
- ii) Unit processing and transport costs are lower and, as a result, unit operating costs decrease from USD 143.3 per tonne in the SRK Model to USD 81.3 per tonne in the Red Cloud Model;
- iii) Costs related to the financing provided by Pandion (via PLI) and the upside participation calculation are deducted from cash flows;²²⁷
- iv) Higher capital expenditure, reflecting the acquisition of the Mally Plant;
- v) Additional “*Mally Cash Flow*” of USD 2.5m in each of the first two years of the mine plan (i.e. a total of USD 5m); and
- vi) Additional “*Head office G&A*” costs of USD 13.5m over the mine plan period.

A3.28 As a result of these adjustments, the Red Cloud Model forecasts post-tax cash flows for the Invicta Project of USD 103.0m. Applying discount rates of (i) 5%; and (ii) 8% to these projected cash flows, the Red Cloud Model computes post-tax net present values for the Invicta Project of USD 86.3m and USD 78.1m respectively.

²²⁶ AC-15 Red Cloud Model

²²⁷ Cash flows in the Red Cloud Model appear to account for only the interest and upside participation elements of the financing (both the original PLI Loan and additional financing expected to be received to finance the purchase of the Mally Plant), but not the receipt or repayment of the loan principal. The logic for this treatment is not clear; however, given that we model FCFE (which does not directly model financing cash flows), this has no impact on our valuation and we do not make any adjustment for this.

Appendix 4 Our estimate of the discount rate of the Invicta Project

- A4.1 We discount the forecast FCFF of the Invicta Project using an estimate of the cost of capital of a hypothetical gold mining entity operating in Peru.
- A4.2 The cost of capital represents the cost of funds (both debt and equity) used to finance a project, and corresponds to the return required by an investor in order to compensate it for the risks associated with investing in that project.
- A4.3 We set out our estimate of the discount rate of the Invicta Project in the remainder of this appendix. Our supporting calculations are set out in electronic format in **Appendix 4a**.

Weighted average cost of capital

- A4.4 We calculate the relevant discount rate by reference to the Weighted Average Cost of Capital (“**WACC**”) of a hypothetical gold mining entity in Peru, calculated as:

$$\text{WACC} = \text{cost of equity (“}K_e\text{”)} \times \text{weight of equity} + \text{cost of debt (“}K_d\text{”)} \times \text{weight of debt}$$

- A4.5 As a starting point, we use the average cost of capital for companies in the precious metals industry based on data from Professor Damodaran, a leading academic in the field of corporate finance and valuation who publishes discount rate data through his website.
- A4.6 Given our Valuation Date of 26 August 2019, we consider data published by Professor Damodaran as at January 2019 and January 2020 and take an average of relevant figures.

Cost of equity (K_e)

- A4.7 One of the most widely used and accepted methods to calculate the cost of equity (K_e) is the Capital Asset Pricing Model (“**CAPM**”). The CAPM calculates K_e as follows:

$$K_e = R_f + \beta \times \text{ERP} + \alpha$$

where:

- R_f is the risk-free rate. The risk-free rate is the rate of return on an investment where the risk of default can be considered to be virtually non-existent;
- β is an estimate of an equity’s sensitivity to changes in the market return, typically calculated by reference to companies operating in a comparable sector;
- Equity Risk Premium (“**ERP**”) is the return the equity market portfolio is expected to generate in excess of the risk-free rate; and
- α includes further premia/discounts, if applicable, reflecting risks specific to the assets over and above the comparable equities. These include, but are not limited to, size premium, country risk premium, lack of marketability premium and control discount.

Risk-free rate (R_f)

- A4.8 The risk-free rate is the baseline rate of return for an asset that can be considered essentially “riskless”. Yield rates on government bonds of countries with mature, stable economies for which default risk is minimal are typically used as a proxy for a risk-free investment.
- A4.9 Professor Damodaran uses the long-term US Treasury bond rate (2.68% and 1.92% as at January 2019 and January 2020 respectively) for his estimate of the risk-free rate.²²⁸
- A4.10 Given that the Invicta Project is located in Peru, we also consider the additional risks (if any) of investing in Peru in the “Country Risk Premium” sub-section below.

Beta (β)

- A4.11 Betas reflect the responsiveness of the value of investments to the volatility of the market. For unlisted firms, beta can be estimated by reference to the betas of listed companies operating in a similar sector.
- A4.12 Professor Damodaran calculates an average equity beta (β_e) of 1.19 and 1.44 for the precious metals industry as at January 2019 and January 2020 respectively.²²⁹

Equity Risk Premium (ERP)

- A4.13 The ERP corresponds to the additional return that an investor would require for investing in equities on the market, as opposed to a risk-free product, and is typically calculated as the excess of historically observed market returns over the risk free rate.
- A4.14 Professor Damodaran calculates an equity risk premium for a mature market of 5.96% and 5.20% as at January 2019 and January 2020 respectively.²³⁰ The average of 5.58% lies above the consensus range given by other studies on the subject.²³¹

Country Risk Premium

- A4.15 Although the estimated cash flows are primarily denominated in USD, the cost of capital needs to be adjusted to reflect the additional risk associated with doing business in Peru over the USA, referred to as the Country Risk Premium (“CRP”).
- A4.16 Professor Damodaran computes a CRP for Peru of 1.67% and 1.18% as at January 2019 and January 2020 respectively.²³²

²²⁸ AC-39 Damodaran data on WACC dated January 2019; AC-40 Damodaran data on WACC dated January 2020

²²⁹ AC-41 Damodaran data on betas dated January 2019; AC-42 Damodaran data on betas dated January 2020

²³⁰ AC-43 Damodaran data on CRP dated January 2019; AC-44 Damodaran data on CRP dated January 2020

²³¹ For example, AC-45 Dimson, Marsh and Staunton, *Equity Premia Around the World* dated 19 July 2011 suggests an equity premium of 3.8% relative to long-term government bonds and 4.5% relative to short-term government bonds based on a study across 19 different countries over a 111-year period between 1900 and 2011, whilst AC-46 Fama and French, *The Equity Premium* dated April 2002 suggests equity risk premiums of 2.55% and 4.32% based on dividend and earnings growth rates respectively, over a 50-year period between 1951 and 2000.

²³² AC-43 Damodaran data on CRP dated January 2019; AC-44 Damodaran data on CRP dated January 2020

Calculation of the cost of equity (K_e)

A4.17 Using the formula set out in paragraph A4.7, we compute a cost of equity for a gold mining entity operating in Peru of 11.4% and 10.6% as at January 2019 and January 2020 respectively (an average of 11.1%).

Cost of debt (K_d)

A4.18 Professor Damodaran computes an average cost of debt of 5.43% and 6.92% for companies in the precious metals industry as at January 2019 and January 2020 respectively.²³³

A4.19 We use the applicable Peruvian corporate tax rate of 29.5% to arrive at a post-tax cost of debt figure for a gold mining entity operating in Peru of 3.8% and 4.9% at January 2019 and January 2020 respectively.

Pre-production premium

A4.20 The CIMVAL Standards state the following in relation to the use of a PEA in an income-based valuation:²³⁴

“Where technical, economic, and other relevant parameters are at a lower confidence level than the Pre-Feasibility Study level (for example, a Preliminary Economic Assessment), it is recommended that the higher risk or uncertainty be recognized by some means, which might include using a higher discount rate...”

A4.21 Such risk or uncertainty can be captured by adjusting the cash flows directly or through the discount rate.

A4.22 Data compiled by Lawrence Devon Smith, an expert in the field of mineral project evaluation, risk assessment and due diligence, sets out the results of metal mining industry surveys which indicate common industry practice on discount rates used at different project stages.²³⁵ The data indicates that premiums are typically applied to account for increased uncertainty and/or risk at project stages before the commencement of production.²³⁶

²³³ AC-39 Damodaran data on WACC dated January 2019; AC-40 Damodaran data on WACC dated January 2020

²³⁴ AC-22 CIMVAL Code for the Valuation of Mineral Properties dated 29 November 2019, page 21

²³⁵ AC-47 Lawrence Devon Smith, *The RADR Paradox-Discount Rates: Risk, & Long Life Projects*, 2016

²³⁶ AC-47 Lawrence Devon Smith, *The RADR Paradox-Discount Rates: Risk, & Long Life Projects*, 2016, page 55

A4.23 Based on this industry data, we apply the following pre-production premiums to the 355t/day Scenario and 590t/day Scenario:

- a) **355t/day Scenario:** We apply a pre-production premium of 3.3% to the discount rate, corresponding to the premium typically applied to mineral properties at the feasibility level of study. We consider that the PEA Mine Plan was at a more advanced stage than some projects at the feasibility stage given that development works were materially completed and financing had been obtained via the PLI Loan;²³⁷ however, we still consider it appropriate to apply a premium given the lower level of confidence provided by mineral resources in comparison to reserves.
- b) **590t/day Scenario:** We apply a pre-production premium of 6.9% to the discount rate, corresponding to the premium typically applied to mineral properties at the scoping level of study. This reflects the higher level of uncertainty attached to the 590t/day Scenario under the Mallay Acquisition Plan, which had not been subject to the same level of detailed financial analysis as the 355t/day Scenario and would have required further capital investment and financing.²³⁸

Our discount rate calculation

A4.24 Professor Damodaran estimates an average D/E ratio of 21.2% and 18.4% for the Precious Metals industry as at January 2019 and January 2020 respectively.²³⁹

A4.25 Using the WACC formula set out in paragraph A4.4, we compute a cost of capital for a gold mining entity operating in Peru of 10.1% and 9.7% as at January 2019 and January 2020 respectively, i.e. an average of 9.9%.

A4.26 In order to present a discount rate in real terms, consistent with our calculation of real cash flows, we further adjust for inflation at an assumed rate of 2%, i.e. a real cost of capital of 7.8%.

A4.27 After adding a pre-production premium to reflect the stage of the project we calculate an overall discount rate to be applied to the FCFF generated by the Invicta Project as follows:

- a) For the 355t/day Scenario, **11.1%** (representing a significantly more prudent approach than the 5% discount rate used in the PEA); and
- b) For the 590t/day Scenario, **14.7%**.

A4.28 The detail of our discount rate calculation is set out in the table below.

²³⁷ Witness Statement of Julio Félix Castañeda Mondragón, paragraph 26; Witness Statement of Gordon Ellis, paragraphs 31-34 and 39;

²³⁸ As set out in Section 4, at the Blockade Date, advanced discussions were ongoing regarding the purchase of the Mallay Plant and the receipt of additional financing from PLI.

²³⁹ AC-41 Damodaran data on betas dated January 2019; AC-42 Damodaran data on betas dated January 2020

Table A4.1. Calculation of the discount rate applicable to the Invicta Project

Parameter	Calculation	Jan-19	Jan-20	355t/day Scenario	590t/day Scenario
Risk-free rate	[a]	2.7 %	1.9 %	2.3 %	2.3 %
Adjusted levered beta	[b]	1.19	1.44	1.31	1.31
Equity Risk Premium	[c]	6.0 %	5.2 %	5.6 %	5.6 %
Peru - Country Risk Premium	[d]	1.7 %	1.2 %	1.4 %	1.4 %
Cost of equity	$K_e = [a] + [b] * [c] + [d]$	11.4 %	10.6 %	11.1 %	11.1 %
Pre-tax cost of debt	[e]	5.4 %	6.9 %	6.2 %	6.2 %
Tax rate - Peru	[f]	30.0 %	29.5 %		
Post-tax cost of debt	$K_d = [e] * (1 - [f])$	3.8 %	4.9 %	4.3 %	4.3 %
D/E ratio	[l]	21.2 %	18.4 %	19.8 %	19.8 %
Nominal WACC	$WACC = [Kd] * ([l] / (1 + [l])) + [Ke] / (1 + [l])$	10.1 %	9.7 %	9.9 %	9.9 %
Real WACC	$((WACC + 1) / 1.02 - 1) + [p]$	7.9 %	7.5 %	7.8 %	7.8 %
Additional premium	[p]			3.3 %	6.9 %
Real discount rate	$[WACC] + [p]$			11.1 %	14.7 %

Source: Appendix 4a, tab "Report"

Appendix 5 **Our damages model for the 355t/day Scenario**

A5.1 In **Section 5**, we detail our assessment of the FMV of Claimant's Investment under the 355t/day Scenario.

A5.2 Our underlying model, which updates the SRK Model, is provided in electronic format.

Appendix 6 **Our damages model for the 590t/day Scenario**

A6.1 In **Section 6**, we detail our assessment of the FMV of Claimant's Investment under the 590/day Scenario.

A6.2 Our underlying model, which updates the Red Cloud Model, is provided in electronic format.

Appendix 7 **Claimant's market capitalisation**

A7.1 In **Section 8**, we benchmark our damages assessment against Claimant's market capitalisation.

A7.2 Our supporting calculations are provided in electronic format.

Appendix 8 **Claimant's sunk costs**

A8.1 In **Section 8**, we also benchmark our damages assessment against Claimant's sunk costs.

A8.2 Our supporting calculations are provided in electronic format.

Appendix 9 **Gold industry transaction multiples**

A9.1 Furthermore, in **Section 8**, we benchmark our damages assessment against gold industry transaction multiples.

A9.2 Our supporting calculations are provided in electronic format.