January 8 | 2016

Bear Creek Mining Corporation ("Claimant")

v.

Republic of Peru ("Respondent")

Reply Report of FTI Consulting

CRITICAL THINKING AT THE CRITICAL TIME™

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1. Introduction

1.1 This is the second report we have prepared in relation to the matter of Bear Creek Mining Corporation v. the Republic of Peru. In our first report, dated May 29, 2015, we provided our independent opinion as to the quantum of damages sustained by the Claimant as a result of the alleged breaches of the Respondent (the "**FTI Report**").[1] The FTI Report was filed as part of the Claimant's Memorial on the Merits ("**Claimant's Memorial**") dated May 29, 2015.

1.2 The purpose of this report is to respond to the comments made by Graham A. Davis and Florin A. Dorobantu of the Brattle Group ("**Brattle**") on behalf of the Respondent in their report dated October 6, 2015 (the "**Brattle Report**"). Brattle also makes reference to the report of Dr. Neal Rigby of SRK Consulting (U.S.) Inc. ("**SRK**") issued on October 6, 2015 (the "**SRK Report**"). RPA addresses the contents of the SRK Report in their reply report dated January 6, 2016 (the "**RPA Reply Report**").

1.3 The Brattle Report and SRK Report were filed in conjunction with the Respondent's Counter-Memorial on the Merits and Memorial on Jurisdiction also dated October 6, 2015 (the "**Respondent's Counter-Memorial**").

1.4 Brattle was retained by counsel to the Respondent and asked to "*review the FTI Report and evaluate the reliability of its calculations of damages to Santa Ana and Corani, as well as its calculation of pre-award interest.*"[2]

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1 Unless otherwise noted, capitalized terms are as defined in the FTI Report.

2 Brattle Report, paragraph 15

1.5 Importantly, Brattle has not conducted an independent analysis of the Claimant's damages, and does not provide any expert opinions of the FMV of the Claimant's mineral projects. Rather Brattle only provides ad hoc adjustments to our opinion of the FMV of Santa Ana and calculates the Claimant's damages as the costs incurred by the Claimant, per instructions from the Respondent.[3] According to the Brattle Report: [4]

"We understand that Respondent's position is that Claimant is not entitled to damages because Respondent has not breached the [Treaty]. If damages are awarded by the Tribunal, we understand that Respondent argues they should equal at most the amount that Claimant had invested in the Santa Ana project by the date of Supreme Decree 032. We have been instructed to calculate this amount."

1.6 As such, Brattle offers no independent opinion on damages under the compensation standard presented by the Claimant.

Qualifications

1.7 As in our previous report, this report has two authors: Howard N. Rosen and Chris Milburn. We are both responsible for the entirety of this report. Our qualifications were provided in Section 1 of the FTI Report.[5]

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3 Although Brattle does not provide an opinion of the FMV of the Santa Ana project, in Table 4 of the Brattle Report, it presents "implied market benchmarks" of value for Santa Ana's based on Bear Creek's EV, in a range between $42.2 million and $149.4 million, with an average of $89.1 million. In Table 6 of the Brattle Report shows the results of various adjustments it makes to our opinion of Santa Ana's FMV. Brattle calculates an NPV for the Project of approximately $70 million after all its noted adjustments. As discussed in detail herein, we disagree that the benchmarks indicated by Brattle provide a proper measure of the FMV of Santa Ana, and disagree with its ad hoc adjustments to our opinion of the FMV of Santa Ana.

4 Brattle Report, paragraph 16

5 Our curricula vitae were provided in Appendix 1 and Appendix 2 of the FTI Report.

Restrictions and Declarations

1.8 The reporting standards, restrictions, and declarations set in Section 3 of the FTI Report also apply to this report. This report should be read in conjunction with the FTI Report.

Sources of information

1.9 In addition to the documents set out in Appendix 4 of the FTI Report, in the preparation of this report we have relied upon the documents and interviews, set forth in **Appendix 1** of this report.

Structure

1.10 **Section 2** provides a summary of the FTI Report.

1.11 **Section 3** provides a summary of the Brattle Report and includes an overview of our responses.

1.12 **Section 4** provides a summary of our responses to the Brattle Report.

1.13 **Section 5** addresses the comments made in the Brattle Report regarding the standard of compensation.

1.14 **Section 6** addresses the comments made in the Brattle Report regarding the applicability of Bear Creek's share price to the Santa Ana FMV calculation.

1.15 **Section 7** addresses the comments made in the Brattle Report regarding our calculation of the Santa Ana FMV under the DCF methodology.

1.16 **Section 8** addresses the comments made in the Brattle Report regarding our Corani damages methodology.

1.17 **Section 9** addresses the comments made in the Brattle Report regarding the calculation of pre-award interest.

1.18 **Section 10** is our declaration with respect to this report.

2. Summary of the FTI Report

2.1 As noted above, we were retained by the Claimant to provide our independent opinion as to the quantum of damages sustained by the Claimant, if any, as a result of the alleged breaches of the Treaty by the Respondent.[6] Our findings are set out in the FTI Report.

2.2 In the FTI Report, we calculated damages to the Claimant based on the principle set out in the judgement in the *Factory at Chorzow* case, which stated that damages are to "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 the act had not been committed."[7]

2.3 Our opinion of damages considers the following two primary allegations by the Claimant:

i) The alleged expropriation of the Santa Ana project by the Respondent on June 25, 2011 (i.e. the Expropriation Date) as a result of the issuance of Supreme Decree 032 without appropriate compensation;[8] and,

ii) The alleged expropriation of the Santa Ana project also resulted in additional negative impacts to the Corani project that resulted in a diminution of value.[9]

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6 FTI Report, paragraph 1.3

7 Factory at Chorzow (Germ v. Pol), 1928 P.C.I.J (ser A), No 17 (Sept 13), page 47 (**FTI-20**)

8 FTI Report, paragraph 2.2

9 FTI Report, paragraph 2.4

Santa Ana Damages

2.4 Santa Ana damages are based on the assumption that the alleged breaches of the Treaty by the Respondent have resulted in the unlawful expropriation of the Claimant's ownership interest in the Santa Ana project without compensation.[10] Although the Treaty is silent with respect to compensation required for unlawfully expropriated assets, Article 812 of the Treaty states that the Claimant's compensation for legally expropriated assets:[11]

"…shall be equivalent to the fair market value of the expropriated investment immediately before the expropriation took place ("date of expropriation"), and shall not reflect any change in value occurring because the intended expropriation had become known earlier."

2.5 As it is not defined in the Treaty, we adopted a commonly accepted definition of FMV for purposes of the FTI Report.[12] We understand that the respondent publicly disclosed its intent to issue Supreme Decree 032 on June 24, 2011.[13] Therefore, the Valuation Date was set as the day immediately preceding this disclosure, June 23, 2011.

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10 FTI Report, paragraph 7.1

11 FTI Report, paragraph 7.2

12 FTI Report, paragraph 7.3

The FTI Report defined FMV as, *"[T]he price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms-length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."*

13 FTI Report, paragraph 7.7

2.6 Pursuant to internationally accepted valuation standards and standards specific to the valuation of Mineral Properties (i.e. CIMVAL), we considered multiple valuation approaches and methodologies in our analysis.[14] Based on our review of the FSU, the Santa Ana project would be defined as a Development Property under CIMVAL. Therefore, income-based and market-based approaches were considered in determining the FMV of the Santa Ana project at the Valuation Date.[15]

2.7 Using a DCF methodology under the income-based approach, we calculated the FMV of the Santa Ana project based on a cash flow model provided to us by RPA, which included the production timing, volumes, and relevant costs over the expected mine life.[16] The DCF methodology is recognized by internationally accepted valuation standards and is widely used by valuators and market participants as the primary valuation methodology for Mineral Properties that have progressed to the feasibility stage for the determination of FMV. While the RPA Revised Base Case model only included Mineral Reserves, CIMVAL requires that all identified Mineral Resources be considered in the valuation of Mineral Properties.[17] As such, we have calculated the FMV of the Santa Ana project based on the RPA Extended Life Case since it includes both Reserves and Resources.[18]

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14 FTI Report, paragraph 7.12, 7.13

15 FTI Report, paragraph 7.16, 7.17

16 FTI Report, paragraph 7.19

17 FTI Report, paragraph 7.23

18 FTI Report, paragraph 7.26

2.8 We forecasted short-term commodities prices based on the futures curve on the Valuation Date as this provides objective market data of actual prices the Project could have realized absent the alleged expropriation over this period.[19] Long-term commodities prices were based on the indicators that would be relied upon by market participants to value the Project in a notional transaction, according to a survey of silver miners.[20] We also provided a calculation of Santa Ana's FMV under an alternative long-term price methodology whereby we assumed the last available futures contract price as at the Valuation Date would remain constant thereafter as accepted by the tribunal in a recent mining arbitration case.[21]

2.9 The discount rate that we applied in the FTI Report was a real WACC developed under a CAPM approach, resulting in a discount rate of 10.0%.[22]

2.10 Under the income-based approach, our opinion is that the Santa Ana projects FMV at the Valuation Date was $224.2 million.[23] Under the alternative long-term commodities price methodology mentioned above, the FMV of the Santa Ana project increases to $333.7 million.[24] We confirmed the reasonability of our conclusion by reference to valuations of the Project that were prepared contemporaneously by the industry analysts that covered the Company in the period leading up to the Valuation Date. The consensus of the industry analysts was that the Project had a value of $257.8 million, which supports our conclusion that Santa Ana's FMV was approximately $224.2 million.[25]

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19 FTI Report, paragraph 7.30

20 FTI Report, paragraph 7.46, 7.49

21 FTI Report, paragraph 7.50, 7.51

22 FTI Report, paragraph 7.53

23 FTI Report, paragraph 7.54

As in the FTI Report, all amounts presented in this report are denominated in USD, unless otherwise noted.

24 FTI Report, paragraph 7.57

25 FTI Report, paragraph 7.79, Figure 25

Corani Damages

2.11 In the FTI Report, we were asked to calculate damages that were sustained by the Claimant in relation to the Corani project as a result of the alleged expropriation of Santa Ana.[26] The Claimant has alleged that the loss of Santa Ana has given rise to the following additional damages to the Claimant relating to the Corani project:

i) The development of Corani has been delayed;

ii) Corani's financing requirements and cost of capital have both increased; and,

iii) Corani's overall risk profile has increased.

2.12 All three of these effects of the alleged expropriation on the Corani project are permanent and will reduce the value that the Claimant will realize from the Corani project in the future.

[26] FTI Report, paragraph 8.1

2.13 Unlike the Santa Ana project, a fully developed cash flow model was not available for us to use to perform a comprehensive valuation under the preferred DCF methodology. As such, the focus of our analysis was the decline in the portion of Bear Creek's EV that is attributable to Corani in the period immediately after the alleged expropriation of the Santa Ana project in order to isolate the impacts of the alleged breaches on the Corani project. Due to the fundamental differences between the price of shares of a junior mining company and the FMV of its underlying mineral projects (as discussed in the FTI Report and herein), we did not consider the EV of the Company to be a reliable measure of the FMV of the Corani project. Instead, we relied on the total dollar value of the change in the Claimant's EV caused by the alleged Breaches as a measure of the impact of these permanent effects on Corani's value as this is the only objective measure available. Although we recognized this measure likely understates the damage to Corani, in the absence of a more reliable measure and since the impacts of these factors are ongoing, we maintain that the approach we followed provides a reliable calculation of the damages sustained by the Claimant relating to the Corani project.

2.14 The Corani damages were calculated by determining the EV of Bear Creek around the date of the ESIA Suspension (i.e. May 27, 2011), less an allocation of the portion of EV attributable to Santa Ana in order to isolate the portion attributable to Corani as at May 27, 2011.[27] This estimated EV based 'value' of Corani was indexed to the trading day after the Valuation Date (i.e. June 27, 2011) based on the change in the S&P/ TSX Global Mining Index over the same period, a decline of 7.3%. The indexed value represents a "but for" valuation of Corani. The "actual" value of Corani was estimated based on Bear Creek's EV as at June 27, 2011.

2.15 We limited our analysis to this date as subsequent changes in the Claimant's EV will also reflect changes in general market conditions rather than the impact of the expropriation of Santa Ana itself.[28]

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27 FTI Report, Figure 27

28 FTI Report, footnote 122

2.16 Depending on the portion of EV value allocated to Santa Ana in the "but for" case, our estimate for damages suffered by the Claimant with respect to Corani was within a range of $59.6 million and $267.3 million.[29] Selecting an allocation based on the relative valuations of the Santa Ana and Corani projects prepared by the various analysts that tracked Bear Creek prior to the Valuation Date, we concluded that Corani suffered a reduction in value of $170.6 million.[30]

Pre-Award Interest

2.17 We were instructed to calculate pre-award interest based on a reference rate from the Central Reserve Bank of Peru of 5.0%.[31] Pre-award interest was compounded based on the commercially reasonable treatment of interest; simple interest is not commercially reasonable and would fail to appropriately compensate the Claimant.[32]

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29 FTI Report, paragraph 8.11

30 FTI Report, paragraph 8.12

31 FTI Report, paragraph 9.3

32 FTI Report, paragraph 9.6

FTI Damages Conclusion

2.18 Based on the scope of our review as well as the assumptions and restrictions set out in the FTI Report, we quantified the Claimant's damages as follows:[33]

Figure 1 – Summary of FTI Report Damages Conclusions

Description ($ millions)		Compensation
Santa Ana Project - Damages	$	224.2
Pre-Award Interest	$	72.4
Santa Ana Damages	**$**	**296.6**
Corani Project - Reduction in Value	$	170.6
Pre-Award Interest	$	55.0
Corani Reduction in Value	**$**	**225.6**
Total	**$**	**522.2**

[33] FTI Report, Figure 2

3. Summary of the Brattle Report

3.1 As discussed above, the purpose of the Brattle Report was to review and criticize the FTI Report, while only providing a calculation of the *"amount that the Claimant had invested in the Santa Ana project by the date of Supreme Decree 032."*[34]

3.2 The following sections provide a brief summary of the Brattle Report.

Santa Ana Damages

3.3 Brattle does not perform a valuation of the Santa Ana project but rather provides comments on the valuation analysis performed by FTI. Their comments focus on Bear Creek's share price as a potential measure of value. Brattle states, *"Bear Creek's shares meet the requirements typically associated with the definition of FMV: open and unrestricted markets, arm's length trading between willing buyers and sellers, reasonable availability of information."*[35] Brattle asserts that Bear Creek's share price provides a "direct measure" of the FMV of Santa Ana and Corani. Using the share price as an indicator, Brattle calculates various "implied market benchmarks" for Santa Ana as at the Valuation Date within a range of $42.2 million and $149.4 million, with an average value of $89.1 million.[36] Although they have not performed a proper valuation and do not express an independent opinion thereon, Brattle appears to assert that their calculations represent proxies for the FMV of Santa Ana.

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34 Brattle Report, paragraph 15, 16

35 Brattle Report, paragraph 18

36 Brattle Report, Table 4

According to Table 3 of the Brattle Report, as at May 27, 2011, Santa Ana had a share price-based FMV between $49.5 million and $175.0 million, with an average estimate of $104.3 million.

3.4 Brattle asserts that our determination that the Bear Creek share price does not provide a reliable measure of the FMV of Santa Ana in the FTI Report is *"internally inconsistent because its DCF valuation for Santa Ana also relies on exchange-traded share prices"* with respect to our discount rate determination.[37] Brattle also states that Bear Creek was not a thinly traded company, so there was no evidence of a disconnect between share price and FMV.

3.5 Finally, Brattle asserts that our DCF analysis is flawed for the following reasons:[38]

i) The DCF method used by FTI is imprecise compared to the real options methodology preferred by Brattle;

ii) According to SRK, the mine plans and cost projections provided by RPA and relied upon by us are *"internally inconsistent and reflect calculation errors"*;

iii) Generally, feasibility studies understate capital expenditures;

iv) The DCF model in the FTI Report understates the time necessary to develop the project and does not reflect additional delays due to community opposition to the development of Santa Ana; and,

v) The DCF model in the FTI Report does not include downward adjustments for potential changes to the Peruvian taxes and royalty regime that may have been promulgated by the new government that was elected in June 2011, prior to the Valuation Date.

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37 Brattle Report, paragraph 24, 25

38 Brattle Report, paragraph 26, 27

3.6 Brattle makes several adjustments to our opinion of the FMV of Santa Ana at the Valuation Date of $224.2 million which they calculate results in a net present value ("**NPV**") of approximately $70 million for Santa Ana.[39] Brattle states that there are additional adjustments that it would seek to make, but that it has not done so due to their inability to do so.[40] Brattle notes that any additional adjustments may either increase or decrease Santa Ana's FMV.

Corani Damages

3.7 Brattle reviewed the development of Corani from the Valuation Date through to September 2015, essentially through to the publication date of the Brattle Report.[41] According to Brattle, *"the various factors put forward by Claimant have not caused a realized loss to Corani to date"*.[42] Brattle concludes that Bear Creek's loss of market value following the taking of Santa Ana did not result in an "unrealized loss" as they claim these losses were eventually reversed.[43]

3.8 Brattle asserts that the Corani damages methodology in the FTI Report which relies on the reduction in the Company's EV after the taking of Santa Ana is inconsistent with our calculation of the FMV of Santa Ana under a DCF approach to value.[44]

Claimant's Amount Invested in Santa Ana

3.9 Based on instruction from Respondent's counsel, Brattle tabulated Bear Creek's direct exploration costs for the Santa Ana project to be $21.8 million.[45]

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39 Brattle Report, Table 1

40 Brattle Report, paragraph 29

41 Brattle Report, paragraph 32

42 Brattle Report, paragraph 33

43 Brattle Report, paragraph 34

44 Brattle Report, paragraph 37

Pre-Award Interest

3.10 Brattle calculates pre-award interest based on a one-month U.S. Treasury rate amounting to 0.65% per annum and a risk-free rate amounting to 0.16% per annum.[46]

3.11 Brattle asserts that the interest rate of 5.0% per annum that we applied in the FTI Report is incorrect because it is denoted in Peruvian currency rather than USD and is not a commercial rate of interest.[47] Brattle agrees that pre-award interest should be calculated on a compound basis.[48]

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45 Brattle Report, paragraph 39

46 Brattle Report, paragraph 40, 41

47 Brattle Report, paragraph 42

48 Brattle Report, paragraph 199

4. Summary of FTI's Responses to the Brattle Report

4.1 Although we carefully considered all of the comments set out in the Brattle Report, we have determined that none of them requires us to revise our approach, any of our calculations or our opinion of the damages sustained by the Claimant in this matter. We find the majority of Brattle's comments to be either misguided in theory, mischaracterizations or misunderstandings of the approach we used, overly academic and impractical for a valuation in a damages context, unsupported, or simply incorrect.

4.2 Since Brattle does not express any opinions as to the appropriate approach(es) or measures of damages or the amount of compensation required to wipe out the effects of the alleged breaches, which are subjects that should fall within the domain of an independent damages expert, our comments herein relate only to their critiques of the opinions we provided in the FTI Report.

4.3 Our responses to Brattle's main comments are as follows:

i) Share Price vs. FMV: Brattle asserts that Bear Creek's share price provides a direct measure of the FMV of the Santa Ana project. We strongly disagree. While share price can be used as an indication of value generally, there are fundamental reasons why share price and FMV (of 100.0% of the shares) will differ. This difference increases when attempting to reconcile Bear Creek's share price to the FMV of one of its two main mineral projects. We agree that information from the share price can be used in a valuation, subject to appropriate adjustments. However, the more adjustments required, the less reliable the measure is. Some of the necessary adjustments in this case to reconcile share price to FMV of Santa Ana include:

(1) Acquisition Premia: The acquisition premium a buyer of 100.0% of Bear Creek's shares would have to pay over the traded share prices;

(2) Allocation of Value: An adjustment to get from the value of the entire company to the value of a specific asset. Here Bear Creek has two main projects and thus total firm value needs to be allocated on some (subjective) basis;

(3) Investor Sentiment and Trading Momentum: These factors may impact the price of traded shares but do not impact the FMV of the Santa Ana project itself as that is entirely determined by its ability to earn cash flows in the future; and,

(4) Market "Noise" Related to the Alleged Breaches: At the Valuation Date, Bear Creek's share price may have also included a discount for certain risks that are properly excluded in order to wipe out the effects of the alleged breach. For example, the Company's ESIA was suspended on May 28, 2011 and this resulted in a reduction in the Bear Creek share price that persisted at the Valuation Date. Discounts for political risks of Peru generally may be properly excluded to avoid reducing the compensation owing due to similar issues or behavior to that being complained of.

ii) Brattle attempts to extrapolate our decision to use a DCF in preference to Bear Creek's share price for the determination of the Claimant's damages as a full rejection of the use of any form of market data in a valuation analysis. This is a complete mischaracterization of our approach and professional views. As noted in the FTI Report, the Bear Creek share price did not provide a clean or direct measure of the FMV of Santa Ana and thus, in our view, is inferior to the DCF methodology in this case. We agree that where possible, the valuation conclusion reached under an income approach should be reconciled to market based information. We have done so in the FTI Report with reference to the valuations of independent analysts. We explain further below how the factors noted in (i) above would be used to reconcile the Bear Creek share price and the FMV of Santa Ana.

iii) DCF vs. Real Options Approach: Brattle goes to great lengths to characterize the widely used, accepted and understood DCF methodology we used in the FTI Report as being inferior to a real options methodology championed by Professor Davis. The simple fact is that the DCF method is the 'gold standard' for valuation and economic analysis and is used by all market participants including mining companies, the technical experts that conduct the feasibility studies, the analysts, private equity firms, consultants and valuation experts alike. It is our experience that a real options methodology is not widely used or accepted or understood by market actors in negotiating transactions, or in determining damages in a mining dispute. The use of real options may be useful in an academic context or as a tool for assessing different investment alternatives, but as valuation professionals performing a damages analysis in the context of an arbitration, we must adhere to professional practice standards and international valuation standards which indicate the DCF is the preferred valuation methodology;

iv) "Errors" identified by Brattle: Brattle purports to have identified numerous "errors" in the FTI Report and RPA Report. However, upon investigation, it is clearly apparent that each of the issues they claim to be in "error" are actually assumptions and differences of professional opinions/views that they have mischaracterized as being "errors", apparently because they differ from their own views or those of the Respondent. These items include:

(1) RPA Inputs: Technical inputs we obtained from the RPA Report including cut-off grade, operating costs, capital costs, project timeline, silver recovery, and the inclusion of all Project Resources in the DCF model. We understand that RPA has reviewed each of these allegations and has refuted each one in the RPA Reply Report. These are not errors and thus no adjustment is required to our calculations or our opinion of the Claimant's damages;

(2) Change to Taxes/Royalty Regime: Brattle points out that as of the Valuation Date there was uncertainty as to potential changes to the tax and royalty regime that the incoming government may have imposed. Although this was a consideration in our analysis and a source of potential risk, as no concrete changes to the tax or royalty regimes had been adopted or proposed at the Valuation Date, it would have been speculative to attempt to include any such change in our DCF analysis. We remain comfortable with the overall conclusion of FMV at that Valuation Date and have not made any change for this issue;

(3) Discount Rate: The issues Brattle raises regarding the discount rate refer to the beta and the country risk and relate to a difference of professional opinion, not calculation errors or a misapplication of damages/valuation theory; and,

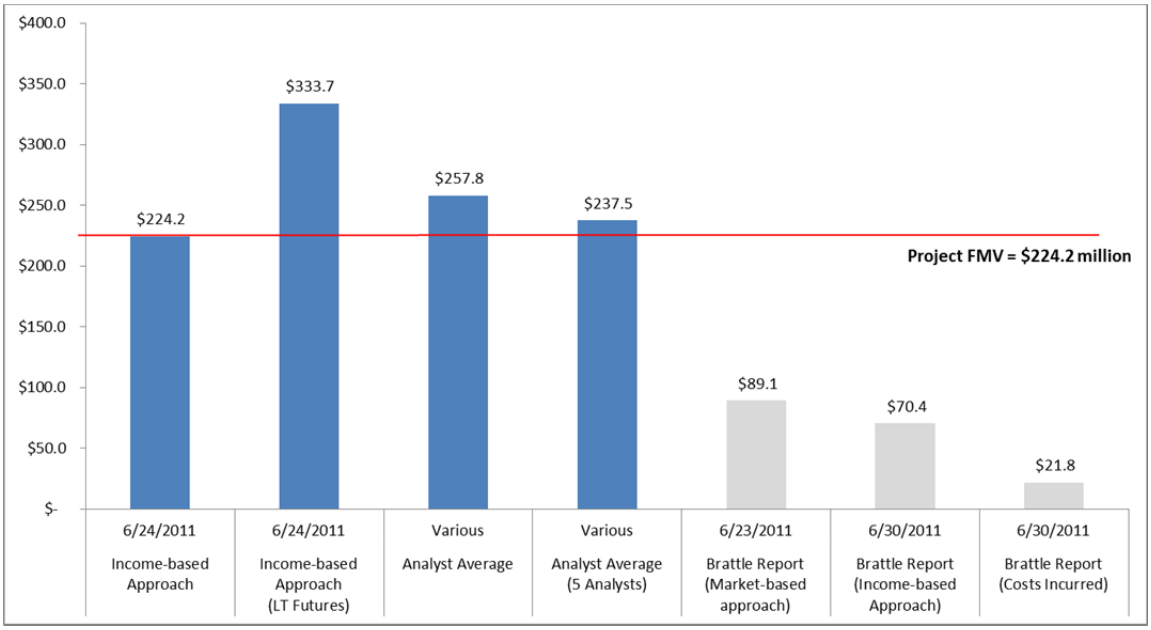
(4) Commodity Prices: The issues Brattle raises do not indicate any calculation or methodological errors were made in the FTI Report.

v) Losses to Corani: The losses sustained by the Claimant due to the delay, increase in financing costs, and increased risk to the Corani project are permanent and ongoing. The methodology we used to value the loss was based on the reduction in Bear Creek's EV that is attributable to Corani. This is not the same thing as the FMV of Corani. Since the EV understates the value of the projects for the reasons discussed above, this measure likely understates the loss but since a fully developed cash flow model was not available for Corani as of the date of the FTI Report, the reduction in EV was the only objective measure available to assess this loss. In calculating the loss to Corani, we allocated the portion of EV attributable to Santa Ana. This is not the FMV of Santa Ana (or Corani) as the EV understates the value of the projects for the reasons cited above. Mixing the FMV of Santa Ana with the portion of Bear Creek's EV attributable thereto would be inappropriate and thus, Brattle's suggestion that there is an inconsistency in our approaches with respect to the treatment of Santa Ana is incorrect.

vi) Pre-award interest: The pre-award interest rate Brattle suggests does not properly reflect the Respondent's sovereign debt risk. Since the FTI Report, we determined that the rate of 5% is appropriate given the posted rates for USD-denominated Peruvian sovereign bonds in the period proximate to the Valuation Date.

vii) Brattle's calculations of the damages to the Claimant based on the instructions they accepted by the Respondent (i.e. reimbursement of costs) and the calculations of 'value' they obtained by making downward adjustments to our valuation model are all significantly below all other available value metrics, as indicated in the following figure:[49]

Figure 2 – Santa Ana FMV Indicators



49 Refer to **Section 2** for more information on the Santa Ana FMV indicators that were discussed in the FTI Report.

5. Response to Brattle's comments regarding the applicable standard of compensation

5.1 This section addresses the comments made in the Brattle Report with respect to the applicable standard of damages as set out in the Treaty, from an economic perspective.

Brattle's valuation date is based on a misunderstanding of the Treaty

5.2 Under the Treaty, the appropriate valuation date is the date *"immediately before the expropriation took place ('date of expropriation'), and shall not reflect any change in value occurring because the intended expropriation had become known earlier."*[50] The Valuation Date adopted in the FTI Report was June 23, 2011, based on the expropriation being announced publicly on June 24, 2011.[51]

5.3 Brattle argues that the valuation date should be set to June 24, 2011 because the Supreme Decree 032 was dated June 25, 2011.[52] Brattle argues that a valuation date of June 24, 2011 is more appropriate because *"Information regarding the forthcoming decree, however, was known the day prior. The [Treaty] instructs that the FMV calculation should exclude any effect of the information."* The Respondent's Counter Memorial does not adopt Brattle's argument regarding the valuation date, while the Respondent's technical expert SRK adopts an effective valuation date of June 23, 2011, based on reasoning consistent with the FTI Report.[53]

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50 "Canada-Peru Free Trade Agreement", August 2009, Article 812 (**FTI-21**)

51 FTI Report, paragraph 6.4, 7.7

52 Brattle Report, paragraph 44

53 SRK Report, paragraph 64

5.4 Brattle's interpretation of the valuation date issue is inconsistent with its insistence that the FMV of Santa Ana is inexorably tied to Bear Creek's share price and that value derived under an income approach must be reconciled to that value.[54] On June 24, 2011, Bear Creek's share price dropped from $6.28 ($6.16 CAD) per share to $5.24 ($5.16 CAD) per share, compared to the S&P/TSX Global Mining Index decline from 121.97 to 120.94.[55] On Brattle's preferred valuation date and applying Brattle's preferred methodology, the decline in share price as a result of the alleged expropriation would have been incorporated into the valuation, inappropriately reflecting the impact of the early knowledge of the alleged expropriation.

5.5 According to the Claimant's Memorial, *"[t]he Government adopted Supreme Decree 032 on June 24, 2011 in the immediate aftermath of violent demonstration by Mr. Aduviri's supporters on the same day at Juliaca airport, 185 kilometres away from Santa Ana."*[56] Based on this interpretation and our further discussions with Counsel, we have been instructed that the effective date of expropriation is June 24, 2011.

5.6 Under our interpretation of the meaning of the Treaty from an economic perspective and the effective date of expropriation, we maintain our belief that June 23, 2011 is the appropriate Valuation Date.

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54 Brattle Report, paragraph 55

We discuss the reasons why share price is not a reliable measure of the Santa Ana project's FMV as at the Valuation Date in **Section 6**.

55 Market capitalization provided by Capital IQ. (**FTI-03**)

56 Claimant's Memorial, paragraph 135

Brattle's standard of compensation does not align with the Treaty

5.7 When commenting on the Santa Ana damages analysis performed in the FTI Report, Brattle recognizes that the standard of damages applicable to an expropriation under the Treaty is the *"…fair market value of the expropriated investments immediately before the expropriation took place ('date of expropriation'), and shall not reflect any change in value occurring because the intended expropriation had become known earlier."* Brattle then states that they *"…applied this standard"*.[57] However, it is not clear how Brattle applied this standard as they did not perform any independent analysis of the Claimant's damages but rather uncritically accepted and executed the instructions provided by the Respondent to simply tabulate the amounts invested by the Claimant and apply pre-award interest.

5.8 According to Brattle,[58]

> *"If damages are awarded by the Tribunal, we understand that Respondent argues they should equal at most the amount that Claimant had invested in the Santa Ana project by the date of Supreme Decree 032. We have been instructed to calculate this amount."*

5.9 It is our view that the costs invested by Bear Creek up to the point that the Respondent allegedly expropriated the Santa Ana project do not meet the FMV standard set by the Treaty.[59]

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57 Brattle Report, paragraph 43

58 Brattle Report, paragraph 16

59 "Canada-Peru Free Trade Agreement", August 2009, Article 812 (**FTI-21**)

5.10 Firstly, under valuation theory, costs incurred are not indicative of value as value is prospective and is a function of future cash flows. Further, according to CIMVAL, a cost-based approach to value is not appropriate for the purposes of calculating the value of a project that has been classified as a Development Property, as was the case with Santa Ana.[60]

5.11 Secondly, reimbursing the Claimant for costs incurred, as suggested by the Respondent, is not consistent with our understanding of the guiding principles for the calculation of damages as set out in the *Factory at Chorzow* case, which seeks to place the Claimant in the financial position they would have been in absent the wrongful actions of the Respondent. An award of damages that only reimburses the direct costs invested does not appropriately compensate the Claimant for risks undertaken and successfully surpassed in developing the Project or the lost opportunity to earn profits or returns on the amounts invested.

5.12 Mining and exploration enterprises include a number of inherent risks, which are mitigated as resources are defined, reserves are determined, and the project is brought to production. As a project is advanced and it moves through the various stages of development, its value increases as the asset is de-risked. The existence of financing is also an important de-risking factor as a project whose construction has already been financed will invariably be less risky than one that requires additional investment, all other factors being equal.

5.13 This de-risking also allows for more and more financing options to become available to the investor as shown in the following chart prepared by Credit Suisse:[61]

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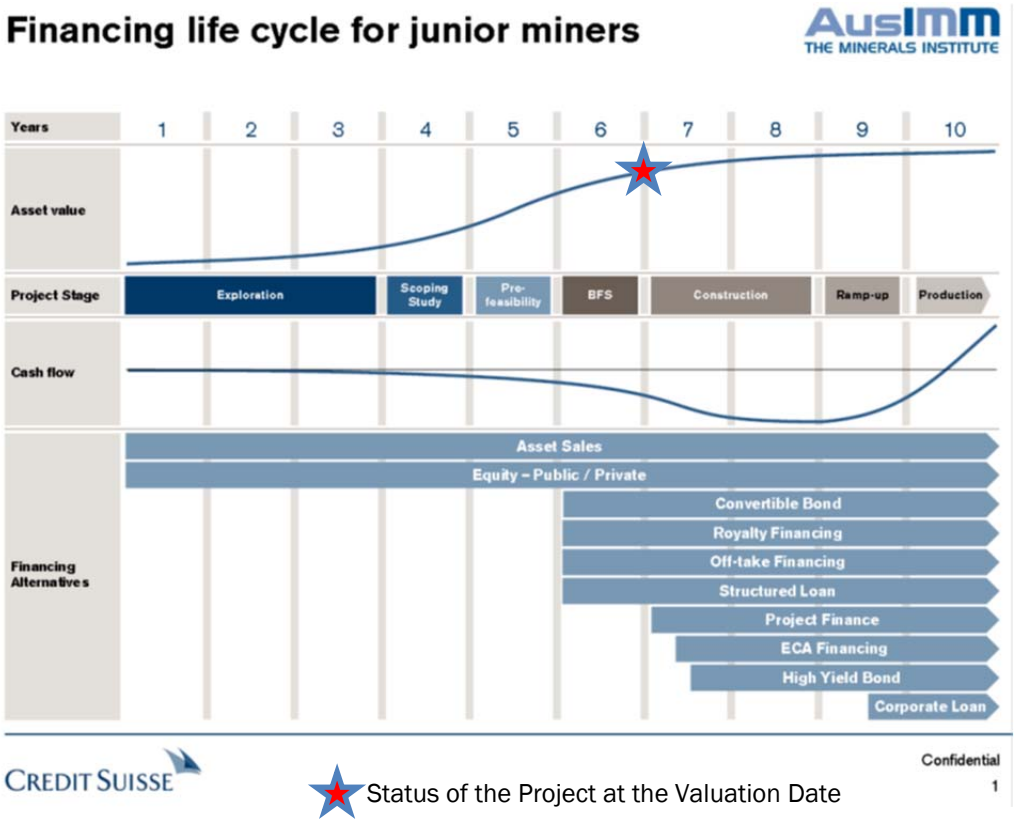
60 FTI Report, Figure 14

61 Credit Suisse, "Financing life cycle of junior miners", page 1 (**FTI-61**)
We added the Project's status to the chart above for emphasis.

Figure 3 – Financing Life Cycle for Junior Miners



5.14 Bear Creek obtained the Santa Ana Mining Concessions in 2007.[62] Since that time, Bear Creek advanced the project through the "Exploration" phase and completed the FSU, finishing the "BFS" phase, overcoming economic and development risks along the way; absent the alleged expropriation, the Santa Ana project would have been entering the "Construction" phase with project financing already secured.

62 FTI Report, paragraph 4.8

5.15 As discussed in the FTI Report, the Santa Ana project would be classified as a Development Property under CIMVAL based on the fact that Mineral Reserves were established prior to the Valuation Date and the ESIA process was underway, with production anticipated to start by the end of 2012.[63] As such, the Claimant had progressed through the "BFS" or bankable feasibility study phase of development, had secured financing for the Santa Ana project and was ready to begin construction pending the approval of its ESIA.[64]

5.16 From an economic perspective, the repayment of the amounts invested by the Claimant would imply that the investment was made risk-free with no potential of return. The reimbursement of costs would ignore the risks overcome by the Claimant in taking the Project from a property with potential targets, but no identified resources, to the discovery and definition of Mineral Reserves. Conversely, an award of the Claimant's investment cost would effectively allow the Respondent to unjustly capture the increase in the value of the Santa Ana project created by the Claimant, by paying a fraction of its actual FMV.

5.17 Finally, none of the industry analysts that covered Bear Creek proximate to the Valuation Date considered the direct exploration costs incurred as a relevant means for determining the value of the Santa Ana project.[65]

5.18 Therefore, we believe that the economic implications of the Respondent's damages methodology are illogical. If a mining company can have its project taken once it makes a significant discovery and performs a significant amount of work to define the resource and only receive the direct costs expensed (after incurring additional costs and risks related to litigation), no rational investor would invest in such exploration activities as they would face all the downside risk, while the government could unjustly capture all upside potential.

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63 FTI Report, paragraph 7.16

64 FTI Report, paragraph 4.27

65 Refer to Appendix 8 of the FTI Report for a discussion on the reports issued by analysts that were reporting on Bear Creek.

5.19 Even if Bear Creek had been retained by the Respondent purely on a contract basis to provide mineral exploration services on a cost-plus or hourly rate basis, they would have charged a profit component for their services above and beyond their costs (inclusive of indirect costs, which are omitted under Brattle's methodology as discussed below).

5.20 Bear Creek was not retained to explore on a contract basis. Rather, it put its own capital at risk in anticipation of earning a return thereon. It then found and defined a Mineral Resource, confirmed a significant Mineral Reserve, proved economic feasibility, obtained financing in capital markets, and took steps to begin construction. These facts are ignored in the Respondent's damages methodology that Brattle was instructed to, and did, adopt.

Brattle's calculation of investment costs ignores indirect costs

5.21 Setting aside the issue that an award of the Claimant's cost of investment fails to meet the standard of compensation under the Treaty from an economic perspective, the costs enumerated in the Brattle Report do not accurately summarize the extent of Bear Creek's investment in the Santa Ana project.

5.22 The investment costs summarized in Table 7 of the Brattle Report reflect direct costs expensed and capitalized according to Bear Creek's annual financial statements.[66] However, this tabulation ignores indirect costs, such as an allocation of head office expenses including the wages, salaries, and other forms of compensation paid to senior management, professional fees, and other general and administrative expenses.[67] Economically, an allocation of some overhead is appropriate in order to account for senior management's time spent developing the Santa Ana project and the ancillary support services necessary to maintain the Claimant's investment.

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66 Brattle Report, Table 7

67 Bear Creek, "Bear Creek Audited Financial Statements", 2011, page 4 (**FTI-51**)

5.23 To reiterate, we do not believe that the reimbursement of direct costs methodology applied in the Brattle Report meets the standard of compensation set out in the Treaty. Therefore, we have not provided an estimate of the full costs invested, including an appropriate allocation of indirect costs herein.

6. Response to Brattle comments regarding Bear Creek's share price

6.1 Brattle's comments regarding Bear Creek's share price revolve around their central thesis that a company's EV provides a clean and direct reflection of the FMV of all of its assets.[68] This section addresses Brattle's thesis and further elaborates on why, in our view, Bear Creek's share price does not provide a reliable indicator of the FMV of the Santa Ana project.

6.2 In preparing our opinion as to the FMV of the Santa Ana project, we reviewed Bear Creek's share price as part of our market-based approach analysis and due to a number of fundamental differences between the attributes of the shares and the Project, we concluded that the share price was not indicative of the Santa Ana project's FMV.[69] Since we had a reliable cash flow model for the Project, we preferred to use the DCF methodology as it provided a direct and 'clean' measure of the FMV of the Project on a stand-alone basis.

6.3 While we agree with Brattle that valuation conclusions reached under different approaches should be compared and reconciled where possible, it is important to understand that publicly traded shares of Bear Creek do not automatically equal the FMV of the underlying assets due to the number of factors listed in the FTI Report, including the need to allocate firm value to specific assets, the impact of behavioral investing, thin trading and liquidity, and the potential impact of alleged actions of the Respondent that predate the Valuation Date.

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68 Brattle Report, paragraph 49

69 FTI Report, paragraph 7.69

6.4 We also reviewed the reports of the various analysts that were following Bear Creek prior to the Valuation Date for their views on Bear Creek's share price and the NAV of the Santa Ana project.[70] The seven analysts that we reviewed concluded that the Project had a NAV of approximately $257.8 million on average ($237.5 million if we remove the highest and lowest analyst conclusions). This was supportive of our FMV conclusion of $224.2 million at the Valuation Date.[71]

Share price and FMV consider different transactions

6.5 As we explained in the FTI Report, Bear Creek's share price of $6.28 ($6.16 CAD) at the Valuation Date represents a closing price for a "normal sized" (typically 100 shares) trading block of the company's shares, (as opposed to the company's underlying assets).[72]

6.6 Our mandate in the FTI Report was to *"provide our independent opinion as to the quantum of damages sustained by the Claimant, if any, as a result of the alleged breaches of the Treaty by the Respondent."*[73] As part of this mandate, we calculated the FMV of the 100.0% owned Santa Ana project as at the Valuation Date.

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70 FTI Report, Appendix 8

71 FTI Report, paragraph 7.82

72 Share prices provided by Capital IQ. (**FTI-03**)

73 FTI Report, paragraph 1.3

6.7 The definition of FMV that we have adopted, and which is not disputed by Brattle, is based on the price that a notional buyer and seller would pay for an asset (i.e. the Santa Ana project) in a hypothetical transaction for that asset.[74] As the Santa Ana project had not been exposed for sale prior to the Valuation Date, Brattle suggests the price of Bear Creek's shares can be used as a proxy the FMV of the Santa Ana project. While it would have been possible to obtain control of the Santa Ana project at the Valuation Date by acquiring 100.0% of Bear Creek's outstanding shares, this is not the same transaction contemplated under the definition of FMV.

6.8 Under Brattle's thesis, the FMV of all assets should be equal to the company's EV. As shown in Figure 2 of the Brattle Report, EV is equivalent to the market value of all assets, excluding cash.[75]

6.9 The EV estimates provided in the FTI Report and referred to throughout the Brattle Report are provided by Capital IQ. The methodology used by Capital IQ to determine EV is to add the market capitalization of a company on a given date (share price multiplied by shares outstanding - a proxy for the market value of equity) to the net debt (interest bearing debt less cash - a proxy for the market value of debt). We reference this calculation in the FTI Report.[76]

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74 FTI Report, paragraph 7.3

75 Brattle Report, Figure 2

76 FTI Report, paragraph 7.77

6.10 At the Valuation Date, the company did not have any debt outstanding and had approximately $112.4 million of cash based on the March 31, 2011 balance sheet.[77] As cash on hand is not counted toward EV, for purposes of this calculation, Bear Creek's EV was equal to its market capitalization less cash. The company's market capitalization on the Valuation Date was $578.5 million.[78] This represents the theoretical price that would be paid to purchase 100.0% of Bear Creek's outstanding shares at the Valuation Date. However, in practice this is often not the case as discussed further below in **Paragraph 6.14**.

6.11 Considering the market capitalization less the cash on hand at the Valuation Date, Capital IQ estimated that Bear Creek's EV was $464.0 million.[79]

6.12 According to CIMVAL, market-based valuations that make reference to the market capitalization of a particular company, as suggested by Brattle, are *"[m]ore applicable to Valuation of single property asset junior companies than to properties."*[80] This makes intuitive sense since the subject of the valuation in each case is different; the shares of a company versus a Mineral Property.

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77 FTI Report, paragraph 7.77

78 Market capitalization provided by Capital IQ. (**FTI-03**)

79 Market capitalization provided by Capital IQ. (**FTI-03**)

80 CIMVAL, page 23 (**FTI-04**)

6.13 A notional buyer and notional seller (i.e. not necessarily Bear Creek) would consider a transaction for 100.0% of the shares of the Claimant differently than a transaction for the Santa Ana project. Firstly, share price, and related metrics such as EV, does not reflect the full price that an acquirer might pay for a company, and therefore it cannot be reflective of FMV of the underlying assets without adjustment to reconcile the two concepts.[81] Secondly, the analyst consensus was that Bear Creek's share price was depressed compared to the underlying value of the company's assets as at the Valuation Date.[82]

Bear Creek's EV and FMV are not identical

6.14 Setting aside the difference between the transactions for Bear Creek's shares implied by EV versus the FMV of the Santa Ana project on a standalone basis, Brattle's approach skips several steps that would be required to reconcile Bear Creek's EV and the FMV of Santa Ana. The Brattle Report states:[83]

"Bear Creek's share price provides a reliable and direct measure of the FMV of its projects. If Santa Ana were Bear Creek's only project, then its FMV would be equal to the company's EV."

6.15 The first step Brattle skips is the fact that Bear Creek has more than one project and thus a major reconciling factor is to isolate the portion of the EV that relates to Santa Ana as opposed to Corani or the Company's other assets.

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81 Refer to **Paragraph 6.14**.

82 Refer to **Paragraph 6.27**.

83 Brattle Report, paragraph 55

6.16 According to Brattle, a buyer could have acquired 100.0% of Bear Creek's issued and outstanding shares on the Valuation Date for its market capitalization, $578.5 million, and effectively paid the company's EV, $464.0 million, for both Santa Ana and Corani.[84] This view of company acquisitions does not hold true in either the mining sector or in the market at large.

6.17 A hypothetical willing and able buyer would not be able to acquire the Santa Ana and Corani projects by acquiring all of Bear Creek's shares at a single, stated price (i.e. $6.28/ $6.16 CAD on the Valuation Date).[85] An attempt to submit a large buy order to the market would create buying volume in the market that would drive share prices higher.

6.18 Furthermore, Brattle's simplistic view omits the impact that insiders, institutional investors, and other strategic holders have on an acquisition transaction. These non-retail investors may hold their investments and choose not to sell at a stated market price on a given date. According to a presentation given by Bear Creek during the European Gold Forum between April 12, 2011 and April 15, 2011, Silver Wheaton, a silver streaming company, held approximately 14.5% of the company's shares, followed by a bloc of insiders who held a further 4%.[86]

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84 Market capitalization provided by Capital IQ. (**FTI-03**)

The buyer would either not pay for the cash on hand or receive the excess cash when taking over Bear Creek, reducing his or her overall purchase price by an equivalent amount.

85 FTI Report, paragraph 4.3

86 Bear Creek Mining, "Presentation to Denver Gold Group – European Gold Forum", April 12-15, 2011, slide 23 (**FTI-28**).

6.19 In the month before the Valuation Date, which included several days with higher than normal trading volume due to the events surrounding the Santa Ana project, Bear Creek's average trading volume, including both buy and sell transactions, was approximately 612.3 thousand shares per day.[87] Considering that the total number of outstanding shares as of the Valuation Date was approximately 92.2 million, this implies that it would have taken approximately 151 trading days at the previous month's average volume to purchase all the shares.[88] Such buying activity would have a material impact on share price. However, there are several more steps required to execute a takeover transaction.

6.20 Bear Creek is listed publicly on the TSX Venture Exchange, which is overseen by the Ontario Securities Commission ("**OSC**"). The OSC has various rules that seek to regulate the process of an acquisition of a company. Typically, when an acquirer obtains at least 10.0% of the total outstanding shares, it triggers early warning disclosure requirements, including disclosure of its future intentions with respect to the company.[89] Canadian takeover rules are formally triggered once the acquirer obtains more than 20.0% of the target company's shares.[90]

6.21 Both of these requirements signal the market of potential takeover targets. Empirical evidence indicates that the market reacts to the anticipation or announcement of a potential or initiated takeover bid, causing abnormal positive price and share volume movement in the underlying publicly-traded target equity.[91]

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87 Trading volume provided by Capital IQ. (**FTI-62**)

88 Shares outstanding provided by Capital IQ. (**FTI-62**)

92.2 million shares outstanding / 612.3 thousand shares = 151 days

89 Torys LLP, "Takeover Bids in Canada and Tender Offers in the United States", 2009, page 14, 15 (**FTI-63**)

90 Torys LLP, "Takeover Bids in Canada and Tender Offers in the United States", 2009, page 2 (**FTI-63**)

91 Bank of Canada, "Pre-Bid Run-Ups Ahead of Canadian Takeovers: How Big is the Problem", 2005, page 25 (**FTI-64**)

6.22 The market of buyers for 100.0% of the shares of BCM would predominantly consist of larger mining companies who have projects at different stages of development (including producing mines) and thus enjoy a lower cost of capital than BCM (access to debt as well as equity). These buyers would be willing to pay a premium for the mining properties (or all the shares of BCM) due to their lower cost of capital. That is; they can extract higher value in the eyes of the market place primarily due to the efficiency of the larger firm's capital or some other "synergy" that can uniquely be enjoyed by the buyer. This is why we ordinarily see takeover premia in the mining industry.[92]

6.23 FactSet Mergerstat, LLC ("**Mergerstat**") publishes a Control Premium Study on a quarterly basis to quantify control premiums observed in recent transactions.[93] Mergerstat calculates the acquisition premium by reviewing the *"price just prior to the point of change in the representative normal pricing of a given security"* against the purchase price per share.[94]

6.24 Of the "Metal Mining" transactions reviewed by Mergerstat, the average acquisition premium for transactions in Q1 of 2011 was 63.7%.[95] This would imply that Bear Creek's FMV on the Valuation Date would be at least approximately $759.6 million.[96]

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92 The FMV of Santa Ana under the DCF approach includes such a premium due to the use of the discount rate that would be applicable to such a buyer.

93 Mergerstat, "Control Premium Study 1st Quarter 2011", page ii (**FTI-65**)

94 Mergerstat, "Control Premium Study 1st Quarter 2011", page ii, 37 (**FTI-65**).

Based on our review of the Mergerstat data for metals mining, the acquisitions generally feature larger companies acquiring smaller companies. This is consistent with the notion that larger companies are willing to pay a premium due to the more efficient cost of their capital.

95 Mergerstat, "Control Premium Study 1st Quarter 2011", page 6 (**FTI-65**)

96 $464.0 million EV * (1 + 63.7% acquisition premium) = $759.6 million

6.25 Both Bear Creek and a notional buyer would be aware of the acquisition premium that is typically paid in transactions for mining companies. Added to the fact that the analyst consensus at the time was that Bear Creek's shares were undervalued and trading at a discount to the NAV of the underlying assets, we believe that the FMV of Bear Creek would be higher than the amount suggested by its EV, increased by the average acquisition premium per the Mergerstat data.[97]

6.26 The remaining differences between the EV attributable to Santa Ana and the FMV calculated under the DCF method is the undervaluation of the Company's projects at the Valuation Date, as indicated by the industry analysts. This undervaluation at the time was due to noise in the marketplace due to political issues and anti-mining protests in Peru.

Industry analysts all indicated that Bear Creek's share prices were depressed compared to NAV

6.27 As discussed in the FTI Report, analysts that issued reports on Bear Creek leading up to the Valuation Date consistently believed that the company's share price did not reflect the value of the projects that it controlled. Brattle attempts to summarily dismiss the valuations prepared by the industry analysts that covered Bear Creek.[98] However, these reports were prepared contemporaneously by knowledgeable industry experts at major financial institutions that understood the market and the projects and were informing market participants at the time. Notional buyers and sellers would review their valuation analyses and perform similar analyses themselves in order to determine a price for a transaction.

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97 FTI Report, Appendix 8
Refer to **Paragraph 6.27**.

98 Brattle Report, paragraph 61

6.28 In a report dated May 31, 2011 and titled "Oversold & Upgrading – Santa Ana Not in Price", the Scotia analyst noted that the impact of the continued protests around the Santa Ana site reduced the company's market capitalization by more than $200.0 million.[99] However, Bear Creek was rated as a "Sector Outperform" in part due to his conclusion that:

"The Santa Ana project cited by protestors is valued at $179 million ($1.38 per share) in our model. We believe the share price no longer reflects Santa Ana, and we conclude Bear Creek is oversold."

"We would be a buyer of Bear Creek based on Corani's valuation alone, inclusive of construction equity financing in our model, ($285 million at $8.00 per share for 36 million shares)."

6.29 On June 1, 2011, BMO confirmed its "Outperform (Speculative)" rating for Bear Creek, citing that *"BCM currently trades at 0.4x the 10% nominal NPV, a significant discount to junior silver peers, which trade at 0.9x."*[100] To support this analysis, Figure 2 of the report plotted Bear Creek's share price to NPV per share against companies that the BMO analyst considered to be comparable:[101]

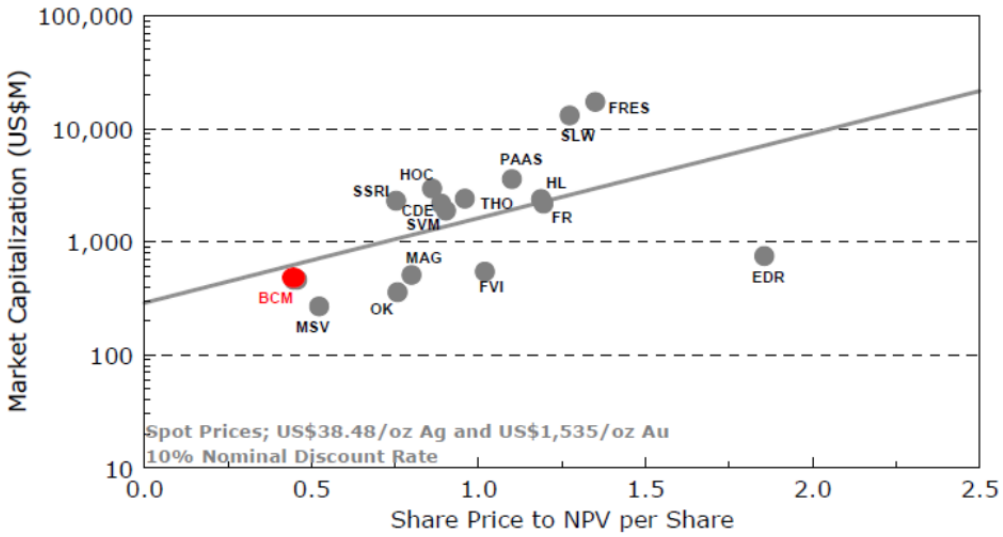
99 Scotia, "May 31, 2011 Report", page 1 (**FTI-57**)

100 BMO, "June 1, 2011 Report", page 1 (**FTI-53**)

101 BMO, "June 1, 2011 Report", page 3 (**FTI-53**)

Figure 4 – June 1, 2011 BMO Report, Figure 2

Fig 2: Market Capitalization versus Share Price to NPV per Share



Source: BMO Capital Markets

6.30 The BMO analyst noted that Bear Creek had officially obtained local support for the Santa Ana project as recently as February 2011 and that the suspension itself was likely politically motivated.[102] Even so, he noted that the delay caused by the ESIA Suspension appeared to have an outsized impact on Bear Creek's share price:[103]

"An Outperform (Speculative) rating is maintained given that the 30% decline in BCM share price exceeds the NAV impact of the Santa Ana delay, in our view."

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102 BMO, "June 1, 2011 Report", page 2 (**FTI-53**)

103 BMO, "June 1, 2011 Report", page 1 (**FTI-53**)

6.31 On June 2, 2011, Raymond James issued a report that confirmed its "Outperform" rating and included the following passage:[104]

"We believe the anti-mining and other interest groups are largely using this period leading up to the runoff federal election (Jun-5-11) as a platform to voice their anti-mining/development views rather than specifically targeting any of the technical or environmental aspects of the Santa Ana project. BCM's shares have fallen ~40% since early March, when Peruvian election polls first indicated Humala may win. In our view, BCM's current valuation reflects no value for Santa Ana and is also now applying a higher risk discount to Corani."

6.32 Following the election of President Humala, Canaccord's report dated June 7, 2011 maintained its "Speculative Buy" recommendation.[105] According to its analysis, Bear Creek was trading at a discount from its peers and that it could only be explained if Santa Ana was being excluded entirely from the share price:[106]

"[A]t today's share price, investors are paying essentially nothing for the Santa Ana project with a compelling revaluation potential associated with de-risking the Corani project alone."

6.33 Finally, a Paradigm report dated June 8, 2011 also confirmed a "Speculative Buy" rating on Bear Creek making note of the high political risk involved in the company's Peruvian operations:[107]

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104 Raymond James, "June 2, 2011 Report", page 1 (**FTI-54**)

105 Canaccord, "June 7, 2011 Report", page 1 (**FTI-56**)

106 Canaccord, "June 7, 2011 Report", page 2 (**FTI-56**)

107 Paradigm, "June 8, 2011 Report", page 1 (**FTI-55**)

"We maintain our Speculative Buy rating for investors with a 12-month (plus) timeframe, though do caution that the share price movements are likely to be driven almost entirely on political sentiment over the next 3-6 months."

6.34 Paradigm also comments that *"[w]e believe the market has over-reacted to the turbulence of Bear Creek's situation"* and that *"[t]his has Bear Creek trading at a 0.38x P/NAV multiple, which is substantially below where we believe it should trade (our target P/NAV multiple is 0.60x NAV, making allowance for geopolitical risk."*[108]

6.35 The other two analysts referenced in the FTI Report (Haywood and Cormark) published reports months prior to the ESIA Suspension and thus did not comment directly on the subsequent material declines in share price.[109]

6.36 From the perspective of the industry analysts, Bear Creek's share price was depressed as a result of the ESIA Suspension and continued perception of political risk arising from the alleged ongoing actions of the Respondent prior to the Valuation Date. In addition, a number of analysts suggested that the prevailing share price in the period after the ESIA Suspension did not reflect any value for the Santa Ana project.

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108 Paradigm, "June 8, 2011 Report", page 2 (**FTI-55**)

109 FTI Report, Figure 25

Allocating share price between multiple projects is a major flaw in using share price as a measure of Project FMV

6.37 In our analysis of Corani damages, we allocated approximately 19.2% of Bear Creek's May 27, 2011 EV to Santa Ana in order to segregate the EV of the two projects.[110] Our analysis assumed that Bear Creek's other non-cash assets were immaterial; Bear Creek's EV calculation already excludes cash.[111]

6.38 However, as a part of our Corani analysis we acknowledged that there were conflicting views about how much, if any, of Bear Creek's overall EV could be attributable to Santa Ana.[112] These considerations and our specific point estimate are addressed in more detail in Section 8.

6.39 Brattle's specific claim that the 19.2% allocation should apply to the calculation of Santa Ana's FMV is misguided.[113] We applied the 19.2% allocation (and all other allocations) as of May 27, 2011, the last trading day prior to the ESIA Suspension. After that date, the Respondent's actions targeting the Santa Ana project resulted in a dramatic decline in Bear Creek's share price and, by extension, its EV.

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110 FTI Report, Figure 27

111 FTI Report, footnote 123

112 FTI Report, paragraph 8.7

113 Brattle, paragraph 65

6.40 For reference, the analyst average estimate for Corani's NAV was approximately $1.1 billion, several times higher than the June 27, 2011 EV of Bear Creek as a whole of $236.2 million.[114] Taking into account the actions of the Respondent, allocating Bear Creek's EV to calculate the FMV of the Santa project is more difficult than simply applying the 19.2% from our Corani methodology. This is one of the significant flaws in Brattle's assertion that Bear Creek's share price can be used as a direct measure of the FMV of Santa Ana.

Brattle denies that sentiment and momentum have any impact on share price

6.41 One of the contributing factors to the decoupling between the FMV of the underlying assets and the share price of a given company is the impact of sentiment and momentum.[115] Behavioral factors and market-wide events are well known factors that impact share prices without necessarily affecting the value of the assets held by those companies directly.

6.42 It is common in junior mining companies for insiders and institutional investors to make long term investments in shares of the company, with a view to hold the shares and not trade them on an active basis. Thus, it is most common to see trading in the shares of junior companies to be made up of retail investors who seek to make trading returns.

6.43 Traditional finance implicitly assumes that rational investors perfectly exploit all arbitrage opportunities to correct differences between prices and the intrinsic value of underlying assets (e.g. the FMV of Bear Creek's projects). Behavioral finance suggests that market prices deviate from their fundamental value as a result of "investment behavior", which is linked to the differences between actual human behavior and those of the hypothetical rational economic agent.[116]

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114 FTI Report, Figure 26, paragraph 8.5(ii)

115 FTI Report, paragraph 7.69(ii)(1)

116 Guido Baltussen, "Behavioral Finance: an introduction", 2009, page 3 (**FTI-66**)

6.44 Behavioral finance recognizes that the market is comprised of investors that hold biases that limit their ability to completely correct market prices. As explained in *Behavioral Finance: Investors, Corporations, and Markets*:[117]

"The thinking process does not work like a computer. Instead, the human brain often processes information using shortcuts and emotional filters. These processes influence financial decision makers such that people often act in a seemingly irrational manner, routinely violate traditional concepts of risk aversion, and make predictable errors in their forecasts. These problems are pervasive in investor decisions, financial markets, and corporate managerial behavior."

6.45 Brattle's position assumes that behavioral factors have no impact on share prices and that the market in which Bear Creek and other company's shares trade is perfectly efficient as defined by the strong form of the Efficient-Market Hypothesis ("**EMH**"). Under strong EMH, one would have to assume that all available information from all sources, both public and private, is accessible, understood, and incorporated by all investors.[118] One must also assume that all investors in the market have the same level of interest, risk tolerance, and investment sophistication to immediately and flawlessly price securities. As a result, Brattle states:

"In essence, to argue that the market cannot correctly value Bear Creek's two major assets is to conclude that the market cannot correctly value any asset on any listed stock exchange."

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117 H. Kent Baker, John R. Nofsinger, "Behavioral Finance: Investors, Corporations, and Markets", 2010, page 3 (**FTI-67**)

118 Richard A. Brealy, Stewart C. Myers, Franklin Allen, "Principles of Corporate Finance, Tenth Edition", 2011, page 317-318 (**FTI-68**)

Other forms include weak and semistrong market efficiency, which assume that only historical information and public information are incorporated, respectively.

6.46 In effect, Brattle's adoption of the EMH considers the market to be a single, homogeneous investor and that the price must always be equal to FMV. As discussed above with respect to the objections under behavioral finance, we know this is not the case.

6.47 The market is comprised of many disparate investors whose behavior sets a price at a given point in time based on buying and selling activity. Each investor in Bear Creek has a varying level of familiarity with technical, industry-specific measures and jargon. In addition to the financial and technical data released by Bear Creek, analyst reports, news coverage, and macroeconomic factors are subjectively processed by each investor leading to different market outlooks. Regardless of, and perhaps as a result of, the abundance of publicly available information for investors, the possibility of current and prospective investors inadvertently missing and misinterpreting this information still exists.

6.48 Brattle's attempt to extrapolate our decision to use DCF in preference to Bear Creek's share price for the determination of the Claimant's damages as a full rejection of the use any form of market data in a valuation analysis (futures, beta, equity risk premia, inflation, etc.) is misguided.[119] We do not dispute the fact that public markets and prices have economic relevance. The distinction that we make from Brattle's position is that share prices can and do incorporate factors, such as sentiment, momentum, and the other considerations discussed in this section, that may result in a decoupling between prices for shares and the FMV of underlying assets and in this case, we prefer the DCF approach to the use of the Company's share price as a reliable measure of FMV.

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119 Brattle Report, paragraph 71

Impact of Respondent's Actions

6.49 As discussed in **Paragraph 2.4** and **Section 5**, Article 812 of the Treaty stipulates that the Valuation Date should be set immediately prior to the alleged expropriation and exclude the impact of the act becoming known earlier (i.e. June 23, 2011). Brattle's suggestion of merely moving the date of the valuation to some earlier time to exclude the impact of the ESIA Suspension and other non-expropriation factors is not consistent with the Treaty.[120]

6.50 As discussed above and in the FTI Report,[121] the ESIA Suspension had a negative impact on Bear Creek's share price. Although the suspension of environmental permitting would also impact Bear Creek's EV, according to the Claimant's Memorial, the ESIA Suspension was both unwarranted and unlawful, which is a clear breach of the Treaty.[122] Our DCF methodology assumes that 'but-for' the alleged breaches, the ESIA Suspension would have been overcome and production could have begun as scheduled. However, the share price at the Valuation Date inherently includes the impact of this alleged breach.

6.51 On the other hand, the protests we referenced in the FTI Report would not have a direct impact on the Santa Ana project's FMV (i.e. its ability to generate cash flow), but had obvious negative consequences on Bear Creek's share price. While the protests may have created negative news around Bear Creek, we understand that the protests were not directly related to the Santa Ana project and could only impact its cash flows by influencing the Respondent to take actions to breach the Treaty.[123] Again, this provides evidence of a decoupling between Bear Creek's share price and the FMV of its underlying assets, including Santa Ana.

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120 Brattle Report, paragraph 80

121 FTI Report, paragraph 7.75

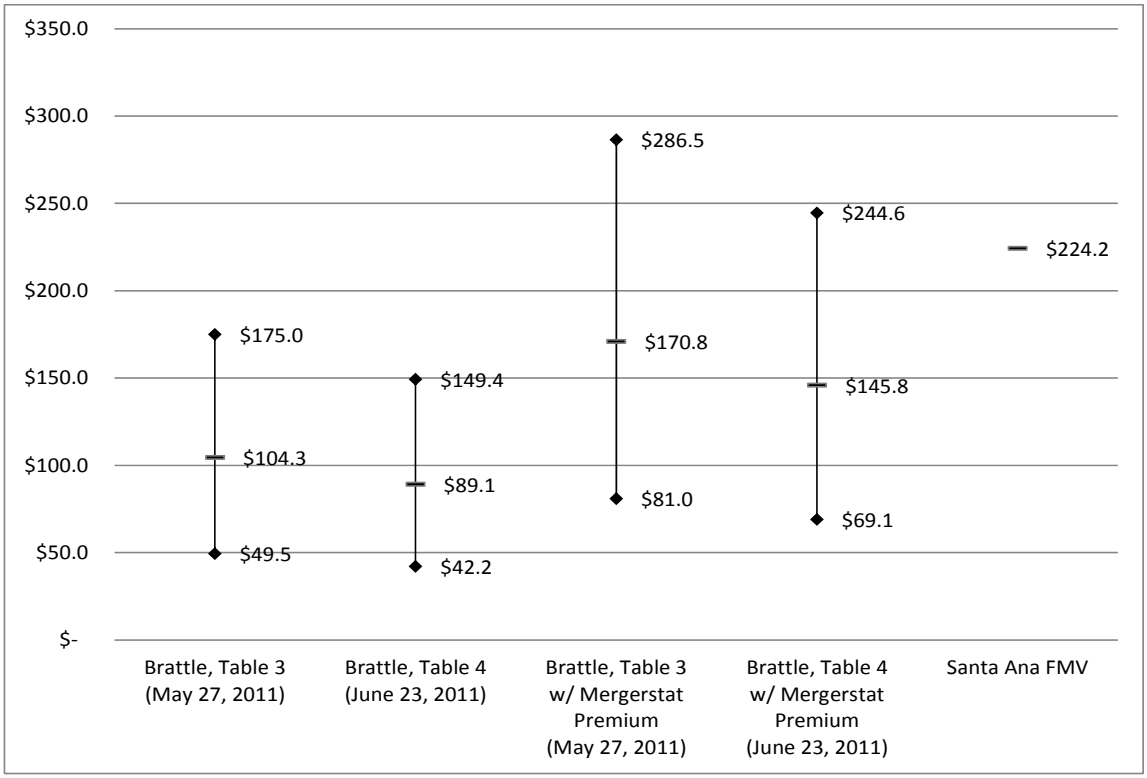
122 Claimant's Memorial, paragraph 73, 178

123 Claimant's Memorial, paragraph 79

Illustrative Reconciliation of Share Price to Santa Ana Project FMV

6.52 As discussed above, there are a number of fundamental reasons why the share price of Bear Creek does not provide a 'clean' or direct measure of the FMV of the Santa Ana project. Although they did not perform a proper valuation, in the Brattle Report, Brattle derived figures they termed "implied market benchmarks" for Santa Ana's FMV based on the share price and various relative allocations of firm value between Santa Ana and Corani which were based on the valuations of the industry analysts (which Brattle found in the FTI Report). Brattle concludes that *"…the discrepancy between FTI's damages and the benchmark is striking."* Based on the various elements discussed above, we have corrected Brattle's comparison of the share price benchmark to include the estimated acquisition premium per the Mergerstat data, and our FMV conclusion in the figure below:

Figure 5 – Revised Figure 1 from Brattle Report to include Acquisition Premium



6.53 As shown in the figure above, when one of the main reconciling factors (the acquisition premium) is reflected, the difference between our FMV conclusion for Santa Ana and the share price is significantly reduced and in fact our FMV is lower than the higher end of both ranges of adjusted EV. Thus, on this basis, our conclusion falls within the total range of the market benchmark values presented. Remaining differences at the lower end of the assumed percentages of EV allocated to Santa Ana relate to the undervaluation in the market due to political risk factors and other issues noted above.

6.54 However, in the "but-for" analysis of damages, Santa Ana is assumed to be built (absent Peru's FTA alleged breaches) and thus this 'noise' would not impact the value as it is assumed to be resolved by the time the Project reached production. Accordingly, they are properly ignored for the purpose of calculating the damages required to restore Bear Creek to the economic position it would have been in absent Peru's breaches.

7. Response to comments regarding the Santa Ana DCF calculation

7.1 We calculated compensation owed to the Claimant as a result of the alleged expropriation of the Santa Ana project as the FMV of the Project as at the Valuation Date according to Article 812 of the Treaty.[124] Given the stage of development of the Santa Ana project at the Valuation date, the FMV was determined considering the income-based and market-based approaches.[125]

7.2 Under the income-based approach, we applied a DCF methodology based on both the RPA Revised Base Case and RPA Extended Life Case.[126] In accordance with CIMVAL, the FMV of the Santa Ana project must include consideration of all of the Project's Resources.[127] Therefore, our FMV is based on the RPA Extended Life Case. As noted above, the DCF methodology is widely used in the industry as the preferred valuation method under the income approach.

7.3 In addition to the production, recovery, operating cost, and capital cost estimates provided by the RPA Extended Life Case model, we estimated both commodity prices and the applicable discount rate.[128] Based on the DCF methodology, we concluded that the FMV of the Santa Ana project was $224.2 million.[129] We then confirmed this value by reference to objective based market indications of value including valuations of Santa Ana performed contemporaneously by industry analysts covering Bear Creek prior to the Valuation Date.

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124 FTI Report, paragraph 7.2, 7.3

125 FTI Report, paragraph 7.17

126 FTI Report, paragraph 7.20

127 FTI Report, paragraph 7.23

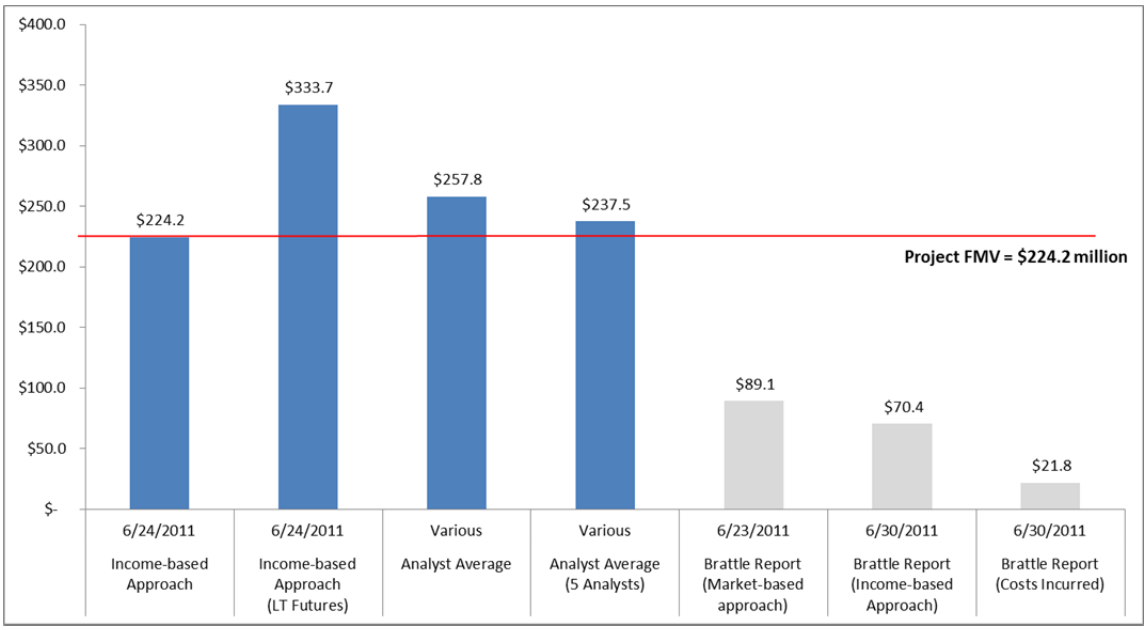
128 FTI Report, paragraph 7.27, 7.53

129 FTI Report, paragraph 7.54

7.4 In the Brattle Report, Brattle attempts to marginalize the importance and reliability of the DCF methodology. Brattle asserts that the DCF methodology is simplistic compared to their preferred "modern" DCF based on the use of real options and takes issue with a number of the inputs included in the model.[130] While Brattle does not itself apply a real options-based methodology, the impact of the various ad hoc adjustments suggested by Brattle results in a reduced calculation of the value of the Project of $70.4 million.[131] As discussed in detail below, we disagree with the adjustments made by Brattle to our DCF model.

7.5 We have summarized the various Santa Ana project FMV indicators and Brattle's calculations in the chart below:

Figure 6 – Santa Ana FMV Indicators and Brattle Calculations



130 Brattle Report, paragraph 82

131 Brattle Report, Workpaper 22 – D1

7.6 We address the Brattle Report's comments with respect to our DCF methodology in the following section.

"Errors" identified in the FTI Report by Brattle are not errors

7.7 Throughout their report, Brattle makes frequent references to "errors" that they claim are made in either the FTI Report or the RPA Report. Characterizing these as errors is both inaccurate and disingenuous since none of the issues they raise were due to calculation errors or improperly applied theoretical considerations. Rather, the issues they raise and mischaracterized as "errors" actually relate to either technical inputs from RPA which the Respondent's technical expert disagrees with, assumptions employed that Brattle disagrees with, or issues of professional judgment that Brattle disagrees with.

7.8 The specific issues Brattle mischaracterizes as "errors" are discussed in more detail below.

Brattle's so-called "modern" DCF is not more reliable than the DCF methodology used in the FTI Report

7.9 The DCF methodology, as applied in the FTI Report, has long been accepted by the market and market participants as an appropriate means to value a Mineral Property. According to CIMVAL, the DCF methodology is described as being, *"[v]ery widely used. Generally accepted in Canada as the preferred method."*[132]

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132 CIMVAL, page 22 (**FTI-04**)

7.10 In contrast, Brattle' states its conception of a "modern" DCF as the "real options" valuation method but does not provide a detailed discussion of what it entails. When discussing how the market views its preferred methodology, it references CIMVAL and a paper co-authored by Professor Davis.[133] This paper refers to both the Dynamic DCF and real options methodologies.[134]

7.11 CIMVAL describes the real options component of Brattle's "modern" methodology as, *"[n]ot widely used and not widely understood but gaining in acceptance."*[135]

7.12 While Brattle asserts that the market has accepted the real options methodology, we are not aware of any market participants that considered real options in their valuations of the Santa Ana project. The DCF methodology used in the FTI Report is based on the model from the FSU - which followed a DCF methodology for its economic NPV assessment (later revised by RPA) - that was used to determine that the Mineral Reserves were economically mineable.[136] As far as we are aware, all of the analysts that followed Bear Creek also applied a DCF methodology when determining the NAV of the Santa Ana and Corani projects and none had considered "real options".[137]

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133 Brattle Report, paragraph 96

134 Michael Samis, Luis Martinez, Graham A. Davis, James B. Whyte, "Using Dynamic DCF and Real Options Methods for Economic Analysis in NI43-101 Technical Reports", Abstract (**BR-123**)

135 CIMVAL, page 22 (**FTI-04**)

136 FSU, Table 0.22 (**FTI-06**)

FTI Report, paragraph 4.29

137 FTI Report, Appendix 8

While it seems as though the Scotia analyst's valuation was performed using a DCF methodology, he does not explicitly state this or provide sufficient detail in his report to allow us to conclude this definitively.

7.13 Confirming CIMVAL's determination that the real options methodology is not widely accepted, other than the *Principles of Corporate Finance* textbook, the only sources referenced by Brattle are papers co-authored by Professor Davis himself.[138]

7.14 In contrast to the real options methodology, the DCF methodology applied in the FTI Report is widely accepted and understood by both finance professionals and arbitral tribunals. In our experience, the real options methodology is not an accepted methodology for the purposes of determining the FMV of Mineral Properties in the context of international arbitration and we note that it appears Brattle themselves have not used this methodology in previous arbitration cases (or in this case).[139]

7.15 When referring to their real options methodology, Brattle takes care to discuss it in terms of generalities and provides no specific changes to be made to the DCF model used in the FTI Report. Importantly, Brattle makes no attempt to provide a valuation under the real options methodology that it promotes.

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138 Brattle Report, footnote 59, 67

139 Ivanhoe Mines, Ltd. "Oyu Tolgoi Project", June 2010, page 44 (**FTI-69**)

Entrée Gold Inc, "Lookout Hill Property, Southern Mongolia", June 2010, page 27 (**FTI-70**)

Calculating the NPV of a Mineral Property in a technical report is not the same engagement as determining the FMV of a Mineral Property. Two technical reports were cited as examples in a paper (**BR-123**) co-authored by Professor Davis (and his colleague Michael Samis of Ernst & Young ("**EY**")). Both were prepared by AMEC Minproc who contracted EY to prepare real options and Dynamic DCF analyses to include in their reports. In both cases, it appears that EY was contracted to prepare an analysis to supplement the traditional DCF methodology. EY's actual findings were provided to the permit holders directly and only a summary of their methodologies was included in the AMEC Reports. These limited uses as supplemental analyses do not convince us that the real options and Dynamic DCF methodologies are widely used and understood.

7.16 We believe this may be due to the fact that the DCF methodology is the foundation of Brattle's preferred methodology, but that real options requires another level of assumptions and judgements about potential future options, their potential cash flows, and their probability of occurrence and thus would tend to increase the level of subjectivity of the analysis. It would also tend to increase the value above that obtained by a traditional DCF approach. According to an article of Professor Davis from 2003,[140]

"It is well known within the industry, for example, that well-conducted NPV analysis tends to undervalue mining company equity (Davis 1996). The result is that a mineral's fundamental value usually is worth more than its NPV. This added value can only be uncovered using a real options approach. In practice, however, calculating this added value is extremely difficult."

7.17 The chapter of *Principles of Corporate Finance* that the Brattle Report states the following in its introduction to the topic,[141]

*"We should start with a warning. Setting out the possible future choices that a firm may encounter usually calls for a strong dose of judgement. Therefore, **do not expect precision when valuing real options.** Often managers do not even try to put a figure on the value of the option, but simply draw on their experience to decide whether it is worth paying for additional flexibility. Thus they might say, "We just don't know whether gargle blasters will catch on, but it probably makes sense to spend an extra $200,000 now to allow for an extra production line in the future."*

7.18 Brattle acknowledges this issue:[142]

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140 Graham A. Davis, "Economic Theory and The Valuation of Mineral Assets", Journal of Business Valuation, July 15, 2003, page 406 (**FTI-71**)

141 Richard A. Brealy, Stewart C. Myers, Franklin Allen, "Principles of Corporate Finance, Tenth Edition", 2011, page 554 (**FTI-68**)

Emphasis added.

"[W]hile the modern DCF can be more reliable than the simple DCF, it needs more market inputs. If market signals about the risk of the major cash flow components are not available, then the improvement in precision does not occur."

7.19 Brattle's reference to "market inputs" belies the sheer number of new assumptions that need to be made about the future operating options available to management of the Santa Ana project. Brattle is vague about the nature of these market inputs and where they would come from. Some of these assumptions, such as the probability of achieving a certain outcome in the future, are necessarily entirely subjective and require professional judgement.

7.20 In our view, although the real options methodology may have relevance as a tool for management to anticipate and evaluate potential future outcomes or alternative investments, or in the context of NI 43-101 where the focus is on deciding whether to proceed or not (although in our experience it also appears to be rarely used for that purpose), it is inappropriate in the context of preparing an opinion as to the FMV of a mineral project.

7.21 As professional valuators and members of good standing of the CICBV, we are bound by professional practice standards for our valuation analyses and adhere to internationally accepted valuation standards and mineral mining valuation guidelines. We have done so in this case and maintain our preference of the DCF method we employed over other available methods including the "real options" method.

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142 Brattle Report, footnote 64

7.22 Other than the assertion that the real options methodology is a more reliable valuation technique, Brattle criticizes the DCF methodology, stating that exponential discounting of cash flows is not reasonable because it is unlikely that the Santa Ana project's cash flows would be increasingly risky over time.[143] To alleviate this, Brattle suggests that we should have created multiple discount rates for each different cash flow (i.e. silver revenue, gold revenue, mining costs, etc.) and each different year since they have different risk profiles.[144] We disagree that this is a legitimate issue as the exponential increase in risk Brattle complains of is simply a mathematical function of discounting future cash flows to a present value and reflecting the time value of money and compounding which is a commercial reality. Creating multiple discount rates for each element of the cash flow would not address the compounding issue and is not practical as 'beta factors' to determine the systematic risk for each are not readily available in the market and doing so would introduce more subjectivity into the valuation analysis.

7.23 Further, regarding the practical application of a multiple discount rate approach, Brattle makes vague references to "market signals" to provide evidence of the rates applicable to different cash flow items.[145] For example, with respect to certain revenues based on futures prices, Brattle suggests a risk free rate is applicable. Where prices are not available, such as the case with input costs, Brattle suggest the use of proxy markets, using the example of crude oil as a stand-in for diesel fuel costs. While they are quick to criticize our project-level discount rate, Brattle fails to provide the actual discount rates that they believe would apply to the Santa Ana project's different cash flows in each year, providing no opinion as to how to differentiate discount rates by type and date of cash flow, which in our view is an inherently subjective and speculative exercise.

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143 Brattle Report, paragraph 89

144 Brattle Report, paragraph 92

145 Brattle Report, paragraph 93-94

7.24 As with the real options methodology, the preponderance of additional assumptions necessary to apply a multiple discount rate approach would only serve to provide an illusion of a level of precision that does not exist.[146] More importantly, this disaggregation of the project-level discount rate may be a theoretical or academic consideration, but, like the real options methodology, we have not seen evidence that this actually is done in practice. Therefore, in our view, Brattle's suggested changes to our DCF methodology would not improve the reliability of the resulting calculation of Santa Ana's FMV.

SRK's comments regarding reserves, silver recovery, and operating costs are unfounded

7.25 SRK claims that the RPA Report includes erroneous cut-off grade estimates that result in overstatements in reserves, leading to an overstatement in the Santa Ana project's total life of mine.[147] SRK also claims that the levels of silver recovery and operating costs estimated by RPA were overstated and understated, respectively.

7.26 Regarding cut-off grade ,the RPA Reply Report states:[148]

> *"In paragraphs 65 to 69 SRK attempts to discredit the methodologies used to determine the Mineral Resource estimate in the FSU and the subsequent review by RPA. SRK, on more than one occasion, confuses the application of a variable cut-off grade used in the mine plan with that of Mineral Reserve reporting."*

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146 FTI Report, paragraph A5.47

We rounded our discount rate in the FTI Report to 10.0% because we did not wish to imply a level of precision with our calculations that does not exist.

147 Brattle Report, paragraph 100

148 RPA Reply Report, paragraph 72

7.27 According to RPA, SRK has confused and misunderstood CIM Best Practice Guidelines and has made comments *"founded in practices that are not used or accepted in the industry"*.[149] As a result, RPA has made no adjustment to their calculation of the Santa Ana reserves in the RPA Revised Base Case.

7.28 Regarding SRK's claim that the silver recovery factors should be adjusted downwards, RPA states that SRK has not provided any evidence that there should be a reduction in silver recovery factor and that "*it is just as likely that actual recovery will be higher and not lower, especially on permanent leach pads that stack ore in multiple lifts*".[150] RPA concludes:[151]

> *"In summary, based on this evaluation, RPA has confirmed that SRK's assumptions for reducing the silver recovery for the Santa Ana Project are flawed and recommends that the estimated silver recovery recommended in the FSU (i.e., 75%) should be maintained."*

7.29 As a result, RPA has not made an adjustment to the silver recovery factor in the RPA Revised Base Case.

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149 RPA Reply Report, paragraph 36

150 RPA Reply Report, paragraph 97

151 RPA Reply Report, paragraph 103

7.30 Regarding operating costs, the RPA Report estimated operating costs could be in a range of $2.00 to $2.50 per tonne mined, concluding that $2.10 per tonne mined would be appropriate.[152] This estimate was based on a 25% increase on the costs estimated in Santa Ana's FSU and the identification of a few additional costs that were originally omitted. SRK recommends that an operating cost of $2.50 per tonne mined be adopted as a result of Mr. Rigby's belief that the high altitude and associated labour challenges were not being considered in the FSU.[153]

7.31 RPA notes that the contractor quote that was used to estimate the operating costs used in the FSU were provided by San Martin General Contracting ("**San Martin**"), one of the largest mining contractors in Peru with several years of mining experience in the region.[154] Regarding SRK's recommendation, RPA responds:

"SRK did not provide any justification for their recommendation of an operating cost of "closer to $2.50", only suggesting that higher altitudes would lead to higher costs as a result of lower labour and equipment productivity."

7.32 As a result, RPA has not made any adjustments to their operating cost assumption.

7.33 With respect to the timeline to production, whereas Brattle asserts that our DCF analysis does not include potential delays for permitting and community opposition, RPA rejects this stating that the production schedule had considered and allowed for reasonable periods of time for these issues.[155]

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152 RPA Report, paragraph 85

153 SRK Report, paragraph 80

154 RPA Reply Report, paragraph 85, 86

155 RPA Report, paragraph 50

7.34 As RPA has rejected the adjustments suggested by SRK with respect to cut-off grade, silver recovery, operating costs, and timeline, we believe that our calculations with respect to these assumptions remain reasonable. Therefore, we have not made any adjustment to our opinion of Santa Ana's FMV at the Valuation Date for the factors set out in the RPA Report (and RPA Reply Report).

Brattle's adjustment to capital costs is unsupported

7.35 In addition to the comments made by SRK regarding mining costs, Brattle adds that they believe that the FSU's capital cost estimate is understated.[156] To support their argument, Brattle again references a paper co-authored by Professor Davis, which finds that capital costs for mining projects are approximately 14.0% higher than estimated in bankable feasibility studies.[157]

7.36 We do not find Brattle's argument to be compelling for the following reasons:

i) SRK, the Respondent's mine engineering expert who was responsible for reviewing the FSU and commenting on the RPA Report, made no such assertion regarding the capital cost estimates in the FSU.[158] Based on their lack of comment, with respect to capital costs, Respondent's technical expert, SRK, appears not to have any issue with the Project's estimated capital costs;

ii) A statement about average understatement provides no specific insight into the capital cost estimates in the FSU. Brattle has not identified any specific capital costs in the FSU that they believe are understated;

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156 Brattle Report, paragraph 101

157 Jasper Bertisen, Graham A. Davis, "Bias and Error in Mine Project Capital Cost Estimation", The Engineering Economist, April 1, 2008, page 118 (**BR-116**)

158 SRK Report, paragraph 1

SRK commented on the production, development timeline, and operating expense assumptions that were part of the RPA Revised Base Case and RPA Extended Life Case DCF models.

iii) The 63 projects referenced in the paper co-authored by Professor Davis were completed between 1980 and 2001, from 10 to 31 years prior to the FSU, and are not relevant to the Project;[159] and,

iv) The FSU envisaged the hiring of an Engineering Procurement and Construction Management ("**EPCM**") contractor to handle mining, including the acquisition of mining equipment.[160]

7.37 Firstly, SRK does not take issue with the capital costs indicated in the FSU and RPA Report, and Brattle identifies no specific capital costs that it deems to be understated in order to justify its grossing-up of the FSU's estimates. While the average understatement in Professor Davis' paper may be 14.0%, there is no evidence presented that such an understatement existed in the FSU or that it would have materialized during the construction of the Santa Ana project. Therefore, we do not believe that it is appropriate to apply this general adjustment in our conclusion on the Santa Ana project's FMV.

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159 Jasper Bertisen, Graham A. Davis, "Bias and Error in Mine Project Capital Cost Estimation", The Engineering Economist, April 1, 2008, page 136 (**BR-116**)

160 FSU, page 137 (**FTI-06**)

7.38 Secondly, as stated above, the paper cited in the Brattle Report focuses on projects where construction was completed by 2001, which suggests that the feasibility studies may have been issued many years earlier. The timeframe of Brattle's sample is outdated by 10 to 31 years and predates many important reporting regulations for the mining industry, including National Instrument 43-101 ("**NI 43-101**"), which came into effect on February 1, 2001.[161] NI 43-101, which applied to Bear Creek's disclosures including the FSU, was created in response to the Bre-X Minerals Ltd. scandal and the poor reporting regulations that facilitated the fraud. All things being equal, we would expect that the quality of mining reports, including the FSU, has increased since the timeframe investigated in Professor Davis' paper.

7.39 Finally, the FSU contemplated that mining duties would be handled by an EPCM firm. According to the Claimant's Memorial, *Graña y Montero Ingenieros Consultores* ("**GMI**"), *"a Peruvian company with substantial experience planning and building mining and infrastructure projects in the country"*, was contracted on February 28, 2011 to handle EPCM duties.[162] We understand that San Martin, operating under GMI, would have been responsible for using much of its own equipment to run the mine, alleviating some of the capital burden on Bear Creek. Both RPA and SRK confirmed that mining equipment would be provided by the contractor and be accounted for in the mine contractor's unit rate costs.[163]

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161 Ontario Securities Commission, "National Instrument 43-101 Standards of Disclosure for Mineral Projects", page 1 (**FTI-72**)

162 Claimant's Memorial, paragraph 54

163 RPA Reply Report, paragraph 84

SRK and Brattle's comments on the timeline to production are unfounded

7.40 According to Brattle, SRK's analysis indicated that the project could be delayed by at least a year due to a lack of permitting and landowner agreements as of the Valuation Date.[164] Additionally, Brattle assumes that continued community opposition could lead to a delay of up to four years based on a sample of six mining projects located in Peru that experienced community opposition; Brattle's review included 16 projects total, but their assumption is based on the six that experienced opposition.[165]

7.41 RPA discusses the issue of permitting delays with reference to two examples, the La Arena and Constancia projects; the latter is located near Santa Ana and both were omitted by the delay analysis in the Brattle Report.[166] According to RPA, the mine schedule included some consideration for the permitting process, including nine months for the ESIA and an additional six months for the construction and operating permits.[167] This 15 month period exceeds the 12 month maximum delay suggested by SRK. Finally, RPA notes that SRK has not referenced any specific reason for a delay in the permitting process, leading RPA to conclude that SRK's comments are speculative.

7.42 Brattle's suggestion is similarly speculative. Firstly, Brattle assumes that any form of community opposition should lead to a delay of at least four years, but, like SRK, does not address any specific characteristics at Santa Ana that would give rise to such a long delay.

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164 Brattle Report, paragraph 103

165 Brattle Report, paragraph 104, 105, Table 5, Workpaper 4

166 RPA Reply Report, paragraph 114

167 RPA Reply Report, paragraph 114, 115

7.43 Secondly, Brattle's methodology for defining project delays is simplistic in that it only measures the original projected start of production versus the actual or projected start of production as of the end of 2011.[168] Per Workpaper 4 of the Brattle Report, the average project was delayed by 1.3 years, if you included those that were free of social opposition according to Brattle. If you isolate only those projects that encountered social opposition, as per Table 5, there is still a wide range of delays from Pucamarca beginning production ahead of schedule through to La Zanja that was delayed by five years. Brattle has made no attempt to provide an explanation for these delays or how their situations relate to the situation at the Santa Ana project.

7.44 Finally, as discussed throughout the FTI Report and in **Paragraph 6.50**, we understand that the ESIA Suspension was both unwarranted and unlawful. There has been no clear evidence that the social opposition in Peru was based on operational issues associated with the Santa Ana project directly, so it is unclear that schedule delays, if any, would reach the length of Brattle's suggested delay.[169]

Brattle's comments about the risk of increased taxes are unfounded

7.45 Brattle references the election of President Humala and the expectation that the new government may have increased mining taxes and royalties.[170] Brattle mentions this issue was considered by two of the industry analysts and suggests that FTI should have made some kind of adjustment for this potential contingency in our valuation.

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168 Brattle Report, Table 5, Workpaper 4

169 RPA Reply Report, paragraph 209, 210

170 Brattle Report, paragraph 107

7.46 As at the Valuation Date, there was no specific proposal or indication of what the changes to the tax and royalty regime would be and how they might impact the Santa Ana project. Thus, any adjustment to our tax/royalty assumptions would have been speculative. Therefore, we relied upon the tax assumptions that were included in the FSU published on April 1, 2011 and maintain our belief that this is a reasonable basis under which to calculate the FMV of the Santa Ana project.[171]

Brattle's comments on FTI's discount rate

7.47 Brattle does not independently derive a discount rate for the Santa Ana project, or for any of the cash flow elements they propose under their "modern" DCF approach.

7.48 The 10.0% discount rate applied in the FTI Report to value the Santa Ana project was based on the assessment of a number of economic inputs to arrive at a discount rate calculated under a CAPM-based approach.[172] In providing its comments, Brattle focuses its critiques on two of these inputs:[173]

i) Beta factor; and,

ii) Country risk.

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171 FTI Report, Schedule 1, 2

172 FTI Report, paragraph 7.53

173 Brattle Report, paragraph 111, 112,

7.49 As described in the FTI Report, the beta factor is an estimate of an investment's relative volatility compared to that of the market as a whole.[174] We estimated a beta relevant to the Santa Ana project based on a survey of 73 precious metals companies in the U.S. and confirmed the reasonability of our estimate against ex post data also published by Professor Damodaran in January 2012.[175] The resulting levered beta of 1.22 represents our estimate of volatility expected by a notional investor in the Santa Ana project.

7.50 Brattle's primary objection to the beta factor we used is that it is an industry-level beta.[176] The purpose of applying an industry-level beta in our CAPM-based discount rate is to estimate the volatility faced by a notional investor in the Santa Ana project based on prevailing macroeconomic factors faced by the metals and mining industry as a whole. As with most of its critiques, Brattle presents no alternative beta estimation methodology that it believes to be more relevant or reliable in order to determine Santa Ana's FMV.

7.51 We maintain that the beta factor we applied in our DCF analysis is appropriate and reflects the risks a notional investor would consider when purchasing Santa Ana.

7.52 Regarding country risk, we reviewed multiple sources for estimating the country risk premium applicable to an investment based in Peru, including four separate models presented by Morningstar, Professor Damodaran's estimate, the actual spread faced on Peruvian government debt, and other financial instruments that reflect a spread on Peruvian securities versus those of the U.S.[177] We discussed and set aside the country risk indicators provided by Morningstar due to their reliance on historical data and our belief that they may not provide a meaningful estimate of forward-looking country risk.[178]

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174 FTI Report, paragraph A5.18

175 FTI Report, paragraph A5.21

176 Brattle Report, paragraph 111

177 FTI Report, paragraph A5.29

178 FTI Report, paragraph A5.29(i)

7.53 The remaining country risk indicators were:

i) Professor Damodaran's estimate of 2.0%, which he increases to 3.0% to account for the increased risk inherent in equity investments;[179]

ii) The 10 year bond spread between Peru and the U.S. of 1.8%;[180]

iii) The CDS spread of 1.3%;[181] and,

iv) The EMBI spread of 2.0%.[182]

7.54 Professor Damodaran's methodology estimates that equity-based returns must necessarily be higher than those of debt-based securities and reflects this by applying a 1.5x factor to debt-based risk measures.[183] Based on the greater investment security and return certainty inherent in debt-based instruments, we believe that such an adjustment is reasonable in this case. Therefore, the debt, CDS, and EMBI indicators result in country risk estimates of 2.8%, 1.9%, and 3.0%, respectively. Added to Professor Damodaran's estimate of 3.0%, we believed and continue to believe that a country risk estimate of 3.0% is appropriate.[184]

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179 FTI Report, paragraph A5.29(ii)

180 FTI Report, paragraph A5.29(iii)

181 FTI Report, paragraph A5.29(iv)
CDS spread of 126.62 basis points should be rounded to 1.3; previously written as rounded to 1.2.

182 FTI Report, paragraph A5.29(iv)

183 FTI Report, paragraph A5.29(ii)

184 FTI Report, paragraph A5.32

7.55 Brattle questions Professor Damodaran's approach specifically and the concept of a country risk premium in general.[185] Firstly, adopting Brattle's interpretation regarding country risk premiums, all other inputs being equal, the discount rate should decrease as the country risk would be set to 0.0%, implying that the Santa Ana project was undervalued in the FTI Report.

7.56 However, we reiterate our belief that a country risk premium is an appropriate addition to our U.S.-based equity rate of return because of the higher rate of return required for investments in Peru.[186] Each of the inputs that we used to build up the equity rate of return in the FTI Report were based on U.S. rates of return and it is unreasonable to assume that these would be identical for Peru-based investments. Such country risk adjustments are generally accepted by other quantum experts and have generally been accepted by tribunals.[187]

7.57 Brattle's secondary comment with respect to country risk is that we have made no adjustments for country risk with respect to the different industries.[188] We recognize that industries are exposed to in-country risk differently, but have not made explicit adjustment for this qualitative factor.[189] We note that the industry beta discussed above does account for some of the industry-specific risk faced by metals and mining firms globally. As only a portion of the Peruvian country risk would apply to the Santa Ana project as most of its capital and operating costs would be incurred in U.S. dollars and 100.0% of its revenues would be received in U.S. dollars, any adjustment for the proportion of the country risk applicable to Santa Ana would serve to increase the loss to the Claimant.

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185 Brattle Report, paragraph 112

186 FTI Report, paragraph A5.27

187 For example, country risk adjustments were applied by both experts and adopted by the tribunal in the *Gold Reserve, Inc. v. Bolivarian Republic of Venezuela* award (**FTI-27**).

188 Brattle Report, paragraph 112

189 FTI Report, paragraph A5.30

7.58 We recognize that the discount rate results in material changes to Santa Ana's FMV and presented a sensitivity analysis that reflects changes to the discount rate in the FTI Report.[190] However, we disagree with Brattle's conclusion that this sensitivity should lead us to default to a damages calculation based on the reimbursement of the costs incurred by the Claimant as asserted by the Respondent.

Brattle's comments regarding short-term silver prices

7.59 Brattle makes a number of vague and unsupported statements that the commodity price methodology applied in the FTI Report as being *"inconsistent with finance principles"* and *"not consistent with commodity pricing theory"*. Brattle appears to misunderstand the methodology that we adopted.[191]

7.60 First and foremost, we selected a commodity pricing methodology that would provide the most reliable estimate of the commodity prices that notional buyers and sellers would have estimated at the Valuation Date based on the available information. Reviewing the available market indicators of price expectations, we came to the conclusion that there is a discrete period over which futures contracts were available and a period thereafter where they were not. For the period where futures contracts were available, we found them to be the most reliable estimate of commodities, as a silver producer (i.e. Bear Creek) could presumably execute these contracts and "lock-in" a given price.[192]

7.61 This is objectively the most appropriate estimate for commodities prices because they represented actual prices that could foreseeably be obtained as at the Valuation Date. The other methodologies that exist for forecasting commodity prices are less objective.

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190 FTI Report, Figure 23

191 Brattle Report, paragraph 116, 117

192 FTI Report, paragraph 7.28

7.62 Brattle disputes this rationale, asserting,[193]

> *"It is well known in finance that the market value of an asset is the same whether or not the firm sells its production forward (Black 1976). That is, hedging decisions by a firm neither create nor destroy value, so whether Bear Creek planned to hedge its future sales or not is irrelevant to Santa Ana's FMV."*

7.63 Although Brattle's comment may or may not be correct, Brattle misses the point of our reference to futures prices, which is to obtain objective market data for the prices the Project would have realized "but-for" the alleged expropriation and thus limit the impact of price uncertainty in our DCF model.

7.64 Brattle's preference for using an expected spot price methodology is illogical since this would reduce the level of objectivity and certainty in the cash flows in our short-term period.[194]

Brattle misunderstands their sources and misinterprets the long-term prices in the FTI Report

7.65 Regarding long-term commodity prices (i.e. those prices after 2015 where no futures contracts exist), we adopted a forecasting methodology based on the way that actual market participants would have formed their commodity price expectations.[195] On the Valuation Date, a rational market participant would take into consideration all of the available information when forming a long-term commodity price expectation. This methodology is equivalent to creating a spot price expectation for a given year as preferred by Brattle.[196]

7.66 Our DCF methodology is based on inflation-adjusted (or "real") prices, costs, and discount rates. Therefore, our price expectation was also denominated in real terms.

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193 Brattle Report, footnote 97

194 Brattle Report, paragraph 116

195 FTI Report, paragraph 7.31

196 Brattle Report, paragraph 116

7.67 Brattle's objection to our commodity price expectation references sources that they say indicate that silver is "slightly mean reverting in nominal terms".[197] Brattle interprets this to mean that silver prices tend toward long-run constant nominal prices and declining real prices.

7.68 Brattle's interpretation of mean reversion is flawed because it pre-supposes that the long-run mean price, in nominal terms, of commodities is constant. As discussed in **Paragraph 7.73**, these prices have actually been increasing in nominal terms, a trend that accelerated in the years leading up to the Valuation Date.

7.69 Brattle's interpretation does not make intuitive sense as constant nominal prices would, in the long-run, result in real prices that tend towards zero (i.e. in the future, silver would effectively have no value). This does not appear to be a reasonable basis for forecasting prices.

7.70 Upon review of the academic sources cited in the Brattle Report, rather than supporting Brattle's interpretation, it appears that the sources refute the idea that commodity prices should be constant in nominal terms.

7.71 A footnote included in one of the sources cited by Brattle regarding the test methodology from Professors Casassus and Collin-Dufresne states:[198]

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197 Brattle Report, paragraph 117

198 Jamie Casassus, Pierre Collin-Dufresne, "Stochastic Convenience Yield Implied from Commodity Futures and Interest Rates", footnote 21 (**BR-119**)

"For simplicity, we do not adjust the data for inflation. Given the relative short time span of our data set this seems reasonable. A more realistic implementation of the model with a longer time series would require explicit modelling of inflation for two reasons. First, it seems likely to find mean reversion in real prices rather than nominal prices. Second, with our specification, the convenience yield is a linear function of the log spot price, which seems more sensible if prices are expressed in real terms (we thank Mark Rubinstein for pointing this out)."

7.72 The DCF methodology we employed denominated all inputs and cash flows in real terms, including prices, costs, and the discount rate. Professors Casassus and Collin-Dufresne also comment on Brattle's other source for this interpretation of mean reversion as it relates to commodity price:[199]

"Bessembinder et al. (1995) also find evidence for mean reversion by comparing the sensitivity of long-maturity futures prices to changes in spot prices (or, effectively, short-maturity futures prices). Since their test uses only information from the cross section of futures prices, it cannot detect mean reversion resulting from "movements in the risk-premium component" (see their discussion p. 362). Consequently, their test cannot determine whether historical time series of commodity prices actually exhibit mean reversion."

7.73 Brattle's interpretation is also not supported by the historical behavior of silver and gold as of the Valuation Date. For example, the chart below charts the daily spot prices of silver for the 20 years prior to the Valuation Date:[200]

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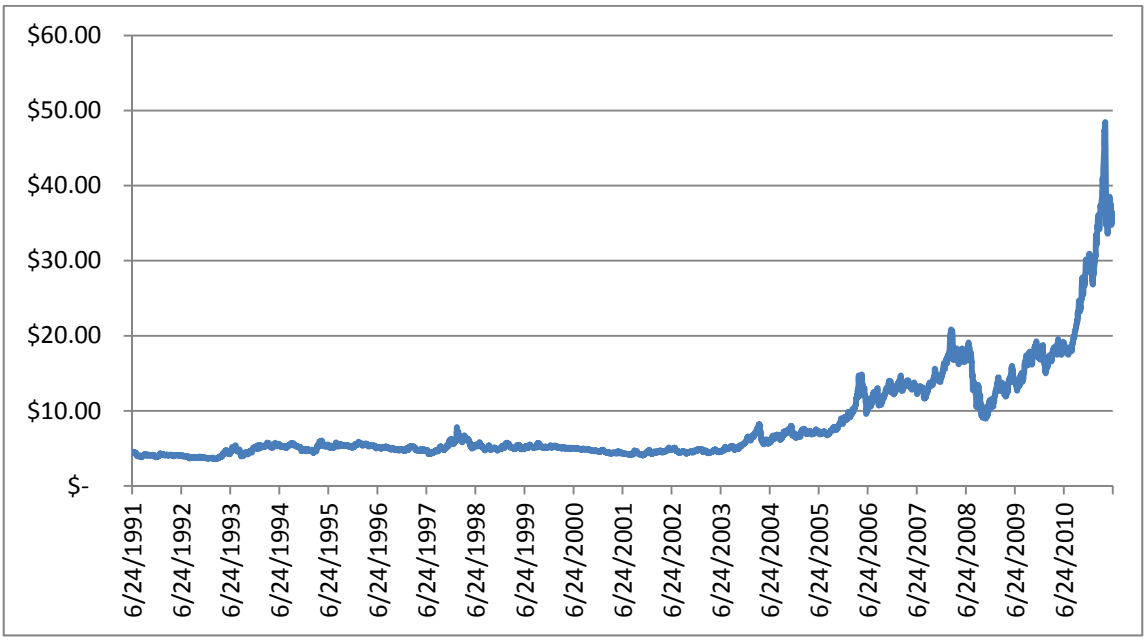
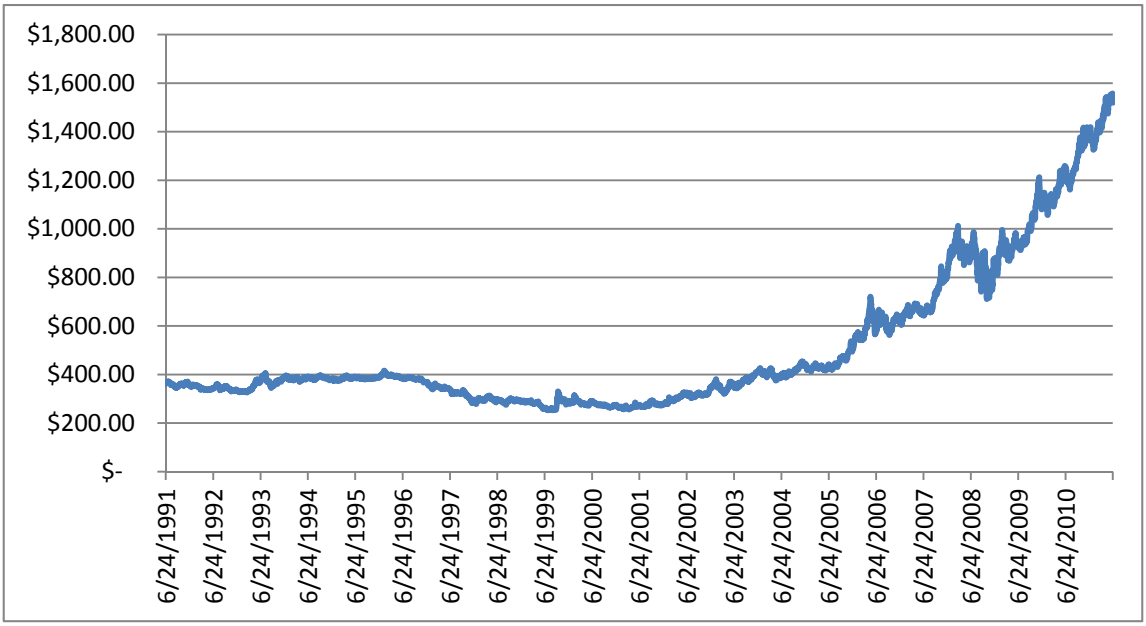
199 Jamie Casassus, Pierre Collin-Dufresne, "Stochastic Convenience Yield Implied from Commodity Futures and Interest Rates", page 2286 (**BR-119**)

200 Commodity spot prices provided by SNL. (**FTI-73**)

Figure 7 – Silver and Gold Prices (June 24, 1991 to June 23, 2011)





7.74 Prior to the mid-2000s, silver and gold spot price volatility was low. The publications cited by Brattle are dated (1995, 2005), which may explain their interpretation of mean reversion resulting in constant long-run nominal prices.[201] Brattle's sources predate the shift in commodities markets that began in the mid-2000s and global commodity markets have changed since the publication of the papers referred to in the Brattle Report.

7.75 We do not find Brattle's comments regarding our chosen long-term commodity price methodology to be compelling. A constant nominal price curve, resulting in a declining real price that tends toward zero, is not supported in the academic sources cited by Brattle and it appears to be fundamentally illogical. Therefore, we do not believe that any adjustment is necessary to our long-term price methodology.

7.76 Brattle applies its flawed interpretation to the findings of the *Gold Reserve* case as well.[202] In the FTI Report, we presented an alternative pricing methodology based on the approach adopted in the *Gold Reserve* case because the tribunal in that case found that holding the last applicable futures price was a common industry practice.[203] As explained above, we do not believe that it is economically reasonable to have a commodity price forecast that results in a declining real price of commodities that tends toward zero in the long-run. Therefore, we also do not believe that any adjustment is necessary to our alternative long-term price methodology.

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201 Brattle Report, footnote 99

BR-117 and BR-119 were published in 1995 and 2005, respectively.

202 Brattle Report, paragraph 118

203 FTI Report, paragraph 7.50

Brattle's comments on the RPA Extended Life Case

7.77 Brattle comments on the RPA Extended Life Case claiming that the difference in cut-off grade between it and the RPA Revised Base Case is a result of a *"higher price scenario for the life of mine compared with the base case"*.[204] The implication is that Brattle believes that RPA has been inconsistent between the two cases. RPA responds:[205]

> *"…Brattle is incorrect in stating that a "higher price scenario" is the reason behind the difference in the 17.5 g/t Ag and 14 g/t Ag cut-off grades. The 14 g/t Ag cut-off was based on a set of assumptions for operating costs, metal prices, and metallurgical recoveries which are specific to the [RPA] Extended Life Case."*

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204 Brattle Report, paragraph 120

205 RPA Reply Report, paragraph 207

7.78 Brattle follows up its initial comment by assuming that RPA failed to run a Whittle Pit Optimization (which Brattle assumes was run on the RPA Revised Base Case) on the additional Mineral Resources, which led to an overstatement of material converted from Resource to Reserve.[206] Brattle quotes SRK's accusation that this was part of *"a deliberate strategy to inflate value"*. Brattle is mistaken. According to RPA, they only ran a Whittle Pit Optimization on the RPA Extended Life Case and instead relied on the FSU design pit for the RPA Revised Base Case; if they had optimized the RPA Revised Base Case, the revised Mineral Resources would have been even higher.[207] Regarding the Resource to Reserve conversion rate comment made by SRK and repeated by Brattle, RPA explains that the Respondent's experts are mistaken because the conversion in the RPA Extended Life Case is based on the cut-off grade, explained above, which is lower based on improved operating cost assumptions and better metal prices.[208] RPA opines that referencing the current Mineral Reserve estimate as a reference point is the cause of SRK's misstatement.

7.79 Finally, Brattle attempts to cast doubt on the inclusion of Inferred Resources in the RPA Extended Life Case, calling RPA's decision "controversial".[209] We note that the NI 43-101 standards are not relevant for this issue as both RPA and our engagements were not to create a revised Feasibility Study. The relevant standard, as identified multiple times throughout our reports, is CIMVAL, which the RPA Extended Life Case is in compliance with.

7.80 RPA quotes CIVMAL as follows:[210]

"All Mineral Reserves and Mineral Resources on a Mineral Property should be considered in its Valuation."

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206 Brattle Report, paragraph 121

207 RPA Reply Report, paragraph 212, 213

208 RPA Reply Report, paragraph 112

209 Brattle Report, paragraph 124

210 RPA Reply Report, paragraph 216

"Inferred Mineral Resources should be used in the Income Approach with great care, and should not be used if the Inferred Mineral Resources account for all or are a dominant part of total Mineral Resources. Any use of Inferred Mineral Resources in the Income Approach must be justified in the Valuation Report and treated appropriately for the substantially higher risk or uncertainty of Inferred Mineral Resources compared to Measured and Indicated Mineral Resources. Inferred Mineral Resources should only be used in the Income Approach if Mineral Reserves are present and if, in general, mined ahead of the Inferred Mineral Resources in the Income Approach model, and/or if Measured and/or Indicated Mineral Resources are used as specified in G4.3 to G4.7 and if, in general, mined ahead of Inferred Mineral Resources in the Income Approach model."

7.81 Regarding these two excerpts, firstly the RPA Extended Life Case properly considered all Mineral Reserves and Resources, including Inferred Resources, as part of the DCF model. Secondly, the Inferred Resources were approximately 13% of the total tonnes and were not a dominant part of the total Mineral Resources.

7.82 As identified in the RPA Report, Inferred Resources are typically considered in investment decisions. Regarding acquisitions, RPA states:

"Transactions for mining properties take place at all stages of development and the value can be based on mineral reserves and/or mineral resources, including inferred resources."

7.83 Therefore, RPA has made no adjustments to the RPA Extended Life Case as a result of the comments raised by SRK and Brattle. Consequently, we have not adjusted our conclusion with respect to the Santa Ana project's FMV for the comments in either the SRK Report or the Brattle Report.

8. Response to Brattle comments regarding Corani Damages

8.1 We were also asked by Counsel to quantify the additional damages suffered by the Claimant as a result of the alleged expropriation of the Santa Ana project. Specifically, we were advised that as a result of the loss of the Santa Ana project, development of the Corani project was stalled due to a lack of discretionary cash flows from Santa Ana's production.[211] We understand that the Claimant has alleged that the alleged expropriation of the Santa Ana project lead to the following damages to its interest in the Corani project:

i) Development was delayed;

ii) Claimant has to raise more money at a higher financing rate, while having fewer options than if they retained control of the Santa Ana project; and,

iii) The Corani project has become riskier to develop.

8.2 One source of damage to the value of Corani (in addition to the delay) lies in the cost of capital that is available to the Claimant to develop the mine. Corani was to be financed by the cash flows from Santa Ana, and the availability of debt financing that can be raised by the operators of an active mine. In the absence of the development of Santa Ana, the Claimant will not have access to this source of capital. Further, the sources of capital that will be available to develop Corani will come from the issuance of equity of a much smaller company with a lower market capitalization. The resulting dilution to investors, and the cost of this equity will undoubtedly exceed the cost of capital that would have been available had Santa Ana been allowed to proceed as anticipated.

8.3 Thus the damage to Corani is tangible, has been experienced, and is permanent.

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211 FTI Report, paragraph 8.1

8.4 As explained above, BCM's share price does not provide a reliable measure of the FMV of either Santa Ana or Corani for the reasons set out above and in the FTI Report. Unlike Santa Ana, a fully developed cash flow model for the Corani project was not available at the time the FTI Report was prepared. Accordingly, due to the alleged breaches, we are unable to develop a counterfactual "but-for" model based on an objective measure of the cost of capital that will be available to develop Corani. Any such effort would, in this circumstance, require a number of subjective assumptions, which would not support an objective opinion of damage.

8.5 As such, FTI was not able to prepare a similar analysis for Corani as was prepared for Santa Ana. The only objective measure of the change in perceived value to Corani is the change in the price of the shares of BCM as at the Valuation Date. FTI has outlined in detail the deficiencies in using the stock price as a measure of the value of the Santa Ana and Corani projects; however, it remains the only measure of decline in value that can be objectively observed.

8.6 In order to quantify the reduction in value as a result of the taking, we estimated the value of Corani with reference to Bear Creek's EV under a "but-for" scenario based on the assumption that absent the alleged actions of the Respondent, the company's share price would have followed the decline in the S&P/ TSX Global Mining index from May 27, 2011 to June 27, 2011.[212] As the company retained control of Corani, we deducted Bear Creek's EV as of June 27, 2011, which we equated to the retained value of the Corani project following the alleged expropriation.

8.7 To account for the value of Santa Ana that was potentially embedded in Bear Creek's EV prior to the Expropriation Date, we produced three different reduction calculations as shown in the table below:[213]

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212 FTI Report, paragraph 8.5, 8.6

213 FTI Report, Figure 27

Figure 8 – Corani Reduction in Value Summary

Description	Calculation	Santa Ana Allocation		
		FMV	19.2% of EV	0.0% of EV
May 27, 2011 BCM EV	[A]	$ 543.5	$ 543.5	$ 543.5
Less: Santa Ana value	[B]	$ (224.2)	$ (104.3)	$ -
May 27, 2011 Corani value	[C] = [A] - [B]	$ 319.3	$ 439.1	$ 543.5
Less: Index decline @ 7.3%	[D] = [C] * [1 - 7.3%]	$ (23.4)	$ (32.2)	$ (39.9)
June 27, 2011 Corani value	[E] = [C] - [D]	$ 295.9	$ 406.9	$ 503.6
Less: June 27, 2011 BCM EV	[F]	$ (236.2)	$ (236.2)	$ (236.2)
Reduction in Corani value	[E] - [F]	**$ 59.6**	**$ 170.6**	**$ 267.3**

8.8 We selected a reduction value of $170.6 million as a point estimate for purposes of our damages conclusion as we do not believe that the Bear Creek share price reflected the full FMV of Santa Ana at the time.[214]

8.9 It is likely that this method of measuring damages understates the effect on the value of Corani substantially. The consensus of independent industry analysts placed a value of approximately $1.1 billion on Corani at the Valuation Date.[215] Given Bear Creek's current EV of approximately $18.1 million, the diminution is significantly in excess of FTI's calculation of damage.[216]

8.10 Thus, although we know that BCM's share price understates the FMV of Corani, and hence the observed decrease in the BCM EV after the expropriation will also understate the damages to Corani, the calculation in the FTI Report provides the best estimate with the information available at the time of writing.

8.11 We address the Brattle Report's comments with respect to our calculation of the damages to the Claimant relating to Corani below.

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214 FTI Report, paragraph 8.12

215 FTI Report, paragraph 8.8

216 Enterprise Value provided by Capital IQ. (**FTI-62**)
Enterprise Value estimate based on prevailing share prices as at January 6, 2016.

Witness Statements of Andrew Swarthout

8.12 In the FTI Report, we were advised that the damages suffered by the Claimant with respect to Corani are as a result of a delay in Corani's development, an increase in its cost of financing, and an overall increase in the project's risk profile.[217] These risk factors were enumerated by the Claimant through the witness statement of Andrew T. Swarthout, president, CEO, and director of Bear Creek, dated May 28, 2015 (the "**Swarthout Witness Statement**").[218]

8.13 The Brattle Report attempts to address these three causes of injury and makes many arguments of fact that downplay the role of the Santa Ana expropriation in the diminution of Corani's value and Bear Creek's share price.[219] In doing so, the Brattle Report also distinguishes between realized and unrealized damages related to Corani. We do not believe that this distinction is relevant since the alleged injury faced by Claimant is ongoing.

8.14 In response to the allegations made in the Brattle Report and the Respondent's Counter-Memorial, Mr. Swarthout has prepared a second witness statement dated January 6, 2016 ("**Second Swarthout Witness Statement**").

Bear Creek's increase in financing costs is directly related to the loss of Santa Ana

8.15 Brattle asserts that Bear Creek has not faced an increase in its financing costs *"because Bear Creek has not sought or obtained financing for Corani to date"*.[220] Brattle points to a recent "Special Call" held by Bear Creek on June 2, 2015, where the company had no need to raise financing *"until a production decision is made for the Corani project"*.

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217 FTI Report, paragraph 8.1

218 Swarthout Witness Statement, paragraph 46

219 Brattle Report, paragraph 133

220 Brattle Report, paragraph 136

8.16 Mr. Swarthout responded:[221]

"[I]t was impossible to raise financing for a project of Corani's magnitude until the ESIA was finally approved – especially in light of how Peru acted at Santa Ana. While Santa Ana was fully financed at the time Peru took away Santa Ana on June 25, 2011, this was not possible for Corani, which involved substantially higher upfront capital investments."

"There is little doubt in my mind that Bear Creek's financing of Corani cannot move forward unless Bear Creek receives compensation in this arbitration for Peru's taking of Santa Ana."

8.17 Brattle claims that internal financing is not necessarily cheaper than outside financing.[222] Brattle also argues that the relevant cost of capital is driven by Corani's risk. According to Mr. Swarthout:[223]

"Peru asserts that external financing and using internal funds are equally costly. Again, Peru misses the point as Bear Creek has always acknowledged that it will need traditional project debt (bank lending), equity, equipment financing, and other forms of external financing besides the Santa Ana cash flow in order to finance Corani. There is no doubt that the cost of this external financing has substantially increased (assuming it remains available at all) after the taking of Santa Ana."

"Peru suggests that lenders and the markets view the financing of the Corani Project solely on the basis of the risks related to the Corani Project itself. To decouple Corani from Santa Ana when discussing cost of capital is naïve and unrealistic."

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221 Second Swarthout Witness Statement, paragraph 44, 45

222 Brattle Report, paragraph 156

223 Second Swarthout Witness Statement, paragraph 52, 53

8.18 Finally, Brattle attempts to minimize the impact of the loss of Santa Ana's free cash flows by stating *"[t]he free cash flows from Santa Ana (estimated by Bear Creek at $68 million per year) would not have been sufficient to cover the substantial construction costs of Corani (anticipated to be about $253 million per year)."*[224] Brattle estimates that Santa Ana's cash flows would only account for 11% of Corani's full capital cost.

8.19 Brattle also suggests that the loss of Santa Ana is a benefit to Bear Creek's ability to develop Corani. Mr. Swarthout discusses this point as follows:[225]

> *"Peru also asserts that by losing Santa Ana we have saved US$71 million in construction costs, apparently thereafter available for the construction of Corani, seemingly painting the picture that we have somehow been given an opportunity. However, those funds were raised in 2010 in a Canadian Securities regulated, public equity offering for which the "Use of Proceeds" in the Offering Prospectus was specifically to build Santa Ana. Therefore, I do not view the unexpected availability of this US$ 71 million as a windfall for Corani."*

8.20 As discussed previously, Bear Creek never considered Santa Ana the sole financing source for Corani. Taking out the impact of the Santa Ana capital costs, the first two years of Santa Ana's free cash flows would account for approximately 23.7% of Corani's initial capital costs.[226] According to the Corani Feasibility Study, Corani's initial capital expenditure would be expended as $22.6 million, $219.8 million, $286.7 million, and $45.2 million over the first four years, respectively.[227]

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224 Brattle Report, paragraph 159

225 Second Swarthout Witness Statement, paragraph 54

226 $136 million/ $574 million = 23.7%.

227 Corani Feasibility Study, page 240 (**FTI-08**)

8.21 Brattle fails to provide evidence that Bear Creek's opportunity cost of internally generated capital would be greater than the cost of capital of external financing, but merely implies that it could be the case. The loss of the Santa Ana project's free cash flows increased the gross amount of funds that needed to be raised by Bear Creek in order to develop the Corani project. This, in addition to the uncertainty created by the taking itself (discussed in **Paragraph 8.33**), would have the effect of making the terms of potential financing less favourable and overall more expensive for Bear Creek than it would have been absent the loss of Santa Ana. Therefore, the loss of Santa Ana has resulted in an increase in cost to Bear Creek to finance Corani.

The delay in Corani's development is tied to the loss of Santa Ana

8.22 As discussed above, losing Santa Ana made Corani's development substantially more difficult to finance. We understand that this increased difficulty in financing the Corani project is also the cause of the delay. According to Mr. Swarthout:[228]

> *"Contrary to what Peru and its experts assert, Bear Creek's financing efforts for Corani have, in fact, been delayed and continue to be delayed as a result of Peru's taking of Santa Ana. This is because Bear Creek's strategic plan was to bring the Santa Ana Project into production first, in order to help finance the development of Corani."*

228 Second Swarthout Witness Statement, paragraph 43

8.23 Brattle concedes that Corani has been delayed.[229] However, Brattle characterizes the delay in Corani's development as a managerial decision brought on by technical factors such as, the choice to update the Corani Feasibility Study, and the decline in the price of silver.[230] Brattle cites to a number of statements made by Bear Creek and Mr. Swarthout regarding the development of Corani from 2011 through to 2015 to support their characterization.[231]

8.24 Responding to Brattle's statement that management chose to delay the development of Corani, Mr. Swarthout responded:[232]

"As explained in detail in the 2011 Feasibility Study, various recommendations were made for Bear Creek's future consideration and execution. In other words, additional technical studies, which is what optimization strategies are, were clearly contemplated in the 2011 Feasibility Study and are customary steps in the development of mining projects. In addition, these recommendations were completely independent of market conditions."

8.25 Finally, according to Brattle, the delay may have actually been a net benefit to Bear Creek as Corani's value, as calculated in its feasibility studies, increased as a result of the update.[233] Mr. Swarthout responded as follows:[234]

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229 Brattle Report, paragraph 134

230 Brattle Report, paragraph 138, 139

231 Brattle Report, paragraph 140

232 Second Swarthout Witness Statement, paragraph 46

233 Brattle Report, paragraph 146

234 Second Swarthout Witness Statement, paragraph 47

"It is correct that, as a result of the 2015 updated feasibility study, Corani's value has increased, which was precisely the purpose of that study. However, our ability to finance Corani remains substantially impaired, which severely impacts Bear Creek's ability to monetize Corani's value. Given that Santa Ana will not be put into production, there is no reason to expect in the future that this loss in value will diminish in any way."

8.26 The fact that the work performed in the update to the Corani Feasibility Study resulted in an increase in the Project's NPV is irrelevant in our opinion. Firstly, we understand that optimization work is typically performed throughout the life of mine and could have been realized as construction and development was underway if Corani was delayed or not.[235] Secondly, NPV estimates in the two feasibility studies are not directly comparable without adjustments to account for the impact of the nearly four years between the two reports, including inflation and additional discounting to set them back to the same valuation date. Finally, as Mr. Swarthout notes, the financing issue continues to delay Corani and it is unclear when development will actually be able to start.

8.27 Therefore, Corani's development has been delayed due to the financing difficulties created by the loss of Santa Ana. As noted above, Brattle concedes that this delay has been realized. The fact that Brattle fails to acknowledge that losing Santa Ana's free cash flows also contributed to this delay defies explanation.

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235 RPA Reply Report, paragraph 184

Brattle's illustrative example of market value is not relevant

8.28 Brattle attempts to downplay the impact on the impact of Bear Creek's increased financing costs through use of an illustrative example of a tomato farm located in Manhattan, which could be sold to a land developer.[236] Brattle's example is not relevant to this case as it is apparent that Corani's value as a silver deposit has been verified through the Corani Feasibility Study and the subsequent update in June 2015. Given the size of the deposit, it is likely that a buyer would want to develop Corani as a silver project. Furthermore, Brattle fails to develop an alternative use for Corani that would justify its example.

8.29 Mr. Swarthout also addresses Brattle's example and suggestion that Bear Creek sell the project to mitigate its losses with respect to Corani:[237]

> *"While I hesitate to even respond, Peru goes as far as to use a tomato project in Manhattan as an analogy to illustrate its assertion. This is both ludicrous and insulting to suggest that Bear Creek and its investors have the mind-set of tomato farmers and real estate speculators. As they repeatedly stated to Catherine McLeod Seltzer and I, some of the most sophisticated mining investors in the world invested substantial amounts in Bear Creek with the view of participating in an emerging mining company capable of being in the top 10 producers of the world. This was not only possible for Bear Creek, but probable given our team and access to capital, until June 2011 and continuing for the foreseeable future. Accordingly, it does not make any sense to suggest that Bear Creek should sell Corani in distressed conditions and miss on the opportunity to turn it into a producing mine. Peru basically suggests that Bear Creek should "cut its losses" and be content to go back to square one. This is not how one runs a mining company."*

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236 Brattle Report, paragraph 154

237 Second Swarthout Witness Statement, paragraph 51

8.30 For reference, Corani was to be the eighth largest silver project in the world, and largest in Peru, by contained Mineral Reserves and Resources as of the Valuation Date:[238]

Figure 9 – Top 20 Silver Projects by Contained Reserves and Resources as of June 23, 2011

Rank	Property Name	Contained, Reserves & Resources - Silver (oz)	Primary Commodity	Development Stage	Owner(s)	Province/State	Country
1	Bolshoi Konimansur	1,714,019,000	Silver	Prefeas/Scoping	Government of Tajikistan	Sughd	Tajikistan
2	Navidad	753,693,778	Silver	Feasibility	Pan American Silver Corp. (Owner) 100%; Silver Wheaton Corp. (Owner)	Chubut	Argentina
3	La Pitarrilla	725,840,000	Silver	Feasibility	Silver Standard Resources Inc.	Durango	Mexico
4	Fresnillo	583,783,000	Silver	Expansion	Fresnillo Plc	Zacatecas	Mexico
5	Saucito	526,561,000	Silver	Expansion	Fresnillo Plc	Zacatecas	Mexico
6	Cannington	521,542,000	Silver	Operating	South32 Limited	Queensland	Australia
7	Cordero	450,758,000	Silver	Prefeas/Scoping	Levon Resources Limited	Chihuahua	Mexico
8	Corani	406,700,000	Silver	Feasibility Complete	Bear Creek Mining Corporation	Puno	Peru
9	Malku Khota	370,136,000	Silver	Prefeas/Scoping	Comibol	Potosí	Bolivia
10	Dukat	339,738,000	Silver	Operating	Polymetal International Plc (Owner) 100%; Magadan Silver Co (Venture)	Magadanskaya oblast'	Russia
11	Aktepe	318,655,000	Silver	Reserves Development	Republic of Uzbekistan (Optionor) 50%; Valencia Ventures Inc. (Optionee) 26.2%	Toshkent	Uzbekistan
12	Xiasai Yindou	318,292,000	Silver	Operating	Western Mining Co., Ltd.	Sichuan	China
13	Escobal	318,270,000	Silver	Expansion	Tahoe Resources Inc.	Santa Rosa	Guatemala
14	Sunshine	275,898,030	Silver	Preproduction	Sunshine Silver Mines Corp	Idaho	USA
15	Pachuca	261,512,000	Silver	Feasibility	Altos Hornos de México, S. A. B. de C. V	Hidalgo	Mexico
16	Montanore	259,987,000	Silver	Prefeas/Scoping	Mines Management, Inc.	Montana	USA
17	Lucky Friday	206,206,183	Silver	Expansion	Hecla Mining Company	Idaho	USA
18	Prognoz	204,809,000	Silver	Prefeas/Scoping	Argentum CJSC (50%); Nord Gold N.V. (50%)	Sakha, Respublika	Russia
19	Juanicipio	199,569,000	Silver	Construction Started	Fresnillo Plc (56%); MAG Silver Corporation (44%)	Zacatecas	Mexico
20	Menkechka	179,871,000	Silver	Feasibility	GeoProMining Ltd.	Sakha, Respublika	Russia

8.31 If Corani was sold by Bear Creek in an attempt to mitigate damages, as suggested by Brattle, the realized price would be depressed; there is no motivation for a buyer to pay forced sellers full price in forced sale scenarios. This fact is recognized in the stipulation that the notional transaction contemplated in the definition of FMV be conducted "*when neither [the buyer nor seller] is under compulsion to buy or sell*". Our conclusion with respect to the reduction in Corani's value is <u>not</u> based on a calculation of Corani's FMV.

The loss of Santa Ana increased Corani's risk profile beyond the mere threat of expropriation

8.32 Brattle states that Corani's permitting process has progressed unimpeded and that as such there was no loss to date as a result of interference from the Respondent.[239] Mr. Swarthout agrees with this assessment, but states:[240]

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238 Silver ounces by project provided by SNL. (**FTI-73**)

239 Brattle Report, paragraph 149

240 Second Swarthout Witness Statement, paragraph 49

"It is irrelevant that social opposition has not existed with respect to Corani or that the Peruvian government has not taken action against Corani. The fact remains that the taking of Santa Ana caused substantial financing delays and impacted the perception of the market that the government could take action against Corani. Bear Creek's depressed share price has reflected this concern."

8.33 As noted above, analysts commented on the increase in risk to Corani following the ESIA Suspension, but even before the expropriation of Santa Ana. For example, Raymond James noted, *"In our view, BCM's current valuation reflects no value for Santa Ana and is also now applying a higher risk discount to Corani."*.[241]

8.34 The Swarthout Witness Statement discusses the increase in Corani's risk profile in the following terms:[242]

"[T]he Government's expropriation of Santa Ana has substantially raised the risk profile associated with Corani in the eyes of mining investors because Corani is located approximately 350 kilometers away from Santa Ana where the Government demonstrated its willingness to sacrifice an advanced mining project to appease political activists."

8.35 Brattle acknowledges that such an increase in risk would give rise to damages:[243]

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241 Raymond James, "June 2, 2011 Report", page 1 (**FTI-54**)

242 Swarthout Witness Statement, paragraph 46

243 Brattle Report, paragraph 160

"Bear Creek argues also that the expropriation of Santa Ana generated an increase in the market's assessment of the probability that similar government actions might be taken in the future against the Corani project. We agree that if such an increase in probability occurred and persisted to date, it would have reduced the value of Corani to Bear Creek and to potential buyers. Therefore it would have lowered the project's FMV…"

8.36 Brattle does not address this concern. Instead, they insist that Corani's distance from the Santa Ana project and strong base of community support were enough to insulate it from a similar expropriation.[244] Brattle's perspective focuses entirely on the expropriation element, ignoring the other knock-on effects that the loss of Santa Ana would have on Bear Creek's plans for Corani's development.

8.37 In the Second Swarthout Witness Statement the other risk factors are elaborated upon:[245]

"Peru suggests that lenders and the markets view the financing of the Corani Project solely on the basis of the risks related to the Corani Project itself. To decouple Corani from Santa Ana when discussing cost of capital is naïve and unrealistic. Perhaps the best illustration is the answer I frequently gave to President Humala and other government officials repeatedly asked me "why doesn't Bear Creek just build Corani and worry about Santa Ana later?" I invariably responded that "I have just raised US$ 130 million in 2010 specifically to build Santa Ana which has now been taken away. You are suggesting that I go back to the very same markets and ask for perhaps US$ 250 million (the equity portion) in order to build Corani also located in Peru AND in Puno – the same region as Santa Ana?" President Humala and others told me that they understood what I was saying, as well as the gravity of the relationship between Santa Ana and Corani."

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244 Brattle Report, paragraph 161, 165

245 Second Swarthout Witness Statement, paragraph 53

8.38 Regardless of the actual threat of expropriation faced by Corani, the market's perception of risk for the project and Bear Creek would have increased. As described in **Paragraph 5.12**, the existence of financing serves to de-risk a project. Santa Ana's potential revenues were anticipated to be a substantial source of financing for the development of the Corani project. Once Santa Ana entered production, Bear Creek would have been reclassified from a junior exploration and development company to a junior producer, which in and of itself tends to reduce the market's perception of risk for a company and its projects.[246] The loss of Santa Ana delays Bear Creek's progression to becoming a junior producer and increases the company's overall risk profile.

8.39 The Second Swarthout Witness Statement summarizes the issue succinctly,[247]

> *"Peru spends a lot of time describing how Corani was otherwise unaffected, but it repeatedly misses the main point, namely the clear existence of the financial dependence of Corani on Santa Ana. Investors understandably conclude that Peru can act as capriciously at Corani [as] it did at Santa Ana under any political pressure, especially since both projects are located in the same region."*

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246 BDO, "The terrain is getting tougher: Junior mining companies deal with an increasingly complex landscape", October 2011, page 1. (**FTI-74**)

247 Second Swarthout Witness Statement, paragraph 55

The temporary recovery in Bear Creek's share price is not relevant

8.40 Brattle argues that the increased perception of risk was temporary and that the potential reduction in Corani's value was reversed within a month.[248] To support this claim, Brattle creates a mining index based on companies that they have identified as operating primarily in Peru and compares the index' share price returns against Bear Creek's from May 27, 2011 through to September 30, 2011.[249] Brattle also includes comparison against the S&P/ BVL General Index and the S&P/ TSX Composite Index.

8.41 Brattle's comments focus on a period between the June 27, 2011 (the first trading day after the Expropriation Date) and July 21, 2011.[250] During this period, Bear Creek's shares experienced a temporary spike in share price following a large sell-off. Subsequently, Bear Creek's share price quickly returned to prices seen immediately after the Expropriation Date, closing at $3.81 per share on September 30, 2011 compared to $3.80 per share on June 27, 2011. Brattle's assertion that Corani's decline in value was only temporary is unsupported.

The reduction in value to Corani was more pronounced than any of the market indicators

8.42 Examining Brattle's analysis further, we do not believe that the S&P/ TSX Composite Index or the S&P/ BVL General Index are reflective of the risks faced by Bear Creek given that neither of those indexes focuses on mining. In our opinion, the S&P/ TSX Global Mining Index, which we applied in the FTI Report, is more relevant in this case.[251]

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248 Brattle Report, paragraph 171

249 Brattle Report, Figure 6

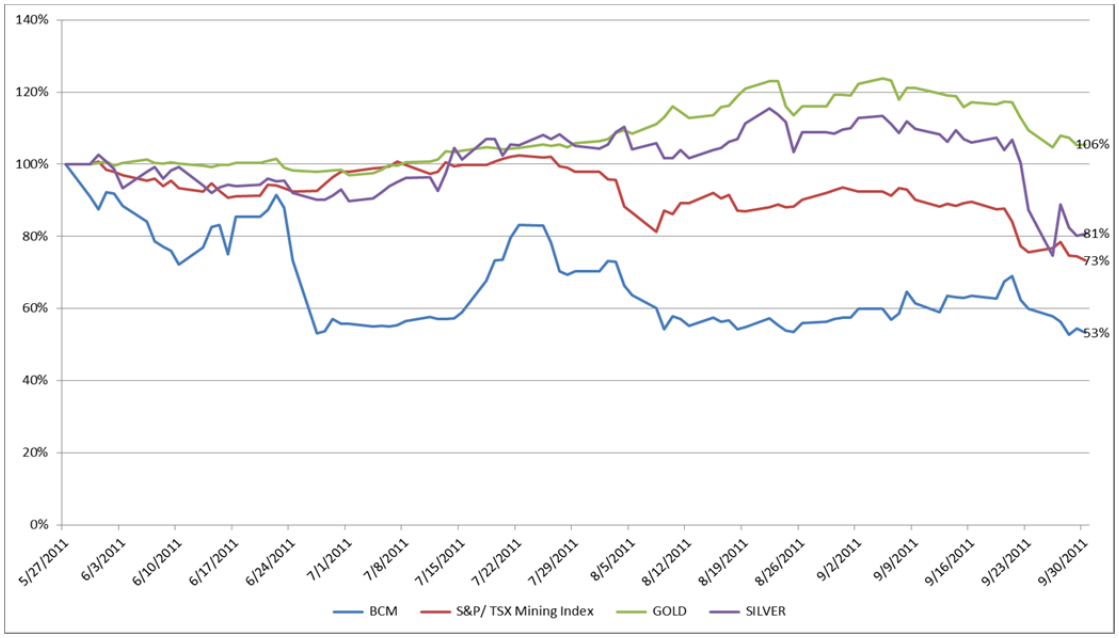
250 Brattle Report, paragraph 170

251 FTI Report, paragraph 8.5(i)

8.43 Between May 27, 2011 and September 30, 2011, Bear Creek's share price declined by approximately 46.7%, compared to declines of 20.1% and 18.7% in the S&P/ TSX Composite Index and the S&P/ BVL Peru General Index, respectively.[252] Brattle's own mining index declined by only 23.7% if constituents were weighted based on their relative size in terms of market capitalization; 29.9% based on an equal weighting.

8.44 However, Brattle ignores silver price and the S&P/ TSX Global Mining Index that were referenced in the FTI Report.[253] We have extended Figure 24 of the FTI Report to the end of September 2011 to match the period charted in Figure 6 of the Brattle Report:[254]

Figure 10 – Figure 24 of the FTI Report Extended Until September 30, 2011



252 Brattle Report, Workpaper 5

253 FTI Report, Figure 24

254 Bear Creek share prices and S&P/TSX Global Mining Index data provided by Capital IQ. (**FTI-62**) Commodity prices provided by SNL. (**FTI-73**)

8.45 No matter the metric being applied, Bear Creek's share price declined by more than the market indicators referenced in either the FTI Report or the Brattle Report. Assuming that the alleged breaches did not occur beginning in May 2011 and that Bear Creek's share followed one of the many market indicators discussed above, we would have expected the shares to be priced at least 31.4% higher by the end of September 30, 2011:[255]

Figure 11 – Projection of Bear Creek's share price to September 30, 2011

Bear Creek Mining Share Price Projection from May 27, 2011	May 27, 2011	September 30, 2011		Difference
		Comparative Indicator Price	BCM Projected Price	
BCM vs. S&P/TSX Mining Index	130.75	95.88	$5.24	37.6%
BCM vs. S&P/BVL Peru General Index	22,375.30	18,329.10	$5.86	53.7%
BCM vs. Gold (Spot)	$1,532.88	$1,617.79	$7.55	98.1%
BCM vs. Silver (Spot)	$37.69	$30.45	$5.78	51.6%
BCM vs. Equal-Weighted Peru Mining Index	1.00	0.70	$5.01	31.4%
BCM vs. Market-Weighted Peru Mining Index	1.00	0.76	$5.43	42.6%
Bear Creek Mining Actual Share Price	$7.15	$3.81		

8.46 After the period charted above, Bear Creek's share price continued to decline through the release of the Corani Feasibility Study on November 9, 2011 and beyond. Today, Bear Creek's share price sits below its issuing price in 2003, before the development of either Santa Ana or Corani.[256] According to Brattle's methodology where Bear Creek's share price is assumed to equal the FMV of the underlying assets, this would suggest the near total loss of Corani's value.

255 Brattle Report, Workpaper 5
Bear Creek share prices provided by Capital IQ. (**FTI-62**)

256 Second Swarthout Witness Statement, paragraph 57

8.47 Attributing this reduction to any specific actions or events is difficult given prevailing macroeconomic conditions, such as the overall decline in metals prices and the mining industry that have arisen in the past four years. It is clear that regardless of subsequent market conditions, Bear Creek's share price was depressed as a result of the loss of Santa Ana. Absent the alleged expropriation, Bear Creek's share price would not have suffered the observed stock price compression and the company was projected to have a producing mine by the date of this report. Therefore, we believe that it is reasonable to conclude that Bear Creek's current share price would have been higher absent the alleged expropriation.

Our methodology isolates the impact of the alleged expropriation on Corani

8.48 On June 27, 2011, with Corani being the only significant asset held by Bear Creek aside from cash, the company and by association, the Corani project, could have been acquired for some amount greater than Bear Creek's EV to realize the Claimant's loss. Our Corani damages methodology does not rely on Bear Creek's EV to calculate the FMV of the Corani project, but rather takes the difference between our projected EV attributable to Corani absent the alleged breaches and the actual EV attributable to Corani on June 27, 2011 to calculate the reduction in EV attributable to Corani over this period.

8.49 Per **Section 6**, in our view, this amount is lower than the FMV an acquirer would pay in a transaction, but would have used the decrease in the EV attributable to Corani as a proxy for the transactional value of Bear Creek as a whole at that date. Although imperfect, we believe that this is the best available estimate of the actual loss in value suffered by the Claimant as a result of the alleged breaches of the Treaty perpetrated by the Respondent. As a result, our methodology may understate the potential damage to Bear Creek.

There is no inconsistency between the Santa Ana and Corani damages methodologies

8.50 Brattle argues that our conclusions on Santa Ana's FMV and Corani's reduction in value are inconsistent because the amount of the estimated EV "but-for" the alleged breaches that we allocated to Santa Ana was not its full FMV.[257] When Brattle says that there is no reason to believe that Bear Creek's shares did not reflect the FMV of the company's assets, they ignore all market indicators to the contrary.

8.51 As explained in the FTI Report, we do not believe that Bear Creek's share price provides a reliable measure of the FMV of its underlying assets.[258] We reiterated this point throughout **Section 6** and quoted a number of industry analysts that indicated their view that Bear Creek's shares were under-priced at the time. Thus it would be inappropriate to mix the FMV of Santa Ana and the portion of the EV attributable thereto in a calculation of the damages to Corani.

8.52 Per **Paragraph 6.36**, some analysts believed that Santa Ana's FMV was being omitted entirely from Bear Creek's share price prior to the actual taking. Our calculation in the FTI Report that resulted in a reduction in Corani's value of $267.3 million reflected this consensus.[259] As of May 27, 2011, Bear Creek's EV was approximately 50.9% of the consensus average NAV of Corani alone.[260] As shown in **Paragraph 6.40**, by June 27, 2011, Bear Creek's EV dropped to 22.1% of Corani's consensus average NAV.[261]

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257 Brattle Report, paragraph 179, 180

258 FTI Report, paragraph 7.69

259 FTI Report, Figure 27

260 FTI Report, Figure 26, 27
$543.5 million EV/ $1,066.8 million NAV = 50.9%

261 $236.2 million EV/ $1,066.8 million NAV = 22.1%

8.53 We considered all of the above points in the FTI Report and concluded that 19.2% of Bear Creek's EV could be attributable to Santa Ana on May 27, 2011, based on an estimate of the relative proportion of the total EV that market participants could have attributed to Santa Ana at the time, based on the relative NAV estimates of each project. As the alleged expropriation had yet to occur on that date, an acquirer could technically obtain a 100.0% interest in the Santa Ana project through an acquisition of shares regardless of the fact that those shares appeared to exclude consideration for the project itself.

8.54 In addition to the under-pricing of Bear Creek's shares, as discussed in **Paragraph 8.49**, Bear Creek's EV is lower than the amount that an acquirer would pay to obtain a 100.0% interest in the company. Therefore, we believe that it is reasonable that the 19.2% allocation of Bear Creek's May 27, 2011 EV is not the same number as the FMV of the Santa Ana project at the Valuation Date.

8.55 We disagree with Brattle that there is any inconsistency in using the more reliable and precise DCF method as it was available to determine the FMV of Santa Ana (rather than the BCM share price which for a number of fundamental reasons does not provide a reliable measure of FMV for the underlying assets) and then using the change in BCM's EV "but-for" and given the expropriation to estimate the permanent damage to Corani caused by the alleged breaches.

8.56 Since the alleged wrongful actions themselves have caused the uncertainty that forced FTI to use a less precise approach to measure the damages to Corani, it would not be appropriate to ignore the permanent and ongoing damages to Corani due to the inherent difficulties in estimating its quantum.

9. Response to Brattle comments regarding Pre-Award Interest

9.1 In the FTI Report, we were instructed to adopt a pre-award interest rate of 5.0%.[262] This pre-award interest rate was compounded as is commercially reasonable.[263]

9.2 The Brattle Report disputes this pre-award interest rate, preferring a rate stated at the Respondent's borrowing rate of 0.65%.[264] Brattle also suggests an alternative interest rate based on the risk-free rate of 0.16%.[265] Brattle agrees that it is commercially reasonable to calculate pre-award interest on a compound basis.[266]

9.3 We discuss the alternative rates suggested by Brattle in the following section.

Brattle's calculation of the Respondent's borrowing rate does not align with Peru's actual borrowing rate

9.4 The methodology used by Brattle to determine the Respondent's borrowing rate is made of two components:[267]

i) The interest rate for a one-month U.S. Treasury bill, resetting after each maturity date, denominated as a per annum interest rate; and,

ii) The sovereign spread for Peru for a CDS with a one year maturity period.

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262 FTI Report, paragraph 9.3, 9.4

263 FTI Report, paragraph 9.6

264 Brattle Report, paragraph 189

265 Brattle Report, paragraph 193

266 Brattle Report, paragraph 199

267 Brattle Report, paragraph 189

9.5 Brattle concludes that this equates to an average interest rate of 0.65% per annum. However, these yields are not consistent with Peru's actual borrowing costs in USD.

9.6 Firstly, in another section of their report, Brattle's identifies a LIBOR + 1.0% interest rate of approximately 1.2% as being the relevant rate during the interest period according to the law.[268] At a minimum, this suggests that the relevant interest rate would be 1.2%, not 0.65% as proffered by Brattle.

9.7 Secondly, the Peruvian Ministry of Economics and Finance also identified that the Respondent's EMBI spread, which we referred to for purposes of determining country risk, was 2.0% as at the Valuation Date.[269] This would suggest that on any US-based debt instrument, an equivalent instrument issued by Peru and denominated in USD should have a rate at least 2.0% higher.

9.8 Thirdly, according to Peru's Ministry of Economics and Finance, Peru's coupon rates and bond yields on USD-denominated bonds as of June 23, 2011 were as high as 9.9% and 6.0%, respectively, depending on the remaining term of the bonds.[270] As at the Valuation Date, the instrument with the shortest time to maturity had a 9.1% coupon and a 1.8% yield, but was due within less than a year. The next shortest had a time to maturity of 3.7 years, a coupon rate of 9.9% and yielded 2.7%.[271] The longest term bond with a 40.0 year maturity had a 5.6% coupon rate and yielded 6.0%. We have provided an analysis of these debt instruments in the table below:

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268 Brattle Report, paragraph 197

269 FTI Report, paragraph A5.29(iv)

270 Peru Ministry of Economics and Finance, "Daily Report", June 23, 2011, page 1 (**FTI-47**)

271 The majority of the bonds traded above par, with only the Peru Global 50 (maturing in 2050) valued under par. The high prices for Peru's bonds explain the low yields shown at the Valuation Date.

Figure 12 – Summary of Respondent's Outstanding USD-Denominated Global Bonds

Bond	Outstanding Issue $MM (USD)	% Allocation of Outstanding Issue	Price	Coupon Rate	Weighted Coupon Rate	Yield to Maturity	Weighted Yield to Maturity
Peru Global 12	312	3.52%	104.70	9.1%	0.3%	1.8%	0.1%
Peru Global 15	278	3.13%	124.43	9.9%	0.3%	2.7%	0.1%
Peru Global 16	581	6.55%	122.63	8.4%	0.5%	3.3%	0.2%
Peru Global 19	1,000	11.28%	119.92	7.1%	0.8%	4.1%	0.5%
Peru Global 25	2,250	25.37%	121.52	7.4%	1.9%	5.2%	1.3%
Peru Global 33	2,245	25.32%	136.31	8.8%	2.2%	5.8%	1.5%
Peru Global 37	1,202	13.55%	110.90	6.6%	0.9%	5.7%	0.8%
Peru Global 50	1,000	11.28%	94.19	5.6%	0.6%	6.0%	0.7%
TOTAL	**8,868**	**100%**			**7.58%**		**5.07%**

9.9 According to our research, of Peru's USD-denominated bonds, the "Peru Global 50" was issued on November 10, 2010 and was the debt instrument issued closest to the Valuation Date.[272] From this, it is apparent that the Respondent's borrowing rate was likely in a range of 5.1% (the weighted yield to maturity at the Valuation Date) and 5.6% (the coupon rate of the most recently issued bond).[273]

9.10 Therefore, the rate of 0.65% suggested by Brattle is not a commercial rate of interest that represents the Respondent's actual borrowing rate.

Neither the Claimant nor the Respondent could issue debt at a 'risk free' rate

9.11 According to Article 812 of the Treaty, *"Compensation shall be payable in a freely convertible currency and shall include interest at a commercially reasonable rate for that currency from the date of expropriation until the date of payment."*[274]

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272 Peru Global 50 bond issuance data provided by Capital IQ. (**FTI-62**)

273 The weighted average coupon rate is also relevant here because it represents the actual amount paid by the Respondent for its outstanding USD-denominated debt, whereas the yield represents the bond investor's expected return based on prevailing market prices.

274 "Canada-Peru Free Trade Agreement", August 2009, Article 812 (**FTI-21**)

9.12 Brattle asserts that an interest rate based on the risk-free rate is *"also a commercial rate"*.[275] Brattle has provided no support for this assertion.

9.13 Our understanding of the phrase "commercially reasonable" is that the interest rate must be achievable in a commercial context, meaning that it must be rate at which either the Claimant or Respondent could issue debt to arm's length parties.

9.14 As discussed above, the Respondent's cost of borrowing is much higher than the base risk-free rate. In the FTI Report, we estimated that the Claimant's cost of debt is approximately 5.6% based on four different reference rates from commercial sources.[276] As at the Valuation Date, the Claimant was not in the business of making commercial loans, but we believe that it is reasonable to assume that any such loans would be at a rate greater than or equal to its own cost of borrowing.

Conclusion

9.15 Based on the prevailing coupon and yield rates of Peru's actual bonds outstanding and the Claimant's estimated borrowing rate, we believe that the legal interest rate of 5.0% that we have been instructed to apply by Counsel was a reasonable commercial rate of interest at the Valuation Date.

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275 Brattle Report, paragraph 192

276 FTI Report, paragraph A5.40

10. Expert Declaration

10.1 We confirm that we understand our overriding duty is to the Tribunal and that we must assist the Tribunal on matters within our expertise. We believe that we have complied with this duty.

10.2 The assumptions upon which our calculations are based are not, in our opinion, unreasonable or unlikely assumptions.

10.3 We have no present or past relationship with any of the Parties. We note that we do have other ongoing cases with Counsel in which we have also been retained as independent experts.

10.4 We confirm that insofar as the facts stated in our report are within our own knowledge we have made clear which they are and we believe them to be true, and that the opinions we have expressed represent our true and complete professional opinion.

Howard N. Rosen January 8, 2016

Chris Milburn January 8, 2016

Appendix 1 Scope of Review

A1.1 We have relied upon the following documents in the course of our review.

Provided by Respondent

1) Brattle Report, dated October 6, 2015.

2) Michael Samis, Luis Martinez, Graham A. Davis, James B. Whyte, "Using Dynamic DCF and Real Options Methods for Economic Analysis in NI43-101 Technical Reports".

3) Jasper Bertisen, Graham A. Davis, "Bias and Error in Mine Project Capital Cost Estimation", The Engineering Economist, April 1, 2008.

4) SRK Report dated October 6, 2015.

5) Jamie Casassus, Pierre Collin-Dufresne, "Stochastic Convenience Yield Implied from Commodity Futures and Interest Rates".

Provided by Claimant

1) Request for Arbitration dated August 11, 2014.

2) Claimant's Memorial on Merits dated May 29, 2015.

3) RPA Report dated January 6, 2016.

4) Witness Statement of Andrew Swarthout dated May 28, 2015.

5) Second Witness Statement of Andrew Swarthout dated January 6, 2016.

Publicly Sourced[277]

61) Credit Suisse, "Financing life cycle of junior miners".

62) Data provided by Capital IQ.

63) Torys LLP, "Takeover Bids in Canada and Tender Offers in the United States", 2009.

64) Bank of Canada, "Pre-Bid Run-Ups Ahead of Canadian Takeovers: How Big is the Problem", 2005.

65) Mergerstat, "Control Premium Study 1st Quarter 2011".

66) Guido Baltussen, "Behavioral Finance: an introduction", 2009.

67) H. Kent Baker, John R. Nofsinger, "Behavioral Finance: Investors, Corporations, and Markets", 2010.

68) Richard A. Brealy, Stewart C. Myers, Franklin Allen, "Principles of Corporate Finance, Tenth Edition", 2011.

69) Ivanhoe Mines, Ltd. "Oyu Tolgoi Project", June 2010.

70) Entrée Gold Inc., "Lookout Hill Property, Southern Mongolia", June 2010.

71) Graham A. Davis, "Economic Theory and The Valuation of Mineral Assets", Journal of Business Valuation, July 15, 2003.

72) Ontario Securities Commission, "National Instrument 43-101 Standards of Disclosure for Mineral Projects".

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277 We have continued the numbering of publicly sourced documents from Appendix 1 of the FTI Report.

73) Data provided by SNL.

74) BDO, "The terrain is getting tougher: Junior mining companies deal with an increasingly complex landscape", October 2011.