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28 March 2017

The Manager
ASX Announcements

Electronic Lodgement

Dear Sir/Madam

Off-market Takeover Bid by Northern Silica Corporations - Target's Statement

We act for Heemskirk Consolidated Limited (**HSK**) in relation to the off-market takeover bid made by Northern Silica Corporation (**the Bidder**) for all the shares in HSK (**the Offer**).

In accordance with section 633(1) item 14 of the *Corporations Act 2001* (Cth), we enclose a copy of the target's statement by HSK dated 28 March 2017 and accompanying Independent Expert Report dated 27 March 2017 relating to the Offer (**Target's Statement**).

As detailed in the Target's Statement, the Directors of HSK unanimously recommend that shareholders **ACCEPT** the Offer and elect the Cash Consideration from Northern Silica Corporation (in the absence of a Superior Proposal).

HSK has today lodged a copy of the Target's Statement with the Australian Securities & Investments Commission and served a copy on the Bidder.

Despatch of the Target's Statement to HSK shareholders will be completed shortly.

Yours sincerely

Alfonso Grillo

agrillo@grillohiggins.com.au



TARGET'S STATEMENT

Heemskirk Consolidated Limited ABN 18 106 720 138

This Target's Statement has been issued in response to the off-market takeover bid made by Northern Silica Corporation for all of your fully paid ordinary shares in Heemskirk Consolidated Limited.

The Directors of Heemskirk Consolidated Limited unanimously recommend that you <u>ACCEPT</u> the Offer and elect the Cash Consideration from Northern Silica Corporation (in the absence of a Superior Proposal)

If you accept the Offer you have the choice of receiving, for each fully paid Heemskirk Share held by you:

- 1. \$0.075 cash (Cash Consideration); or
- 2. 1 Bidder Share (Share Consideration).

This is an important document and requires your immediate attention.

If you are in any doubt about how to deal with this document, you should contact your broker, financial adviser or legal adviser immediately.





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John Taylor (Non Executive Director)

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Attachment 1: Comparison of Canadian and Australian Corporations Law

Attachment 2: Independent Expert Report

Important Notices

This document is a Target's Statement issued by Heemskirk Consolidated Limited (ACN 106 720 138) under part 6.5 division 3 of the Corporations Act in response to a Bidder's Statement issued by Northern Silica Corporation (**NSC** or the Bidder). A copy of this Target's Statement was lodged with ASIC and given to the ASX on 28 March 2017. Neither ASIC nor ASX, nor any of their respective officers take any responsibility for the content of this Target's Statement.

Defined terms

A number of defined terms are used in this Target's Statement. These terms are explained in the definitions in Section 15.1.

Forward looking statements

This Target's Statement contains forward looking statements. The forward looking statements in this Target's Statement reflect views held at the date of this Target's Statement.

You should be aware that such statements involve inherent risks and uncertainties. Actual events or results may differ materially from the events or results expressed or implied in any forward looking statement and those deviations are both normal and to be expected. None of Heemskirk, its officers or any person named in this Target's Statement with their consent, or involved in the preparation of this Target's Statement, makes any representation or warranty as to the accuracy or likelihood of fulfilment of any forward looking statement. You should not place undue reliance on those statements.

Privacy statement

Heemskirk has collected your information from the register of Shareholders. The Corporations Act permits that information to be made available to certain persons, including NSC. Your information may also be disclosed on a confidential basis to Heemskirk's related bodies corporate and external service providers and may be required to be disclosed to regulatory parties such as ASIC. You can contact us for details of information held by us about you.

Shareholder information

Heemskirk has established a Shareholder Information Line which Heemskirk Shareholders may call if they have any queries in relation to the Offer. The telephone number for the Heemskirk Shareholder Information Line is 1300 096 259 (within Australia) or +61 2 8016 2832 (outside Australia) between 8:15am and 5:30pm (AEST) Monday to Friday.

Third party information

Whilst Heemskirk has undertaken substantial reviews of the information provided to it by NSC and other third parties in respect of the Offer and the business operations of NSC, as outlined in the Bidder's Statement, such information has not been independently verified. Accordingly, Heemskirk, its officers, associates and any other person named in this Target's Statement do not make any representations or warranties as to the accuracy or completeness of any information contained in the Bidder's Statement (whether reproduced in this Target's Statement) or any other information in respect of NSC and its business operations, save as required by the Corporations Act.

No account of personal circumstances

This Target's Statement does not take into account your individual investment objectives, financial situation or particular needs. It does not contain personal advice. This Target's Statement should not be relied on as the sole basis for any investment decision in relation to Heemskirk Shares. The Directors encourage you to obtain

independent legal, financial and taxation advice before deciding whether to accept or reject the Offer, and the election of the Cash Consideration or Share Consideration.

Foreign Jurisdictions

The release, publication or distribution of this Target's Statement in jurisdictions other than Australia may be restricted by law or regulation in such other jurisdictions and persons who come into possession of it should seek advice on and observe any such restrictions. Any failure to comply with such restrictions may constitute a violation of applicable laws or regulations.

This Target's Statement has been prepared in accordance with Australian law and the information contained in this Target's Statement may not be the same as that which would have been disclosed if this Target's Statement had been prepared in accordance with the laws and regulations outside Australia.

28 March 2017

Dear Shareholder

Takeover bid by Northern Silica Corporation

You should have recently received a Bidder's Statement from Northern Silica Corporation (**NSC** or the Bidder), which is a subsidiary of Taurus Resources No.2 BV (**Taurus BV**), containing its off-market takeover offer (**Offer**) for your shares in Heemskirk Consolidated Limited (**Heemskirk or the Company**).

NSC has made an offer to acquire 100% of the issued share capital of Heemskirk. Shareholders have the opportunity to elect one of the following forms of consideration for your Heemskirk Shares, namely:

- 1. \$0.075 cash (Cash Consideration) for each fully paid Heemskirk Share held by you; or
- **2.** 1 Bidder Share (**Share Consideration**) for each fully paid Heemskirk Share held by you.

This Target's Statement contains your Directors' formal response to the Offer and sets out in detail your Directors' reasons for unanimously recommending that you <u>ACCEPT</u> the Offer and elect the Cash Consideration, in the absence of a Superior Proposal.

The Directors have formed this view having regard to a number of factors, including the following:

- The Independent Expert has assessed the value of Heemskirk and has concluded that the Cash Consideration of the Offer to be fair and reasonable to Heemskirk Shareholders in the absence of a Superior Proposal;
- The Cash Consideration is at a significant premium to Heemskirk share prices prior to announcement of Taurus BV's proposal on 22 December 2016 (**Proposal**);
- The Cash Consideration provides certainty of value (subject to the satisfaction of Offer Conditions);
- The Cash Consideration crystallises value for the Moberly Project;
- Heemskirk's need for additional working capital;
- No brokerage or stamp duty for Shareholders;
- No Superior Proposal has emerged (as at the date of this Target's Statement);
- Heemskirk's share price may fall if the Offer is unsuccessful and no Superior Proposal emerges; and
- There are risks associated in being a minority Shareholder in Heemskirk if the Offer is successful.

The Directors however do not make any recommendation with respect to the Share Consideration of the Offer. The election of Share Consideration will depend upon each Shareholder's individual circumstances. Specific reasons are set out in Section 6 of this Target's Statement.

Please refer to Sections 1 to 4 of this Target's Statement for more details on the reasons to accept or reject the Offer.

The Board encourages Shareholders to read this Target's Statement and the Bidder's Statement in their entirety, and to consider the Offer having regard to their own personal risk profile, investment strategy and tax position.

The Offer is scheduled to close at 7pm (Sydney time) on 18 April 2017 (unless extended). To accept the Offer, simply follow the instructions set out in the 'How to accept the offer' section on page 7 of the Bidder's Statement and printed Acceptance and Transfer Form that accompanies the Bidder's Statement.

If you have any further queries in relation to the Offer, please call the Heemskirk Shareholder Information Line on 1300 096 259 (within Australia) or +61 2 8016 2832 (outside Australia) between 8:15am and 5:30pm (AEST) Monday to Friday.

Your Board will continue to keep you informed of all material developments relating to the Offer.

Yours sincerely

Heemskirk Consolidated Limited

Garry Cameron

Non-executive Chairman

Key Dates

Event	Date
Proposal announced	22 December 2016
Offer announced	13 February 2017
Record Date	13 March 2017
Bidder's Statement lodged with ASIC and ASX	13 March 2017
Date of Offer (Offer opens)	15 March 2017
Target's Statement served on the Bidder and lodged with ASIC and ASX	28 March 2017
Offer closes (unless extended)	18 April 2017

What should you do?

You should read this Target's Statement.

The Directors unanimously recommend, in the absence of a Superior Proposal, you **ACCEPT** the Offer and elect the Cash Consideration for all of the Heemskirk Shares you hold.

The Directors do not make any recommendation with respect to the Share Consideration.

To **ACCEPT** the Offer, you should complete the Acceptance and Transfer Form which accompanies the Bidder's Statement and return it in the envelope provided in accordance with the instructions in the Bidder's Statement.

To **REJECT** the Offer, simply do nothing.

If you have any questions, please call Heemskirk Shareholder Information Line on 1300 096 259 (within Australia) or +61 2 8016 2832 (outside Australia) between 8:15am and 5:30pm (AEST) Monday to Friday.

The Offer will be open until 7pm (Sydney time) on 18 April 2017 (unless the Offer is withdrawn or extended). Shareholders should note that once they have accepted the Offer, they will not be able to withdraw their acceptance even if a Superior Proposal is received unless the limited rights of withdrawal of acceptances under the Corporations Act apply. Such a withdrawal right will arise if, after you have accepted the Offer, NSC varies the Offer in a way that postpones, for more than a month, the time when NSC has to meet its obligations under the Offer (for example, if NSC extends the Offer for more than 1 month while the Offer remains conditional). Your acceptance will automatically be void if any of the conditions precedent in Appendix 2 of the Bidder's Statement are not fulfilled or waived by NSC by the end of the Offer Period.

1.1 The Independent Expert has concluded that the Cash Consideration of the Offer is fair and reasonable to Heemskirk Shareholders in the absence of a Superior Proposal

Heemskirk appointed BDO Corporate Finance (East Coast) Pty Ltd to prepare an Independent Expert's Report to provide an opinion as to whether the Offer is fair and reasonable for Heemskirk Shareholders.

The Independent Expert, in the absence of a superior offer, has concluded that the Cash Consideration of the Offer is fair and reasonable to Heemskirk Shareholders. In particular, the Independent Expert has concluded that the Cash Consideration is higher than their valuation range on a 100% control basis (\$nil to \$0.008 per Share).

A complete copy of the Independent Expert's Report is included in Attachment 2. The Directors recommend that you read the Independent Expert's Report carefully.

1.2 Cash Consideration represents a significant premium to recent historical share prices

The Cash Consideration is at a significant premium to Heemskirk share prices prior to announcement of the Proposal on 22 December 2016:

- 50% to the Heemskirk closing share price on 21 December 2016;
- 18% to the Heemskirk 1 month VWAP to 21 December 2016; and
- 60% to the Heemskirk 12 month VWAP to 21 December 2016.

Figure 1 below shows the Offer price premium relative to the Heemskirk share price and VWAP.



Source: IRESS

Figure 1: Offer price premium relative to Heemskirk share price and VWAP

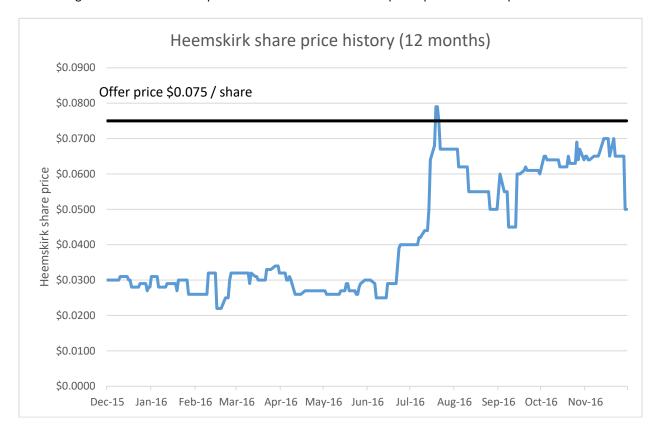


Figure 2 below shows the premium to the Heemskirk share prices prior to the Proposal.

Source: IRESS

Figure 2: Heemskirk share price history (12 months)

1.3 Certainty of value (subject to the satisfaction of Offer Conditions)

The Cash Consideration of \$0.075 cash per Heemskirk Share provides you with certainty of value for your Heemskirk Shares (subject to the Offer Conditions being satisfied or waived).

The certainty of accepting the Cash Consideration should be compared with both:

- Accepting the Offer and electing the Share Consideration; and
- Not accepting the Offer and remaining a Heemskirk Shareholder, with risks and uncertainties
 including share price volatility, limited liquidity and Heemskirk's future operational performance.
 Please refer to Section 8.6 of this Target's Statement for further information on risks associated
 with Heemskirk and the Moberly Project.

1.4 Crystallises value for the Moberly Project

The Cash Consideration compensates Shareholders for the current status of the Moberly Project; noting it remains under construction and has commissioning and operating risks.

1.5 Need for additional working capital

Taurus BV has agreed to underwrite up to a C\$10 million Bridge Facility to be made available contingent upon the Offer being declared free of conditions. Please refer to Section 9.5(b) of the Target's Statement for further information on this Bridge Facility.

Without this funding commitment from Taurus BV, Heemskirk will need to undertake a capital raising to fund additional working capital required during Moberly Project commissioning and early production.

- It is the Directors' view that any equity raising is likely to be at a material discount to Heemskirk share prices prior to announcement of the Proposal, and may be impacted materially if Taurus BV and its associates do not participate (since, as at the date of the Bidder's Statement (13 March 2017), they hold 32.78% of fully paid ordinary shares in the Company)¹.
- Alternative forms of raising capital are expected to be challenging at this current stage, given stage 1 of the Moberly Project has not reached production, the existing debt facility agreement with Taurus BV and requirement for Taurus BV (as the current debt provider) to approve any non-equity capital raisings.

1.6 No brokerage or stamp duty

By accepting the Offer and electing the Cash Consideration, you will not incur brokerage fees on your Heemskirk Shares, which may otherwise be incurred if you were to sell your Heemskirk Shares on market.

However, if your Heemskirk Shares are registered in a CHESS Holding or you hold your Heemskirk Shares through a bank, custodian or other nominee, you should ask your Controlling Participant (usually your broker), or the bank, custodian or other nominee whether it will charge any transaction fees or service charges in connection with your acceptance of the Offer.

1.7 No Superior Proposal has emerged

As at the date of this Target's Statement, no Superior Proposal has been received by the Board of Heemskirk and the Board is not aware of any party having an intention to make such a proposal.

The Directors believe that the likelihood of a Superior Proposal emerging is low given:

- Some time has passed since the Proposal was publicly announced on 22 December 2016; and
- NSC's position as a subsidiary of Taurus BV, a major shareholder and provider of debt financing facility to the Moberly Project.

1.8 Heemskirk's share price may fall if the Offer is unsuccessful and no Superior Proposal emerges

The Cash Consideration Offer Price of \$0.075 is at a significant premium to Heemskirk share prices in the 12 months to 21 December 2016. For the 12-month period to 21 December 2016, Heemskirk's closing Share price averaged \$0.042 and traded between \$0.022 and \$0.079, with the Cash Consideration Offer Price of \$0.075 only being exceeded on two trading days (9 and 10 August 2016).

Whilst the Heemskirk share price on the ASX is impacted by a range of factors, if the Offer is unsuccessful and an alternative proposal does not emerge, there is a risk that the Heemskirk share price may fall to a lower price than the price at which it has traded since the Proposal was announced on 22 December 2016.

In addition, Heemskirk will need to undertake a capital raising to fund working capital requirements during Moberly Project commissioning and early production. It is the Directors' view that any equity raising is likely to be at a material discount to Heemskirk share prices prior to announcement of the Proposal, and may be impacted materially if Taurus BV and its associates do not participate (since, as

¹ On 27 March 2017, the day before the date of this Target's Statement, NSC, its holdings entities (including Taurus BV), their subsidiaries and its associates lodged a Form 604 stating that they have acquired a relevant interest under section 608(8) of the Corporations Act as a result of acceptances under the Offer giving them a voting power of 34.59%.

at the date of the Bidder's Statement (13 March 2017), they hold 32.78% of fully paid ordinary shares in the Company)².

1.9 There are risks associated in being a minority Shareholder in Heemskirk if the Offer is successful

If the Offer becomes unconditional and NSC is able to acquire more than 50% (but less than 90%) of Heemskirk's Shares on a fully diluted basis, then control of Heemskirk would pass to NSC without NSC having the ability to compulsorily acquire the remaining Heemskirk Shares.

This would mean that Shareholders who did not accept the Offer and elect the Cash Consideration would remain as minority Shareholders of Heemskirk. The possible implications of being a minority shareholder include that:

- NSC would be in a position to cast the majority of votes at a Heemskirk general meeting. This
 will enable NSC to control the composition of the Heemskirk Board;
- NSC will be able to pass an ordinary resolution at a meeting of Heemskirk Shareholders;
- It is unlikely the Heemskirk share price would include any takeover premium;
- The liquidity of Heemskirk Shares may be lower than at present;
- Where NSC holds at least 75% of all Heemskirk Shares, it will be able to pass a special resolution at a meeting of Heemskirk Shareholders which would permit NSC to change the Heemskirk Constitution and pursue a delisting of Heemskirk;
- Heemskirk may not maintain its listed status if, for example, the number of Heemskirk
 Shareholders falls below the criteria specified in the ASX Listing Rules and, if delisting were to
 occur, Heemskirk Shares will not be able to be bought or sold on the ASX; and

The Offer is currently subject to the 90% acceptance condition, the above implications will only happen if NSC waives such condition.

If NSC is able to acquire a relevant interest in at least 90% of Heemskirk Shares, then NSC will become entitled to acquire your Heemskirk Shares through the implementation of compulsory acquisition procedures in accordance with the Corporations Act. If this occurs, you will be compelled to sell your Heemskirk Shares to NSC at the Offer Price, and if you elect the Cash Consideration you will receive your consideration later than if you accept the Offer and elect the Cash Consideration.

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² On 27 March 2017, the day before the date of this Target's Statement, NSC, its holdings entities (including Taurus BV), their subsidiaries and its associates lodged a Form 604 stating that they have acquired a relevant interest under section 608(8) of the Corporations Act as a result of acceptances under the Offer giving them a voting power of 34.59%.

2 Why you may consider not accepting the Offer

2.1 A Superior Proposal may emerge

You may believe that there is a possibility that a Superior Proposal could be made in the foreseeable future. As at the date of this Target's Statement, no Superior Proposal has emerged. In addition, the Director's believe that the likelihood of a Superior Proposal emerging is low given:

- Some time has passed since the Proposal was publicly announced on 22 December 2016; and
- NSC's position as a subsidiary of Taurus BV, a major shareholder and provider of the debt financing facility to the Moberly Project.

2.2 You may disagree with the Directors' recommendation or the conclusion of the Independent Expert and believe that the Offer is inadequate

You may disagree with the unanimous recommendation of the Directors' and the Independent Expert's opinion that the Cash Consideration component of the Offer is fair and reasonable.

As at the date of this Target's Statement, no Superior Proposal has emerged for consideration by the Heemskirk Directors.

In addition, in the event that the Offer is unsuccessful, Heemskirk will need to undertake a capital raising to fund working capital requirements during Moberly Project commissioning and early production. It is the Directors' view that any equity raising is likely to be at a material discount to Heemskirk share prices prior to announcement of the Proposal, and may be impacted materially if Taurus BV and its associates do not participate (since, as at the date of the Bidder's Statement (13 March 2017), they hold 32.78% of fully paid ordinary shares in the Company)³.

2.3 By accepting the Offer and electing the Cash Consideration, Heemskirk Shareholders will lose exposure to any potential upside in the Heemskirk Share price

If you accept the Offer, you will give up your right to sell your Heemskirk Shares on market, accept a Competing Proposal in relation to Heemskirk, or otherwise deal with your Heemskirk Shares (subject to limited withdrawal rights). If you accept the Offer and NSC subsequently raises its Offer Price, you will receive the higher price.

If you accept the Cash Consideration, you will also lose the exposure to any potential upside in the Heemskirk share price associated with:

- Stage 1 of the Moberly Project successfully reaching production;
- Progression on, and realisation of stage 2 of the Moberly Project; and
- Any improvements in the broader North American sand industry.

2.4 You may wish to maintain your current investment profile

You may wish to retain an investment in an ASX listed company. However, you should note that if NSC receives acceptances in respect of 90% or more of Heemskirk Shares, NSC will be able to compulsorily acquire all remaining Heemskirk Shares which it does not hold.

³ On 27 March 2017, the day before the date of this Target's Statement, NSC, its holdings entities (including Taurus BV), their subsidiaries and its associates lodged a Form 604 stating that they have acquired a relevant interest under section 608(8) of the Corporations Act as a result of acceptances under the Offer giving them a voting power of 34.59%.

If all the conditions of the Offer are satisfied or waived (and NSC receives acceptances in respect of at least 90% of Heemskirk Shares), NSC intends to compulsorily acquire your Heemskirk Shares. If NSC does reach 90% and a shareholder's holding is compulsorily acquired, you may receive payment less quickly than if you had accepted under the Offer.

2.5 Potential tax consequences of the Offer may not suit your current financial position or tax circumstances

There may be tax consequences for Heemskirk Shareholders who accept the Offer and elect the Cash Consideration, which may include tax payable on any gain on the disposal of your Heemskirk Shares.

Please refer to section 8 of the Bidder's Statement and Section 8.5 of this Target's Statement for comments on tax consequences of accepting the Offer.

Heemskirk Shareholders should seek their own professional advice regarding the individual tax consequences applicable to them.

3 Why you might elect the Share Consideration

While providing you with the below considerations on why you might elect the Share Consideration, the Directors do not make a recommendation about the Share Consideration for the reasons set out in Section 6 of this Target's Statement.

3.1 Shareholder rights governed by USA

The rights and responsibilities of shareholders in NSC will be governed by the Unanimous Shareholders Agreement ("USA"). By electing the Share Consideration, you will receive shares in NSC and as a result agree to the terms of the USA. For further details of the USA, please refer to section 2.3 of the Bidder's Statement.

A copy of the USA can be found at NSC's website: www.northernsilica.com.

3.2 Opportunity to participate in future benefits realised by the Moberly Project

As a shareholder in NSC you will retain exposure to the Moberly Project and participate in the potential benefits of re-domiciling the company to Canada, increasing business efficiencies and a potential reduction in corporate overheads and the benefits of any stage 2 expansion. The Bidder believes that the Moberly Project offers the potential for a long-life, profitable business with exposure to favourable market dynamics.

3.3 You may be eligible for Australian capital gains tax rollover relief.

Heemskirk has submitted an application for class ruling to the Australian Tax Office. If this class ruling is received, Shareholders who accept the Offer and elect the Share Consideration, may be eligible for scrip for scrip capital gains tax rollover relief. If you elect the Cash Consideration, you will not receive capital gains tax rollover relief. Please refer to section 8 of the Bidder's Statement for more details on tax considerations.

Please refer to section 8 of the Bidder's Statement and Section 8.5 of this Target's Statement for comments on tax consequences of accepting the Offer.

Heemskirk Shareholders should seek their own professional advice regarding the individual tax consequences applicable to them.

4 Why you might not elect the Share Consideration

The Directors do not make a recommendation about the Share Consideration for the reasons set out in Section 6 of this Target's Statement.

4.1 The Independent Expert has concluded that the Share Consideration of the Offer is neither fair nor reasonable to Heemskirk Shareholders

The Independent Expert has concluded that the Share Consideration of the Offer is neither fair nor reasonable to Heemskirk Shareholders. In particular, the Independent Expert has concluded that their valuation of the Share Consideration ranges from \$nil to \$0.006 (on a minority basis) per Share, with a preferred value of \$nil.

The Independent Expert further opines that the value of Cash Consideration is superior to the value of the Share Consideration.

4.2 The future value of the Share Consideration is less certain than the Cash Consideration

The Directors understand NSC's intentions are to privatise Heemskirk, redomicile it to Canada (where the Moberly Project is located) and reduce corporate overheads. This means the future value of the Share Consideration is less certain than the Cash Consideration and may vary significantly based on a number of factors, including:

- The future performance of the Moberly Project, including the potential stage 2 expansion of the Moberly Project;
- Capital requirements of NSC, including the refinancing of the Bridge Facility (see Section 4.3 of this Target's Statement below) and funding of the potential stage 2 expansion of the Moberly Project;
- The private company structure and domicile of NSC in Canada;
- The terms of the USA; and
- Associated taxation matters.

4.3 Refinancing of the Bridge Facility may be via the issue of Bidder Shares

The C\$10m Bridge Facility allows for NSC to refinance the facility and pay for accrued interest, and arrangement and commitment fees via the issue of Bidder Shares. The timing for this is on or prior to 31 March 2018. As a consequence, shareholders in NSC will be required to participate in the material equity raising (expected to be at an issue price of C\$0.075 per share), or otherwise face:

- Dilution in their shareholding in NSC; and
- Potential for Taurus BV to increase its shareholding in NSC.

4.4 Shares received under the Share Consideration will have different characteristics from your existing investment in Heemskirk Shares

Bidder Shares issued under the Share Consideration will have different characteristics from your existing investment in Heemskirk Shares. Key areas of difference include:

 The Corporations Act and the ASX Listing Rules will not apply to Bidder Shares – this means that certain investor protections will not apply;

- You will be a minority investor in NSC which will be controlled by Taurus BV, subject to the terms
 of the USA; and
- As NSC is domiciled in Canada, you may be subject to Canadian tax rules.

For your further reference, please refer to the tables in Attachment 1 of this Target's Statement which set out key characteristics of Canadian corporations law provisions as compared with Corporations Act and key ASX Listing Rules that will no longer apply to recipients of Bidder Shares.

4.5 Bidder Shares issued under the Share Consideration will have less trading liquidity and reduced marketability

Bidder Shares will not be listed on ASX or any other public securities exchange and will have less trading liquidity than your current investment in Heemskirk Shares:

- Bidder Shareholders can only sell up to 0.20% of Bidder Shares outstanding in a 12 month period, without having to follow the pre-emptive rights provision of the USA; and
- As Bidder Shares will not be traded on a public exchange, the determination of the fair market value of Bidder Shares is more complicated and less transparent.

5 Frequently asked questions about the Offer

The process governing takeovers is complex. This Section of the Target's Statement is designed to help you understand some of the issues relating to the Offer.

Question	Answer	Further Information
Who is NSC?	Northern Silica Corporation (NSC) is the Bidder and is a recently incorporated Canadian private corporation existing under the Business Corporations Act (Alberta).	Refer to section 2 of the Bidder's Statement
	The Bidder has been incorporated for the sole purpose of holding the Heemskirk Shares and issuing the Share Consideration to Heemskirk Shareholders who accept the Share Consideration. As a special purpose vehicle, the Bidder has no assets (other than its nominal share capital) or liabilities.	
	The Bidder is owned 90.00% by Taurus BV; 9.86% by T2 LP and 0.14% by T2 Trust.	
	A summary of the governance arrangements of the Bidder is set out in section 2.3 of the Bidder's Statement which will be of interest to Heemskirk Shareholders who are considering accepting the Offer in return for the Share Consideration.	
What is the Offer?	NSC has made an offer to acquire 100% of the issued capital of Heemskirk. Shareholders have the opportunity to elect one of the following forms of consideration for your Heemskirk Shares:	Refer to Section 7 of this Target's Statement for further information
	\$0.075 cash (Cash Consideration) for each fully paid Heemskirk Share held by you; or	
	1 Bidder Share (Share Consideration) for each fully paid Heemskirk Share held by you.	
May I accept for only some of my Heemskirk Shares?	If you intend on accepting the Offer, it must be for all of the Heemskirk Shares that you own.	Refer to paragraph 1 of Appendix 1 of the Bidder's Statement
Can I elect part cash and part scrip?	No, you can either accept the Cash Consideration for all of your Shares <u>or</u> the Share Consideration for all of your Shares.	
Are there limits on the amount of cash or scrip that NSC will pay?	No, there are no limits on the amount of cash or scrip that can be elected by Shareholders.	

Question	Answer	Further Information
What do the Directors recommend?	Your Directors unanimously recommend you ACCEPT the Offer and elect the Cash Consideration in the absence of a Superior Proposal.	Refer to Sections 1 to 4 and Section 6 of this Target's Statement
	The Directors do not make any recommendation with respect to the Share Consideration for reasons set out in Section 6 of this Target's Statement.	
What are the conclusions of the Independent Expert?	The Independent Expert has concluded that: (a) The Cash Consideration offer is fair and reasonable to Shareholders in the absence of a superior offer; and (b) The Share Consideration offer is neither fair nor reasonable to Shareholders	Refer to Attachment 2 for full copy of the Independent Expert's Report.
What do I do to accept the Offer?	Details of how to accept the Offer are set out in How to Accept the Offer" section on page 7 of the Bidder's Statement.	
What are my options?	You have the following choices: (a) If you want to accept the Offer and elect the: (i) Cash Consideration; or (ii) Share Consideration, follow the instructions in "How to Accept the Offer" section on page 7 of the Bidder's Statement. (b) If you want to reject the Offer, do nothing. (c) You may sell your Heemskirk Shares on market (unless you have previously accepted the Offer and you have not validly withdrawn your acceptance).	
Can I accept the Offer if I am a foreign Shareholder	Yes, however you will not be entitled to receive Bidder Shares as part of the consideration. Refer to paragraphs 2.2 and 6.3 of Appendix 1 of the Bidder's Statement on how the Offer applies to foreign shareholders.	

Question	Answer	Further Information
What are the consequences of accepting the Offer now?	If you accept the Offer while it is still conditional, you will not be able to sell your Heemskirk Shares on the ASX or to any other bidder that may make a takeover offer, or deal with your Heemskirk Shares in any other way while the Offer remains open.	Refer to Section 7 of the Target's Statement for further information.
	You may only withdraw your acceptance if NSC extends the Offer Period by more than one month and the Offer remains subject to the Conditions at the time.	
	If the Conditions of the Offer are not satisfied or waived and the Offer lapses, you will then be free to deal with your Heemskirk Shares, even if you accepted the Offer.	
	If you accept the Offer and NSC subsequently raises its Offer Price, you will receive the higher price.	
What happens if the Offer Price is increased?	If you have already accepted the Offer you will be entitled to the increased Offer Price.	
	If you have sold your Heemskirk Shares independently of the Offer (e.g. on market) you will not be eligible for the benefit of any increase in the Offer Price.	
When do I have to decide?	If you want to accept the Offer, an Acceptance Form must be received before the end of the Offer Period as set out in paragraph 3 of Appendix 1 of the Bidder's Statement.	Refer to Section 7 of this Target's Statement
	NSC has stated that the Offer will remain open until 18 April 2017 , unless extended or withdrawn.	
	If you do not want to accept the Offer, you need not do anything.	

Question	Answer	Further Information
What are the conditions of the Offer?	The Offer is subject to various Conditions including minimum acceptance condition of the Bidder Group obtaining at least 90% of the Shares.	Refer to Section 7 of this Target's Statement
	Please refer to Section 7.4 of this Target's Statement for further details about the Conditions and Appendix 2 of the Bidder's Statement for full details of all Conditions.	
	If the Conditions of the Offer are not satisfied or waived before the Offer closes, the Offer will lapse and all contracts resulting from the acceptance of the Offer will be void. You will then be free to deal with your Heemskirk Shares as if the Offer had not been made, unless you have already sold your Heemskirk Shares to someone else.	
When will NSC advise as to the status of the conditions?	Paragraph 7.7 of Appendix 1 of the Bidder's Statement indicates that the Bidder will give a Notice of Status of Conditions before the end of the Offer Period on 10 April 2017, or on an extended date as permitted by the Corporations Act should the Offer Period be extended.	Refer to Section 7 of this Target's Statement
	NSC is required to set out in this Notice of Status of Conditions:	
	 whether the Offer is free of the Conditions; whether, so far as NSC knows, the Conditions have been fulfilled on the date the notice is given; and 	
	NSC's voting power in Heemskirk.	
What happens if I do nothing?	You will remain a Heemskirk Shareholder unless NSC receives acceptances in respect of 90% or more of Heemskirk Shares in which case NSC will be able to compulsorily acquire all remaining Heemskirk Shares which it does not hold.	
	If all the conditions of the Offer are satisfied or waived (and NSC receives acceptances in respect of at least 90% of Heemskirk Shares), NSC intends to compulsorily acquire your Heemskirk Shares.	
When does the Offer close?	The Offer will close on 18 April 2017 , unless it is extended or withdrawn.	

Question	Answer	Further Information
Can NSC vary the Offer?	Yes. NSC can vary the Offer by waiving the Conditions, extending the Offer Period or increasing the Offer Price.	
	If you accept the Offer, you may only withdraw your acceptance if NSC varies the Offer where:	
	 the Offer remains subject to a defeating condition; and 	
	 the time by which NSC has to meet its obligations under the Offer is postponed for more than 1 month. 	
What if there is a Competing Proposal?	If a Competing Proposal emerges, your Directors will carefully consider the merits of any Competing Proposal and send you supplementary information advising whether the Competing Proposal affects their recommendation.	
	If you have already accepted the Offer, then you may not be able to participate in any Competing Proposal.	
	Except under limited circumstances provided for in the Corporations Act, Heemskirk Shareholders who accept the Offer will not be able to accept an alternative offer, should any emerge. You may only withdraw your acceptance and accept an alternative offer if NSC extends the Offer Period for more than one month and that offer remains subject to any condition at the time.	
Will I need to pay brokerage if I accept NSC's Offer?	No brokerage or stamp duty will be payable by you on acceptance of the Offer.	
	If your Heemskirk Shares are registered in a CHESS Holding or you hold your Heemskirk Shares through a bank, custodian or other nominee, you should ask your Controlling Participant (usually your broker), or the bank, custodian or other nominee whether it will charge any transaction fees or service charges in connection with your acceptance of the Offer.	
What if I have other questions about the Offer?	If you have any questions, please call the Heemskirk Shareholder Information Line on 1300 096 259 (within Australia) or +61 2 8016 2832 (outside Australia) between 8:15am and 5:30pm (AEST) Monday to Friday, or visit Heemskirk's website at www.heemskirk.com .	

6 Directors' recommendation and reasons

6.1 Directors' recommendation

After taking into account the terms of the Offer (set out in the Bidder's Statement) and the matters in this Target's Statement, your Directors, unanimously recommend that you ACCEPT the Offer and elect the Cash Consideration in the absence of a Superior Proposal.

Principally, the reasons for accepting the Offer are set out in the Section entitled 'Why you should accept the Offer and receive Cash Consideration' (Section 1) including the opinion of the Independent Expert concluding that the Cash Consideration of the Offer is fair and reasonable in the absence of a Superior Proposal. Whilst under the terms of the Takeover Implementation Agreement, Heemskirk remains free to respond to Superior Proposals should they emerge, the Directors of Heemskirk note that as of the date of the Target's Statement, no such Superior Proposal has been received.

The Directors have determined not to make any recommendation with respect to the Share Consideration for the reasons below.

The Directors understand NSC's intentions are to privatise Heemskirk, redomicile it to Canada (where the Moberly Project is located) and reduce corporate overheads appropriately. This means the future value of the Share Consideration is less certain than the Cash Consideration and may vary significantly based on a number of factors. These factors include the following:

- (a) A Heemskirk Shareholder who elects the Share Consideration will hold a minority interest in a company that is majority owned by Taurus BV and its associates. The value of the Share Consideration is likely to be influenced by the ability of that Shareholder to protect its position as a minority shareholder and influence the affairs of NSC, which will be subject to the private company structure and domicile of NSC in Canada and the terms of the USA;
- (b) Bidder Shares are not listed. Therefore, there is no ready market for the Bidder Shares, nor is there expected to be any such market in the future.
- (c) The future performance of the Moberly Project, including the potential stage 2 expansion of the Moberly Project;
- (d) Capital requirements of NSC, including the refinancing of the Bridge Facility and funding of the potential stage 2 expansion of the Moberly Project; and
- (e) Associated taxation matters.

The Directors are of the view that the impact of these factors and the suitability of the Share Consideration depend significantly on the individual circumstances of each Heemskirk Shareholder (including risk profile, liquidity preference, tax position, and their preference to gain exposure to the future performance of the Moberly Project). Individual shareholders may place a different emphasis on the various factors in assessing the Offer and are encouraged to obtain their own independent advice.

In addition, certain features of Bidder Shares (such as governance arrangements and trading liquidity) will have different implications depending upon the individual circumstances of an investor including the size of their investment and their investment holding horizon. While the Directors are concerned that the Share Consideration may not be suitable for most Heemskirk Shareholders, especially when they are in the position of minority shareholders, the Directors are of the view that the Share Consideration may be suitable to institutional investors who would be in a position to protect their position as a shareholder in NSC and influence the affairs of NSC, for example by obtaining director representation rights. This, however, depends on each Shareholder's individual circumstances.

The Directors, however, have set out various considerations to assist Heemskirk Shareholders in deciding to elect or not elect the Share Consideration under Section 3 and Section 4 of this Target's Statement. The Independent Expert has concluded that the Share Consideration of the Offer is neither fair nor reasonable to Heemskirk Shareholders and further opines that the value of Cash Consideration is superior to the value of the Share Consideration.

If you accept the Cash Consideration and NSC subsequently raises its Offer Price, you will receive the higher price.

The Directors encourage Heemskirk Shareholders to read this Target's Statement carefully.

7 Key terms of the Offer

7.1 History

On 22 December 2016, Heemskirk released an announcement in relation to NSC's intention to make an off-market takeover bid for all of Heemskirk's Shares (the Proposal).

On 13 February 2017, NSC and Heemskirk entered into a Takeover Implementation Agreement setting out the terms of the proposed Offer.⁴

On 13 March 2017, NSC lodged its Bidder's Statement with ASIC and gave a copy to Heemskirk.

The NSC Bidder's Statement sets out the terms of the Offer.

7.2 Summary of the Offer

The Offer is to acquire all of your Heemskirk Shares, with Shareholders having the option of electing one of the following forms of consideration:

- 1. \$0.075 cash (Cash Consideration); or
- 1 Bidder Share (Share Consideration);

for each fully paid Heemskirk Share held by you.

7.3 Offer Period

The Offer will remain open for acceptance until **7pm (Sydney time)**, **18 April 2017**, unless extended or withdrawn under the Corporations Act.

7.4 Conditions of the Offer

The Offer is subject to those Conditions set out in full in Appendix 2 of the Bidder's Statement, which are summarised below:

- (a) **minimum acceptance:** the Bidder Group obtains a relevant interest in at least 90% of Shares.
- (b) **other regulatory approvals**: ensuring compliance of Heemskirk with respect to its material licences and authorisations.
- (c) **no restraining orders:** no government agency taking any action to restrain the Offer or require the divesture of the Bidder of any Shares or assets of Heemskirk Group or Bidder Group.
- (d) **no material adverse effect**: no material adverse change has occurred or is reasonably likely to occur in relation to Heemskirk Group.
- (e) **no material acquisitions, disposals or new commitments**: except for any proposed transaction announced by Heemskirk, any member of Heemskirk Group does not engage in certain transactions having value in excess of \$1,000,000.
- (i) no persons exercising rights under certain agreements or instruments: no person (other than a member of the Bidder Group including the lender under the Facility Agreement) exercises any rights under any provision of any agreement or other instrument to which a member of Heemskirk Group is a party.

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⁴ The Takeover Implementation Agreement is disclosed at Schedule 2 of the announcement of 13 February 2017.

- (f) **prescribed occurrences**: no event that is a "prescribed occurrence" occurs such as member of Heemskirk Group becoming insolvent or changing its capital structure.
- (g) **no termination of the Takeover Implementation Agreement by Heemskirk:** Heemskirk does not terminate the Takeover Implementation Agreement prior to the end of the Offer Period.
- (h) no material breach of the Takeover Implementation Agreement by Heemskirk: there is no material breach of the Takeover Implementation Agreement by Heemskirk prior to the end of the Offer Period.
- (i) **Company licences**: all material approvals and licences required for the lawful operation of the business conducted by Heemskirk remain in force.
- (j) Heemskirk Directors to recommend: Heemskirk Directors unanimously recommend that the Shareholders accept the Cash Consideration component of the Offer in the Target's Statement and any other public statements made by Heemskirk in relation to the Offer, and do not modify that recommendation.
- (k) Employee Securities: any entitlement to shares under Employee Securities are cancelled.

The above is only a summary of the Conditions, you are encouraged to review Appendix 2 of the Bidder's Statement for the full set of Conditions in order to better understand them.

Under the Takeover Implementation Agreement, the Bidder obtaining FIRB approval was one of the conditions of the Offer. As announced on 23 February 2017 Heemskirk was advised that an application made by Taurus BV for FIRB approval in relation to the acquisition of 100% of the issued capital in Heemskirk and the Offer by NSC has been formally granted, in satisfaction of the FIRB approval condition under the Takeover Implementation Agreement. In accordance with Appendix 2 of the Bidder's Statement, FIRB approval is no longer a condition of the Offer.

Clause 4.1 of the Takeover Implementation Agreement provides that prior to expiry of the Bid Period and subject to the Offer being unconditional (save for Condition in paragraph (m) of Schedule 1 of the Takeover Implementation Agreement), Heemskirk will use its reasonable endeavours to work in conjunction with NSC to negotiate with the relevant parties to ensure that any entitlement to shares under the Employee Share Plan are cancelled for nil consideration, or for such other consideration agreed with NSC in good faith.

Heemskirk will shortly commence working in conjunction with NSC to negotiate with the relevant employees in accordance with Clause 4.1 of the Takeover Implementation Agreement.

As at the date of this Target's Statement, Heemskirk is not aware of any act, omission, event or fact that would result in any of the Conditions of the Offer being triggered (or not being satisfied, as appropriate).

7.5 Notice of the status of Offer Conditions

Paragraph 7.7 of Appendix 1 of the Bidder's Statement indicates that the Bidder will give a Notice of Status of Conditions on 10 April 2017 before the end of the Offer Period, or on an extended date as permitted by the Corporations Act should the Offer Period be extended.

NSC is required to set out in its Notice of Status of Conditions:

- whether the Offer is free of any or all of the Conditions;
- whether, so far as NSC knows, any of the Conditions have been fulfilled; and
- NSC's voting power in Heemskirk.

If the Offer Period is extended by a period before the time by which Notice of Status of Conditions is to be given, the date for giving the Notice of Status of Conditions will be taken to be postponed for the same period. In the event of such extension, NSC is required as soon as practicable after the extension, to give a notice to the ASX and Heemskirk that states the new date for giving of the Notice of Status of Conditions.

If a Condition is fulfilled (so that the relevant Offer becomes free of that Condition) during the Offer Period but prior to the date on which the Notice of Status of Conditions is required to be given, NSC must, as soon as practicable give a notice to the ASX and Heemskirk that states that the particular Condition has been fulfilled.

As at the date of this Target's Statement:

- (a) The condition under the Takeover Implementation Agreement that the Bidder obtaining FIRB approval has been satisfied (Please refer to section 10.3 of the Bidder's Statement); and
- (b) NSC has not given notice that any of the Conditions have been fulfilled.

7.6 Consequences if Conditions not satisfied

If the Conditions are not satisfied or waived before the Offer closes, the Offer will lapse. This means that:

- (a) if you have accepted the Offer, your acceptance is void, you will continue to be a Heemskirk Shareholder and are free to deal with your Heemskirk Shares; or
- (b) if you have not accepted the Offer, you continue to be a Heemskirk Shareholder and are free to deal with your Heemskirk Shares.

7.7 Effect of acceptance

The effect of acceptance of the Offer is set out in paragraph 8 of Appendix 1 of the Bidder's Statement. Heemskirk Shareholders should read that section in full to understand the effect that acceptance will have on their ability to exercise the rights attaching to their Heemskirk Shares and the representations and warranties they give by accepting the Offer.

If you accept the Offer you will not be able to sell your Heemskirk Shares on the ASX while the Offer remains open. You may only withdraw your acceptance if NSC extends the Offer Period by more than one month and the Offer remains subject to the Conditions at the time.

7.8 Payment of consideration

NSC has set out in paragraph 6 of Appendix 1 of its Bidder's Statement the timing of the payment of the consideration to Heemskirk Shareholders who accept the Offer.

In general terms, you will receive the consideration to which you are entitled on acceptance of the Offer on or before the earlier of:

- (a) one month after the date the Offer is validly accepted by you or, if the Offer is subject to a defeating condition when accepted, within one month after the Offer or the contract resulting from your acceptance of the Offer becomes unconditional; and
- (b) 21 days after the end of the Offer Period.

7.9 Changes to the Offer

NSC can vary the Offer by:

- (a) waiving the Conditions to the Offer;
- (b) extending the Offer Period; or
- (c) increasing the consideration offered under the Offer.

If you accept the Offer and NSC subsequently increases its Offer Price, you are entitled to receive the higher price.

7.10 Compulsory Acquisition

NSC has indicated in section 5.2(a) of the Bidder's Statement that, if it is entitled to do so, it will proceed to compulsorily acquire all remaining Heemskirk Shares.

Under section 661A Corporations Act, NSC is entitled to compulsorily acquire any Heemskirk Shares for which it has not received an acceptance of the Offer on the same terms of the Offer if, during or at the end of the Offer Period, NSC and its associates have a Relevant Interest in at least 90% (by number) of Heemskirk Shares.

The consideration per Heemskirk Share payable to Heemskirk Shareholders whose Shares are compulsorily acquired is the same as that payable under the Offer.

If NSC is entitled to proceed to compulsory acquisition, it will have one month after the Offer Period to give compulsory acquisition notices to Heemskirk Shareholders who have not accepted the Offer. Heemskirk Shareholders have statutory rights to challenge the compulsory acquisition, but a successful challenge will require them to establish to the satisfaction of a court that the terms of the Offer do not represent 'fair value' for the Heemskirk Shares.

If NSC does not become entitled to compulsorily acquire Heemskirk Shares under section 661B of the Corporations Act, it may nevertheless become entitled to exercise the general compulsory acquisition power under Part 6A.2 of the Corporations Act in the future.

8 Implications and risks associated with the Offer

8.1 Inability to accept an alternative offer if one were to emerge

Except under limited circumstances provided for in the Corporations Act, Heemskirk Shareholders who accept the Offer will not be able to accept an alternative offer, should any emerge. You may only withdraw your acceptance and accept an alternative offer if NSC extends the Offer Period for more than one month and that offer remains subject to any conditions at the time.⁵

8.2 Value of Bidder Shares

Heemskirk Shareholders who accept the Share Consideration will receive shares in NSC in exchange for their Heemskirk Shares. The value of Bidder Shares will depend on the future performance of NSC.

Heemskirk Shareholders who accept the Cash Consideration will have certainty of value for their Heemskirk Shares (subject to the Offer Conditions being satisfied or waived).

8.3 Decrease in Heemskirk Share price

The announcement of NSC's proposal resulted in an increase in the Heemskirk share price. The Heemskirk share price on the day immediately before the Proposal announcement date was \$0.05, and closed on 27 March 2017, the day before the date of this Target's Statement, at \$0.076.

While the change in the Heemskirk share price may be due to reasons other than the Offer, the Directors consider that the Heemskirk share price may fall if the Offer is unsuccessful and no other offers emerge. In addition, Heemskirk will need to undertake a capital raising to fund working capital requirements during Moberly Project commissioning and early production. It is the Directors' view that any equity raising is likely to be at a material discount to Heemskirk share prices prior to announcement of the Proposal, and may be impacted materially if Taurus BV and its associates do not participate (since, as at the date of the Bidder's Statement (13 March 2017), they hold 32.78% of fully paid ordinary shares in the Company)⁶.

The latest price for Heemskirk Shares may be obtained from the ASX website at www.asx.com.au using the code "HSK".

8.4 Effective control

In the event that NSC receives greater than 50% acceptance in respect of the Offer but less than the minimum acceptance condition of 90%, it is possible that NSC may waive the minimum acceptance condition.

In the event that the minimum acceptance condition is waived, NSC will have the ability to substantially control Heemskirk and may:

- (a) substantially change the nature of its business (subject to ASX listing rules);
- (b) seek to de-list Heemskirk from the ASX; and
- (c) remove and replace one or all of the current directors of Heemskirk,

amongst other things, subject to the Corporations Act and the Listing Rules.

⁵ Section 650E Corporations Act.

⁶ On 27 March 2017, the day before the date of this Target's Statement, NSC, its holdings entities (including Taurus BV), their subsidiaries and its associates lodged a Form 604 stating that they have acquired a relevant interest under section 608(8) of the Corporations Act as a result of acceptances under the Offer giving them a voting power of 34.59%.

Please refer to section 5 of the Bidder's Statement for a summary of the Bidder's intentions.

8.5 Taxation

We refer to the Bidder's Statement at section 8 for comments on the Australian and Canadian tax consequences of accepting the Offer. The taxation comments in the Bidder's Statement are, as stated therein, intended as a guide only.

Heemskirk shareholders should note the comments in the Bidder's Statement are not intended to be taxation advice as it does not take into account the specific circumstances of each particular Heemskirk shareholder. All Heemskirk shareholders should seek their own independent professional advice regarding the taxation implications associated with the Offer.

As a general comment, an Australian-resident who makes a capital gain on the disposal of their shares will need to include the capital gain in their assessable income. A Heemskirk shareholder who would otherwise need to include a capital gain in their assessable income may be eligible for capital gains tax (**CGT**) rollover relief to the extent that a capital gain arises from the capital proceeds comprising Bidder Shares (the cash component of the Offer is not eligible for CGT rollover relief). CGT rollover relief allows shareholders to defer the taxation of a capital gain relating to the disposal of their shares.

CGT rollover relief may (subject to other criteria being satisfied) be available if NSC acquires at least 80% of the Heemskirk Shares as a result of the Offer.

To provide shareholders with the Australian Taxation Office's (ATO) view, Heemskirk is in the process of applying for a class ruling from the ATO in relation to the availability of CGT scrip for scrip roll-over relief (CGT roll-over relief) for Heemskirk shareholders.

8.6 Risk Factors associated with Heemskirk and the Moberly Project

In considering this Target's Statement, Shareholders should be aware of there are a number of risks, general and specific, in relation to the existing business and operations of Heemskirk and the Moberly Project, which may affect the further operating and financial performance of Heemskirk. Many of these risks are relevant to Shareholders today and will be relevant to Shareholders who remain as Shareholders following the completion of the Offer.

Many of these risks are outside the control of Heemskirk and the Directors. There can be no certainty that Heemskirk will achieve its stated objective or any forward looking statement will eventuate.

Additional risks and uncertainties not currently known to Heemskirk may have a material adverse effect on Heemskirk's business and the information set out below does not purport to be, nor should it be construed as representing, an exhaustive list of the risks that may affect Heemskirk or Shareholders.

Shareholders should read this Target's Statement in its entirety and carefully consider the following factors in deciding whether to accept the Offer.

(a) Business and Operation Risks

Production and cost estimates

• The ability of Heemskirk to achieve production targets, or meet operating and capital expenditure estimates on a timely basis cannot be assured. The assets of Heemskirk are subject to uncertainty with ore tonnes, grade, metallurgical recovery, ground conditions, operational environment, funding for development, regulatory changes, accidents and other unforeseen circumstances such as unplanned mechanical failure of plant or equipment.

- Heemskirk prepares estimates of future production, cash costs and capital costs of production
 for its operation. No assurance can be given that such estimates will be achieved. Failure to
 achieve production or cost estimates or material increases in costs could have an adverse impact
 on Heemskirk's future cash flows, profitability, results of operations and financial condition.
- Costs of production may also be affected by a variety of factors, including: changing waste-to-ore ratios, product recoveries, labour costs, general inflationary pressures and currency exchange rates.
- Unforeseen production cost increases could result in Heemskirk not realising its development
 plans or in such plans costing more than expected or taking longer to realise than expected. Any
 of these outcomes could have an adverse effect on Heemskirk's financial and operational
 performance.

Ore Reserves and Mineral Resources

- Heemskirk's ore reserves and mineral resources are expressions or judgement based on industry practice, experience and knowledge and are estimates only. Estimates of ore reserves and mineral resources are necessarily imprecise and depend to some extent on interpretations which may prove inaccurate. No assurance can be given that the estimated reserves and resources are accurate or that the indicated level of silica or any other mineral, or the quality or recovery of sand intended for the frac sand market will be produced. Such estimates are, in large part, based on interpretations of geological data obtained from drill holes and other sampling techniques. Actual mineralisation or geological conditions may be different from those predicted. No assurance can be given that any or all of Heemskirk's mineral resources constitute or will be converted into reserves.
- Market price fluctuations of frac sand as well as increased production and capital costs may render Heemskirk's ore reserves unprofitable to develop at a particular site or sites for periods of time or may render mineral reserves containing relatively lower grade mineralisation uneconomic. Estimated reserves may have to be recalculated based on actual production experience. Any of these factors may require Heemskirk to reduce its mineral reserves and resources, which could have a negative impact on Heemskirk's financial results and the expected operating life of its mines.
- Actual ore reserves and mineral resources may differ from those estimated, which could have a positive or negative effect on Heemskirk's financial performance.

Replacement of depleted Ore Reserves

- Heemskirk must continually replace reserves depleted by production to maintain production levels over the long term. Reserves can be replaced by expanding known ore bodies, locating new deposits or making acquisitions and demonstrating that the extensions, additions or acquisitions are economic to produce from and will have all necessary approvals, licences and permits to come into production. Exploration is highly speculative in nature and involves many risks and are frequently unsuccessful. There is no assurance that current or future exploration programs will be successful. Also, if a discovery is made, it may take several years from the initial phases of drilling until production is possible.
- There is a risk that depletion of reserves will not be offset by discoveries or acquisitions or that
 divestitures of assets will lead to a lower reserve base. The reserve base of Heemskirk may
 decline if reserves are mined without adequate replacement and Heemskirk may not be able to
 sustain production beyond the current mine lives, based on current production rates.

Geological and Geotechnical

There is a risk that unforeseen geological and geotechnical difficulties may be encountered when
developing and mining ore reserves, such as unusual or unexpected geological conditions, pit
wall failures, rock bursts, seismicity and cave-ins. In any of these events, a loss of revenue may
be caused due to the lower than expected production and/or higher than anticipated operation
and maintenance costs and/or on-going unplanned capital expenditure in order to meet
production targets.

Foreign Exchange Risk

• Heemskirk is an Australian business that reports in Australian dollars. Heemskirk's revenue is derived from the sale of frac sand in Canadian dollars and funding for the Moberly Project is received in US dollars. Costs are mainly incurred by the businesses in both Australian and Canadian dollars therefore events in the CAD/USD, CAD/AUD and AUD/USD exchange rates may adversely or beneficially affect Heemskirk's results of operations and cash flows. The risks associated with such fluctuations and volatility may be minimised by any currency hedging Heemskirk may undertake although there is no assurance as to the efficacy of such currency hedging.

Regulatory Risk

- The operations of Heemskirk are subject to various Federal, State and local laws and plans
 including those relating to mining, prospecting, development, permit and licence requirements,
 industrial relations, environment, land use, royalties, water, native title and cultural heritage,
 land access, mine safety and occupational health.
- Approvals, licences and permits required to comply with such rules may, in some instances, be subject to the discretion of the applicable government or government officials, and, in some cases, the local community. No assurance can be given that Heemskirk will be successful in obtaining any or all of the various approvals, licences and permits or maintaining such authorisations in full force and effect without modification or revocation. To the extent such approvals are required and not retained or obtained in a timely manner or at all, Heemskirk may be curtailed or prohibited from continuing or proceeding with production and exploration.

Weather and climactic conditions

• Heemskirk's sites and operations are subject annual weather seasonality which, from time to time, may result in delays or loss of production.

Insurance risk

Heemskirk maintains insurance coverage as determined appropriate by its board and
management, but no assurance can be given that Heemskirk will continue to be able to obtain
such insurance coverage at reasonable rates (or at all), or that any coverage it obtains will be
adequate and available to cover all claims.

Environmental risk

 Mining and exploration can be potentially environmentally hazardous, giving rise to potentially substantial costs for environmental rehabilitation, damage control and losses. Heemskirk is subject to environmental laws and regulations in connection with its operations and could be subject to liability due to risks inherent in its activities, including unforeseen circumstances.

Hydraulic Fracturing

 Due to significant public debate surrounding the environmental impacts of hydraulic fracturing, the industry is subject to substantial public and regulatory scrutiny and to rigorous public environmental approval and monitoring processes. The implementation of future regulations and approval processes may impact the market for frac sand products supplied by Heemskirk.

Industry Risk

International oil and gas prices have fluctuated widely in recent years and may continue to
fluctuate significantly in the future. Fluctuations in oil and gas prices and, in particular, a
material decline in the price of oil or gas may have a material adverse effect on the Company's
business, financial condition and results of operations.

(b) Moberly Project Risks

Construction risks

- Completion of the Moberly Project involves a number of typical construction risks including the failure to obtain necessary approvals, employee or equipment shortages, higher than budgeted construction costs, insolvency events and project delays, which may impact the commerciality and economics of the project.
- There are also risks associated with ensuring contractors and subcontractors perform their contractual obligations to the Company and do not withdraw from their contractual arrangements.

Debt funding risk

• In 2015, Heemskirk entered into financing commitments pursuant to which Taurus BV agreed to provide debt financing for the Moberly Project construction on certain terms and conditions (see Section 9.5 of this Target's Statement for further information regarding the Debt Funding Facility with Taurus BV). If certain events occur (e.g. insolvency, compliance with bank covenants etc.), Taurus BV may terminate the debt financing agreements. Termination of the Debt Funding Facility would have an adverse impact on Heemskirk's sources of funding for the Moberly Project. Taurus BV has obtained security interests over Heemskirk's assets to secure the funding, there is a risk that Taurus BV could enforce this security if Heemskirk defaults on the Debt Funding Facility.

Working Capital Risk

• As noted in Section 1.6 of this Target's Statement in relation to the Bridge Facility, if conditions of the Bridge Facility are not satisfied (including the Offer being unconditional), the Bridge Facility may not be available to Heemskirk and Heemskirk will need to undertake a capital raising to fund additional working capital required during Moberly Project commissioning and early production. It is the Directors' view that any equity raising is likely to be at a material discount to Heemskirk share prices prior to the announcement of the Proposal, and may be impacted materially if Taurus BV and its associates do not participate (since, as at the date of the Bidder's Statement (13 March 2017), they hold 32.78% of fully paid ordinary shares in the Company)⁷. Alternative forms of raising capital are expected to be challenging at this current stage, given stage 1 of the Moberly Project has not reached production, the existing debt facility agreement with Taurus BV and requirement for Taurus BV (as the current debt provider) to approve any non-equity capital raisings.

⁷ On 27 March 2017, the day immediately before the date of this Target's Statement, NSC, its holdings entities (including Taurus BV), their subsidiaries and its associates lodged a Form 604 stating that they have acquired a relevant interest under section 608(8) of the Corporations Act as a result of acceptances under the Offer giving them a voting power of 34.59%.

Liquidity risk

• The market for the Company's Shares may be illiquid. As a consequence, investors may be unable to readily exit or realise their investment.

Off-take risk

At the date of the Target's Statement, Heemskirk had not entered into any off-take contracts for
the future sale of Moberly frac sand production. Until such time as unconditional off-take
contracts are entered into, uncertainty will exist in relation to the sales estimates, in both
physical tonnages and unit pricing terms, which support Moberly's forecast revenues until such
time as unconditional off-take contracts are entered into.

Counterparty risk

• There is a risk that contracts and other arrangements to which Heemskirk is party to and obtain a benefit will not be performed by the relevant counterparties if those counterparties become insolvent or are otherwise unable to perform their obligations.

Occupational Health and Safety

• Failure to comply with the necessary health and safety legislative requirements applicable to the Moberly Project could result in fines, penalties and compensation for damages as well as reputational damage.

9 Profile of Heemskirk

9.1 Operations

Heemskirk is publicly listed on the Australian Securities Exchange. The Company's sole operation is the Moberly Silica Mine in British Columbia, Canada (**Moberly Project**).

The Moberly Project is operated by the Company's wholly owned Subsidiary, Heemskirk Canada Limited, which has a regional administrative office in Calgary and supported by a corporate head office located in Melbourne.

Heemskirk was established in 2003 and listed on the ASX in October 2004.

9.2 Moberly Project

The Moberly Project is located near the town of Golden, in south-eastern British Columbia, about 260 kms west of Calgary, Canada. It is a high-quality silica project, with a granted mine lease and a freehold plant site.

The Moberly Project is scheduled to produce frac sand which test work has indicated complies with various American Petroleum Institute (**API**) specifications used by the industry to designate quality (Mount Moberly White $^{\text{m}}$).

Test work has indicated that the project, as designed, may produce 30/40, 30/50, 40/70 and 70/140 mesh frac sands passing various API specifications and capable of meeting the requirements of petroleum industry exploration and development companies operating in North America.

As announced on 23 November 2016, the estimated measured and indicated resources as of 30 September 2016 is 37.5 million tonnes of silica with an estimated recovery, based on test work, of 70% recovery to 30 mesh to 140 mesh frac sand products.⁸ For further information, please refer to the Heemskirk Mineral Resources and Ore Reserves Statement which was released to ASX on 23 November 2016. It should be noted that the Independent Expert has only considered reserves in its discounted cash flow (**DCF**) valuation. Heemskirk believes that the DCF valuation should also include some of the 37.5 million tonnes of measured and indicated resource value.

Stage 1 of the Moberly Project has a nameplate production output capacity of 300,000 metric tonnes per annum. Construction completion is expected by 30 June 2017 with commissioning completion and first production during calendar Q3 2017.

Heemskirk received an expression of interest (dated 17 February 2017) from Canadian oil and gas exploration company, Velvet Energy Ltd, to purchase 100,000 to 150,000 metric tonnes from the Moberly Project.

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⁸ The information in this Target's Statement that relates to Mineral Resources or Ore Reserves was released to ASX on 23 November 2016 (*Heemskirk Mineral Resources and Ore Reserves Statement*) and available on ASX website at www.asx.com.au and Heemskirk's website at www.heemskirk.com (the Reserve & Resource Statement dated 23 November 2016).

The Company confirms that it is not aware of any new information or data that materially affects the information included in the Reserve and Resource Statement dated 23 November 2016 and that all material assumptions and technical parameters underpinning the estimates in the Reserve and Resource Statement dated 23 November 2016 continue to apply and have not materially changed. The Company confirms that the form and context in which the findings are presented have not been materially modified from the Reserve and Resource Statement dated 23 November 2016.

⁹ Please refer to the Reserve & Resource Statement dated 23 November 2016.

In addition, North American peers report the following average sale prices:

- US Silica Inc., a major frac player, listed on New York Stock Exchange reported an average selling price per short ton of US\$65 in its December 2016 Quarterly Report. This equates to approximately C\$95¹⁰ per metric tonne;
- Fairmount Santrol Holdings Inc., in its December 2016 Quarterly Report reported an average selling price per short ton of US\$63, equivalent to C\$92¹¹ per metric tonne.

On this basis, Heemskirk expects to be able to sell its product at C\$85 per metric tonne from commencement of production, well above the range assumed by the Independent Expert in the early years of production (C\$65 in Year 1, stepping up to C\$85 by Year 5).

The Moberly Project has a mine life of at least 35 years with strong product demand. It is a scaleable project – with the attraction of import replacement supply for Western Canadian petroleum industry customers.

9.3 Strategy

The Company's activities are primarily focussed on completing efficiently the construction and commissioning of the Moberly Project. More broadly, Heemskirk's strategy is to be the dominant quality producer of silica sand for the glass, cement and oil & gas markets in Canada and North America.

Short-term

Heemskirk's short-term focus is to:

- Reduce discretionary spending continue to focus on reducing Company overheads whilst supporting the construction and development of the Moberly Project;
- Secure customer offtake agreements; and
- Prepare for operational readiness including:
 - Mining and hauling ensure sufficient raw material is on site for commissioning and production;
 - Logistics lock in shipping contracts so that freight is ready for first shipment and to take advantage of the Moberly Project's closer proximity to the Western Canadian Sedimentary Basin;
 - Management team put in place a management team that is ready for commissioning and first production; and
 - Systems ramp up procedures and systems ready for operation.

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¹⁰ US\$65 per short ton / 0.907185 (short ton conversion to metric tonnes) x 1.33 (spot USD/CAD rate on 23 March 2017). For further information, please refer to the December 2016 Quarterly Report dated 22 February 2017 of US Silica Inc. which could be found at the following link: http://www.prnewswire.com/news-releases/us-silica-holdings-inc-announces-fourth-quarter-and-full-year-2016-results-300411984.html.

¹¹ US\$63 per short ton / 0.907185 (short ton conversion to metric tonnes) x 1.33 (spot USD/CAD rate on 23 March 2017). For further information, please refer to Fairmount Santrol Holdings Inc.'s December 2016 Quarterly Report dated 9 March 2017 which could be found at the following link: http://investors.fairmountsantrol.com/investor-relations/news/press-releases/press-release-details/2017/Fairmount-Santrol-Announces-Fourth-Quarter-and-Full-Year-2016-Results/default.aspx.

Long-term

The Company recently commissioned its engineering contractor, Morrison Hershfield, to review the expansion of the Moberly Project and produce a high-level report of its findings (**Expansion High Level Review**).

The Expansion High Level Review investigated potential bottle neck areas for expansion of capacity from 300,000 metric tonnes per annum (**Mtpa**) to 600,000 Mtpa.

Morrison Hershfield preliminary estimates are that the capital cost of the expansion is approximately C\$18 million¹². This includes:

- 15% for permitting and fees;
- 15% buffer for contingency cost; and
- A mine haul road extension to avoid parts of the main public road and reduce the impact of the hauling activities on the local community.

The estimated capital cost excludes feasibility study and engineering costs, working capital and financing costs.

To fund the expansion, the Debt Funding Facility includes US\$15 million for expansion. As part of the Taurus BV US\$40 million two-tranche secured debt facility, draw down of the US\$15 million is contingent upon various conditions including approval from Taurus BV, completion of detailed technical evaluation and design, permitting, demonstration of full Moberly Project funding, committed off-take arrangements and consideration of market conditions. Please refer to Section 9.5 of this Target's Statement for further information on the Debt Funding Facility.

The capital cost to double plant capacity from the expansion is materially less than the capital cost of the original project (currently anticipated at approximately C\$37 million through to construction completion in June 2017). As a result, the Company anticipates that the expansion has the potential to be materially value accretive for Heemskirk Shareholders.

The next step for the Company is to commission a feasibility study to prove up the expansion case. This would determine the economics of the expansion and produce detailed designs and costings. Current management projections are that the expansion could be underway in 2018 and completed in 2019. The Moberly Project is readily expandable to double initial production capacity once all initial operational and product sales milestones have been met.

9.4 Financial position

In the year ended 30 September 2016, Heemskirk made a net loss after tax of A\$4.82m, reflecting that the Moberly Project is currently in construction stage. As at 30 September 2016, the Company had cash of A\$13.31m and net assets of A\$27.62m.

As at 31 December 2016, Heemskirk had a cash balance of A\$13.1m, as disclosed in the Heemskirk Quarterly Report released on 31 January 2017.

Further financial information can be obtained from Heemskirk's quarterly and annual reports which are disclosed on Heemskirk's website at www.heemskirk.com.

¹² Cost estimates provided in the Expansion High Level Review are high-level estimates provided without a detailed design / scope of work, nor cost-consultant / contractor involvement, and represent only order-of-magnitude opinion of probable costs. Significant deviations in final project costs can only be realised after a scope of work is designed, contractors provide competitive quotations, and the project is complete such that hidden or latent defects are found and included.

Shareholders requiring a hard copy can obtain copies of these reports by contacting the Heemskirk Shareholder Information Line on 1300 096 259 (within Australia) or +61 2 8016 2832 (outside Australia) between 8:15am and 5:30pm (AEST) Monday to Friday.

9.5 Debt Funding Facility with Taurus BV

(a) Secured Debt Facility Agreement

The Company entered into a US\$40 million two-tranche secured debt facility agreement with Taurus BV to fund the construction of the Project (**Debt Funding Facility**) in 2015. Under the Debt Funding Facility, Heemskirk's Canadian subsidiary HCA Mountain Minerals (Moberly) Limited is the borrower and Taurus BV is the lender.

The Debt Funding Facility is broken into two tranches:

- Tranche 1: US\$25 million to complete the 300,000 Mtpa construction and production development project (stage 1); and
- Tranche 2: US\$15 million to complete an expansion of the project (stage 2) to a 600,000 Mtpa production level, once stage 1 has been successfully completed. A decision to expand will also consider market conditions. A feasibility study will be commissioned to prove up the expansion case.¹³

The Debt Funding Facility bears interest at 10% per annum, an arrangement fee of 2% of the facility amount 14, a commitment fee of 2% per annum on undrawn amounts at each phase, an issue of 25.219 million options and 2% gross revenue royalty. The Debt Funding Facility is secured by security interests over Heemskirk's assets, by way of a guarantee from Heemskirk under the Debt Funding Facility agreement of performance by its subsidiaries, HCA Mountain Minerals (Moberly) Limited, Heemskirk Canada Limited and Heemskirk Canada Holdings Limited, of their obligations under certain agreements, including the following:

- a Canadian law pledge of all the shares in HCA Mountain Minerals (Moberly) Limited granted by Heemskirk Canada Limited;
- a Canadian law fixed and floating charge debenture granted by HCA Mountain Minerals (Moberly) Limited over all of its assets;
- a Canadian law assignment of certain material contracts, leases and other agreements connected to the Moberly Project to Taurus BV;
- a Canadian law fixed and floating charge debenture granted by Heemskirk Canada Limited over all of its assets; and
- a Canadian law fixed and floating charge debenture granted by Heemskirk Canada Holdings Limited over all of its assets.

The Debt Funding Facility maturity date is 31 August 2020.

Heemskirk remains funded for the budgeted construction costs of the Moberly Project through to 30 June 2017 subject to the satisfaction of relevant covenants and utilisation requirements as provided under the Debt Funding Facility agreement with Taurus BV.

¹³ Heemskirk's First Quarter Activities Report released on ASX on 31 January 2017.

¹⁴ Paid via an issue of 10.773 million HSK fully paid ordinary shares on 15 July 2015.

As part of the Debt Funding Facility, Heemskirk is required to:

- Make interest payments from August 2017;
- Commence principal repayments from November 2017; and
- Set aside US\$3 million (A\$4 million¹⁵) in a debt service reserve account upon satisfaction of project completion tests (expected to be in November 2017).

(b) Bridge Facility

As announced on 31 January 2017, Heemskirk believes that additional short-term funding, in the vicinity of A\$5 million – A\$10m million, is likely to be required during project commissioning, early production and for the commencement of studies for stage 2 of the Moberly Project.

The Company undertook an engineering review during 2016. Various refinements and modifications were identified in the issued for construction drawings, requiring redesign prior to completion of the steel design and equipment installation. This resulted in a revised construction schedule.

Taurus BV has offered a funding solution via a working capital bridging facility (**Bridge Facility**) to be available to Heemskirk (via its Canadian subsidiary, HCA Mountain Minerals (Moberly) Limited) on the following key terms:

- Up to C\$10 million, able to be drawn in C\$2.5 million minimum tranches;
- Maturity date of 31 March 2018;
- Bullet repayment at the maturity date, with no penalty for early repayment;
- Funds to be used by Heemskirk for funding working capital requirements and existing Debt
 Funding Facility servicing requirements;
- Unsecured facility;
- Interest rate of 12.5% p.a. on drawn funds, to be repaid in Bidder Shares (not cash);
- Fees payable to Taurus BV in Bidder Shares (not cash) comprising:
 - > 2% arrangement fee on the total facility size; and
 - 2% p.a. commitment line fee on undrawn funds.
- The Bridge Facility is available for draw down once NSC has declared its Offer free of all conditions; and
- Repayment of the Bridge Facility is currently intended to be via a new equity issue by NSC following completion of the Offer on the following key terms:
 - Issue price of C\$0.075 per share; and
 - All NSC Shareholders may participate in the equity raising on a pro-rata basis to their shareholdings in NSC.

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¹⁵ Based on USD/AUD exchange rate of 1.33

The Bridge Facility is subject to certain conditions precedent, representations and warranties; including legal documentation and customary provisions for a facility of this nature.

The Terms Sheet for the Bridge Facility was signed by parties on 13 February 2017. As at the date of this Target's Statement, formal documents to give effect to the Terms Sheet are currently being prepared.

9.6 Dividends and dividend policy

On the basis that the Company's Moberly Project is still under construction, with the need for additional working capital through commissioning and early production phases, the Directors of the Company do not intend to pay any dividends in the near future. Payment of dividends is not likely until the Moberly Project reaches production nameplate capacity for a full financial year, and having regard to servicing requirements and conditions under the Debt Funding Facility.

9.7 Recent trading prices of Heemskirk Shares

The following table sets out the share prices and VWAPs of Heemskirk Shares for specified periods and dates:

	Heemskirk share price / VWAP
VWAP 6 months prior to announcement of the Proposal (on 22 December 2016)	\$0.0554
VWAP 3 months prior to announcement of the Proposal	\$0.0622
Closing price prior to announcement of Proposal	\$0.0500
Closing price prior to announcement of entering into the Takeover Implementation Agreement setting out the terms of the proposed Offer on 13 February 2017	\$0.0800
Closing price on 27 March 2017 being the date immediately prior to the date of this Target's Statement	\$0.076

9.8 Continuously disclosing entity

As a company listed on the stock market operated by the ASX and a 'disclosing entity' under the Corporations Act, Heemskirk is subject to regular reporting and continuous disclosure obligations. Heemskirk's recent announcements are available on the company's website at www.heemskirk.com.

Further announcements concerning developments will continue to be made available on this website after the date of this Target's Statement.

These documents can also be accessed through the ASX's website at www.asx.com.au.

In addition, Heemskirk will make copies of the following documents available for inspections at Heemskirk's offices which are located at Level 17, 303 Collins Street, Melbourne VIC 3000:

(a) Annual Report for the financial year ended 30 September 2016, lodged with ASX on 17 January 2017; and

(b) Any continuous disclosure document lodged by Heemskirk with ASX between the lodgement of its Annual Report for the financial year ended 30 September 2016 and the date of this Target's Statement namely:

Change in substantial holding
Confirmation of despatch of Bidder's Statement
Commencement of Despatch of Bidder's Statement
Becoming a substantial holder
Receipt of Bidder's Statement
Bidder's Statement
Change in substantial holding
Becoming a substantial holder
Appendix 3B - Issue of Options
Taurus FIRB Condition Satisfied
Results of 2017 Annual General Meeting
Annual General Meeting Presentation 23 February 2017
Taurus Takeover Proposal Recommended
First Quarter Activities Report
Corporate Governance Statement & Appendix 4G

9.9 No material litigation

The Directors are not aware of any current material litigation involving Heemskirk.

9.10 Issued capital

Shares

At the date of this Target's Statement, there are 562,635,912 fully paid ordinary Heemskirk Shares on issue.

Share class	Number of shares in issue	Amount paid up on those shares
Ordinary shares	562,635,912	Fully paid
Reserved Shares	1,461,808	Fully paid
Class A \$0.25 ordinary shares	100,000	1 cent paid up, 24 cents unpaid
Class B \$0.50 ordinary shares	1,500,000	1 cent paid up, 49 cents unpaid

Taurus BV Options:

Issue date	Number of Options	Expiry Date	Exercise Price	Holders
3 May 2016	1,576,215	15 July 2020	\$0.0878	Taurus Resources No.2 BV
10 August 2016	1,576,215	15 July 2020	\$0.0878	Taurus Resources No.2 BV
3 January 2017	1,576,215	15 July 2020	\$0.0878	Taurus Resources No.2 BV
28 February 2017	1,576,215	15 July 2020	\$0.0878	Taurus Resources No.2 BV
TOTAL	6,304,860	15 July 2020	\$0.0878	Taurus Resources No.2 BV

Heemskirk currently has vested shares and unvested shares (which are held by an Employee Share Plan trustee), vested rights to acquire shares in HSK and unvested rights to acquire shares in HSK, details as follows:

Employee Shares and Employee Rights to Acquire:

	Number Vested	Number Unvested	Total
Employee Shares (allocated)	277,632^	179,048*	456,680
Employee Shares (unallocated)	341,501#	43,274*	384,775
Employee Rights to Acquire	749,894*	402,254*	1,152,148
	1,369,027	624,576	1,993,603

^{^ 190,294} of these vested shares are quoted on ASX and form part of 562,635,912 fully paid ordinary shares; 87,338 of these vested shares are not quoted on ASX and form part of 1,461,808 Reserved Shares.

Under the Heemskirk Employee Share Plan Trust Deed, on the occurrence of a control event (e.g. in the event of takeover offer), in the case of Employee Shares held by the Trustee that are not allocated to an employee, the Trustee must accept any offer to acquire the Shares in connection with the control event.

Under the Heemskirk Employee Share Plan, if the Company has been served with a bidder's statement under the Corporations Act, the Company may declare that each Employee is permitted, if he or she so wishes, to direct the Trustee to accept the offer on the Employee's behalf in respect of all or part of the Shares under the Heemskirk Employee Share Plan standing to the credit of the Employee's account and the Company shall notify the Trustee accordingly.

An Employee who wishes to direct the Trustee to accept such an offer in respect of all or part of the Shares under the Heemskirk Employee Share Plan standing to the credit of his or her account must do so by notice in writing to the Trustee. By giving that notice the Employee irrevocably directs the Trustee to take such action as may be necessary to convert non-cash consideration into cash and to apply the total cash received to repay the amount of the loan outstanding on these Shares under the Heemskirk Employee Share Plan.

Clause 4.1 of the Takeover Implementation Agreement provides that prior to expiry of the Bid Period and subject to the Offer being unconditional (save for Condition in paragraph (m) of Schedule 1 of the Takeover Implementation Agreement), Heemskirk will use its reasonable endeavours to work in conjunction with NSC to negotiate with the relevant parties to ensure that any entitlement to shares under the Employee Share Plan are cancelled for nil consideration, or for such other consideration agreed with NSC in good faith.

9.11 Substantial holders

Substantial holder notices lodged with the ASX before 28 March 2017 (being the date of this Target's Statement) indicated that the following entities (together with any of their associates) have Relevant Interests in 5% or more of Heemskirk Shares:

^{*} not quoted on ASX, currently forming part of 1,461,808 Reserved Shares.

[#] these shares are quoted on ASX and form part of 562,635,912 fully paid ordinary shares.

Substantial Holder	No. of Ordinary shares	TOTAL No. of Ordinary shares	Total voting power	Date of Substantial Holder Notice
FIRST SAMUEL LIMITED	195,069,619	195,069,619	34.68%	29 January 2016
NORTHERN SICILIA CORPORATION, its holding entities, their subsidiaries and its associates ¹⁶	194,703,557	194,703,557	34.59%	27 March 2017
MARC RABINOV:			6.61%	6 March 2017
MMS1 PTY LTD ATF SHALL & HALL PARTNERSHIP	330,005,949			
NEWMELD PTY LTD ATF NEWMELD SUPER FUND	7,204,750	37,210,699		
		426,983,875	75.88%	

¹⁶ The shareholding percentage of NSC, its holding entities (including Taurus BV), their subsidiaries and its associates as at the date of the Bidder's Statement and in accordance with Form 603 lodged by NSC to ASX on 14 March 2017 was 32.78%. On 27 March 2017, the day before the date of this Target's Statement, NSC, its holdings entities (including Taurus BV), their subsidiaries and its associates lodged a Form 604 stating that they have acquired a relevant interest under Section 608(8) of the Corporations Act as a result of acceptances under the Offer giving them a voting power of 34.59%.

10.1 Directors

Garry Cameron (Non-Executive Chairman)

BBus(A/c), BEc(Hons), MEc, FAICD, FCPA

Garry was Managing Director of a listed property group for 10 years and prior executive roles include Executive Director Finance for Telstra. He is currently a Non-Executive Chairman of Infrastructure Specialist Asset Management Limited. He was previously a Non-Executive Director with ANZ Specialist Asset Management Ltd. Garry's roles over the past nine years have been in funds management of energy and infrastructure projects particularly focused on large coal, gas and biofuels projects from exploration to delivery.

Garry formerly held Non-Executive Director roles in the oil and gas sector, superannuation funds management, a retirement village developer and operator, and a contract labour services company.

Garry was recognised in 1992 on the Australia Day Honours list for his contributions to the Finance and Telecommunications industries.

Garry joined the Board on 24 February 2011 and was appointed Chairman on 20 March 2014.

John Taylor (Non-Executive Director)

BE(Chem), MBA, FIChemE

John was Managing Director of Outotec Australasia Pty Ltd (previously Outokumpu Technology) and prior to that, Lurgi (Australia) Pty Ltd for 18 years. He has held senior positions in management, process engineering and plant construction, primarily in the mining, minerals processing and environmental sectors.

John was previously a Non-Executive Director of listed companies KGL Resources Limited, Ticor Ltd, The Environmental Group Ltd and Ausmelt Ltd.

He is a part time consultant to Outotec South East Asia Pacific.

John joined the Board on 9 May 2011.

Peter McKenna (Non-Executive Director)

BE (Civil)(Hons), GAICD, FIEAust, CP Eng, F Fin, MAusIMM

Peter has worked in the mining, resource and infrastructure industries for nearly 40 years and has over 20 years of board level experience.

Peter brings governance experience of major resource and infrastructure projects, research and development organisations and international representative offices.

Peter was previously a Non-Executive Director of Cooperative Research Centre of Mining and an Advisory Board Member of North West Rail Link project, Sydney. He also has executive Board experience at Glencore Coal (previously Xstrata Coal), MPE and Prodeco S.A. (Colombia).

Peter joined the Board on 23 March 2016.

Heemskirk Key Management

Mark Connors (Acting Chief Executive Officer)

Mark was appointed Acting Chief Executive Officer of the Company during April 2016. Mark is also currently President of Heemskirk Canada, and is responsible for managing the Company's construction and ongoing operations in North America, including the Moberly Project.

Mark joined the Company in 2009 as VP Marketing and Compliance after a 10 year career with M-I Swaco, a division of Schlumberger. Mark has experience in Supply Chain and is a member of the Supply Chain Management Association of Canada. Mark was also a Manager of Quality, Health, Safety and Environment with M-I working throughout North America in the oil and gas industry both onshore and offshore.

Trish Hally (Company Secretary)

BSc, Grad Dip ACG; AGIA; ICSA; Chartered Secretary

Trish joined Heemskirk in 2008 and has held various roles in governance, corporate and human resources areas. More recently her primary focus has been on corporate governance and company secretarial roles within the Company.

Trish was appointed Company Secretary on 28 October 2016.

11 About NSC

Please refer to section 2 of the Bidder's Statement.

12 Directors' interests

12.1 Directors' interests in Heemskirk Shares

At the date of this Target's Statement, the Directors had Relevant Interests in the following Heemskirk Shares:

Director	Heemskirk Shares	% of Issued Shares
Garry Cameron	575,000	0.10%
Peter McKenna	Nil	Nil
John Taylor	2,928,572	0.52%

12.2 Directors' recent dealings in Heemskirk Shares

On 6 December 2016, Non-Executive Director John Taylor acquired an indirect interest in 35,000 ordinary Heemskirk Shares, via on-market purchases through JohnChris Superannuation Fund, an entity of which John Taylor is a member. The consideration paid for the shares was \$0.07 per share.

On 9 December 2016, Mr John Taylor acquired an indirect interest in 465,000 ordinary Heemskirk Shares, via on-market purchases through JohnChris Superannuation Fund. The consideration paid for the shares was \$0.065 per share.

With the exception of the abovementioned acquisition, as at the date of this Target's Statement, no Heemskirk Director nor any of their respective associates has acquired or disposed of any Heemskirk Securities in the four month period ending on the date immediately before the date of this Target's Statement.

12.3 Directors' interests in NSC securities

No director of Heemskirk has any interest in NSC's shares.

12.4 Benefits and agreements

- (a) No person has been or will be given any benefit (other than a benefit which can be given without member approval under the Corporations Act) in connection with the retirement of that person, or someone else, from the board of directors of Heemskirk or a related body corporate of Heemskirk;
- (b) There are no agreements made between a Director and another person in connection with, or conditional upon, the outcome of the Offer, other than in the Director's capacity as a holder of Heemskirk Shares; and
- (c) No Director has an interest in any contract entered into by NSC.

12.5 Directors' recent dealings in NSC securities

No Director has acquired or disposed of a Relevant Interest in any securities in NSC in the four month period immediately preceding the date of this Target's Statement.

13 Additional information

13.1 Consents

Each of the Directors (Mr Garry Cameron, Mr John Taylor and Mr Peter McKenna) has given and has not before the date of this Target's Statement withdrawn his consent to be named in the form and context in which he is named to the inclusion of statements made by, or attributed to, him in the form and context in which it is included.

Each of the below parties referred to in this Section:

- (a) has not authorised or caused the issue of this Target's Statement;
- (b) does not make, or purport to make, any statement in this Target's Statement, nor is any statement in this Target's Statement based on any statement by any of those parties other than as specified in this Section; and
- (c) to the maximum extent permitted by law, expressly disclaims and takes no responsibility for any part of this Target's Statement other than a reference to its name and a statement included in this Target's Statement with the consent of that party as specified in this Section.

GrilloHiggins Lawyers has given and has not before the date of this Target's Statement withdrawn its consent to be named in this Target's Statement as Heemskirk's legal adviser in the form and context in which it is named.

Lion Capital Advisory Pty Ltd, as corporate adviser to Heemskirk, has consented to be named in this Target's Statement as Heemskirk's corporate adviser and, as at the date of this Target's Statement, has not withdrawn that consent.

Boardroom Pty Limited has given and has not before the date of this Target's Statement withdrawn its consent to be named in this Target's Statement as Heemskirk's share registry in the form and context in which it is named. Boardroom Pty Limited has had no involvement in the preparation of any part of this Target's Statement other than being named as Share Register to the Company. Boardroom Pty Limited has not authorised or caused the issue of, and expressly disclaims and takes no responsibility for any part of this Target's Statement.

Morrison Hershfield has consented to be named in this Target's Statement in the form and context in which it is named and to the inclusion in the Target's Statement of the statements based upon the Expansion High Level Review prepared by them in the form and context in which it appears, and as at the date of this Target's Statement, has not withdrawn that consent.

BDO Corporate Finance (East Coast) Pty Ltd, as the Independent Expert engaged by Heemskirk, has given and has not before the date of this Target's Statement withdrawn its consent to be named in this Target's Statement as the Independent Expert in the form and context in which it is named, and to the inclusion of the Independent Expert's Report and references to that report in the Target's Statement in the form and context in which they are included.

CSA Global Pty Limited, as the Independent Technical Specialist engaged by Heemskirk has given and has not before the date of this Target's Statement withdrawn its consent to be named in this Target's Statement as the Independent Technical Specialist in the form and context in which it is named, and to the inclusion of the Independent Technical Assessment Report in the Independent Expert's Report.

13.2 Transaction expenses

Expert, corporate adviser and legal fees, as well as printing and mailing costs associated with the Offer are anticipated to be approximately \$800,000.

13.3 Publicly available information

As permitted by ASIC Class Order 13/521, this Target's Statement contains statements which are made in, or based on statements made in, documents lodged with ASIC or given to the ASX by NSC and the Target's Statement fairly represents the statement or includes, or is accompanied by, a correct and fair copy of the document or the part of the document that contains the statement. Pursuant to ASIC Class Order 13/521, the consent of persons to whom such statements are attributed is not required for the inclusion of those statements in this Target's Statement. Any Shareholder may request a copy of those documents (or part) free of charge during the Offer Period by contacting the Heemskirk Shareholder Information Line on 1300 096 259 (within Australia) or +61 2 8016 2832 (outside Australia) between 8:15am and 5:30pm (AEST) Monday to Friday. A copy of the relevant document (or part) will be provided within 2 Business Days of the request. As permitted by ASIC Corporations (Consents to Statements) Instrument 2016/72, this Target's Statement may include or be accompanied by certain statements that:

- (a) fairly representing a statement by an official person; or
- (b) from a public official document or published book, journal or comparable publication,

and the consent of the persons to whom those statements are attributed is not required to be included in this Target's Statement.

In addition, as permitted by ASIC Corporations (Consents to Statements) Instrument 2016/72, this Target's Statement contains share price trading data sourced from IRESS without its consent.

13.4 Takeover Implementation Agreement

Heemskirk and NSC have entered into a Takeover Implementation Agreement, a copy of which was included in Heemskirk's announcement lodged with the ASX on 13 February 2017.

A summary of the key terms of Takeover Implementation Agreement is set out below.

(a) Exclusivity clauses

Clause 6 of the Takeover Implementation Agreement provides exclusivity clauses that Heemskirk must ensure that, during the period commencing 13 February 2017 until the End Date, Heemskirk, its associates, agents or advisers do not:

(i) "general no talk"

Participate in or continue any negotiations or discussions which would reasonably be expected to encourage or lead to the making of, an actual, proposed or potential Competing Proposal; or

(ii) "no shop"

Solicit, invite, encourage or initiate (including by the provision of non-public information to any third party) any inquiry, expression of interest, offer, proposal or discussion by any person in relation to, or which would reasonably be expected to encourage or lead to the making of, an actual, proposed or potential Competing Proposal.

(b) Exceptions to exclusivity limitations

The "no talk" and "no shop" provisions do not prevent the Heemskirk Board acting in good faith and in order to satisfy what the Directors reasonably consider to be their fiduciary or statutory duties based on the opinion of their external legal advisers, reasonably determine that the consequences of

failing to respond to such bona fide Competing Proposal or providing the relevant information would constitute, or would be likely to constitute, a breach of the fiduciary or statutory duties owed by any Company Director or would otherwise be unlawful. The Competing Proposal must reasonably be considered to be a Superior Proposal or lead to a Superior Proposal.

(c) Matching Right

Pursuant to clause 6.2 of the Takeover Implementation Agreement, if Heemskirk receives a Competing Proposal, and as a result the Directors propose to publicly change or withdraw their recommendation that Shareholders should accept the Offer or otherwise considers that they should recommend the Competing Proposal, Heemskirk must give NSC five clear Business Days' notice in writing of such proposed change or withdrawal.

As per clause 6.3, during such five Business Days, NSC may match that Competing Proposal by giving notice to Heemskirk (**Bidder Counterproposal**).

Heemskirk must consider any Bidder Counterproposal and if the Directors, acting in good faith, determine that the Bidder Counterproposal would be of an equivalent or superior outcome for the Shareholders than an applicable Competing Proposal, the Directors must also recommend the Bidder Counterproposal to Shareholders and not the Competing Proposal.

(d) Break Fee

Heemskirk agrees to pay NSC a reimbursement fee of \$450,000 if, at any time after the Announcement Date, it enters into an agreement, arrangement or understanding of a Competing Proposal of any kind during the Offer Period and within 12 months of the date of such announcement, the third party or any associate of that third party acquires Control of the Company (or similar circumstances).

NSC agrees to pay Heemskirk a reimbursement fee of \$450,000 without set-off or withholding if, at any time after the Announcement Date, NSC is in material breach of a term of the Takeover Implementation Agreement and does not remedy the breach or cease the conduct which caused the breach within five Business Days following written notice from Heemskirk outlining the nature of the breach.

(e) Termination of Takeover Implementation Agreement by NSC

NSC may terminate the Takeover Implementation Agreement if, during the Offer Period any director of Heemskirk does not recommend that the Shareholders accept the Cash Consideration component of the Offer or having recommended the Cash Consideration component of the Offer, withdraws or adversely modifies his or her recommendation, or a person (other than the Bidder or its associates) has a relevant interest in more than 20% of the Shares on issue (other than existing Shareholders who at the date of the Agreement hold a relevant interest in more than 20% of the Shares on issue).

(f) Heemskirk's rights on termination of Takeover Implementation Agreement

If all of the Directors adversely change or withdraw their recommendation to Shareholders in relation to the Offer or recommend a Competing Proposal, Heemskirk can terminate the Takeover Implementation Agreement.

The Takeover Implementation Agreement can also be terminated by either party upon certain circumstances including the emergence of a Superior Proposal.

13.5 No other material information

This Target's Statement is required to include all of the information that Heemskirk Shareholders and their professional advisers would reasonably require to make an informed assessment about whether to accept the Offer, but:

- (a) only to the extent to which it is reasonable for Heemskirk Shareholders and their professional advisers to expect to find this information in this Target's Statement; and
- (b) only if the information is known to any Director.

The Directors of Heemskirk are of the opinion that the information that Heemskirk Shareholders and their professional advisers would reasonably require to make an informed assessment whether to accept the Offer is contained in:

- (a) the Bidder's Statement (to the extent that the information is not inconsistent with or superseded by information in this Target's Statement);
- (b) Heemskirk's annual reports and releases to the ASX, and documents lodged by Heemskirk with ASIC before the date of this Target's Statement; and
- (c) this Target's Statement.

14 Approval of Target's Statement

Signed on behalf of Heemskirk Consolidated Limited by Garry Cameron, Non-executive Chairman, who is authorised to sign by a resolution unanimously passed at a meeting of the Directors of Heemskirk Consolidated Limited to approve this Target's Statement.

Dated: 28 March 2017

Garry Cameron

Non-executive Chairman

15.1 Definitions

In this Target's Statement:

Term Definition

ABCA means the Alberta Business Corporations Act

AEST Australian Eastern Standard Time

API means American Petroleum Institute.

Announcement Date means 13 February 2017.

ASIC means the Australian Securities and Investments Commission.

ASX means ASX Limited ACN 008 624 691 or the securities exchange

operated by it (as the case requires).

ASX Listing Rules means the listing rules of ASX.

ASX Settlement Operating

Rules

means the settlement rules of ASX.

Bidder means Northern Silica Corporation, a private corporation

incorporated under the Canadian Business Corporations Act

(Alberta).

Bidder's Shares means one share in the share capital of the Bidder.

Bidder's Statement means the bidder's statement dated 13 March 2017 by NSC which

contains the Offer and dispatched to the Shareholders on 15

March 2017.

Bridge Facility has the meaning given to it under Section 9.5(b) of this Target's

Statement.

Broker means a person who is a share broker and a participant in CHESS.

Business Day means a day on which banks are open for general banking

business in Melbourne (not being a Saturday, Sunday or public

holiday in that place).

Cash Consideration means the payment of \$0.075 cash for each fully paid Heemskirk

Share held by you.

CBCA means the Canada Business Corporations Act

CHESS means the Clearing House Electronic Subregister System, which

provides for electronic share transfer in Australia.

CHESS Holding means a holding of Heemskirk Shares on the CHESS subregister of

Heemskirk.

Competing Proposal means any proposal, agreement, arrangement, or transaction

which, if entered into or completed, would mean that a third party (either alone or with any associate thereof) would:

(a) for any person who does not hold 20% or more of Shares on the date of the Takeover Implementation Agreement, directly or indirectly acquires a relevant interest in, or has a right to acquire a legal, beneficial or economic interest in, or control of, 20% or more of

the Shares;

Term	Definition

- (b) for any person who holds a greater than 20% interest in Shares on the date of the Takeover Implementation Agreement, directly or indirectly acquires a relevant interest in, or has a right to acquire a legal, beneficial or economic interest in, or control of, 50% or more of the Shares;
- (c) acquire control of any member of the Heemskirk Group;
- (d) otherwise directly or indirectly acquire or merge or be stapled with any member of the Heemskirk Group; and/or
- (e) directly or indirectly acquire or become the holder of, or otherwise acquire or have a right to acquire a legal, beneficial or economic interest in, or control of, all or substantially all of the business or assets of any member of the Heemskirk Group,

whether by way of a takeover bid, scheme, shareholder approved acquisition, capital reduction, buy back, sale or purchase of shares, other securities or assets, assignment of assets or liabilities, incorporated or unincorporated joint venture, duallisted company (or other synthetic merger), deed of company arrangement, any debt for equity arrangement or other

means the conditions precedent to the Offer set out in Appendix 2 of the Bidder's Statement.

has the meaning given in section 50AA of the Corporations Act.

means the Broker or Participant who is designated as the controlling participant for shares in a CHESS Holding in accordance with the ASX Settlement Operating Rules.

means Corporations Act 2001 (Cth).

has the meaning given to it under Section 9.5(a) of this Target's Statement.

means the directors of Heemskirk.

means the vested and unvested rights to acquire shares in Heemskirk granted to employees of the Heemskirk Group.

means any entitlement of a person to be issued Employee Shares under the Employee Share Plan (upon the satisfaction of any vesting condition) and the Employee Rights to Acquire.

means the equity incentive plan as adopted by, and amended from time to time, by the Heemskirk Group.

means the unvested shares held by the trustee of the Employee Share Plan.

(a) date of termination of the Takeover Implementation

Agreement in accordance with its terms; and (b) 30 July 2017.

transaction or arrangement.

Conditions

Control

Controlling Participant

Corporations Act

Debt Funding Facility

Directors

Employee Rights to Acquire

Employee Securities

Employee Share Plan

Employee Shares

End Date

53 Heemskirk Target's Statement

means the earliest of:

Definition Term Expansion High Level Review means the recently commissioned report by Heemskirk's engineering contractor, Morrison Hershfield, which reviews the expansion of the Moberly Project. **FIRB** means the Australian Foreign Investment Review Board. FY means financial year ending 30 September every calendar year. **GST** has the meaning given to that term in A New Tax System (Goods and Services Tax) Act 1999 (Cth). **Heemskirk Employee Share** means the Trust Deed dated 20 February 2007 entered into **Plan Trust Deed** between Heemskirk and HSK Staff Share Plan Pty Ltd as trustee with respect to Employee Share Plan. **Heemskirk Group** means Heemskirk and each of its Subsidiaries. **Independent Expert** means BDO Corporate Finance (East Coast) Pty Ltd. **Independent Expert Report** means the report prepared by the Independent Expert in relation to the Offer, a copy of which is attached to this document in Attachment 2. **Independent Technical** means the report prepared by the Independent Technical **Assessment Report** Specialist in relation to the Moberly Project, a copy of which is attached to the Independent Expert Report. **Independent Technical** means CSA Global Pty Ltd. **Specialist** NSC means Northern Silica Corporation, a company incorporated under the laws of Canada. **Notice of Status of Conditions** means the notice served upon Heemskirk by NSC at least 7 days prior to the close of the Offer setting out what, if any, conditions remain outstanding. Offer means the offer by NSC to acquire all Heemskirk Shares, set out in section 1 of the Bidder's Statement. **Offer Period** means the period during which the Offer will remain open for acceptance. Offer Price means the consideration payable by NSC under the Offer. **Moberly Project** means the Moberly silica sand project near Golden, British Columbia, Canada. **Participant** means a participant under the ASX Settlement Operating Rules. **Proposal** means the proposal to acquire 100% of the Shares in Heemskirk by the Bidder as announced by Heemskirk on 22 December 2016. **Record Date** means, for the purposes of section 633(2) of the Corporations Act, the date for determining each person to whom information is to be sent under items 6 and 12 of section 633(1) of the Corporations Act for each Offer, being 13 March 2017.

(a) ASX and ASIC;

includes:

Regulatory Authority

(b) a government or governmental, semi-governmental or judicial entity or authority;

Term	Definition
rem	Delinition

- a minister, department, office, commission, delegate, instrumentality, agency, board, authority or organisation of any government; and
- (d) any regulatory organisation established under statute.

Relevant Interest has the meaning given to that term by section 9 of the

Corporations Act.

Reserved Shares means unquoted Shares held by the trustee of the Employee

Share Plan.

Section means a section of this Target's Statement.

Share Consideration means the payment of 1 Bidder Share for each fully paid

Heemskirk Share held by you.

Share or Heemskirk Share means the fully paid ordinary share in Heemskirk.

Shareholder or Heemskirk Shareholder means a holder of one or more Shares.

Shareholder Information Line

means the information line for Shareholders established by Heemskirk and which Heemskirk Shareholders may call if they have any queries in relation to the Offer. The telephone number for the Shareholder Information Line is 1300 096 259 (within Australia) or +61 2 8016 2832 (outside Australia) and is open between 8:15am and 5:30pm (AEST) Monday to Friday.

Subsidiary means a subsidiary as that term is defined under the Corporations

Act and Heemskirk Subsidiaries means a subsidiary of Heemskirk.

Superior Proposal

means a bona fide Competing Proposal which the relevant board of the member of the Heemskirk Group, acting in good faith, and after receiving written legal advice from its legal advisers and written advice from its financial advisers, determines:

- (a) is reasonably capable of being completed taking into account all aspects of the Competing Proposal including any timing considerations, any conditions precedent, the identity of the proponent and ability to finance; and
- (b) would, if completed substantially in accordance with its terms, be more favourable to the Shareholders (as a whole) than any transaction then proposed by the Bidder or any of their related bodies corporate, taking into account all terms and conditions of the Competing Proposal.

Takeover Implementation Agreement

Taurus BV

means the Takeover Implementation agreement between NSC and Heemskirk dated 13 February 2017 and attached to Heemskirk announcement lodged with the ASX on 13 February 2017.

Target's Statement means this document, being target's statement by Heemskirk in

means Taurus Resources No. 2 BV, a company incorporated under

the laws of the Netherlands.

response to the Bidder's Statement.

T2 LP means Taurus Resources No.2 L.P.

T2 Trust means Taurus Resources No.2 Trust.

Term	Definition
USA	means the unanimous shareholders agreement in respect of NSC. $\label{eq:normalization}$
VWAP	means volume weighted average price.

15.2 Interpretation

In this Target's Statement, unless the context otherwise requires:

- (a) headings are for convenience and do not affect the interpretation;
- (b) words or phrases defined in the Corporations Act have the same meaning in this Target's Statement;
- (c) a reference to a section is a reference to a section of this Target's Statement;
- (d) a singular word includes the plural and vice versa;
- (e) if a word or phrase is defined, its other grammatical forms have a corresponding meaning;
- (f) a reference to a person includes a corporation, trust, partnership, unincorporated body, government and local authority or agency, or other entity whether or not it comprises a separate legal entity;
- (g) a reference to legislation or to a provision of legislation (including subordinate legislation) is to that legislation as amended, re-enacted or replaced, and includes any subordinate legislation issued under it;
- (h) a reference to '\$' or 'dollar' is to Australian currency; and
- (i) a reference to time is to Australian Eastern Standard Time unless it is specifically noted otherwise.

ATTACHMENT 1: COMPARISON OF CANADIAN AND AUSTRALIAN CORPORATIONS LAW

The tables below set out key characteristics of Canadian corporations law provisions as compared with Corporations Act and key ASX Listing Rules that will no longer apply to recipients of Bidder Shares.

Table 1 - Loss of protections under ASX Listing Rules

NSC is an unlisted entity incorporated in Canada and you will therefore not be protected by the provisions of either the ASX Listing Rules or the Corporations Act (also having regard to the USA to be entered into between NSC and you) in respect of Bidder Shares if you elect the Share Consideration.

The below table outlines key ASX Listing Rules which currently provide protections to holders of Heemskirk Shares which will be effectively lost to recipients of NSC shares under the Share Consideration.

Listing Rule	Form of protection	Potential effect of non- application of Listing Rules to NSC
Continuous Disclosure	Obligation for listed entities to disclose material price sensitive information to the market.	NSC may not be obliged to disclose information which has the potential to affect its share price.
Securities	Classes of equity securities must be considered by ASX to be appropriate and equitable.	The terms of securities issued by NSC will not be subject to ASX's approval. The USA provides that the Board of NSC shall have the power to: allot or issue additional securities; create a new share class; and adjust or vary rights attaching to Bidder Shares. The creation of a new share class, or adjustment or variation of rights attaching to Bidder Shares may be subject to satisfaction of requirements set out in NSC's constitution, including shareholder approval.
Changes in capital and share issues	Issues of securities which are more than 15% of the entity's issued capital in a 12 month period must be approved by securityholders (subject to certain exceptions).	Your holding in NSC may be more easily diluted than your current holding of Heemskirk Shares. In addition, under the USA, NSC may issue additional securities without providing Shareholders an option to purchase their pro rata proportion of the additional securities in part or whole before

issuing the securities to third parties in the following circumstances: upon the exercise of conversion or exchange of rights attached to other previously issued securities of NSC; or in connection with the acquisition of assets or services (including bank loans, equipment lease financings and acquisition transactions) by NSC from a person with whom NSC deals at arm's length. Transactions with persons of Persons in a position of influence Transactions between NSC and its influence over the entity such as related related parties (including Taurus) parties, subsidiaries and may not be subject to substantial holders are restricted shareholder approval. from entering into certain transactions with the entity unless certain conditions, such as securityholder approval, are met. Significant transactions Listed entities require A significant change to NCS's securityholder approval for operations (e.g. disposal of its transactions which propose a interest in the Moberly Project) significant change to the nature may not require shareholder or scale of its activities. approval. The Alberta Business Corporations Act however does require certain transactions, including mergers and disposal of all or substantially all of the company's assets be approved by two thirds of the votes cast by shareholders voting at a valid shareholder meeting. Under the USA, any action with respect to the following matters shall be put to NSC Shareholders for approval, including: making any material change to the nature of the business of NSC, undertaking of new activities or starting a new business; authorising or permitting the entry by the corporation into:

- (i) a merger, consolidation, arrangement or amalgamation with any other person;
- (ii) a scheme for the acquisition of another enterprise;
- (iii) a scheme for another enterprise to take over NSC or any of its subsidiaries;
- (iv) a partnership, joint venture or similar arrangement or any transaction which is not in the ordinary course of the business of NSC; and
- (v) any proposal to amend the NSC's articles of association or charter documents; or
- (vi) adopting a profit-sharing, share option, bonus or other incentive scheme for the benefit of the directors, other officers or other employees of, or service provider to, NSC and any material amendment to or termination of the scheme

The Board of NSC has significant power including:

- applying for the listing of shares of NSC on a recognised stock exchange;
- declaring or payment dividends;
- approving or incurring capex in excess of C\$5,000,000;
- disposal of material assets of NSC; and
- the winding up or dissolution of the NSC.

Table 2 - Differences between Australian and Canadian company law

Recipients of Bidder Shares will be subject to the Alberta Business Corporations Act (ABCA) and not the Corporations Act. The ABCA is Canadian provincial legislation, and is applicable to NSC due to NSC having been

incorporated in the Province of Alberta. The laws of the Province of Alberta are also the governing laws of the USA.

If, in the future, NSC becomes a federally registered Canadian corporation, it will be subject to the federal regulations under the Canada Business Corporations Act (CBCA). The table below outlines some of the key differences between the Corporations Act and Canadian company laws as it may apply to NSC and NSC Shareholders. It should not be considered as a full and complete review of all matters relevant to Canadian company law and taxation, or as an exhaustive list of differences between Australian and Canadian company law.

Area of Regulation	Australian Law	Alberta Law Comparison	Federal Canadian Law Comparison
Takeovers and compulsory acquisitions	The Corporations Act contains certain takeover protections: • in relation to substantial shareholder notice requirements; • prohibiting increases in holdings from 20% or below to above 20%, or from a starting point above 20% and below 90% of an Australian listed entity or any Australian entity with more than 50 members ('the 20% stop rule' provisions), unless an exception, such as a takeover bid or scheme of arrangement, applies; • permitting compulsory acquisition by holders of 90% or more of the relevant shares; • providing for minimum consideration requirements; and • prohibiting the provision of collateral benefits by bidders to some (but not all) shareholders.	A bidder for an ABCA company must comply with takeover bid rules in order to make an offer to acquire securities where the acquisition would result in the offeror holding 20% or more of the issued securities in the target company. Similar to the Australian law, this does not apply where the target company has fewer than 50 securityholders. Compulsory acquisition is permitted if the takeover bid is accepted by the holders (excluding the offeror) of 90% or more of the shares in any class of shares to which the bid relates, who are not associated with the offeror, and as long as the notice by the offeror is provided to the dissenting offeree (an offeree who does not accept the takeover bid) within 180 days of the bid. A dissenting offeree is required to elect to either transfer its shares to the offeror on the terms offerees who accepted the offer transferred their shares, or demand from the offeror fair value for the shares.	A bidder for a CBCA company must comply with takeover bid rules in order to make an offer to acquire securities where the acquisition would result in the offeror holding 20% or more of the issued securities in the target company. Similar to the Australian law, this does not apply where the target company has fewer than 50 securityholders. Compulsory acquisition is permitted if the takeover bid is accepted by the holders (excluding the offeror) of 90% or more of the shares in any class of shares to which the bid relates, who are not associated with the offeror, and as long as the notice by the offeror is provided to the dissenting offeree (an offeree who does not accept the takeover bid) within 180 days of the bid. The compulsory acquisition provisions in the CBCA only apply to a "distributing corporation", which is defined as (a) a corporation that is a "reporting issuer" under Canadian securities laws (which would not

		The USA provides for customary tag along, drag along and information rights.	corporation that (i) has filed a prospectus or registration statement under provincial legislation or under the laws of a jurisdiction outside Canada, (ii) any of the securities of which are listed on a stock exchange in or outside Canada, or (iii) that is involved in, formed for, resulting from or continued after an amalgamation, a reorganization, an arrangement or statutory procedure of the participating bodies corporate is a corporation to which subparagraph (i) or (ii) applies.
Directors' duties	Various statutory duties are imposed on company directors by the Corporations Act and the general law, including the duty of due care and diligence, good faith and avoidance of improper use of position or information.	Similar duties are imposed by the ABCA, being the duty to act honestly and in good faith with a view to the best interests of the corporation and to exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances.	Similar duties are imposed by the CBCA, as in the ABCA.
Financial assistance and self- acquisition	Except in limited circumstances, companies cannot financially assist or acquire shares in the company itself or its holding company under Australian law.	Under the ABCA financial assistance to a company's shareholders, directors, affiliated corporations, or for the purpose of acquiring shares in the company, must be disclosed to shareholders, unless an exception applies. Under the ABCA, a corporation may acquire shares issued by it, provided there are not reasonable grounds for believing that it would, after the payment for such shares, be unable	There is no prohibition under the CBCA of the provision of financial assistance to directors, officers, employees and shareholders of a corporation, save that the directors are obligated to act in the best interest of the corporation with respect to decisions on financial assistance. Under the CBCA, a corporation may acquire shares issued by it, provided there are not reasonable grounds

		to pay its liabilities as they become due or the realisable value of the corporation's assets would after the payment be less than the aggregate of its liabilities and stated capital. Under the ABCA, a corporation that is not a distributing corporation also has an obligation to notify its shareholders within 30 days of the purchase of its own shares of the details of the purchase.	for believing that it would, after the payment for such shares, be unable to pay its liabilities as they become due or the realisable value of the corporation's assets would after the payment be less than the aggregate of its liabilities and stated capital.
Protection of minority shareholders	Under Australian law, minority shareholders are in certain circumstances able to: • pursue a claim of oppression against a company and commence a derivative action; • apply for an order to inspect a company's books; and • apply to have a company wound up.	The ABCA provides for minority shareholders to pursue a claim of oppression or commence a derivative action for which a court may make a wide range of interim and final orders. The USA also provides for anti-dilution clause. In particular, if the board determines that NSC requires further equity funding, NSC must first offer those shares to the existing shareholders pro-rata to each shareholder's respective proportion in NSC as at the date of the share issue. The Bidder may issue additional securities without providing this option to purchase to Bidder's shareholders in the following circumstances: • upon the exercise of conversion or exchange of rights attached to other previously issued securities of NSC; or • in connection with the acquisition of	The CBCA has similar provisions to the ABCA.

		assets or services (including bank loans, equipment lease financings and acquisition transactions) by NSC from a person with whom NSC deals at arm's length. In such circumstances, shareholders can request to receive more or less than their pro rata portion of the shares proposed to be issued. In the event that any shareholders elect to receive less than their pro rata proportion, any otherwise unallocated shares will be distributed to those shareholders that elected to receive greater than their pro rata portion.	
		If the number of shares taken up by existing shareholders is less than the number of shares on offer, NSC may issue that number of shares to a third party.	
Related party transactions	Provision of financial benefits to related parties by public companies is regulated by the Corporations Act.	A corporation is not required to disclose to shareholders financial assistance given to its holding company or its subsidiaries under the ABCA. As noted above under the USA, related party transactions may not require shareholder approval but fall under	The CBCA does not have equivalent provisions to the Corporations Act.

Filing of documents and access to information

The Corporations Act requires a corporation to file various documents with ASIC, including its accounts and notification of changes to its constitution (in respect of public companies).

Documents filed with ASIC are available to the public. The Corporations Act also provides for a statutory right to apply to a court for an order permitting the member to inspect the books of a company.

The ABCA requires a corporation to file various documents with the Director under the ABCA, including its constituent documents and any amendments, notice of changes of directors, and an annual return in the prescribed form. Any document filed with the Director under the ABCA is available to the public. The ABCA also provides that shareholders of a corporation and their personal representatives may examine certain documents at the corporation's registered office during normal business hours including constituent documents, and all related amendments, minutes of meetings and resolutions of shareholders, notice of directors and notices of changes of directors, a securities register, and the financial statements of the corporation.

In accordance with the USA, NSC Shareholders will be provided with:

- quarterly reports
 which will include
 summary financial
 statements
 (unaudited),
 operations summary,
 commercial
 summary,
 environmental,
 social and
 governance (ESG)
 summary and
 summary of any
 other material
 developments;
- audited financial statements; and

The CBCA has similar provisions to the ABCA.

		all shareholder information to be distributed electronically via each shareholder's nominated email and posted on NSC's website (login to be provided to shareholders).	
Reporting to shareholders	The ASX Listing Rules and Corporations Act require the disclosure of periodic reports. Financial reports are required to include, among other things, financial statements and notes, a directors' declaration that the disclosing entity will be able to meet its debts as and when they become due and payable, and the directors' opinion that the financial statements and notes comply with accounting standards and give a true and fair view of the financial performance of the company.	Under the ABCA, a corporation is required to provide financial statements to its securityholders for each relevant period, including: • a comparative statement financial position; • the report of the auditor, if any; and • any further information reflecting the financial position of the corporation and the results of its operations required by its constituent documents.	The CBCA has similar provisions to the ABCA.
Notice of meetings	At least 28 days' notice must be given for a general meeting of a listed company under the Corporations Act.	No less than 21 days' and no more than 50 days' notice must be given for meeting of shareholders under the ABCA.	No less than 21 days' and no more than 60 days' notice must be given for meeting of shareholders under the CBCA.
Removal of directors	The Corporations Act provides that a director may be removed by resolution at a general meeting, subject to the company receiving at least two months' notice of the intention to move the resolution and the company notifying the relevant director as soon as possible after receiving notice of that intention. Other provisions pertain to resignation and retirement of directors.	The ABCA provides that shareholders may, by ordinary resolution at a special meeting, remove a director. However, where the holders of any class or series of shares of a corporation have the right to elect one or more directors, a director so elected may only be removed by an ordinary resolution at a meeting of shareholders of that class or series.	The CBCA has similar provisions to the ABCA.

Under the ABCA, a director is entitled to receive notice of, and to be heard at, any meeting of the shareholders.

A director who resigns, receives a notice or otherwise learns of a meeting of shareholders called for the purpose of removing the director from office, or receives a notice or otherwise learns of a meeting of directors or shareholders at which another person is to be appointed or elected to fill the office of director, whether because of the director's resignation or removal or because the director's term of office has expired or is about to expire, is entitled to submit to the corporation a written statement giving reasons for resigning or for opposing any proposed action or resolution and the corporation shall circulate such statement to the shareholders.

ATTACHMENT 2 – INDEPENDENT EXPERT REPORT

INDEPENDENT EXPERT'S REPORT

Heemskirk Consolidated Limited

In relation to the proposed takeover by Northern Silica Corporation

27 March 2017



This Financial Services Guide is issued in relation to an independent expert's report ('Report' or 'IER') prepared by BDO Corporate Finance (East Coast) Pty Ltd (ABN 70 050 038 170) ('BDOCF') at the request of the directors ('Directors') of Heemskirk Consolidated Limited ('HSK' or the 'Company').

Engagement

On 22 December 2016, Taurus Resources No.2 BV ('Taurus') announced its intentions via a special purpose subsidiary vehicle called Northern Silica Corporation ('NSC' or 'Bidder') to make an offer to acquire all the shares in HSK that NSC and its associates do not already own via an off-market takeover for consideration comprising cash of A\$0.075 per share or scrip in NSC on a one for one basis (collectively, the 'Offer').

This IER is to be included in HSK's Target Statement in order to assist the HSK shareholders in their decision whether to accept the Offer.

Financial Services Guide

BDOCF holds an Australian Financial Services Licence (License No: 247420) ('Licence'). As a result of our IER being provided to you BDOCF is required to issue to you, as a retail client, a Financial Services Guide (FSG). The FSG includes information on the use of general financial product advice and is issued to comply with our obligations as holder of an Australian Financial Services Licence.

Financial services BDOCF is licensed to provide

The Licence authorises BDOCF to provide reports for the purposes of acting for and on behalf of clients in relation to proposed or actual mergers, acquisitions, takeovers, corporate restructures or share issues, to carry on a financial services business to provide general financial product advice for securities and certain derivatives (limited to old law securities, options contracts and warrants) to retail and wholesale clients.

BDOCF provides financial product advice by virtue of an engagement to issue the IER in connection with the issue of securities of another person.

Our IER includes a description of the circumstances of our engagement and identifies the party who has engaged us. You have not engaged us directly but will be provided with a copy of our IER (as a retail client) because of your connection with the matters on which our IER has been issued.

Our IER is provided on our own behalf as an Australian Financial Services Licensee authorised to provide the financial product advice contained in the IER.

General financial product advice

Our IER provides general financial product advice only, and does not provide personal financial product advice, because it has been prepared without taking into account your particular personal circumstances or objectives (either financial or otherwise), your financial position or your needs.

Some individuals may place a different emphasis on various aspects of potential investments.

An individual's decision in relation to voting on the Offer described in the Target Statement may be influenced by their particular circumstances and, therefore, individuals should seek independent advice.

Benefits that BDOCF may receive

BDOCF will receive a fee based on the time spent in the preparation of the IER in the amount of approximately \$75,000 (plus GST and disbursements). BDOCF will not receive any fee contingent upon the outcome of the Offer, and accordingly, does not have any pecuniary or other interests that could reasonably be regarded as being capable of affecting its ability to give an unbiased opinion in relation to the Offer.

Remuneration or other benefits received by our employees

All our employees receive a salary. Employees may be eligible for bonuses based on overall productivity and contribution to the operation of BDOCF or related entities but any bonuses are not directly connected with any assignment and in particular are not directly related to the engagement for which our IER was provided.

Referrals

BDOCF does not pay commissions or provide any other benefits to any parties or person for referring customers to us in connection with the reports that BDOCF is licensed to provide.

Associations and relationships

BDOCF is the licensed corporate finance arm of BDO East Coast Partnership, Chartered Accountants and Business Advisers. The directors of BDOCF may also be partners in BDO East Coast Partnership, Chartered Accountants and Business

BDO East Coast Partnership, Chartered Accountants and Business Advisers is comprised of a number of related entities that provide audit, accounting, tax and financial advisory services to a wide range of clients.

BDOCF's contact details are as set out on our letterhead.

BDOCF is unaware of any matter or circumstance that would preclude it from preparing the IER on the grounds of independence under regulatory or professional requirements. In particular, BDOCF has had regard to the provisions of applicable pronouncements and other guidance statements relating to professional independence issued by Australian professional accounting bodies and Australian Securities and Investments Commission ('ASIC').

Complaints resolution

As the holder of an Australian Financial Services Licence, we are required to have a system for handling complaints from persons to whom we provide financial product advice. All complaints must be in writing, addressed to The Complaints Officer, BDO Corporate Finance (East Coast) Pty Ltd, Level 11, 1 Margaret Street, Sydney NSW 2000.

On receipt of a written complaint, we will record the complaint, acknowledge receipt of the complaint and seek to resolve the complaint as soon as practical. If we cannot reach a satisfactory resolution, you can raise your concerns with the Financial Ombudsman Service Limited ('FOS'). FOS is an independent body established to provide advice and assistance in helping resolve complaints relating to the financial services industry. BDOCF is a member of FOS. FOS may be contacted directly via the details set out below.

Financial Ombudsman Service Limited

GPO Box 3

Melbourne VIC 3001
Toll free: 1300 78 08 08
Email: info@fos.org.au



Tel: +61 3 9603 1700 Fax: +61 3 9602 3870 www.bdo.com.au Collins Square, Tower Four Level 18, 727 Collins Street GPO Box 5099 Melbourne VIC 3001 Australia

Private & Confidential
Commercial in Confidence

The Directors
Heemskirk Consolidated Limited
Level 17, 303 Collins Street
Melbourne VIC 3000

27 March 2017

Dear Directors

INDEPENDENT EXPERT'S REPORT IN RELATION TO THE TAKEOVER OFFER BY NORTHERN SILICA CORPORATION

- 1. BDO Corporate Finance (East Coast) Pty Ltd (ABN 70 050 038 170) ('BDOCF') has been engaged by Heemskirk Consolidated Limited ('HSK' or 'the Company') to prepare an independent expert's report ('Report' or 'IER') in relation to the takeover offer received from Northern Silica Corporation ('NSC' or 'Bidder') ('Offer').
- 2. This IER has been prepared pursuant to section 640 of the Corporations Act 2001 ('Corporations Act' or 'the Act') and is to be included in HSK's Target's Statement in order to assist the HSK shareholders in their decision whether or not to accept the Offer.

Background

- 3. HSK is an ASX listed entity that owns a high quality silica project (referred to as the ('Moberly Project' or 'Project') throughout this report) situated in British Columbia, Canada. The Moberly Project will produce ISO standard specification proppant that has specific applications in the oil and gas markets of Canada and Northern USA for use in hydraulic fracturing as well as broad applications for the glass, paint and cementing industries.
- 4. The NSC Group holds a voting power in 34.59% of HSK shares. Taurus Resources No. 2 BV is currently providing the Company with a US\$25 million debt-funding package to support the Phase 1 Development of HSK's Moberly Project in Canada. A separate Taurus fund (Taurus Resources No. 1 Fund) also holds a voting power in 1.9% of HSK shares.

Offer

5. On 22 December 2016, HSK announced that it had received an indicative, non-binding and conditional Offer from Taurus, via NSC, to acquire 100% of the issued capital that NSC and its associates does not already own.



- 6. Under the Offer, each Shareholder of HSK (who is not an ineligible foreign shareholders) would be entitled to receive either (at their election):
 - cash consideration of \$0.075 for each Ordinary Share held ('Cash Consideration'); or
 - scrip in the Bidder (issued on a 1-for-1 basis to the number of HSK shares held by that HSK Shareholder) ('Share Consideration').
- 7. At or shortly prior to conclusion of the bid, Taurus will transfer all of its Shares in HSK to the Bidder in return for the Share Consideration. The Bidder has been incorporated for the sole purpose of making the Offer. The Bidder is owned 90.0% by Taurus, 9.86% by Taurus Resources No.2 LP (being a limited partnership investment vehicle established in the Cayman Islands) and 0.14% by Taurus Resources No. 2 Trust (being an unlisted investment trust established under the laws of Australia), which are all related parties.
- 8. On 13 February 2017, the Directors of HSK recommended NSC's Offer and that Shareholders elect the Cash Consideration, in the absence of a superior offer and provided the Independent Expert determines the Offer is fair and reasonable. The Directors of HSK did not make a recommendation in respect of the Share Consideration. HSK has also entered into a Takeover Implementation Agreement with NSC that includes important arrangements relating to the opportunity for NSC to match any competing proposals made for HSK, exclusive restrictions for HSK and a mutual break fee payable in certain circumstances.
- 9. Additionally, Taurus has offered a working capital bridging facility of up to CAD\$10.0 million to HSK via its Canadian subsidiary, HCA Mountain Minerals (Moberly) Limited with drawdowns to be in minimum tranches of CAD\$2.5 million, subject to NSC declaring the Offer free of all conditions.
- 10. Further detail regarding the Offer is set out in NSC's Bidder's Statement dated 13 March 2017.

Transaction Costs

11. HSK will incur transaction costs of approximately A\$800,000 in connection with the Offer, including for engaging the Independent Expert, Technical Expert, legal fees etc. In addition, HSK may be obliged to pay a break fee to NSC in certain circumstances of A\$450,000

Conditions Precedent

- 12. The Takeover Offer remains conditional upon the following:
 - Minimum acceptance of the Offer such that NSC achieves a relevant interest in at least 90% of the issued capital of HSK when taken together with interest held by members of the NSC group;
 - No material adverse effect on the Company; and
 - Other customary arrangements for an Offer of this nature.



Summary of Opinion

- 13. We have considered the terms of the Offer as outlined in the body of this Report, and in the absence of a superior offer, we have concluded that:
 - the Cash Consideration Offer is fair and reasonable to Shareholders; and
 - the Share Consideration Offer is neither fair nor reasonable to Shareholders.

Fairness Assessment

- 14. In forming our opinion in relation to the fairness of the Offer, we have compared the fair market value per share of HSK on a controlling basis to the Cash Consideration and the Share Consideration (on a minority basis).
- 15. In undertaking our fairness opinion, we have had regard to the Australian Securities and Investments Commission (ASIC) Regulatory Guide 111 *Content of expert reports* (RG 111).
- 16. RG 111.11 indicates that an offer is 'fair' if the value of the offer price or consideration is equal to or greater than the value of the securities the subject of the offer. The comparison must be made assuming:
 - A knowledgeable and willing, but not anxious, buyer and a knowledgeable and willing, but not
 anxious, seller acting at arm's length; and
 - 100% ownership of the target company, irrespective of the percentage holding of the bidder or its associates in the target company.
- 17. In accordance with ASIC's guidance on the application of RG 111.11, we have assessed the value of HSK before the Offer on a control basis, and in assessing the value of the Share Consideration we have valued the NSC shares on a minority basis.

Valuation of HSK

- 18. Our valuation of HSK has involved the following:
 - We have assessed the value of HSK before the Offer on a sum of the parts basis, which estimates the value of a company by separately valuing each asset and liability. The value of HSK's interest in the Moberly Project was assessed using the discounted cash flow ('DCF') method, having regard to the independent technical assessment of the Moberly Project undertaken by CSA Global Pty Ltd ('CSA').
 - We have considered the quoted market price ('QMP') as our secondary method. HSK's shares are listed on the ASX, which is a regulated and observable market where HSK's shares can be traded. However, we note that trading of HSK's shares has been relatively illiquid, with only 3.8% of total shares being traded in the 12 months prior to the Offer. We also note that the QMP of a company's shares is reflective of a minority interest. Where applicable, we have incorporated a premium for control in our analysis.



Fairness of Cash Consideration Offer

19. The following table summarises the fairness assessment in relation to the Cash Consideration:

Table 1: Fairness assessment - Cash Consideration

A\$	Ref	Low	High	Preferred
Assessed value per HSK share (control basis)	Section 7	\$nil	\$0.008	\$nil
Cash Consideration		\$0.075	\$0.075	\$0.075

Source: BDOCF analysis

20. The Cash Consideration is higher than our valuation range of HSK Shares on a controlling basis.

Accordingly, we conclude that the Offer is fair to HSK Shareholders electing to receive the Cash Consideration.

Fairness of Share Consideration Offer

- 21. Our valuation of the Share Consideration required a valuation of the NSC shares.
- 22. As discussed above, NSC has been incorporated for the sole purpose of holding HSK shares (to be transferred by Taurus at or shortly prior to conclusion of the Offer) and issuing scrip to HSK Shareholders' who elect to take the Scrip Alternative. As a newly incorporated entity, NSC does not hold any other assets or liabilities. Accordingly, our valuation of NSC is based entirely on our valuation of HSK.
- 23. However, in accordance with ASIC's guidance on the application of RG 111.11 to Share Consideration, the value of a NSC share should be adjusted for a minority discount to reflect its value on a minority basis for HSK Shareholders.
- 24. The result of our fairness analysis for the Share Consideration is summarised below:

Table 2: Fairness assessment - Share Consideration

A\$	Ref	Low	High	Preferred
Assessed value per HSK share (control basis)	Section 7	\$nil	\$0.008	\$nil
Share Consideration (minority basis)	Section 8	\$nil	\$0.006	\$nil

Source: BDOCF analysis

- 25. As shown above, our valuation of the Share Consideration ranges from \$nil to \$0.006 (on a minority basis), with a preferred value of \$nil.
- 26. The preferred value of the Share Consideration is only equal to the value of HSK's shares pre-Offer because it was not feasible to apply a minority discount to a \$nil value.
- 27. Accordingly, in our view the Share Consideration is 'not fair' to the shareholders of HSK.
- 28. We further note that the value of the Cash Consideration is superior to the value of the Share Consideration.



Reasonableness Assessment

Reasonableness of Cash Consideration Offer

- 29. On the basis that the Offer is fair, it is also considered reasonable.
- 30. We also consider the following advantages and disadvantages to be relevant in assessing the reasonableness of the Cash Consideration Offer:

Table 3: Reasonableness factors for Cash Consideration Offer

Advantages	
 The Cash Consideration Offer is fair, and RG 111 states that an offer is also reasonable if if fair. 	it is 266
 The Cash Consideration Offer represents a significant premium to HSK share price prior to Offer 	the 267
• The Cash Consideration of \$0.075 per share provides Shareholders with cash certainty and immediate liquidity event with respect to their investment which is an important consideration given that HSK shares exhibit low levels of liquidity (3.80% over 12 months pto the Offer)	200 27 0
 Acceptance of the Cash Consideration Offer removes the risks that Shareholders bear from continuing to hold HSK shares, inclusive of, but not limited to: the successful developmen the Moberly Project, whether HSK with have access to sufficient funds to sustain its funding requirements and also repay its debt facilities; and the demand and supply markets for fragand. 	t of ng
 Shareholders will not be exposed to the risks of being minority shareholders in a non-listed entity. In the event that all of the Offer's conditions are met, NSC will have corporate cor- over HSK, with other non-associated shareholders remaining as minority shareholders in the Company. Shareholders will have limited control over the future direction and operations HSK if NSC becomes the majority shareholder. 	ntrol ne

Dis	advantages	Ref Paragraph
•	If Shareholders accept the Cash Consideration as part of the Offer, they will no longer hold a relevant interest in the Company, and will forgo any potential future upside from the development or potential expansion of the Moberly Project.	273-275

Source: BDOCF analysis

Reasonableness of Share Consideration Offer

31. We consider the following advantages and disadvantages to be relevant in assessing the reasonableness of the Share Consideration Offer:



Table 4: Reasonableness factors for Share Consideration Offer

Ad	vantages	Ref Paragraph
•	The Share Consideration provides an opportunity for HSK Shareholders to retain an interest in the Moberly Project	276
•	The Bidder has offered an underwritten working capital bridge financing facility to be available to the Company, provided the Offer is declared free of all conditions.	277-278
•	CGT Rollover Relief is expected to be available for those HSK Shareholders who accept the Share Consideration subject to the final status of the class ruling application made to the ATO.	279

Disadvantages	Ref Paragraph
The Cash Consideration Offer represents a superior offer.	280
 Shareholders in HSK who elect to receive the Share Consideration will receive shares in a private unlisted company, NSC. Accordingly, the liquidity of NSC shares following the Offer is expected to be low which would limit the ability of HSK shareholders to realise their investment. Shareholders may also have limited access to information. 	281-282

Source: BDOCF analysis

32. We also consider the following matters to be relevant:

Table 5: Other reasonableness factors

Other factors		Ref Paragraph
•	HSK's share price may decrease if the takeover does not proceed	283-286
•	NSC's control of HSK and the Moberly Project following the Offer will be significant when compared to all other shareholders. It is likely NSC will be able to single-handedly pass and block general resolutions, as well as block special resolutions at shareholders' meetings.	253-257
•	The Directors of HSK have advised that they are not aware of any alternative offers and have recommended that shareholders accept the Cash Consideration Offer (subject to the opinion provided in this report).	287-288



Other Matters

Shareholders' individual circumstances

- 33. Our analysis has been undertaken, and our conclusions are expressed at an aggregate level. Accordingly, BDOCF has not considered the effect of the Offer on the particular circumstances of individual HSK Shareholders. Some individual HSK Shareholders may place a different emphasis on various aspects of the Offer from that adopted in this IER. Accordingly, individual HSK Shareholders may reach different conclusions as to whether or not the Offer is fair and reasonable in their individual circumstances.
- 34. The decision of an individual HSK Shareholder in relation to the Offer may be influenced by their particular circumstances and accordingly HSK Shareholders are advised to seek their own independent advice.
- 35. Approval or rejection of the Offer is a matter for individual HSK Shareholders based on their expectations as to the expected value and future prospects and market conditions together with their particular circumstances, including risk profile, liquidity preference, portfolio strategy and tax position.

 HSK Shareholders should carefully consider the Target's Statement. HSK Shareholders who are in doubt as to the action they should take in relation to the Offer should consult their professional adviser.

Current Market Conditions

- 36. Our opinion is based on economic, market and other conditions prevailing at the date of this IER. Such conditions can change significantly over relatively short periods of time.
- 37. Changes in those conditions may result in any valuation or other opinion becoming quickly outdated and in need of revision. We reserve the right to revise any valuation or other opinion, in light of material information existing at the valuation date that subsequently becomes known to us.

Sources of Information

- 38. **Appendix 2** to the IER sets out details of information referred to and relied upon by us during the course of preparing this IER and forming our opinion.
- 39. The statements and opinions contained in this IER are given in good faith and are based upon our consideration and assessment of information provided by HSK.
- 40. Under the terms of our engagement, HSK agreed to indemnify the partners, directors and staff (as appropriate) of BDO East Coast Partnership and BDOCF and their associated entities, against any claim, liability, loss or expense, costs or damage, arising out of reliance on any information or documentation provided by HSK which is false or misleading or omits any material particulars, or arising from failure to supply relevant information.

Limitations

- 41. This IER has been prepared at the request of the Directors for the sole benefit of the Directors and HSK Shareholders to assist them in their decision to approve or reject the Offer. This IER is to accompany the Target's Statement to be sent to HSK Shareholders to consider the Offer and was not prepared for any other purpose.
- 42. Accordingly, this IER and the information contained herein may not be relied upon by anyone other than the Directors and HSK Shareholders without our written consent. We accept no responsibility to any person other than the Directors and Shareholders in relation to this IER.
- 43. This IER should not be used for any other purpose and we do not accept any responsibility for its use outside this purpose. Except in accordance with the stated purpose, no extract, quote or copy of our IER, in whole or in part, should be reproduced without our written consent, as to the form and context in which it may appear.
- 44. We have consented to the inclusion of the IER with the Target's Statement. Apart from this IER, we are



not responsible for the contents of the Target's Statement or any other document associated with the Offer. We acknowledge that this IER may be lodged with regulatory authorities.

Summary

45. This summary should be read in conjunction with the attached IER that sets out in full, the purpose, scope, basis of evaluation, limitations, information relied upon, analysis and our findings.

Glossary

46. Capitalised terms used in this Report have the meanings set out in the glossary. A glossary of terms used throughout this IER is set out in **Appendix 1**.

Financial Services Guide

47. BDOCF holds an Australian Financial Services Licence which authorises us to provide reports for the purposes of acting for and on behalf of clients in relation to proposed or actual mergers, acquisitions, takeovers, corporate restructures or share issues. A financial services guide is attached to this IER.

Yours faithfully

BDO CORPORATE FINANCE (EAST COAST) PTY LTD

Stephen Seear

Director

Dan Taylor Director



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1. SCOPE AND LIMITATIONS

Scope

- 48. The directors of HSK have engaged BDO to prepare an IER for inclusion in the Target's Statement to assess whether the Offer is fair and reasonable to the HSK Shareholders.
- 49. The scope of procedures we have undertaken has been limited to those procedures we believe are required in order to form our opinion. Our procedures did not include verification work nor constitute an audit or assurance engagement in accordance with Australian Auditing and Assurance Standards.

Summary of Regulatory Requirements

Section 640 of the Act

- 50. Section 640 of the Act requires the Target's Statement to include an independent expert's report to shareholders if:
 - The bidder's voting power in the target is 30% or more; or
 - The bidder and the target have a common director or directors.
- 51. At the date of our Report, through its related entities Taurus Funds Management Pty Ltd and Taurus Resources Limited, Taurus held a relevant interest in HSK of approximately 34.59% of fully paid ordinary shares. Under the Offer, Taurus proposes to acquire the remaining shares in HSK that it currently does not own, through a newly incorporated subsidiary called NSC. At or shortly prior to conclusion of the bid, Taurus will transfer all of its Shares to the Bidder in return for Share Consideration.
- 52. An IER accompanying a target statement must state whether, in the expert's opinion, the takeover offer is fair and reasonable and give the reasons for forming that opinion.
- 53. Accordingly, the directors of HSK have engaged BDO to prepare an IER for inclusion in the Target's Statement to assess whether the Offer is fair and reasonable to the HSK Shareholders in accordance with section 640 of the Act.

ASIC Regulatory Guidance

- 54. Neither the Listing Rules nor the Corporations Act defines the meaning of 'fair and reasonable'. In determining whether the Offer is fair and reasonable, we have had regard to the views expressed by ASIC in RG 111. This regulatory guide provides guidance as to what matters an independent expert should consider to assist security holders to make informed decisions about transactions.
- 55. RG 111 suggests that where the transaction is a control transaction the expert should focus on the substance of the control transaction rather than the legal mechanism to affect it.
- 56. In our opinion, the Offer is a control transaction as defined by RG 111 and we have therefore assessed the Offer as a control transaction to consider whether, in our opinion, it is fair and reasonable to HSK Shareholders.



Basis of Assessment

- 57. In determining whether the Offer is fair and reasonable to the Non-associated Shareholders, we have had regard to:
 - RG 111 'Content of expert reports' (RG 111)
 - Regulatory Guide 112 'Independence of experts' (RG 112).
- 58. RG 111 establishes guidelines in respect of independent expert reports under the Act. RG 111 establishes two distinct criteria for an expert analysing a control transaction. The tests are:
 - Is the offer 'fair'?
 - Is it 'reasonable'?
- 59. The terms fair and reasonable are regarded as separate elements and are not regarded as a compound phrase.

Fair

- 60. RG 111.11 indicates that an offer is 'fair' if the value of the offer price or consideration is equal to or greater than the value of the securities the subject of the offer. The comparison must be made assuming:
 - A knowledgeable and willing, but not anxious, buyer and a knowledgeable and willing, but not anxious, seller acting at arm's length.
 - 100% ownership of the target company, irrespective of the percentage holding of the bidder or its associates in the target company.
- 61. In accordance with ASIC's guidance on the application of RG 111.11, we have assessed the value of HSK before the Offer on a control basis, and in assessing the value of the Share Consideration we have valued the NSC shares on a minority basis.

Reasonable

62. In accordance with paragraph 12 of RG 111, an offer is 'reasonable' if it is 'fair'. An offer could also be considered 'reasonable' if there are valid reasons to approve it (in the absence of any higher bid before the close of the offer), notwithstanding that it may not be regarded as 'fair'.

General requirements in relation to the IER

- 63. In preparing the IER, ASIC requires the independent expert when deciding on the form of analysis for a report, to bear in mind that the main purpose of the report is to adequately deal with the concerns that could reasonably be anticipated of those persons affected by the Offer. In preparing this IER we considered the necessary legal requirements and guidance of the Act, ASIC regulatory guides and commercial practice.
- 64. The IER also includes the following information and disclosures:
 - Particulars of any relationship, pecuniary or otherwise, whether existing presently or at any time
 within the last two years, between BDO East Coast Partnership or BDOCF and any of the parties to the
 Offer.
 - The nature of any fee or pecuniary interest or benefit, whether direct or indirect, that we have received or will or may receive for or in connection with the preparation of the IER.
 - We have been appointed as independent expert for the purposes of providing an IER for the Target's Statement.
 - That we have relied on information provided by the board of Directors of HSK (Board) and management of HSK and that we have not carried out any form of audit or independent verification of the information provided.



• That we have received representations from the Board in relation to the completeness and accuracy of the information provided to us for the purpose of our IER.

Special Value

65. We have not considered special value in forming our opinion. Special value is the amount that a potential acquirer may be prepared to pay for a business in excess of the fair market value. This premium represents the value to the particular potential acquirer of potential economies of scale, reduction in competition, other synergies and cost savings arising from the acquisition under consideration not available to likely purchasers generally. Special value is not normally considered in the assessment of fair market value as it relates to the individual circumstances of special purchasers.

Reliance on Information

- 66. This IER is based upon financial and other information provided by the Board and management of HSK. We have considered and relied upon this information. Unless there are indications to the contrary, we have assumed that the information provided was reliable, complete and not misleading, and material facts were not withheld. The information provided was evaluated through analysis, inquiry and review for the purpose of forming an opinion as to whether the Offer is fair and reasonable.
- 67. We do not warrant that our inquiries have identified or verified all of the matters which an audit, extensive examination or due diligence investigation might disclose. In any event, an opinion as to whether a corporate transaction is fair and reasonable is in the nature of an overall opinion rather than an audit or detailed investigation.
- 68. It is understood that the accounting information provided to us was prepared in accordance with generally accepted accounting principles.
- 69. Where we relied on the views and judgement of management the information was evaluated through analysis, inquiry and review to the extent practical. However, such information is often not capable of direct external verification or validation.
- 70. Under the terms of our engagement, HSK has agreed to indemnify BDOCF and BDO East Coast Partnership, and their partners, directors, employees, officers and agents (as applicable) against any claim, liability, loss or expense, costs or damage, arising out of reliance on any information or documentation provided, which is false or misleading or omits any material particulars, or arising from failure to supply relevant documentation or information.

Limitations

- 71. We acknowledge that this IER may be lodged by the Board with regulatory and statutory bodies and will be included in the Target's Statement to be sent to the HSK Shareholders. The Board acknowledges that our IER has been prepared solely for the purposes noted in the Target's Statement and accordingly we disclaim any responsibility from reliance on the IER in regard to its use for any other purpose. Except in accordance with the stated purposes, no extract, quote or copy of the IER, in whole or in part, should be reproduced without our prior written consent, as to the form and context in which it may appear.
- 72. We note that the IER does not deal with the individual investment circumstances of HSK Shareholders and no opinion has been provided in relation to same. Some individual HSK Shareholders may place a different emphasis on various aspects of the Offer from that adopted in our IER. Accordingly, individuals may reach different conclusions on whether or not the Offer is fair and reasonable to them. An individual HSK Shareholder's decision in relation to the Offer may be influenced by their particular circumstances and, therefore, HSK Shareholders are advised to seek their own independent advice.
- 73. Apart from the IER, we are not responsible for the contents of the Target's Statement or any other document. We have provided consent for inclusion of the IER in the Target's Statement. Our consent and the Target's Statement acknowledge that we have not been involved with the issue of the Target's Statement and that we accept no responsibility for the Target's Statement apart from the IER.



Assumptions

- 74. In forming our opinion, we have made certain assumptions and outline these in our IER including:
 - We have performed our analysis in this Report on the basis that the conditions precedent to the Takeover Implementation Agreement and the Offer are satisfied.
 - That matters such as title to all relevant assets, compliance with laws and regulations and contracts
 in place are in good standing, and will remain so, and that there are no material legal proceedings,
 other than as publicly disclosed.
 - Information sent out in relation to the Offer to HSK Shareholders or any regulatory or statutory body is complete, accurate and fairly presented in all material respects.
 - Publicly available information relied on by us is accurate, complete and not misleading.
 - If the Offer is implemented, that it will be implemented in accordance with the stated terms.
 - The legal mechanism to implement the Offer is correct and effective.
 - There are no undue changes to the terms and conditions of the Offer or complex issues unknown to us.
 - Other assumptions, as outlined in the valuation sections.



2. OUTLINE OF THE OFFER

- 75. On 22 December 2016, HSK announced that it had received an indicative, non-binding and conditional Offer from Taurus, via NSC, to acquire 100% of the issued capital that NSC and its associates do not already own.
- 76. Under the Offer, each Shareholder (who is not an ineligible foreign shareholder) of HSK is entitled to elect to receive either:
 - Cash consideration of \$0.075 for each Ordinary Share held; or
 - Share Consideration in the form of 1 share in NSC for every 1 share held in HSK.
- 77. On 13 February 2017, the Directors of HSK recommended NSC's Offer and Shareholders elect the Cash Consideration, in the absence of a superior offer and provided the Independent Expert determines the Taurus Proposal is fair and reasonable. The Directors of HSK did not make a recommendation in respect of the Share Consideration. HSK has also entered into a Takeover Implementation Agreement with NSC that includes important arrangements relating to the opportunity for NSC to match any competing proposals made for HSK, exclusive restrictions for HSK and a mutual break fee payable in certain circumstances.

NSC's Intentions

- 78. On 13 March 2017, NSC issued its Bidder's Statement that, among other things, disclosed NSC's intentions with regard to HSK's business, operations, employees and assets.
- 79. The general intentions of the Bidder based on the information presently known to it are set out below.

If 90% or more of HSK's shares is acquired

- 80. If NSC acquires 90% or more of HSK's shares and if its entitled to, NSC will proceed with:
 - The compulsory acquisition of outstanding HSK shares in accordance with Chapter 6A of the Act;
 - Replace all members of the HSK Board with its own nominees; and
 - At the conclusion of the compulsory acquisition process, arrange for HSK to be removed from official listing of the ASX;
- 81. After the end of the Offer period, undertake an orderly transfer of HSK's corporate functions from Melbourne to Calgary. This will involve the closure of HSK's Melbourne office with all corporate roles based out of Calgary.
- 82. NSC will continue the operations of HSK's existing business and in particular focus on the ongoing development of the Moberly Project. The Bidder's primary focus will be on ensuring that:
 - Moberly site activities are undertaken in accordance with all operating permits, licences and regulations and in-line with industry best practise environmental, social and governance standards;
 - Remaining Moberly construction activities are completed in accordance with the current schedule and on-budget;
 - Detailed plans are developed to cover Moberly commissioning once construction has been completed;
 - Relevant personnel are hired to manage Moberly commissioning;
 - Moberly consistently performs in-line with its forecast operating parameters once commissioned;
 - Discussions with prospective off-take counter parties continue; and
 - Appropriate corporate arrangements are established in Calgary to support Moberly site based activities.



- 83. NSC will after the end of the Offer Period and in the ordinary course of managing its existing business, conduct a general review of the operations, assets, appropriate capital structure and employees.
- 84. The Bidder intends to utilise the Taurus Working Capital Facility to cover working capital needs required to achieve completion of Moberly Stage 1 development, including but not limited to:
 - Additional capital costs;
 - Operating costs during commissioning;
 - Funding required to support a build-up of finished product inventory that may be required to support Moberly off-take arrangements;
 - Funding required to support Moberly logistics arrangements;
 - General corporate costs; and
 - Debt servicing requirements under the Taurus Secured Facility.
- 85. The Bidder currently intends to undertake a refinancing of the Taurus Working Capital Facility via a rights issue once Moberly Stage 1 has reached steady-state production and sustainably positive cash flow generation. HSK shareholders who elect to take the Share Consideration will be diluted if they do not participate in any subsequent rights issue.
- 86. Following the end of the Offer Period and consistent with the above intentions, it is intended that the Bidder will conduct a broad based review of the employment and roles of all of HSK's employees.
- 87. The Bidder does not intend to make significant changes to HSK's Calgary based management team. The Bidder intends to appoint Mr Mark Connors to act as President and CEO of the Bidder upon completion of the Offer. Mr Connors currently serves as acting Chief Executive Offer of HSK and President of Heemskirk Canada Limited. This appointment is subject to completion of the Offer and finalisation of an employment contract on usual commercial terms.
- 88. The Bidder intends to make two key appointments to HSK's Calgary team to augment its current operations:
 - Chief Financial Officer; and
 - Chief Operating Officer ("COO").

The Bidder intends to ensure that any COO appointment includes an individual with a dedicated background in minerals processing engineering.

89. The Bidder intends that the Secured Facility Agreement will continue after completion of the Offer and will seek all necessary consents and waivers required under the Secured Facility Agreement in order to completion the Offer.

Further, the Bidder will obtain all necessary contents and waivers from the lender in order to accede to the Secured Facility Agreement as a guarantor.



If 50.1% or more but less than 90% ownership is acquired

- 90. If the Bidder waives its 90% minimum acceptance condition and acquires more than 50.1% but less than 90% of HSK shares, NSC would obtain effective control of HSK but it would not be entitled to compulsorily acquire the outstanding HSK Shares.
- 91. In these circumstances, the Bidder Group intends:
 - that the HSK business will continue substantially in its current form;
 - to seek to implement the same intentions if it were to acquire 90% or more of HSK shares to the extent possible, as set out above;
 - to continue to deal with its stake in HSK with a view to maximising returns for the NSC Group; and
 - to apply for removal of HSK from the ASX if it is able to do so consistently with ASX guidance.

If less than 50% of HSK's shares is acquired

92. If the Bidder waives its 90% minimum acceptance condition and acquires less than 50.1% of HSK shares, these shares will become an investment of the Bidder and would be reviewed in accordance with its usual investment policies.



PROFILE OF HSK

Overview

- 93. HSK is a producer of industrial minerals in Canada with its operations located close to the Western Canadian Sedimentary Basin, with easy access to vital transport infrastructure. The Company has been operating in the region for over 30 years and is currently redeveloping the Moberly Project to be able to produce high quality silica for use as frac sands, glass sands and other industrial minerals markets.
- 94. The Moberly plant is located on the Trans-Canada Highway and the Canadian Pacific Rail Mainline near Golden, British Columbia. It is within 12 hours from the targeted market areas that extend from southern Saskatchewan (Bakken Basin) to northeast British Columbia (Horn River Basin) by truck. HSK's marketing will be concentrated on the Duvernay and Montney areas of the Western Canadian Sedimentary Basin.
- 95. The material mined at Moberly is the Ordovician Mount Wilson Quartzite unit. Between 2010 and 2012, HSK investigated, via an internal pre-feasibility and then a feasibility study (which was updated in early 2015), the possibility of treating the quartzite to produce a 'frac sand' suitable for use in the oil and gas sector as a proppant. The studies found the Project to be economically viable and the Project moved to engineering design of a new frac sand plant on the existing plant side and an increased mining rate.
- 96. On 15 July 2015, HSK announced that it had secured funding for its Moberly Project from Taurus Funds Management following a process of technical due diligence and legal documentation. The Funding Package was broken into two tranches:
 - Tranche 1 consisted of US\$25m to complete the 300,000 tonnes per annum construction and production development Project (Stage One); and
 - Tranche 2 consisted of US\$15m to complete an expansion of the Project (Stage Two) to a 600,000 tonnes per annum production level, once Stage One had been successfully completed
- 97. The proposed use of the funding was for the remaining development of the Moberly Project with HSK announcing it would progress into the full construction phase of the Project.
- 98. The initial footing stage of construction was completed in May 2015. HSK entered into a construction contract with Maple Reinders for construction of the Stage One Moberly plant. Construction commenced in February 2016 and the estimated completion is 30 June 2017. At the completion of Stage One, the Moberly Project is expected to have a nameplate capacity of 300,000 metric tonnes per annum ('Mtpa').
- 99. HSK also commissioned Morrison Hersfield to investigate the possibility of increasing the capacity of the Moberly Plant to 600,000 Mtpa. The estimated total cost for increasing the nameplate capacity to 600,000 Mtpa was CAD\$18.0 million. The cost estimates considered in the Morrison Hersfield report were highlevel estimates provided without a detailed design/scope of work and represent only order-of-magnitude opinion of probable costs.

Board and Management Structure

- 100. The Company's current board members and senior management are shown below:
 - Mr Mark Connors Acting Chief Executive Officer and President of Heemskirk Canada Limited;
 - Mr Garry Cameron Non-Executive Chairman;
 - Mr Peter McKenna Non-Executive Director;
 - · Mr John Taylor Non-Executive Director, and
 - Ms Trish Hally Company Secretary.



Historical Financial Information

Table 6: Historical Statements of Financial Performance

Statement of Comprehensive Income	Audited	Audited	Audited
	30-Sep-14	30-Sep-15	30-Sep-16
	A\$'000	A\$'000	A\$'000
Revenue			
Revenue	705	224	317
Cost of sales	(1,146)	(52)	-
Gross (loss)/profit	(441)	172	317
Expenses			
Depreciation and amortisation expense	(399)	(331)	(425)
Employee benefits expense	(1,282)	(2,195)	(2,241)
Corporate costs	(544)	(1,072)	(876)
Consultants and advisory expense	(519)	(1,079)	(755)
Finance costs	(455)	(285)	(187)
Impairment expense	(11)	(22)	(164)
Realised loss on sale of investments	(220)	(48)	(1,694)
Fair value gain/(loss) on equity investments	(1,929)	(519)	13
Gain/(loss) on foreign exchange	-	6	(167)
Gain on forward currency contracts	-	-	1,285
Other income	429	78	49
Loss before income tax	(5,372)	(5,295)	(4,845)
Income tax benefit	2	51	25
Profit from discontinued operations	2,991	-	-
Loss after income tax	(2,379)	(5,244)	(4,820)
Gain/(loss) on foreign currency translation	(283)	502	(1,098)
Foreign currency translation differences	(29)	-	-
Asset revaluation	(453)	-	-
Other comprehensive loss, net of taxes	(765)	502	(1,098)
Total comprehensive loss for the period	(3,144)	(4,742)	(5,918)

Source: HSK annual report for the years ended 30 September 2014, 30 September 2015 and 30 September 2016

101. We note the following with regard to HSK's operating performance:

- The Moberly silica deposit was mined from the early 1980s to 2009 for silica processed to silica sand for glass making, golf course sand and similar products. Mining was also conducted again in 2012 and 2016. Employee and other overhead costs are now primarily incurred to support the development of the Moberly Project and to satisfy the Company's regulatory and other compliance obligations. The majority of cost in relation to mine development have been capitalised which are shown in the historical statements of financial position below.
- Revenue is relatively small and represents the sale of goods from the inventory stockpile. Production ceased during the construction of footings at the Moberly plant site (May 2015), with revenue during this time representing sale of the inventory stockpile.
- In 2016, total costs for the Group fell by 7.4% to \$4.0 million as compared to the year ended 30 September 2015. This was largely due to a reduction in legal, due diligence and consultancy fees relating to the development of the Project. The restructuring of corporate activities resulted in redundancies of \$0.5 million being recognised and paid during the year.



- HSK entered into foreign currency forward contracts to hedge its exposure to fluctuations in the USD:CAD exchange rate and to this effect there was a net gain of \$1.3 million for the year ended 30 September 2016.
- The realised loss of \$1.7 million during the year ended 30 September 2016 on sale of investments relates to the sale of approximately 2.5 million shares in Almonty Industries Inc. The shares were received as part payment for the sale of HSK's Los Santos Tungsten Mine to Almonty in April 2011.
- The decline in finance costs by approximately 35% during FY16 was due to the impact of the redemption of convertible notes in March 2015.
- Profit from discontinued operations of approximately \$3.0 million during FY14 pertains to the gain (net of income tax) on sale of the Company's operating mineral products plant in Lethbridge, Canada.

Table 7: Historical Statements of Financial Position

	Audited	Reviewed	Audited	Unaudited
Balance Sheet	30-Sep-15	31-Mar-16	30-Sep-16	31-Jan-17
	A\$'000	A\$'000	A\$'000	A\$'000
CURRENT ASSETS				
Cash and cash equivalents	5,974	12,561	13,305	7,928
Trade and other receivables	263	206	327	180
Inventories	1,398	1,314	2,116	2,342
Other financial assets	3,402	1,732	894	754
Derivative financial assets	-	1,600	976	650
Other current assets	236	107	97	130
TOTAL CURRENT ASSETS	11,273	17,520	17,715	11,985
NON-CURRENT ASSETS				
Property, plant and equipment	4,380	4,426	4,835	4,831
Mine development	7,461	9,960	22,587	34,207
Deferred tax assets	7	19	18	18
Other non-current assets	1,974	1,978	-	-
TOTAL NON-CURRENT ASSETS	13,822	16,383	27,440	39,056
TOTAL ASSETS	25,095	33,903	45,155	51,042
CURRENT LIABILITIES				
Trade and other payables	957	2,558	4,224	3,715
Interest bearing liabilities	19	165	908	2,233
Provisions	286	307	152	162
TOTAL CURRENT LIABILITIES	1,262	3,030	5,284	6,110
NON-CURRENT LIABILITIES				
Deferred tax liabilities	63	41	40	41
Interest bearing liabilities	65	335	11,916	17,927
Provisions	40	38	298	304
TOTAL NON-CURRENT LIABILITIES	168	414	12,254	18,272
TOTAL LIABILITIES	1,430	3,444	17,538	24,382
NET ASSETS	23,665	30,459	27,617	26,660
EQUITY				
Contributed Equity	87,836	97,532	97,532	97,532
Reserves	1,984	1,084	1,060	1,291
Retained earnings/(losses)	(66,155)	(68,157)	(70,975)	(72,163)
TOTAL EQUITY	23,665	30,459	27,617	26,660

Source: HSK annual report for the years ended 30 September 2014, 30 September 2015 and 30 September 2016 and unaudited management accounts as at 31 January 2017



- 102. We note the following in relation to HSK's recent financial position:
 - Cash and cash equivalents increased from \$6.0 million as at 30 September 2015 to \$13.3 million as at 30 September 2016 primarily on account of the issue of share capital amounting to \$9.7 million as part of a rights issue and proceeds of \$13.2 million from the drawdown of the secured debt facility. Key cash outflows include progress payments relating to the construction of the Moberly Project of \$11.8 million and payments to suppliers and employees of \$4.8 million. Cash and cash equivalents decreased from \$13.3 million as at 30 September 2016 to \$7.9 million as at 31 January 2017, primarily in relation to cash payments for the development of the Moberly Project.
 - The increase in Mine development from \$7.5 million as at 30 September 2015 to \$34.2 million as at 31 January 2017 reflects the capitalised expenditure and borrowing costs on the Moberly Project throughout this period.
 - HSK has investments in listed equity instruments classified as 'Other financial assets' and these
 investments are valued on a fair value basis which is determined with reference to the quoted
 market bid price of these investments.
 - HSK has entered into foreign currency forward contracts to manage USD:CAD exchange risks given the
 secured debt facility is denominated in USD and the majority of construction payments will be
 incurred in CAD. Derivative EBIT financial assets reflect the unrealised gain in fair value caused by
 movements in the USD:CAD forward exchange rates between the date of the instruments being taken
 out and the relative balance dates.
 - Increase in Trade and other payables balances by \$3.3 million between 30 September 2015 and 30 September 2016 primarily reflects payables relating to the Moberly Project.
 - Increases in interest bearing liabilities between 30 September 2015, 30 September 2016 and 31 January 2017 reflects the drawdown on the debt facility entered into with Taurus as well as an increase in finance leases and hire purchase contracts.
 - HSK's auditor, EY, has issued an unqualified audit/review opinions in the audit /review reports accompanying the financial statements for the years ended 30 September 2015 and 30 September 2016, and the six-month period ended 31 March 2016.

Forecast financial performance

Management Forecasts

- 103. Management of HSK has prepared a detailed life of mine ('LOM') cash flow model for the Moberly Project ('Model') for a period of 32 years that falls within the timeframe of the mine permit (that ends on 16 March 2050).
- 104. The Model includes estimated future cash flows for both Stage One and Stage Two of the Moberly Project.

Independent Technical Expert Review - CSA

- 105. HSK has engaged CSA to prepare a report providing a technical assessment of the Project assumptions underlying the Model ('Technical Report'). CSA's assessment involved the review and provision of input on the reasonableness of the assumptions adopted in the Model, including but not limited to:
 - resources and reserves incorporated into the model for the Moberly Project;
 - mining physicals (including tonnes of silica mined, product yield/recovery and mine life);
 - processing physicals (including frac sand processed and produced based on effective utilisation rate and availability rate);
 - pricing expectations for frac sand and silica flour;
 - price and cost escalation during the life of the mine;



- production and operating costs (including but not limited to drilling and blasting, mining, haulage, processing, transport, barging, subcontractor production costs, general administration, distribution and marketing, contingencies and royalties or levies); and
- capital expenditure (including but not limited to project capital costs, sustaining capital expenditure, salvage value, rehabilitation and contingencies).
- 106. A copy of CSA's Technical Report is included in Appendix 7.

Summary of key assumptions

107. The assumptions provided below forming part of CSA's report (refer Appendix 7 for further details) were reviewed by HSK. Given that CSA was appointed to undertake an independent technical assessment of the Moberly Project including pricing and cost forecasts, sales forecasts, capital expenditure profile etc, we have relied on the CSA review for the below mentioned key assumptions underpinning the forecast cash flows.

Moberly resource estimate

108. HSK's latest estimates show that Moberly has 37.5 million tonnes of measured and indicated in situ silica resources suitable for frac sand, with a breakdown of the proven and probable reserve estimates provided below:

Reserve Category	Dry tonnes (millions) As at 30 September 2016	
Proven	9.3	
Probable	4.6	
Total Proven and Probable^	13.9	

^{^ 30} mesh to 140 mesh, at 70% yield

Source: HSK announcement, 23 November 2016

Life of Mine

109. HSK's holds a government approved 35 year mine plan commencing 16 March 2015 - 2050. We note that HSK's current ore reserve estimate would support a mine life of greater than 35 years at the production rates adopted in the Model.

Forecast sales volumes

110. HSK has received an expression of interest (dated 17 February 2017) from Velvet Energy Ltd with regard to the Moberly Project based on its current proppant requirements for 2017 estimated to be between 100,000 to 150,000 tonnes of sand. In the absence of signed offtake agreements or supply contracts, and having regard to CSA's market analysis and the adopted pricing assumptions (discussed below), CSA has recommended the following sales projections (taking into account yield and efficiency factors, as discussed below):

Period Ended	Volume of Sales (tonnes/year)
31-Dec-17	100,000
30-Sep-18	200,000
30-Sep-19	260,610
Ongoing annual sales	260,610

Source: CSA Report (refer Appendix 7)



Moberly Project frac sand pricing

111. CSA has recommended pricing assumptions based on estimated costs of major competitors (current and potential) to deliver sand to the main well fracking sites. Further, initial levels of pricing incentives were factored into the pricing matrix for the base price to enable HSK to obtain market share. CSA has recommended an initial base price of CAD\$65/tonne in Year 1 with an annual price increase of CAD\$5/tonne to reach CAD\$85/tonne in Year 5. The following table summarises CSA's recommended pricing assumptions:

Item (In CAD\$)	Year 1	Year 2	Year 3	Year 4	Year 5
Frac Sand	\$65	\$70	\$75	\$80	\$85
Silica Flour	\$140	\$140	\$140	\$140	\$140

Source: CSA Report (refer Appendix 7)

Yield

112. CSA has assumed an overall yield of 70% to the output from the Moberly mine, which is consistent with the value reported in the annual Mineral Resource and Ore Reserve statements completed by a Competent Person and released by HSK.

Processing Plant Efficiency

113. CSA has reviewed the capabilities of the specified plant and has considered an effective utilisation rate of 85%, which is a combination of 92% plant availability and 92% plant utilisation rate. Changes in the product yield and overall efficiency have resulted in a recovery rate of 70% and a maximum production rate of saleable frac sand in Stage One of 260,610 tonnes per annum.

Mining and Hauling Costs

114. HSK has entered into contractual agreements with Speers Construction Inc. to undertake the mining and drill and blast of material and a load and haul agreement with BNW Contracting for the loading of material at the mine and transportation to the processing plant. Rates for each of the tasks and respective contractors have been negotiated and signed for 2017 and 2018 as shown below.

Year	Speers Construction Inc. (Mining)	BNW Contracting (Load and Haul)
2017	CAD\$6.65/tonne	CAD\$6.65/tonne
2018	CAD\$6.50/tonne	CAD\$6.50/tonne

Source: CSA Report (refer Appendix 7)

115. CSA has assumed the long term mining and hauling costs to be CAD\$6.65/tonne for each process, which is then indexed.

Processing cost inputs

116. The inputs for determining the processing costs of the material were completed on a first principle basis.

The summary of the assumed inputs at full production are as shown below:

Parameter (In CAD\$)	Cost	Units
Labour - Technical services	607,000	Per annum
Labour - Operations	3,260,000	Per annum
On Cost	10% of Labour	Per annum



Flour Processing Cost	\$0.92	Per tonne
Raw Storage and Handling	\$0.22	Per tonne
Crushing/Screening Costs	\$0.62	Per tonne
Wet Process Costs	\$0.71	Per tonne
Drying Costs	\$2.01	Per tonne
Screening Costs	\$0.18	Per tonne
Load out Costs	\$0.09	Per tonne

Source: CSA Report (refer Appendix 7)

Overheads

117. Overheads for both the onsite and head offices in Calgary and Melbourne are as indicated below:

Parameter	Cost	Units
General Office Expenses	CAD\$10,000	Per annum
Heating	CAD\$5,000	Per annum
Safety	CAD\$10,000	Per annum
Dust Control	CAD\$12,000	Per annum
Insurance	CAD\$50,000	Per annum
Mineral Tenures	CAD\$20,000	Per annum
Rail Siding Rental	CAD\$8,000	Per annum
Licences, Permit and other fees	CAD\$10,000	Per annum
Property	CAD\$20,000	Per annum
IT and Telecommunications	CAD\$20,000	Per annum
Garbage, Cleaning, Water	CAD\$8,000	Per annum
Freight Contracts	CAD\$10,000	Per annum
Others	CAD\$4,000	Per annum
Consultant, IT , Engineering etc	CAD\$25,000	Per annum
Quarry Tax	CAD\$0.15	Per tonne if >25,000 tonnes
Calgary and Melbourne Office	CAD\$3,000,000	Per annum

Source: CSA Report (refer Appendix 7)



Capital cost inputs

118. The frac sand plant comprises a significant portion of the capital cost. The total capital costs (excluding contingencies) and estimated remaining spend as at 31 January 2017 is summarised below:

Parameter	Currency	Total Cost	Paid to 31 January 2017	Remaining Cost
Construction costs	CAD	25,553,133	12,202,024	13,351,109
Construction costs	USD	6,283,059	4,935,146	1,347,913
Other costs (admin, road, insurances)	CAD	2,896,575	2,132,320	764,255

Note: the amounts in the above table correspond to financial completion, rather than physical completion (as referred to in CSA's Technical Report).

Source: Management

119. CSA has estimated sustaining capital expenditure to be CAD\$400,000 to December 2017, with a long run assumption of CAD\$1.1 million per year thereafter on an inflation-indexed basis.

Residual value

120. CSA has adopted a residual value based on 10% of capital expenditure costs. The estimate takes into account the ongoing capital expenditure throughout the period and the length of the forecast period.

Depreciation

121. The Model has assumed vehicles are depreciated over four years with plant depreciated over seven years. Processing plant and equipment is assumed to have a residual value of 10% at the end of 30 years. The residual values of equipment and added as capital sales at the end of mine life.

Royalty

122. The Model has assumed an annual royalty rate of 2% on revenue from sale of Frac Sand and Silica Flour, payable to Taurus, in accordance with the debt facility provided.

Revenue and Cost Escalation

123. Revenues and costs are escalated at 1.6% per year in the Model.

Taxes

124. The tax assumptions included in the Model are based on Canadian tax law and include an income tax payable to the Federal Government and a beneficial rate payable to the British Columbia Government for a combined rate of 26%.

FX Rates

125. CSA have assumed a CAD:USD exchange rate of 1.37:1 for the USD components required for the plant.

Stage Two of the Moberly Project

- 126. As discussed in the overview section, Stage 2 of the Moberly Project envisages an expansion of the nameplate capacity from 300,000 tonnes per annum to 600,000 tonnes per annum. However, CSA has not factored in the expansion scenario for the following reasons:
 - Total demand of frac sand is not expected to reach peak 2014 levels until 2018 or 2019 which may support future expansion;
 - Existing industry capacity is not expected to be exceeded before 2020 or later;
 - Most frac sand suppliers are not currently profitable, so there is a strong incentive to improve prices;
 and



• The size of the Canadian frac sand market has been estimated to be between 3 million Mtpa/annum and 6 million Mtpa/annum and even on the lowest demand estimate and with the expected increase in market volume, the HSK long term sales target of 260,610 tonnes per annum is considered reasonable.

Capital Structure

127. As at the date of the Target's Statement, the Company has the following Capital structure:

Share class	Number of shares on issue	Amount paid up
Ordinary shares	562,635,912	Fully paid
Employee shares	1,461,808	Fully paid
Class A \$0.25 ordinary shares	100,000	1 cent paid up, 24 cents unpaid
Class B \$0.50 ordinary shares	1,500,000	1 cent paid up, 49 cents unpaid

Source: Target's Statement

128. The ordinary shares held by the most significant shareholders as at the date of the Target's Statement are detailed below:

Name	TOTAL No of ordinary shares held	Percentage of Issued Shares (%)	Date of Substantial Holder Notice
First Samuel Limited	195,069,619	34.67%	29 January 2016
NSC, its holding entities, their subsidiaries and its associates	194,703,557	34.59%	27 March 2017
Marc Rabinov and associated entities	37,210,699	6.61%	6 March 2017
Total - top 3 shareholders	426,983,875	75.89%	
Others	135,652,037	24.11%	
Total Ordinary Shares on Issue	562,635,912	100.00%	

Source: Target's Statement, HSK company announcements

129. The options issued to Taurus are outlined below:

Holder	Issue date	Number of Options	Exercise Price (\$)	Expiry Date
Taurus Resources No 2 BV	3 May 2016	1,576,215	\$0.0878	15 July 2020
Taurus Resources No 2 BV	10 August 2016	1,576,215	\$0.0878	15 July 2020
Taurus Resources No 2 BV	3 January 2017	1,576,215	\$0.0878	15 July 2020
Taurus Resources No 2 BV	28 February 2017	1,576,215	\$0.0878	15 July 2020
Total Number of Options		6,304,860		

Source: Target's Statement



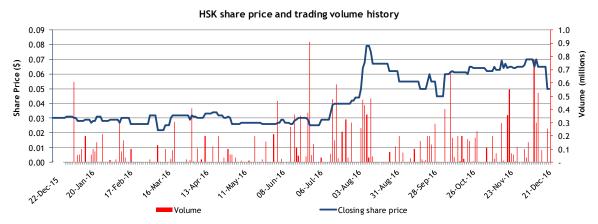
130. The details of employee shares and employee rights to acquire are summarised below:

Holder	Number Vested	Number unvested	Total
Employee shares (allocated)	277,632^	179,048*	456,680
Employee shares (unallocated)	341,501#	43,274*	384,775
Employee rights to acquire	749,894*	402,254*	1,152,148
Total	1,369,027	624,576	1,993,603

Source: Target's Statement

HSK share price and trading volume history

131. Information on the Offer was announced to the market on 22 December 2016. Therefore, the following chart provides a summary of the share price movement over the 12 months to 21 December 2016, which was the last trading day prior to the announcement.



Source: Bloomberg

132. The daily price of HSK shares from 22 December 2015 to 21 December 2016 has ranged from a low of \$0.022 on 8 to 11 March 2016 to a high of \$0.079 on 9 and 10 August 2016. The share price remained relatively steady at around \$0.03 from 22 December 2015 through to early July 2016. The share price then increased and reached a peak of \$0.079 on 9 and 10 August 2016 and was thereafter range bound between \$0.045 and \$0.075 through to 21 December 2016. The highest single day of trading by volume was on 28 June 2016, where 910,888 shares were traded.

^{^ 190,294} of these vested shares are quoted on ASX and form part of 562,635,912 fully paid ordinary shares; 87,338 of these vested shares are not quoted on ASX and form part of 1,461,808 Employee Shares * not quoted on ASX, currently forming part of 1,461,808 Employee Shares

[#] these shares are quoted on ASX and form part of 562,635,912 fully paid ordinary shares.



133. During this period a number of announcements were made to the market. The key announcements are set out below:

Date	Announcement	Closing Share Price Following Announcement \$ (movement)		Closing Share Price Thr Days After Announcement \$ (movement)		ter ement	
24-Nov-16	2016 Preliminary Final Report	0.064	•	1.5%	0.065	•	1.6%
23-Nov-16	Heemskirk Mineral Resources and Ore Reserves Statement	0.065	•	0.0%	0.065	•	0.0%
27-Oct-16	Fourth Quarter Activities Report	0.064	•	0.0%	0.064	•	0.0%
28-Jul-16	Third Quarter Activities Report	0.042	•	5.0%	0.044	•	4.8%
25-May-16	Appendix 4D and Half Year Financial Report	0.026	•	0.0%	0.026	•	0.0%
14-Apr-16	Appointment of CEO in Canada	0.033	•	0.0%	0.034	•	3.0%
12-Apr-16	Second Quarter Activities Report	0.033	•	10.0%	0.033	•	0.0%
15-Feb-16	Moberly Project Financing Package	0.030	•	0.0%	0.026	•	13.3%
29-Jan-16	First Quarter Activities Report	0.028	•	0.0%	0.029	•	3.6%

Source: Bloomberg

134. An analysis of the volume of trading and the volume weighted average price ('VWAP') in HSK shares for the 12 months to 21 December 2016 is set out below:

Days prior to announcement	Share price low	Share price high	Cumulative Volume traded	As a % of Issued capital	VWAP
1 day	\$0.050	\$0.050	250,000	0.04%	\$0.050
10 days	\$0.050	\$0.070	2,198,240	0.39%	\$0.062
30 days	\$0.050	\$0.070	4,037,780	0.72%	\$0.064
60 days	\$0.05	\$0.070	6,862,572	1.22%	\$0.063
90 days	\$0.045	\$0.070	8,498,422	1.51%	\$0.062
180 days	\$0.025	\$0.080	17,194,938	3.06%	\$0.051
1 year	\$0.022	\$0.080	21,352,518	3.80%	\$0.047

Source: Bloomberg, BDOCF analysis

135. Trading in HSK's shares reflects a low level of liquidity, with 3.8% of the Company's current issued capital being traded in a twelve-month period.



Capital Raisings

136. A summary of recent capital raisings undertaken by HSK is set out below:

Date	Note	Number of shares issued	Issue price	Amount raised
15-Dec-2015	3	330,854,387	\$0.03	9,926,000
17-Jul-2015	2	38,599,679	\$0.10	3,860,000
17-Jul-2015	1	13,250,000	\$0.10	1,325,000

Source: HSK annual reports for the years ended 30 September 2015 and 30 September 2016

Notes:

- 1. The Company raised \$9.9 million through a 10-for-7 fully underwritten Rights Issue.
- 2. Renounceable rights issue of 1 new share for every 5 shares held on 21 January 2015.
- 3. The Company issued 13.2 million fully paid shares by way of a private placement to institutional and sophisticated investors.



4. PROFILE OF NSC

Structure of the Bidder Group

- 137. NSC is a Canadian private corporation incorporated in Alberta, Canada on 1st December 2016. The Bidder is a special purpose vehicle incorporated for the sole purpose of making the Offer and issuing the Share Consideration to HSK Shareholders who elect that alternative.
- 138. Other than its nominal share capital, the Bidder has no other assets or liabilities and the Bidder has no trading history. Accordingly, no financial statements have been included in the Bidder's Statement.
- 139. The directors of the Bidder are set out below:
 - Martin Boland;
 - Stuart Love: and
 - Frank Turner.
- 140. Upon completion of the transaction, the Bidder intends to make additional appointments to the board of the Bidder in accordance with the framework set out in the Unanimous Shareholders Agreement. On this basis Mr Frank Turner is currently serving on an interim basis with a replacement independent non-executive director to be appointed upon completion of the Offer.

The Bidder Group overview

- 141. The Bidder is owned 90.0% by Taurus, 9.86% by T2 LP (being a limited partnership investment vehicle established in the Cayman Islands) and 0.14% by T2 Trust (being an unlisted investment trust established under the laws of Australia). Taurus is wholly owned by Taurus Co-op, a holding entity also incorporated in the Netherlands. Taurus Co-op is in turn owned by T2 LP and T2 Trust (the T2 LP and the T2 Trust are known together as the "T2 Fund").
- T2 LP is a limited partnership investment vehicle established in the Cayman Islands. T2 LP is a closed-end investment vehicle whose strategy is to invest in emerging mining and metals companies with projects primarily in the appraisal and development stages. The general partner of T2 LP is Taurus GP LLC, a Delaware limited liability company and a Cayman Island Registered foreign company.
- 143. T2 Trust is an unlisted investment trust established under the laws of Australia.
- 144. The T2 Fund is managed by Taurus Funds, an independent, global funds management group whose clients include institutional and high net worth individuals.
- 145. The Bidder Group and its associates hold voting power of 34.59% in HSK shares. The Bidder Group also holds 6,304,860 options to acquire securities in HSK. Taurus is also a lender to HSK under the Secured Facility Agreement.



5. VALUATION METHODOLOGY

Fairness assessment overview

- 146. The Offer is fair if the fair market value per share of HSK before the Offer (on a control basis) is less than or equal to:
 - the Cash Consideration; or
 - the fair market value of the Share Consideration (i.e. NSC shares) after the Offer (on a minority basis).
- 147. Accordingly, to undertake this comparison we have valued the shares in HSK before the Offer on a controlling basis and the shares in NSC after the Offer on a minority basis.
- In accordance with RG 111.15, we have considered the fair market value of HSK on the basis of a knowledgeable and willing, but not anxious seller that is able to consider alternative options to the Offer. This approach does not take into account the particular circumstances of any specific transaction, and therefore we have not considered the likelihood or otherwise of financial distress of the Company in our fairness assessment.
- 149. The valuation methods we have considered are discussed below.

Valuation methods

- 150. Details of common methodologies for valuing businesses and assets are included at Appendix 3. The principal methodologies which can be used are as follows:
 - Discounted cash flow (DCF);
 - Capitalisation of maintainable earnings (COE);
 - Net asset value (NAV); and
 - Quoted market price basis (QMP).
- 151. We have also considered other market based methods, such as the resource multiple method of comparable companies and/or comparable transactions.
- 152. Set out below is a discussion of the valuation methods we consider appropriate for the purposes of undertaking our valuation assessment of HSK.

Selected valuation methods for HSK pre Offer

- 153. We have applied the following methods to value HSK:
 - Primary approach Sum-of-Parts.
 - Secondary approach QMP.

Sum-of-Parts

- 154. The Sum-of-Parts method estimates the market value of a company by separately valuing each asset and liability of the company ('Sum-of-Parts'). We have applied the DCF method to value the Moberly Project and cross checked our valuation by reference to implied resource multiples. HSK's investments in other listed entities were valued using a QMP approach and other assets and liabilities were primarily valued using a cost approach under the NAV method. We consider these methodologies appropriate for the following reasons:
 - the DCF method was considered for HSK's flagship project, the Moberly Project, as its core value is in the future cash flows to be generated from the sale or development of this project;



- HSK has secured funding to meet the capital costs of the Moberly Project, with additional funding only required for a working capital facility (and potential future expansion, if applicable);
- cash flows from the Moberly Project have a finite life, may vary substantially from year to year and can be reasonably estimated, rendering it suitable for the DCF valuation;
- HSK has sufficient proven and probable resources to apply the DCF method for the life of mine;
- the resource multiple valuation method was used as a cross check, noting that there is a limited number of relevant benchmark transactions involving silica projects;
- other assets and liabilities of HSK (including investments in other listed entities and debt) are not captured in the DCF analysis and have therefore been valued separately.
- 155. We have valued Moberly as at 31 January 2017 to align with the latest available balance sheet for HSK.

QMP

156. The QMP has been applied as a cross check to our overall Sum-of-Parts approach. HSK is listed on the ASX, which is a regulated and observable market where HSK's shares can be traded. However, in order for the QMP methodology to be considered appropriate, the Company's shares should be liquid and the market should be fully informed as to HSK's activities. We note that HSK's shares are relatively illiquid, with only 3.8% of shares being traded within 12 months prior to the Offer. Accordingly, the QMP has been applied as a cross check to our primary approach.

Selected valuation method for NSC post Offer

- 157. NSC is a special purpose vehicle incorporated for the sole purpose of holding HSK Shares and issuing the Share Consideration to HSK Shareholders who elect that alternative. Other than its nominal share capital, the Bidder has no other assets or liabilities and the Bidder has no trading history.
- 158. Accordingly, our valuation of NSC is based entirely on our valuation of HSK.
- 159. However, in accordance with ASIC's guidance on the application of RG 111.11 to Share Consideration, the value of NSC's shares have been valued on a minority basis.

Other valuation considerations

Premium for Control

- 160. We have valued HSK on a controlling basis (which incorporates a control premium), while NSC has been valued on a minority basis (incorporating a minority discount).
- 161. We have reviewed the control premiums paid by acquirers of mining companies listed on the ASX. Further details are contained in Appendix 4.
- 162. Based on our analysis, we consider an appropriate control premium to be 30% to 40%. The equivalent minority discount is 23% to 29%.

Future events

- 163. Future growth potential which may result from new activities, business initiatives, acquisitions and the like (which are not capable of estimation), is not within the scope of this valuation.
- 164. Since forecasts relate to the future, they may be affected by unforeseen events and they depend, at least in part, on management's actions in implementing the plans on which the forecasts are based.

 Accordingly, actual results may vary materially from the forecasts included in the Moberly LOM Model, as it is often the case that some events and circumstances do not occur as expected, or are not fully anticipated, and those differences may be material.

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Valuation in Accordance with APES 225

165. This engagement has been conducted in accordance with professional standard APES 225 Valuation Services, as issued by the Australian Professional and Ethical Standards Board.



VALUATION OF THE MOBERLY PROJECT

DCF valuation of the Moberly Project

- 166. We have elected to use the DCF to value the Moberly Project. The DCF estimates the fair market value by discounting the future cash flows arising from Moberly to their net present value.
- 167. Performing a DCF valuation primarily requires determination of the following:
 - the expected future cash flows that Moberly is expected to generate; and
 - the appropriate discount rate to apply to the cash flows.

Moberly - Future cash flows

- 168. In performing our valuation of HSK's Moberly Project using the DCF method we have relied on the Technical Report prepared by CSA dated 10 March 2017, which contains CSA's review of the technical project assumptions contained in the Moberly LOM Model.
- 169. CSA's Technical Report has been prepared in accordance with the Code of Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports ('the Valmin Code') and the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Resources ('JORC Code').
- 170. BDO has undertaken an analysis of the HSK's LOM Model which has involved the following:
 - analysing the Model to confirm its integrity and mathematical accuracy;
 - reviewing the reasonableness of the assumptions adopted by HSK;
 - holding discussions with representatives of HSK regarding the LOM Model;
 - reviewing CSA's Technical Report, and where required, making changes to the LOM Model to reflect CSA's views as the technical expert;
 - performing sensitivity analysis on the value of the Moberly Project as a results of flexing selected assumptions and inputs;
 - calculating appropriate discount rates; and
 - preparing our own DCF valuation model.

Key cash flow assumptions

171. The cash flows contained in the LOM Model have been evaluated through analysis, enquiry and review for the purposes of forming an opinion as to the value of the Moberly Project. We do not warrant that our enquiries have identified all of the matters that an audit, or due diligence and/or tax investigation might disclose. However, we believe that the information is reasonable for us to form an opinion as to the value of the Moberly Project and that there are reasonable grounds for the assumptions made in the LOM Model.

Operating cash flows

- 172. The key operating cash flow assumptions for the Moberly Project (including the estimated residual value) are summarised in paragraphs 107 to 126 above. All operating assumptions have been reviewed by CSA. We have incorporated these assumptions into our valuation model.
- 173. We have adopted unlevered cash flows, i.e. cash flows of the Moberly Project, which are attributable to both debt and equity providers (this includes the royalty payable to Taurus under the current funding facility). We have taken into account HSK's current debt and additional funding requirements in our valuation of HSK's shares (refer to section 7).



Forecast cash flow period - Life of Mine

- 174. We have adopted a cash flow period of 30 years (from our valuation date) based on the following:
 - CSA has adopted 30 cash flow periods (which equates to slightly less than 30 years due to partial periods);
 - A 30 year cash flow period is supported by HSK's latest estimate of proven reserves of 9.3 million tonnes of silica suitable for frac sand (at 30 mesh to 140 mesh and 70% yield); and
 - This cash flow period is covered by HSK's current mining permit (ending 16 March 2050).
- 175. Whilst HSK's probable and indicated resources may support a longer cash flow period, we did not consider it appropriate to go beyond 30 years, as there would also need to be a corresponding adjustment to the estimated residual value of the project provided by CSA. Nevertheless, we assessed the sensitivity of our valuation to a longer cash flow period.

Economic assumptions

176. The Model adopts inflation of 1.6% for both revenue and costs. We have compared the inflation assumptions in the Model against OECD forecasts and the five-year forecasts provided by the Economic Intelligence Unit. We have also had regard to the Bank of Canada's inflation-control target of 1% to 3% (mid-point of 2%). Overall, we consider the inflation assumptions in the Model to be reasonable.

Foreign exchange rates

- 177. All operating cash flows in the Model are denominated in Canadian dollars. Accordingly, the Moberly Project has been valued in Canadian dollars, and then converted to Australian dollars for purposes of forming our opinion on the Offer.
- 178. We have adopted a CAD:AUD exchange rate of 1.00 based on the spot and 30-day trailing average CAD:AUD rates as at 21 March 2017, as shown below:

PeriodParameter	CAD:AUD
Spot (as at 21 March 2017)	1.00
30-day trailing average	1.01
Adopted	1.00

Source: CapitalIQ

- 179. A small portion of remaining capital expenditure costs are denominated in US dollars. HSK's funding facility is also denominated in US dollars, but this does not affect the Canadian dollar value of the Moberly Project.
- 180. Management has converted the US dollar capital expenditure costs to Canadian dollars using an exchange rate of 1.37, which is the rate hedged by HSK.

Moberly - Discount rate

- 181. We have selected a nominal after-tax weighted average cost of capital ('WACC') of between 11.0% and 13.0% to discount the forecast cash flows from Moberly to present value.
- 182. Details of our discount rate determination are contained in Appendix 5.



DCF valuation and sensitivity analysis

- 183. Adopting the cash flows and discount rate range discussed above, our base case valuation of the Moberly Project is \$34.4 million to \$44.5 million.
- 184. We have also analysed the sensitivity of our DCF valuation to changes in key assumptions in the Model. These sensitivities have been prepared to assist Shareholders in considering the potential impact on the value of the Moberly Project if our base case assumptions change. A summary of our sensitivity analysis is shown below:



Source: BDO analysis

185. We note the following from the sensitivity analysis:

- The value of the Moberly Project is highly sensitive to key revenue drivers (i.e. yield and frac sand pricing). Any change in these assumptions has a direct and corresponding impact on the free cash flows of the Moberly Project, without any additional costs.
- The value of the Moberly Project is also sensitive to changes in plant utilisation, but to a lesser extent than the revenue drivers, given an increase in plant utilisation is partially offset by an increase in operating costs.
- The valuation is less sensitive to changes in operating costs and ongoing capital expenditure, given the quantum of these amounts relative to revenues.
- The valuation is also sensitive to changes in the inflation and discount rate assumptions.
- The Canadian dollar value of the Project is not sensitive to exchange rates given all operating cash flows and the majority of remaining capital expenditures are forecast in Canadian dollars.



186. We have also considered the sensitivity of the valuation to an increase in the life of mine and proceeding with the Stage 2 expansion of the Moberly Project.

Increase in the Life of Mine

- 187. We do not consider it appropriate to adopt a cash flow period longer than 30 years in our base case valuation without a corresponding adjustment to the residual value.
- 188. However, we note that Moberly has the reserves and resource potential, and a mining permit to operate beyond 30 years. All else equal, we note that the valuation of Moberly:
 - increases by approximately 3% if the cash flows are extended to the end of the current mining permit (i.e. 16 March 2050); and
 - increases by 8% if the Model is extended to 46 years (reflecting the current estimate of frac sand silica reserves of 13.9 million tonnes and existing annual nameplate production of 300,000 tonnes per year).

Stage 2 of the Moberly Project

- 189. The Model allows for an analysis of the potential value of the Moberly Project if Stage 2 proceeds. It assumes additional capital costs of CAD\$18.0 million based on the 'order or magnitude' estimate provided in the Morrison Hersfield report and an increase in production capacity (before plant availability and plant utilisation factors are applied) to 600,000 tonnes per year, with all other assumptions remaining constant.
- 190. CSA notes that some components of the plant have already been oversized where feasible to allow for the future expansion, and space is available and building locations have been selected with future expansion in mind. CSA has also indicated that demand for frac sand silica may reach peak levels in 2018 or 2019 and that industry capacity may be reached after 2020, which in our view may support future expansion.
- 191. Nevertheless, we note that CSA has not factored the potential expansion into their assessment based on, inter alia, a need to improve pricing and improve profitability in the industry and the base case forecast volumes in the Model being reasonable given current industry conditions.
- 192. We also note that the current estimate of frac sand silica reserves for Moberly would not support production capacity of 600,000 tonnes per year for 30 years.
- 193. In our view, there is 'real option' value associated with the potential expansion. In particular, we note that Moberly has additional resource potential (with 37.5 million tonnes of measured and indicated resources) and it may be value accretive to ramp up production and utilise the reserves over a shorter period (notwithstanding the additional upfront capital costs).
- 194. Having regard to the level of uncertainty and currently available information, we are not able to form a reliable view on the potential value of the expansion. Accordingly, we do not consider it appropriate to take into account the potential expansion in our fairness assessment. However, we have considered the potential expansion in our reasonableness assessment.

Valuation of the Moberly Project - implied resource multiple cross check

- 195. We have considered the resource multiples of broadly comparable companies and transactions to cross check the reasonableness of our implied resource multiples for Moberly.
- 196. Information on comparable companies and transactions was gathered from CSA's Technical Report, CapitalIQ and other publicly available sources of information. We selected a group of comparable companies and transactions which we considered to be the most comparable to HSK due to:
 - the nature of business activities;
 - exposure to a similar end user market; and
 - similar risks faced with respect to their ongoing business.



- 197. The resource multiple was determined by comparing the enterprise value to the attributable resources of the comparable companies. The enterprise value was based on the market capitalisation as at 31 January 2017, after including a premium for control of 35%. The attributable resources for the comparable companies were derived from a combination of public announcements and annual reports for the periods closest to our valuation date.
- 198. We note that our trading and transaction multiples may incorporate the value of resources as well as other operating assets.

Trading multiple analysis

- 199. We identified three broadly comparable public listed companies based on our search criteria. The company descriptions for these broadly comparable companies are set out in Appendix 6.
- 200. The table below sets out the enterprise value as a multiple of total resources for the comparable non-producing companies.

Company	Proven Resources ('000 Tonnes)	EV(\$AUDm)	\$AUD/Tonne
Hi-Crush	286,435	2,509	8.76
Fairmont Santrol	673,122	5,888	8.75
US Silica	294,285	8,119	27.59

Source: CapitallQ, other publicly available data, BDO analysis

201. We note that the comparable companies are considerably larger than the Moberly Project and hence may trade at a premium to small projects given their size and economies of scale.

Transaction multiple analysis

- 202. We have also considered market transactions involving silica companies. Actual transactions of comparable assets can be regarded as the most tangible evidence of value. However, direct valid comparisons can be difficult due to the specific circumstances of each transaction. In particular:
 - where the transaction recognised a special value to the purchaser;
 - if economic conditions and rates of return have changed;
 - if the parties did not have comparable negotiating abilities; and
 - where a degree of comparability between the assets being valued differs.
- 203. The transactions that have been identified represent controlling interests, and therefore incorporate a premium for control.
- 204. Transaction multiples have been calculated where adequate information was available.
- 205. The tables below set out the enterprise value to resource multiples for comparable transactions that we have identified.



CSA transactions

206. CSA has calculated the implied resource/reserve multiple for a number of companies, as summarised below.

Company	Date	Valuation Methodology	Value (AUDm)	Resource/Reserve Tonnage (Mt)	Implied Resource Value (\$AUD/t)
CRS Proppants LLC	Nov-14	Acquisition	225.0	163.1	1.38
Preferred Sands LLC	Jan-15	Acquisition	N/A	30.8	N/A
NBR Sand LLC	Jul-16	Acquisition	300.0	70.0	4.29
Smart Sand Inc	Nov-16	Initial Public Offering	53.2	336.0	0.16
Fairmount Santrol	Jul-16	Secondary Public Offering	230.8	N/A	N/A
Seymourville	Jul-05	Preliminary Economic Assessment	105.0	26.0	4.04
Firebag Project	Nov-14	Preliminary Economic Assessment	268.3	39.0	6.88
Emerald Quarries	2016	CSA Valuation	22.0	47.4	0.46

Source: CSA Technical Report

207. Of the transactions identified in CSA's Technical Report, we note that:

- a number of the values shown above are not calculated from market transactions (in particular, CSA considered the Emerald Quarries transaction to be the most relevant, but this valuation was based on CSA's own valuation rather than a market transaction);
- the majority of companies are significantly larger than Moberly;
- the transactions or valuations occurred a number of months or years before the valuation of Moberly, and market conditions have changed since that time; and
- the range of implied resource multiples varies considerably, and CSA has indicated this may be attributable to the varying production capacities of the respective silica projects.

Additional transactions

208. We have undertaken an additional search to identify transactions involving broadly comparable silica companies, and the results are summarised below.



Target	Date	Valuation Methodology	Value (AUDm)	Resource /Reserve Tonnage (Mt)^	Implied Resource Value (\$AUD/t)
Permian Basin Sand Company LLC	Feb-17	Acquisition	357.2	55.0	6.50
Hi-Crush Whitehall LLC	Feb-17	Acquisition	191.8	80.7	2.38
Hi-Crush Blair LLC	Aug-16	Acquisition	233.3	120.1	1.94
Canadian Sandtech Inc., Quarrying Leases and Equipment and Machinery	Nov-15	Acquisition	0.9	N/A	N/A
Three Properties in Alberta and Manitoba	Dec-14	Acquisition	1.8	N/A	N/A
Cadre Services, Inc.	Jul-14	Acquisition	104.7	N/A	N/A
Gossan Resources Ltd., Manigotagan Frac Sand Project	Jun-13	Acquisition	1.2	N/A	N/A

[^] Tonnage estimates are not based on assessment by a Competent Person

Source: CapitallQ, other publicly available data, BDO analysis

- 209. Of the additional transactions identified that involve silica companies, we note that:
 - we were only able to calculate implied resource multiples for three transactions;
 - all three transactions for which we calculated an implied multiple involve companies that are significantly larger than Moberly;
 - the range of implied resource multiples varies considerably; and
 - none of the companies or transactions are directly comparable to Moberly.

Moberly - Implied resource/reserve multiple

210. The implied multiple of our DCF valuation of Moberly are shown below (using the preferred value):

Company	Value (AUDm)	Proven Reserves Tonnage (MMt)	Implied Proven Reserve Value (\$AUD/t)	Resource/Reserve Tonnage (Mt)	Implied Resource Value (\$AUD/t)
Moberly - DCF valuation	39.4	9.3	4.24	37.5	1.05

Source: BDO analysis

- 211. On balance, given the limited number of relevant transactions involving silica companies and the wide range of multiples provided, the implied multiple cross check does not provide a significant amount of analytical support for our DCF valuation of the Moberly Project
- 212. Nevertheless, we do not find the implied multiples for Moberly to be unreasonable.



7. VALUATION OF HSK

- 213. We have employed the Sum-of-Parts method in estimating the value of HSK's shares by aggregating the estimated fair market values of its underlying assets and liabilities, having regard to the following:
 - the value of HSK's Moberly Project using the DCF method, as discussed in Section 6; and
 - the value of other assets and liabilities of HSK, which are discussed below.

Value of HSK's other assets and liabilities

- 214. All cash, working capital and derivative assets currently held by HSK have been captured in our DCF analysis of Moberly.
- 215. The only assets and liabilities that have not been captured in our DCF analysis for Moberly comprise financial assets (shares in other listed entities), current debt and additional funding requirements.

Financial assets

- 216. HSK holds shares in three listed entities, the carrying value of which was \$0.75 million as at 31 January 2017 (refer to Table 7). These are surplus assets and have not been captured in the DCF analysis for Moberly.
- 217. We have obtained the current trading prices of these shares as at 21 March 2017 and note that the trading prices have declined slightly since 31 January 2017, albeit on small trading volumes.
- 218. We have adopted a value of \$0.67 million in our valuation of HSK.

Debt and additional funding requirements

- 219. The values attributable to debt and additional funding requirements have been assessed as at 31 January 2017 to align with the latest available balance sheet of HSK and our valuation date for Moberly.
- 220. HSK had \$20.2 million in current and non-current interest bearing liabilities of as at 31 January 2017.
- 221. Our DCF valuation of Moberly also assumes the remaining balance of the current Taurus Debt will be fully drawn down during development and that further funding will be required, which we have taken into account in our valuation of HSK's shares.
 - The remaining balance of the existing Taurus debt facility was US\$10.0 million as at 31 January 2017, which equates to \$13.0 million in Australian dollars (based on the USD:AUD spot rate of 1.3041 as at 22 March 2017, published by the Reserve Bank of Australia). This drawdown is not captured in HSK's 31 January 2017 balance sheet, and has therefore been subtracted separately in our determination of HSK's share value.
 - We have estimated that HSK will require additional funding of approximately \$7.0 million, which
 takes into account the ramp-up in production volumes in the first two years of the Model and a
 working capital buffer of \$1.5 million. The funding shortfall peaks in late 2017. The additional
 funding requirement is treated as debt for purposes of our valuation. Whilst HSK may undertake an
 equity raising rather than source additional debt, we note that there is no valuation impact if shares
 are issued at our valuation price.
- We have not included any additional liabilities associated with transaction costs that have not been captured in HSK's 31 January 2017 balance sheet, but note that any such costs would further decrease the value of HSK's shares.



Control premium

223. The DCF value of the Moberly Project and the values we have attributed to other assets and liabilities represent controlling values. Accordingly, we have not made any adjustments for a control premium.

Valuation of outstanding options

- 224. There are 6,304,860 outstanding options to acquire securities in HSK, all of which are held by Taurus.
- 225. We have assessed the current fair market value of these options using a Black-Scholes valuation method to be \$368k, which we have subtracted from our valuation of HSK's shares.

Fair market value of HSK prior to the Offer

226. The Sum-of-Parts valuation of HSK's shares is shown below:

Summary of Assessment (AUD \$000s)	Low value	High value	Preferred
Value of Moberly Project (enterprise value of HSK)	34,436	44,457	39,446
Add: Other financial assets	669	669	669
Less: Current interest bearing liabilities	(2,233)	(2,233)	(2,233)
Less: Non-current interest bearing liabilities	(17,927)	(17,927)	(17,927)
Less: Drawdown of remaining Taurus Debt Facility	(13,041)	(13,041)	(13,041)
Less: Additional funding requirements	(7,000)	(7,000)	(7,000)
Less: Value of options	(368)	(368)	(368)
Equity value of HSK shares (controlling basis)	(5,463)	4,558	(453)
Number of HSK shares	562,635,912	562,635,912	562,635,912
Value per share (AUD\$)	(0.010)	0.008	(0.001)
Adopted			\$nil

Source: BDOCF analysis

- 227. As shown above, our valuation of a share in HSK ranges from \$nil to \$0.008 (on a control basis), with a preferred value of \$nil (based on the premise that equity value cannot be negative). That is, the amount of HSK's current debt and additional funding requirements exceeds the estimated fair market value of the Moberly Project.
- 228. If the additional funding requirements were met via a capital raising, we note that the equity value per share of HSK would be positive, but it would most likely be heavily diluted (depending on the issue price).

Valuation of HSK - QMP cross check

229. HSK trading prices represent trades in minority interests. Accordingly, we have incorporated a premium for control, as shown below.

A\$	1-day VWAP	30-day VWAP	1 year VWAP
VWAP to 21 December 2016 (day prior to Offer)	0.050	0.064	0.047
Control premium	35%	35%	35%
QMP (controlling basis)	0.0675	0.0864	0.0634

Source: Bloomberg, BDOCF analysis



- 230. HSK has traded at a significant premium to our valuation, albeit based on relatively small volumes. In our view, this may be attributable to the following:
 - the low level of liquidity in the shares; and
 - the trading prices may incorporate the 'real option' value associated with the potential Stage 2 expansion of the Moberly Project, which is not explicitly included in our valuation.
- 231. Whilst the QMP analysis does not support our primary method, we believe our DCF and Sum-of-Parts valuation approach for HSK is more robust, and therefore a more reliable basis to undertake the fairness assessment.
- 232. We are also of the opinion that the difference between our valuation and the QMP suggests HSK's share prices may decline if the proposed takeover by the Bidder does not proceed, at least to the pre-Offer trading prices, if not lower.



8. VALUATION OF NSC

Fair market value of Share Consideration

- 233. The fair market value of the Share Consideration (i.e. an NSC share post-Offer) is equal to our valuation of HSK's shares, less a minority interest discount.
- 234. As noted in paragraph 162, we consider a minority discount between 23% and 29% to be appropriate. It follows that the value of NSC's shares post-Offer should be less than the value of HSK's shares pre-Offer.
- 235. Our valuation of NSC's shares is shown below:

Summary of Assessment (AUD \$000s)	Low value	High value	Preferred
Value of Moberly Project (enterprise value of NSC)	34,436	44,457	39,446
Add: Other financial assets	669	669	669
Less: Current interest bearing liabilities	(2,233)	(2,233)	(2,233)
Less: Non-current interest bearing liabilities	(17,927)	(17,927)	(17,927)
Less: Drawdown of remaining Taurus Debt Facility	(13,041)	(13,041)	(13,041)
Less: Additional funding requirements	(7,000)	(7,000)	(7,000)
Less: Value of options	(368)	(368)	(368)
Equity value of NSC shares (controlling basis)	(5,463)	4,558	(453)
Minority discount	29%	23%	26%
Value including options (AUD\$'000)	-	3,506	-
Number of HSK shares	562,635,912	562,635,912	562,635,912
Value per share (AUD\$)	-	0.006	-
Adopted			\$nil

Source: BDOCF analysis

- 236. As shown above, our valuation of a share in NSC ranges from \$nil to \$0.006 (on a minority basis), with a preferred value of \$nil (based on the premise that equity value cannot be negative).
- 237. The preferred value does not include a minority discount as it would be specious to apply a minority discount to a controlling value of \$nil.



9. FAIRNESS ASSESSMENT

- 238. In undertaking our fairness opinion, we have had regard to RG 111.
- 239. RG 111.11 indicates that an offer is 'fair' if the value of the offer price or consideration is equal to or greater than the value of the securities the subject of the offer. The comparison must be made assuming:
 - A knowledgeable and willing, but not anxious, buyer and a knowledgeable and willing, but not
 anxious, seller acting at arm's length.
 - 100% ownership of the target company, irrespective of the percentage holding of the bidder or its associates in the target company.
- 240. The Offer is fair if the fair market value of a HSK share after the Offer on a minority basis is equal to or greater than the fair market value of a HSK share before the Offer (including a premium for control).

Fairness assessment

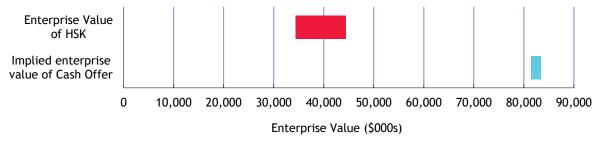
241. The following table summarises the fairness assessment in relation to the Cash Consideration:

Table 8: Fairness assessment - Cash Consideration

A\$	Ref	Low	High	Preferred
Assessed value per HSK share (control basis)	Section 7	\$nil	\$0.008	\$nil
Cash Consideration		\$0.075	\$0.075	\$0.075

Source: BDOCF analysis

- 242. The Cash Consideration is higher than our assessed valuation range of HSK Shares. Accordingly, we conclude that the Offer is fair to HSK Shareholders electing to receive the Cash Consideration.
- 243. The chart below illustrates the difference between our assessment of the fair value of HSK compared to the Cash Consideration Offer. The chart depicts the implied enterprise value (i.e. implied equity value plus debt) of the Cash Consideration Offer and our valuation of the Moberly Project (a comparison of the Cash Consideration to our valuation of HSK shares (equity value) is not meaningful given our adopted value of \$nil).



Source: BDOCF analysis

244. As illustrated above, the valuation of the Moberly Project would need to double for the equity value of HSK to align with the Cash Consideration Offer.



Fairness of Share Consideration Offer

245. The result of our fairness analysis for the Share Consideration is summarised below:

Table 9: Fairness assessment - Share Consideration

A\$	Ref	Low	High	Preferred
Assessed value per HSK share (control basis)	Section 7	\$nil	\$0.008	\$nil
Share Consideration (minority basis)	Section 8	\$nil	\$0.006	\$nil

Source: BDOCF analysis

- 246. Our valuation of HSK's shares pre-Offer and our valuation of the Share Consideration are both \$nil.
- 247. RG 111.11 indicates that an offer is 'fair' if the value of the offer price or consideration is equal to or greater than the value of the securities the subject of the offer. A strict interpretation of RG 111.11 would technically mean that the Share Consideration Offer is fair.
- 248. However, the value of the Share Consideration is only equal to the value of HSK's shares pre-Offer because it was not feasible to apply a minority discount to a \$nil value.
- 249. Accordingly, in our view the Share Consideration is 'not fair' to the shareholders of HSK.
- 250. We further note that the value of the Cash Consideration is superior to the value of the Share Consideration.



10. REASONABLENESS ASSESSMENT

251. Set out below is a summary of factors we have considered in our reasonableness assessment.

Likelihood of alternative offers

252. We are unaware of any alternative Offer that might provide the Shareholders of HSK a premium over the value resulting from the Offer.

Practical Level of Control

- 253. Under the conditions of the Offer there is a minimum acceptance condition of 90%. This means that, unless this condition is waived or varied, NSC may obtain anywhere from 90% to 100% of HSK. As such, should the Offer be successful, NSC will obtain significant control of HSK.
- 254. When shareholders are required to approve a resolution relating to a company, there are two levels of approval. These are general resolutions and special resolutions. A general resolution requires 50% of shares to be voted in favour to approve a matter and a special resolution requires 75% of shares on issue to be voted in favour to approve a matter.
- 255. Given that the Offer involves a minimum acceptance condition of 90%, NSC will be able to single-handedly block or approve both general and special resolutions on their own, if the Offer is successful.
- 256. Among other things, as detailed in section 3 of our Report, NSC's key intentions if they acquire more than 50.1% but less than 90% are to seek to implement the same intentions as if it were to acquire 90% or more of HSK's shares, including seeking board representation commensurate with the shareholding it acquires following the Offer. As such, NSC may also obtain board control.
- 257. NSC's control of HSK following the Offer will be significant when compared to all other shareholders.

Consequences of not accepting the Offer

Shareholders that do not elect to take the Cash Consideration or Share Consideration

258. If the Bidder obtains a relevant interest in at least 90% of HSK shares and all other conditions are waived or satisfied, it intends on proceeding to compulsorily acquire any outstanding HSK shares. Shareholders that do not accept either the Cash or Share Consideration Offer will then receive the Cash Consideration.

Shareholders may become minority shareholders

- 259. In the event that the Offer becomes or is declared unconditional and the Bidder does not become entitled to compulsory acquire any outstanding shares, shareholders will retain their interest in HSK. It is likely those Shareholders will collectively become minority shareholders in HSK.
- 260. The Bidder's key intentions if more than 50.1% and less than 90% is acquired, which we consider may be of significant consequence to Shareholders, includes:
 - The Bidder will seek board representation commensurate to its shareholding;
 - Apply for removal of HSK from the ASX if it is able to do so; and
 - Undertake an overall review of the operations, assets, capital structure and employees of HSK.
- 261. In these circumstances, the Bidder will be able to single-handedly pass and block general resolutions, as well as block special resolutions at Shareholders' meetings.



- 262. If NSC is unable to apply for removal of HSK from the ASX, given NSC will hold a significant shareholding in HSK, Shareholders that do not accept the Offer will be holding shares with a significantly reduced free float. This may lead to reduced liquidity and make it difficult for HSK Shareholders to sell HSK shares at or above the Offer Price. The Offer provides Shareholders with an immediate liquidity event, when trading in HSK's shares has been relatively illiquid in the 12 months prior to the Offer.
- 263. If NSC is able to, and is successful in applying for HSK to be removed from the ASX, the liquidity mechanisms for shareholders who elect to receive the Share Consideration, or who do not accept the Offer will be further limited, with the ability to monetise their holdings being reduced to off market transactions.

Reduced potential for an alternative offer

- 264. Similar to the above, in the case that NSC obtains a relevant interest in HSK of greater than 50.1% following the Offer, it would hold a significant shareholding and potential blocking stake in HSK.
- 265. We consider that the significant shareholding by NSC is likely to have a deterrent effect on the potential for an alternative offer to emerge for Shareholders who did not previously accept the Offer. More specifically, although the prospect of Shareholders realising a control value for their parcel of shares will be dependent on either NSC or another party offering an alternative proposal in the future, in our view the attractiveness of HSK as a potential takeover target will be significantly reduced.

Advantages of accepting the Cash Consideration Offer

266. As stated in Section 9, the Cash Consideration Offer is fair. RG 111 states that an offer is also reasonable if it is fair.

HSK Shareholders are receiving a premium for loss of control

- 267. The Offer Price of \$0.075 per HSK share, in cash, represents a premium of:
 - 50.0% to the Last Close Price, being the price of HSK shares on ASX at the close of trading on 21 December 2016, the Trading Day prior to the Announcement Date, of \$0.05 per HSK share;
 - 18.2% to the HSK one-month volume weighted average price (VWAP) as at the Trading Day prior to the Announcement Date, of \$0.0634 per HSK share;
 - 20.7% to the HSK three month VWAP as at the Trading Day prior to the Announcement Date, of \$0.0622 per HSK share; and
 - 35.7% to the HSK six month VWAP as at the Trading Day prior to the Announcement Date, of \$0.0553 per HSK share.





The Cash Consideration Offer provides an immediate liquidity event

- 268. The Cash Consideration of \$0.075 per share provides Shareholders with cash certainty with respect to their investment returns which is an important consideration in instances where the securities that are the subject of the Offer exhibit low levels of liquidity.
- 269. In the case of HSK, as discussed earlier, only 3.80% of HSK's shares traded over a one-year period to 21 December 2016. In our view, this does not represent sufficient cumulative trading over a one-year period to conclude that HSK's shares exhibit a deep level of liquidity.
- 270. This implies that Shareholders may have greater difficulty liquidating their respective holdings on-market as opposed to accepting the Offer. This difficulty is further increased for those who hold large parcels of shares, and in the event they are unable to sell, their respective trades may cause disruptive movements in the quoted price for HSK's shares.

The Cash Consideration Offer removes exposure to various risks

- 271. The Offer removes the risks that Shareholders bear from continuing to hold HSK shares. These risks include, but are not limited to, the following:
 - whether HSK will have access to sufficient funds from both debt and equity markets as and when required to meet its funding requirements on terms which are commercially acceptable and also repay its existing debt facilities;
 - the successful development of, and production from the Moberly mine; and
 - more broadly, the demand and supply markets for frac sand and the respective influences on the spot price of frac sand.

The Cash Consideration Offer removes exposure to the risks of being minority shareholders in a non-listed entity

272. In the event that all of the Offer's conditions are met, NSC will have corporate control over HSK, with other non-associated shareholders remaining as minority shareholders in the Company. Shareholders will have limited control over the future direction and operations of HSK if NSC becomes the majority shareholder.

Disadvantages of accepting the Cash Consideration Offer

Shareholders will not benefit from potential future valuation upside

- 273. We note that HSK is progressing with its development of the Moberly plant. The expected completion date of Stage 1 is 30 June 2017.
- 274. If Shareholders accept the Cash Consideration as part of the Offer, they will no longer hold a relevant interest in the Company, and will forgo any potential future upside in value once Moberly becomes fully operational. This may be reflected in a change in the forecast cash flows of the Project or a decrease in the risk profile.
- 275. Shareholders will also not be able to participate in the potential expansion of the Moberly Project, the impact of which could be material to the value of HSK's shares.

Advantages of accepting the Share Consideration

Shareholders will retain a relevant interest in the Moberly Project

276. HSK Shareholders who elect to receive the Share Consideration will receive shares in NSC and benefit from the potential future profits and capital growth that HSK may be able to realise (including Stage 1 and potentially Stage 2 of the Moberly Project).

Certainty with respect to additional funding requirements

277. As noted in Section 7, we have estimated that HSK requires additional funding of approximately \$7.0



million to meet working capital requirements of the Moberly Project and service the existing Taurus debt facilities. In the absence of additional funding arrangements, HSK may default on its debt service obligations.

278. To this effect, the Bidder has offered an underwritten working capital bridge financing facility to be available to the Company only if the Bidder has declared its offer free of all conditions. Accordingly, the bridge financing facility is dependent upon the Offer becoming unconditional.

CGT rollover relief

279. HSK is in the process of applying for an ATO class ruling in relation to the CGT rollover relief being available for HSK Shareholders who elect to receive the Share Consideration. The draft class ruling has been reviewed by RSM (NSC's tax advisor) who have advised that they expect the ATO to confirm the applicability of rollover relief to HSK Shareholders who elect to receive the Share Consideration.

Disadvantages of accepting the Share Consideration

Superior offer

280. Based on our fairness assessment, the Cash Consideration represents a superior offer.

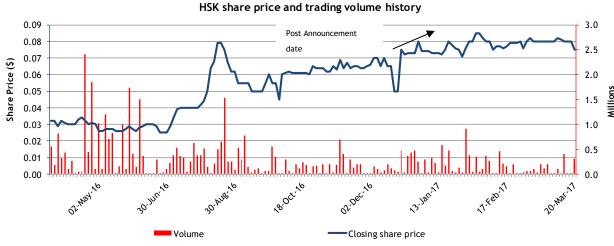
Shareholders will hold a minority interest in a foreign, non-listed company

- 281. Shareholders in HSK (being a listed company on the ASX) who elect to receive the Share Consideration will receive shares in a private unlisted company, NSC, to be domiciled in Canada. Accordingly, in the absence of a specific liquidity mechanism, the liquidity of NSC shares following the Offer is expected to be low which would limit the ability of HSK Shareholders to realise their investment.
- 282. Given that NSC is a private company domiciled in Canada, existing HSK Shareholders' will have limited access to information as compared to their current status as shareholders in a publicly listed company on the ASX.

Other factors

Post announcement share price

283. We have analysed movements in HSK's share price since the Offer was announced. A graph of HSK's share price since the announcement is set out below.



Source: CapitallQ



- 284. The closing HSK share price on ASX on 21 December 2016, being the last Trading Day prior to the Announcement Date, was \$0.05.
- 285. The HSK share price has been trading above the Offer price post announcement of the Offer. The trailing 30-day VWAP as at 20 March 2017 was \$0.080 (based on trades representing 2.0% of issued capital). It is possible market expectations of a higher Offer are pushing the share price above the Offer price, notwithstanding that the Bidder has indicated it does not intend to increase the Offer price in the absence of a superior offer.
- 286. Having regard to our valuation of HSK and the pre-Offer trading prices, in our view it is likely HSK's share price will decline if the Offer does not proceed.

Directors' recommendation

- 287. The Directors have unanimously recommended that HSK shareholders accept the Cash Consideration Offer, in the absence of a superior proposal and subject to the Cash Offer being deemed fair and reasonable in this report.
- 288. The Directors have also advised that they are not aware of any alternative offers.

Conclusion

- 289. We have considered the terms of the Offer as outlined in the body of this report and have concluded that the:
 - the Cash Consideration Offer is fair and reasonable to Shareholders; and
 - the Share Consideration Offer is neither fair nor reasonable to Shareholders.



11. QUALIFICATIONS, DECLARATIONS AND CONSENTS

Qualifications

- 290. BDOCF is the licensed corporate finance arm of BDO East Coast Partnership, Chartered Accountants and Business Advisers. BDOCF provides advice in relation to all aspects of valuations and has extensive experience in the valuation of corporate entities and provision of expert's reports.
- 291. Mr Stephen Seear, B.Com, CA, is a director of BDOCF and a CA certified Business Valuations Specialist. Mr Seear is also a partner of BDO East Coast Partnership. Mr Seear has been responsible for the preparation of this IER.
- 292. Mr Seear has over 15 years' experience in Corporate Finance. He specialises in valuations, independent expert reports, financial modelling and other corporate finance services for a wide range of industries. Accordingly, Mr Seear is considered to have the appropriate experience and professional qualifications to provide the advice offered.
- 293. Mr Dan Taylor, B.Com and FCA, is a director of BDOCF and a CA certified Business Valuations Specialist. Mr Taylor is also a partner of BDO East Coast Partnership. Mr Taylor is the director responsible for the review of this IER.
- 294. Mr Taylor has over 20 years' experience in Corporate Finance. He has undertaken numerous specialist Corporate Finance activities including company valuations, due diligence investigations, preparation and review of business feasibility studies, preparation of independent expert's reports, preparation of information memoranda and other corporate investigations. Accordingly, Mr Taylor is considered to have the appropriate experience and professional qualifications to provide the advice offered.

Independence

- 295. We are not aware of any matter or circumstance that would preclude us from preparing this IER on the grounds of independence either under regulatory or professional requirements. In particular, we have had regard to the provisions of applicable pronouncements and other guidance statements relating to professional independence issued by Australian professional accounting bodies and ASIC.
- 296. Prior to accepting this engagement BDO Corporate Finance (East Coast) Pty Ltd has considered its independence with respect to HSK and NSC and any of their respective associates with reference to ASIC Regulatory Guide 112 'Independence of Experts'. In BDO Corporate Finance (East Coast) Pty Ltd 's opinion it is independent of HSK and NSC and their respective associates.
- 297. BDOCF was not involved in advising on, negotiating, setting, or otherwise acting in any capacity for HSK in relation to the Offer. Further, BDOCF has not held and, at the date of this IER, does not hold any shareholding in, or other relationship with HSK that could be regarded as capable of affecting its ability to provide an unbiased opinion in relation to the Offer.
- 298. BDOCF will receive a fee of approximately \$75,000, plus Goods and Services Tax for the preparation of this IER. BDOCF will not receive any fee contingent upon the outcome of the Offer, and accordingly, does not have any pecuniary or other interests that could reasonably be regarded as being capable of affecting its ability to give an unbiased opinion in relation to the Offer.

Disclaimer

- 299. This IER has been prepared at the request of the Directors and was not prepared for any purpose other than that stated in this IER. This IER has been prepared for the sole benefit of the Directors and HSK Shareholders. Accordingly, this IER and the information contained herein may not be relied upon by anyone other than the Directors and HSK Shareholders without our written consent. We accept no responsibility to any person other than the Directors and HSK Shareholders in relation to this IER.
- 300. The statements and opinions contained in this IER are given in good faith and are based upon our consideration and assessment of information provided by the Board, executives and management of all the entities.



APPENDIX 1: GLOSSARY

Term	Definition
ASIC	Australian Securities & Investments Commission
ASX	Australian Securities Exchange
Act	Corporations Act 2001 (Cth)
APES 225	APES 225 Valuation Services
AUD	Australian Dollar
BDOCF, we, our or us	BDO Corporate Finance (East Coast) Pty Ltd (ABN 70 050 038 170)
Board	Board of directors of HSK
Cash Consideration	Cash consideration of \$0.075 for each Ordinary share held
CAD	Canadian Dollar
COE	Capitalisation of earnings
CSA	CSA Global Pty Ltd
DCF	Discounted cash flow method
Directors	Directors of HSK
FOS	Financial Ombudsman Service Limited
FSG	Financial Services Guide
FYxx	Financial year ended/ending 30 September 20xx
HSK or the Company	Heemskirk Consolidated Limited
HSK Shareholders	Existing shareholders of HSK
IER	Independent Expert's Report
JORC Code	The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves
Licence	Australian Financial Services Licence No: 247420
LOM	Life of mine
Model	Detailed cash flow model of the Moberly Project
Mtpa	Metric tonnes per annum
NAV	Net asset value
NPV	Net present value
Offer	The off-market takeover offer by Taurus to acquire shares in HSK it does not currently own
NSC or Bidder	Northern Silica Corporation
Project	Moberly Project
QMP	Quoted market price basis
RBA	Reserve Bank of Australia
RBC	Reserve Bank of Canada
Report or IER	Independent expert's report
RG 111	ASIC Regulatory Guide 111 Content of expert reports
RG 112	ASIC Regulatory Guide 112 Independence of experts
Share Consideration	Scrip in the Bidder issued on a 1-for-1 basis to the number of HSK shares held by that HSK Shareholder
Target Statement	Target Statement of HSK
Technical Report	Report prepared by CSA
USD	US Dollar
Valmin Code	Australasian Code for Public Reporting of Technical Assessments and Valuations of Mineral Assets
Valuation Engagement	An Engagement or Assignment to perform a Valuation and provide a Valuation Report where the Valuer is
	free to employ the Valuation Approaches, Valuation Methods, and Valuation Procedures that a reasonable and informed third party would perform taking into consideration all the specific facts and circumstances of the Engagement or Assignment available to the Valuer at that time.
VWAP	Volume Weighted Average Price



APPENDIX 2: SOURCES OF INFORMATION

- 301. In preparing this IER, we had access to and relied upon the following principal sources of information:
 - Draft Target's Statement dated on or about the date of this report;
 - NSC's Bidder Statement dated 13 March 2017;
 - Audited financial statements of HSK for the years ended 30 September 2014, 30 September 2015 and 30 September 2016;
 - Reviewed financial statements of HSK for the six-month period ended 31 March 2016;
 - Unaudited management accounts of HSK as at 31 January 2017;
 - Independent Valuation Report of the Moberly Project dated 10 March 2017 performed by CSA;
 - Baker Hughes Heemskirk Canada Proppant Technical Review dated October 2011;
 - Moberly Frac Sand Final Feasibility Study dated 21 October 2011;
 - Moberly Frac Sand Revised Feasibility Study dated 3 February 2015;
 - PEC Consulting Technical Due Diligence Moberly Frac Sand Project Report dated March 13, 2015;
 - Morrison Hershfield Expert Review and Commentary on Design and Proposed Operation: Moberly Frac Sand Development Report dated May 29 2015;
 - Taurus US Dollar Term Facility Agreement dated 15 July 2015;
 - Taurus Secured Facility Agreement Novation and Amendment Deed dated February 2016;
 - Ausenco Moberly Frac Sand Project: Project Status Report dated 17 September 2016;
 - Ausenco Moberly Frac Sand Project: Project Status Report dated 7 December 2016;
 - Ausenco Moberly Frac Sand Project: Review of December 2016 Cost Report dated 27 January 2017;
 - Morrison Hershfield Expansion of current HCA facility to 600,000 Mtpa Report dated January 23 2017;
 - Information in the public domain;
 - Discussions with Directors and Management of HSK;
 - Information sourced from Capital IQ, Connect 4 and Bloomberg; and
 - ASIC guidance notes and regulatory guides as applicable.



APPENDIX 3: VALUATION METHODS - BUSINESSES AND ASSETS

302. In conducting our assessment of the fair market value of HSK Shares the following commonly used business valuation methods have been considered:

Discounted Cash Flow Method

- 303. The discounted cash flow (**DCF**) method is based on the premise that the value of a business or any asset is represented by the present value of its future cash flows. It requires two essential elements:
 - the forecast of future cash flows of the business asset for a number of years (usually five to 10 years); and
 - the discount rate that reflects the riskiness of those cash flows used to discount the forecast cash flows back to net present value (NPV).
- 304. DCF is appropriate where:
 - the businesses' earnings are capable of being forecast for a reasonable period (preferably 5 to 10 years) with reasonable accuracy;
 - earnings or cash flows are expected to fluctuate significantly from year to year;
 - the business or asset has a finite life;
 - the business is in a 'start up' or in early stages of development;
 - the business has irregular capital expenditure requirements;
 - the business involves infrastructure projects with major capital expenditure requirements; or
 - the business is currently making losses but is expected to recover.

Capitalisation of Earnings Method

- 305. This method involves the capitalisation of normalised earnings by an appropriate multiple. Normalised earnings are the assessed sustainable profits that can be derived by the vendor's business and excludes any one off profits or losses. An appropriate earnings multiple is assessed by reference to market evidence as to the earnings multiples of comparable companies.
- This method is suitable for the valuation of businesses with indefinite trading lives and where earnings are relatively stable or a reliable trend in earnings is evident.

Net Asset Value

- 307. Asset based valuations involve the determination of the fair market value of a business based on the net realisable value of the assets used in the business.
- 308. Valuation of net realisable assets involves:
 - separating the business or entity into components which can be readily sold, such as individual business Shares or collection of individual items of plant and equipment and other net assets; and
 - ascribing a value to each based on the net amount that could be obtained for this asset if sold.
- 309. The net realisable value of the assets can be determined on the basis of:
 - orderly realisation: this method estimates fair market value by determining the net assets of the
 underlying business including an allowance for the reasonable costs of carrying out the sale of assets,
 taxation charges and the time value of money assuming the business is wound up in an orderly manner.
 This is not a valuation on the basis of a forced sale where the assets might be sold at values materially
 different from their fair market value;
 - *liquidation*: this is a valuation on the basis of a forced sale where the assets might be sold at values materially different from their fair market value; or



- going concern: the net assets on a going concern basis estimates the market value of the net assets but does not take into account any realisation costs. This method is often considered appropriate for the valuation of an investment or property holding company. Adjustments may need to be made to the book value of assets and liabilities to reflect their going concern value.
- 310. The net realisable value of a trading company's assets will generally provide the lowest possible value for the business. The difference between the value of the company's identifiable net assets (including identifiable intangibles) and the value obtained by capitalising earnings is attributable to goodwill.
- 311. The net realisable value of assets is relevant where a company is making sustained losses or profits but at a level less than the required rate of return, where it is close to liquidation, where it is a holding company, or where all its assets are liquid. It is also relevant to businesses which are being segmented and divested and to value assets that are surplus to the core operating business. The net realisable assets methodology is also used as a check for the value derived using other methods.
- 312. These approaches ignore the possibility that the company's value could exceed the realisable value of its assets.

Quoted Market Prices

- 313. The application of the price that a company's shares trade on the ASX is an appropriate basis for valuation where:
 - the shares trade in an efficient market place where 'willing' buyers and sellers readily trade the company's shares; and
 - the market for the company's shares is active and liquid.

Market Based Assessment

- 314. The market based approach seeks to arrive at a value for a business by reference to comparable transactions involving the sale of similar businesses. This is based on the premise that companies with similar characteristics, such as operating in similar industries, command similar values. In performing this analysis, it is important to acknowledge the differences between the comparable companies being analysed and the company that is being valued and then to reflect these differences in the valuation.
- 315. The resource multiple is a market based approach which seeks to arrive at a value for a company by reference to its total reported resources and to the enterprise value per tonne/lb of the reported resources of comparable listed companies. The resource multiple represents the value placed on the resources of comparable companies by a liquid market.



APPENDIX 4: CONTROL PREMIUM

Control premium

- 316. Investment fundamentals dictate that the value of 100% of a company is normally greater than the sum of values attributable to the individual shares of that company based on transactions in minority share holdings.
- 317. The difference between the value of 100% of a company and the total value of minority share holdings is referred to as a premium for control taking into account control and synergistic benefits for the acquirer. Control of a company by a shareholder gives that shareholder rights to which minority shareholders are not entitled, including control of the company's policies and strategies, and use of cash flows of the company.
- 318. The level of premium for control paid in a takeover bid will vary across industries and is dependent upon the specifics of the company being acquired. We have reviewed the control premiums paid by acquirers of natural resources companies listed on the ASX and summarised our findings below:

Year	Number of Transactions	Average Deal Value (US\$m)	Average Control Premium
2016	5	49.33	79.44
2015	15	165.46	31.00
2014	15	108.84	34.85
2013	18	44.46	49.25
2012	20	129.36	44.61
2011	21	605.51	40.47
2010	25	733.60	43.27
2009	28	84.25	41.85
2008	8	553.76	38.87
	Mean	295.51	42.44
	Median	34.13	37.93

Source: Bloomberg, BDOCF analysis

- 319. In arriving at an appropriate control premium to apply we note that observed control premiums can vary due to the:
 - Nature and magnitude of non-operating assets;
 - Nature and magnitude of discretionary expenses;
 - Perceived quality of existing management;
 - Market conditions and sentiment at the time of the transactions;
 - Commodity prices at the time of the transactions;
 - Nature and magnitude of business opportunities not currently being exploited;
 - Ability to integrate the acquiree into the acquirer's business;
 - Level of pre-announcement speculation of the transaction; and
 - Level of liquidity in the trade of the acquiree's securities.



- 320. Across the general Australian natural resources industry, the average annual control premium paid for effective control transactions since 2008 had a median of approximately 38%. We note that a majority of these transactions would have taken place at a time when commodity prices were significantly higher than the current levels. In addition, given the current state of equity capital markets, with companies finding it difficult to secure equity funding, we consider an appropriate control premium to be lower than the average control premiums presented above.
- 321. The average announced control premium was significantly higher in the year 2016 as a result of Todd Corp Ltd's acquisition of Flinders Mines Ltd on 17 March 2016 at an announced premium of 241.86%. In assessing the sample of transaction for general natural resources companies, which were included in the table, we noted transactions within the list that appear to be outliers. These outliers include 14 transactions where the announced control premium was in excess of 100% and 17 transactions where the acquirer obtained a controlling interest at a discount (i.e. less than 0%). In a sample where there are extreme outliers, the median often represents a superior measure of central tendency compared to the mean.
- Taking the above factors into consideration in applying a control premium to HSK's quoted market share price we believe an appropriate range to be between 30% and 40%.

Discount for minority interest

- 323. A minority interest discount is the inverse of a premium for control and Is calculated using the following formula:
 - 1 (1 / (1+control premium))
- 324. Therefore, we have adopted a minority discount range between of 23% to 29%.



APPENDIX 5: DISCOUNT RATE ASSESSMENT

- 325. Determining the correct discount rate, or cost of capital, for a business requires the identification and consideration of a number of factors that affect the returns and risks of a business, as well as the application of widely accepted methodologies for determining the returns of a business.
- 326. The discount rate applied to the forecast cash flows from a business represents the financial return that would be required before an investor would be prepared to acquire (or invest in) the business.
- 327. The capital asset pricing model ('CAPM') is commonly used in determining the market rates of return for equity type investments and project evaluations. In determining a business' weighted average cost of capital ('WACC') the CAPM results are combined with the cost of debt funding. WACC represents the return required on the business, whilst CAPM provides the required return on an equity investment.

Cost of Equity and Capital Asset Pricing Model

- 328. CAPM is based on the theory that a rational investor would price an investment so that the expected return is equal to the risk free rate of return plus an appropriate premium for risk. CAPM assumes that there is a positive relationship between risk and return, that is, investors are risk averse and demand a higher return for accepting a higher level of risk.
- 329. CAPM calculates the cost of equity and is calculated as follows:

САРМ	
K _e	$= R_f + \beta x (R_m - R_f) + \alpha$
Where:	
Ke	= expected equity investment return or cost of equity in nominal terms
R_{f}	= risk free rate of return
R _m	= expected market return
R_{m} - R_{f}	= market risk premium
В	= equity beta
α	= specific risk premium

330. The individual components of CAPM are discussed below.

Risk Free Rate (Rf)

- 331. The risk free rate is normally approximated by reference to a long term government bond with a maturity equivalent to the timeframe over which the returns from the assets are expected to be received.
- Having regard to the period of operations for HSK's Moberly Project, we have adopted the 10-year average nominal yield to maturity on the 10-year Government of Canada bond as at 15 February 2017, which is 2.60%.

Market Risk Premium (Rm - Rf)

- 333. The market risk premium represents the additional return that investors expect from an investment in a well-diversified portfolio of assets. It is common to use a historical risk premium, as expectations are not observable in practice.
- 334. We note that market risk premiums currently used for valuation purposes by a wide variety of analysts and practitioners are typically in the range 5-6%. In addition to this, a University of Navarra paper found the average of a sample of 127 market risk premiums for Canada used in 2016 to be 5.4%, using data provided by finance and economics professors, analysts and managers of companies.
- 335. For the purpose of our report, we have adopted a market risk premium of 5.5%.



Equity Beta

- 336. Beta is a measure of the expected correlation of an investment's return over and above the risk free rate, relative to the return over and above the risk free rate of the market as a whole.
- 337. It is important to note that it is not possible to compare the equity betas of different companies without having regard to their gearing levels. Thus, a more valid analysis of betas can be achieved by 'ungearing' the equity beta by applying the following formula:

$$\beta_a = \frac{\beta_e}{1 + \left(\frac{D}{E} \times (1 - t)\right)}$$

338. In order to assess the appropriate equity beta for HSK's Moberly Project we have had regard to the equity betas of listed companies involved in similar activities in similar industry sectors. The geared betas below have been calculated using weekly data over a two-year period.

Company	Market Capitalisation (\$m)	Geared Beta	Debt/Equity	Ungeared Beta
Eagle Materials Inc.	6,570	1.10	11%	1.03
Fairmount Santrol Holdings Inc.	3,634	2.36 2.18 1.49	78% 23% 10%	1.61
Hi-Crush Partners LP	1,743			1.91
U.S. Silica Holdings, Inc.	6,242			
Mean	4,547	1.83	12%	1.51
Median	4,938	1.78	21%	1.49

Source: CapitalIQ

Selected Beta (B)

- 339. Based on the above analysis, we have selected an ungeared beta of 1.5 and a debt to equity ratio of 15% for our valuation of the Moberly Project.
- 340. As such, our regeared (equity) beta is 1.67.

Specific Investment Risk Premium (a)

- 341. When applying the CAPM to a specific investment, it is common practice to apply a specific investment risk premium, often termed ('Alpha'). Determination of an appropriate alpha requires significant judgement.
- 342. The cash flows used in our valuation of Moberly capture a number of company specific and industry related risks and have been independently reviewed by CSA. However, certain risks are inherently difficult to capture in the cash flows, including:
 - forecasting risk given the lack of operational history for Project;
 - the risks associated with HSK's additional funding requirements; and
 - construction risk.
- Having regard to the overall discount rate inputs and the above risks, we have adopted a specific risk premium between 0% and 2.0% for purposes of our valuation.



Cost of Equity

344. On this basis we have assessed the cost of equity to be:

Input	Value Adopted		
	Low	High	
Risk free rate of return	2.6%	2.6%	
Equity market risk premium	5.5%	5.5%	
Geared Beta	1.67	1.67	
Specific investment risk premium (α)	0.0%	2.0%	
Cost of Equity	11.8%	13.8%	

Source: CapitalIQ, BDO analysis

Weighted Average Cost of Capital

- 345. The WACC represents the market return required on the total assets of the undertaking by debt and equity providers. WACC is used to assess the appropriate commercial rate of return on the capital invested in the business, acknowledging that normally funds invested consist of a mixture of debt and equity funds. Accordingly, the discount rate should reflect the proportionate levels of debt and equity relative to the level of security and risk attributable to the investment.
- 346. We have adopted the commonly used WACC formula for calculating a nominal, post-tax WACC, as shown below.

WACC	
WACC	$= \frac{E}{E+D} K_e + \frac{D}{D+E} K_d (1-t)$
Where:	
K _e	= expected return or discount rate on equity
K_d	= interest rate on debt (pre-tax)
Т	= corporate tax rate
E	= market value of equity
D	= market value of debt
(1-t)	= tax adjustment

Gearing

- 347. Before WACC can be determined, the proportion of funding provided by debt and equity (i.e. gearing ratio) must be determined.
- 348. In determining a gearing ratio for HSK we have had regard to the capital structure of the selected comparable companies.
- 349. We have adopted a debt to equity ratio of 15.0% for purposes of our valuation.



Cost of debt

We have adopted a pre-tax cost of debt for HSK of 10.0% having regard to HSK's current funding facility. Using the Canadian corporate tax rate of 26%, HSK's post-tax cost of debt is 7.4%.

Calculation of WACC

351. Based on the above inputs we have adopted a WACC of 11.0% to 13.0% for our valuation of Moberly, as summarised in the table below.

Input	Low	High
Cost of Equity	11.8%	13.8%
Cost of Debt	7.4%	7.4%
Proportion of Equity	85%	85%
Proportion of Debt	15%	15%
WACC	11.2%	12.9%
Adopted	11.0%	13.0%

Source: CapitalIQ, BDO analysis



APPENDIX 6: COMPANY AND TRANSACTION DESCRIPTIONS

Comparable companies

352. Descriptions of the broadly comparable listed companies we have identified are shown below.

Company	Description
Eagle Materials Inc.	Eagle Materials Inc. produces and sells construction products and building materials for use in residential, industrial, commercial, and infrastructure construction in the United States.
Fairmount Santrol Holdings Inc.	Fairmount Santrol Holdings Inc., together with its subsidiaries, provides sand-based proppant solutions for exploration and production companies to enhance the productivity of their oil and gas wells.
Hi-Crush Partners LP	Hi-Crush Partners LP produces and supplies monocrystalline sand in the United States.
U.S. Silica Holdings, Inc.	U.S. Silica Holdings, Inc. produces and sells commercial silica in the United States.

Source: CapitalIQ

Comparable transactions

353. Descriptions of transactions involving broadly comparable companies are shown below.

Target	Date	Acquirer	Description
Permian Basin Sand Company LLC	Feb-17	Hi-Crush Partners LP (NYSE:HCLP)	Permian Basin Sand Company LLC owns and operates frac sand reserves. The company was incorporated in 2016 and is based in Dallas, Texas. As of March 3, 2017, Permian Basin Sand Company LLC operates as a subsidiary of Hi-Crush Partners LP.
Hi-Crush Whitehall LLC	Feb-17	Hi-Crush Augusta Acquisition Co. LLC	The Partnership and Hi-Crush Augusta Acquisition Co. LLC, a wholly owned subsidiary of the Partnership ("Acquisition Co."), has entered into a contribution agreement with Hi-Crush Proppants to acquire Hi-Crush Whitehall LLC ("Whitehall"), the entity that owns Hi-Crush Proppants' raw frac sand processing facility located in Whitehall, Wisconsin. The Whitehall facility has 80.7 million tons of proven recoverable Northern White frac sand reserves on 1,447-acres, with an annual processing capacity of approximately 2.86 million tons of frac sand per year.
Hi-Crush Blair LLC	Aug-16	Hi-Crush Partners LP (NYSE:HCLP)	Hi-Crush Blair LLC excavates and processes raw frac sand for use in hydraulic fracturing operations for oil and natural gas wells. The company was incorporated in 2014 and is based in Blair, Wisconsin. As of August 31, 2016, Hi-Crush Blair LLC operates as a subsidiary of Hi-Crush Partners LP.



Target	Date	Acquirer	Description
Canadian Sandtech Inc., Quarrying Leases and Equipment and Machinery	Nov-15	North America Frac Sand, Inc. (OTCPK:NAFS)	As of August 6, 2015, the quarrying leases and equipment and machinery of Canadian Sandtech Inc. was acquired by North America Frac Sand, Inc.
Three Properties in Alberta and Manitoba	Dec-14	Brilliant Sands Incorporated (OTCPK:BRSD)	As of December 18, 2014, Three Properties in Alberta and Manitoba was acquired by Consolidated Goldfields Corporation. Three Properties in Alberta and Manitoba comprises mineral reserves of frac sand. The properties are located in Canada.
Cadre Services, Inc.	Jul-14	U.S. Silica Holdings, Inc. (NYSE:SLCA)	As of July 31, 2014, Cadre Services, Inc. was acquired by U.S. Silica Holdings, Inc. Cadre Services, Inc. produces frac-sand proppants and Hickory sand for oil and gas applications. Cadre Services, Inc. was formerly known as Tanner Companies, Inc. and changed its name to Cadre Services, Inc. in November 2008. The company was founded in 1984 and is based in Voca, Texas.
Gossan Resources Ltd., Manigotagan Frac Sand Project Source: CapitallQ, other publicly availa	Jun-13	Claim Post Resources Inc. (TSXV:CPS)	As of June 18, 2013, Manigotagan Frac Sand Project of Gossan Resources Ltd. was acquired by Claim Post Resources Inc. Gossan Resources Ltd., Manigotagan Frac Sand Project includes 9 quarry leases which comprises silicon sand spread over an area of approximately 306 hectares. The project is located in Manitoba, Canada.



APPENDIX 7: TECHNICAL EXPERT REPORT PREPARED BY CSA GLOBAL PTY LTD

Sent under a separate cover





CSA Global Mining Industry Consultants

Independent Technical Assessment Report

Heemskirk Consolidated Ltd Moberly Project Valuation

Report Nº R132.2017 24th February 2017

www.csaglobal.com



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Disclaimers

Purpose of this document

This Report was prepared exclusively for Heemskirk Consolidated Limited (the Client) by CSA Global Pty Ltd (CSA Global). The quality of information, conclusions, and estimates contained in this Report are consistent with the level of the work carried out by CSA Global to date on the assignment, in accordance with the assignment specification agreed between CSA Global and the Client.

CSA Global has created this Report using data and information provided by or on behalf of the Client [Heemskirk Consolidated Limited agents and contractors]. Unless specifically stated otherwise, CSA Global has not independently verified that all data and information is reliable or accurate. CSA Global accepts no liability for the accuracy or completeness of that data and information, even if that data and information has been incorporated into or relied upon in creating this Report.

Results are estimates and subject to change

The interpretations and conclusions reached in this Report are based on current scientific understanding and the best evidence available to the authors at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however high these probabilities might be, they make no claim for absolute certainty.

The ability of any person to achieve forward-looking production and economic targets is dependent on numerous factors that are beyond CSA Global's control and that CSA Global cannot anticipate. These factors include, but are not limited to, site-specific mining and geological conditions, management and personnel capabilities, availability of funding to properly operate and capitalize the operation, variations in cost elements and market conditions, developing and operating the mine in an efficient manner, unforeseen changes in legislation and new industry developments. Any of these factors may substantially alter the performance of any mining operation.



Executive Summary

CSA Global was requested by Heemskirk Consolidated Limited (Heemskirk) and BDO Corporate Finance (East Coast) Pty Ltd to prepare an Independent Technical Assessment and Valuation Report (ITAVR) on their Moberly Project for use in an Independent Expert Report (IER) to the Australian Securities Exchange (ASX). The IER is to be included with a Target Statement, to assist shareholders in their decision whether or not to approve the proposed off market takeover under which Taurus Resources No.2 BV ('Taurus') will acquire all the issued shares in Heemskirk it does not already own for consideration by way of cash (A\$0.075 per share) or by way of scrip in Taurus.

Heemskirk was listed on the Australian Stock Exchange on 28th October 2004 raising A\$20 million in its initial public offering. Heemskirk owns 100% of a subsidiary called Heemskirk Canada Limited (HCL). HCL owns 100% of HCA Mountain Minerals (Moberly) Limited and this entity owns the Moberly Project.

The Moberly Project is found approximately 7 km north of the regional centre of Golden, British Columbia and about 215 km west of Calgary. The Moberly Project consists of a high-quality quartzite silica deposit that was mined from the early 1980's to 2009 for silica, which was processed to silica sand for glass making, golf course sand, and similar products.

During 2010 to 2012 Heemskirk investigated, via an internal pre-feasibility and then a feasibility study (which was updated in early 2015), the possibility of treating the quartzite to produce a 'frac sand' suitable for use in the oil and gas sector as a proppant. The Heemskirk studies concluded that the project would be economically viable, and the project moved to the engineering design stage of a new frac sand plant on the existing plant site, and based on an increased mining rate, within the original mine footprint, with at least a 35-year mine life.

Frac sand is a specialized type of sand that is added to fraccing fluids that are injected into unconventional oil and gas wells during hydraulic fracturing (colloquially known as 'fraccing' or hydrofraccing). The specifications for frac sand are based on the standards for proppants provided by the American Petroleum Institute (API) and the International Organization for Standards (ISO). The main factors that govern the value, and application, for frac sand include:

- grain strength;
- · grain sphericity;
- grain size;
- grain size distribution; and,
- overall purity.

These physical properties impact on frac sand performance parameters such as conductivity and crush strength.

The market for frac sand is directly related to drilling activity in the unconventional oil and gas sector. The Baker Hughes Drill Count, which is commonly considered the 'business barometer' for the drilling industry and its suppliers, states that that USA and Canadian business in 2017 is expected to increase 30% from 2016 levels.

Gordon Capital (2015) state that "The Moberly project is well sited adjacent to major road and rail networks and overall demand in the Western Canadian Sedimentary Basin (WCSB) region remains positive, with estimated frac sand consumption now at 2.5 million tonnes per annum."

A review by CSA Global of published prices from major listed Tier 1 North American frac sand producers has indicated an average price of C\$77.20 per tonne in September 2016.

CSA Global has collated information from previous exploration reports with the objective of identifying any possible geological domains at the Moberly Pit. CSA Global is of the opinion that there are distinct geological domains present within the Moberly Deposit and that the frac sand product quality is expected



to vary between these geological domains, and that selective mining (or mining by domains) and/or blending, will be needed to maximise consistency of frac sand product quality.

Heemskirk has reported in accordance with the JORC Code (2012) an Indicated and Measured Mineral Resources for two types of silica sand product, namely 37.5 Mt of frac sand (30 to 140 mesh), or 50 Mt of Silica Product for glass and silica flour. The frac sand resource is expressed as an *in situ* tonnage at 70% frac sand yield, for 26.25 Mt Frac sand (30 to 140 mesh).

The JORC Code has specific requirements for reporting industrial minerals resources. Thus, for minerals that are defined by a specification, Clause 49 of The JORC Code (2012) requires industrial Mineral Resources to be reported "in terms of the mineral or minerals on which the project is to be based and must include the specification of those minerals".

CSA Global is of the opinion that Heemskirk has reported Mineral Resources for the Moberly Deposit in accord with Clause 49, according to product types described as:

- frac sand 30–140 mesh; and,
- silica sand with acceptable purity for glass and flour markets, which have been supplied over the past two decades.

All permits (except an amendment to the dust permit) are in place for the 400,000 t/yr production rate, including the 35yr-Mine Plan. Assumptions regarding the infrastructure and services required to operate the project are considered reasonable. The financial model demonstrates that the outcome for the Ore Reserve project case is economically viable. Therefore, all Mineral Resources within the confines of the planned pit were converted to Ore Reserves. CSA Global considers this Ore Reserve estimate to be both technically and economically viable.

In choosing a Preferred Value and Valuation Range for the Moberly Project, CSA Global considered a discounted cash flow financial model which was flexed around a range of critical inputs, and compared this with an analysis of comparable transactions. Based on this analysis, CSA Global conclude that the value of the Moberly Project lies between C\$28.5 million and C\$49.7 million, with a Preferred Value of C\$42 million.



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1 Introduction

1.1 Context, Scope and Terms of Reference

CSA Global Pty Limited (CSA Global) was requested by Heemskirk Consolidated Limited (Heemskirk) and BDO Corporate Finance (East Coast) Pty Ltd to prepare an Independent Technical Assessment and Valuation Report (ITAR or the "Report") on their Moberly Project for use in an Independent Expert Report (IER) to the Australian Securities Exchange (ASX). The IER is to be included with a Target Statement, to assist shareholders in their decision whether or not to approve the proposed off market takeover under which Taurus Resources No.2 BV ('Taurus') will acquire all the issued shares in Heemskirk it does not already own for consideration by way of cash (A\$0.075 per share) or by way of scrip in Taurus.

The Report is a Technical Assessment Report subject to the VALMIN¹ Code. In preparing this ITAR, CSA Global:

- Adhered to the VALMIN Code.
- Relied on the accuracy and completeness of the data provided to it by Heemskirk, and that Heemskirk made CSA Global aware of all material information in relation to the projects.
- Relied on Heemskirk's representation that it will hold adequate security of tenure for exploration and assessment of the projects to proceed.
- Has independently verified the data used to prepare this report and concludes that the data provide reasonable grounds for CSA Global's conclusions reached in this report.
- Required that Heemskirk provide an indemnity to the effect that Heemskirk would compensate CSA
 Global in respect of preparing the Report against any and all losses, claims, damages and liabilities to
 which CSA Global or its Associates may become subject under any applicable law or otherwise arising
 from the preparation of the Report to the extent that such loss, claim, damage or liability is a direct
 result of Heemskirk or any of its directors or officers knowingly providing CSA Global with any false
 or misleading information, or Heemskirk, or its directors or officers knowingly withholding material
 information.
- Required an indemnity that Heemskirk would compensate CSA Global for any liability relating to any
 consequential extension of workload through queries, questions, or public hearings arising from the
 reports.

Heemskirk was listed on the Australian Stock Exchange on 28th October 2004 raising A\$20 million in its initial public offering. Heemskirk owns 100% of a subsidiary called Heemskirk Canada Limited (HCL). HCL owns 100% of HCA Mountain Minerals (Moberly) Limited and this entity owns the Moberly Project.

The Moberly Project is found approximately 7 km north of the regional centre of Golden, British Columbia and about 215 km west of Calgary. The Moberly Project consists of a high-quality silica deposit which was mined from the early 1980s to 2009 for silica processed to silica sand for glass making, golf course sand and similar products.

During 2010–2012 Heemskirk investigated, via an internal prefeasibility and then a feasibility study (which was updated in early 2015) the possibility of treating the quartzite to produce a 'frac sand' suitable for use in the oil and gas sector as a proppant. The Heemskirk studies found the project to be economically viable and

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¹ The Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets (The VALMIN Code, 2015 edition). Prepared by the VALMIN Committee, a joint committee of the Australian Institute of Geoscientists, and the Australasian Institute of Mining and Metallurgy. Available from: http://www.valmin.org



the project moved to engineering design of a new frac sand plant on the existing plant site and an increased mining rate, within the same mine footprint, with at least a 35-year mine life.

1.2 Compliance with the VALMIN and JORC Codes

As CSA Global have not worked on the Moberly Project prior to this engagement, a site visit to the project was carried out by Rob Mackie (PGeo), Principal Geologist in the CSA Global Vancouver office on the 1st February 2017.

As far as possible the Report has been prepared in accordance with the VALMIN Code, which is binding upon Members of the Australian Institute of Geoscientists (AIG) and the Australasian Institute of Mining and Metallurgy (AusIMM), the JORC² Code and the rules and guidelines issued by such bodies as the Australian Securities and Investments Commission (ASIC) and ASX that pertain to IER.

1.3 Principal Sources of Information

This Report has been based upon information available up to and including 1st of January 2017. CSA Global has based its review on information provided by Heemskirk (and Lion Capital), along with other relevant published and unpublished data.

CSA Global has endeavoured, by making all necessary and reasonable enquiries, to confirm the authenticity, accuracy, and completeness of the technical data upon which this report is based.

CSA Global completed a site visit to the Moberly Project area on the 1st February 2017. The site visit consisted of a boardroom meeting in the onsite office and tour of the processing plant with Heemskirk representatives Mark Connors (Acting CEO and President), Ben de Jager (General Manager) and Joel MacDonald (Assistant General Manager). After the meeting, part of the haul route was driven. Due to thick snow cover on the mine road the mine site could not be accessed and only the processing facility was visited.

CSA Global's statements and opinions contained in this report are given in good faith and in the belief that they are not false or misleading. The conclusions are based on the reference date of 1st of January 2017 and could alter over time depending on production results, mineral prices and other relevant market factors.

1.4 Authors of the Report – Qualifications, Experience and Competence

This assignment was led by Patrick Maher. The work was undertaken by Patrick, Dr Andrew Scogings, Dr Richard Flook, Alan Robertson, Carl Morandy, Rob Mackie and Graham Jeffress.

Patrick is a geologist with over 20 years' experience in geological disciplines ranging from mapping and exploration to working as a project leader for community development and sustainability groups in Ireland, Australia and Malaysia. He has expertise in geological site assessment, quarry (aggregate, silica sand, high purity quartz and dimension stone) assessments and the development of regional geological plans for private industry, local and central government agencies.

Dr Andrew Scogings is a Principal Consultant with CSA Global. He has over 25 years' experience in industrial minerals exploration, mining and processing, product development, market applications and commercialisation processes. Andrew is a regular contributor to Industrial Minerals Magazine and has published several papers on the requirements of the JORC Code 2012 with reference to Clause 49. Andrew is a Registered Professional Geoscientist (RP Geo. Industrial Minerals) with the Australian Institute of Geoscientists.

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² Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition. Prepared by: The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).



Dr Richard Flook is an Associate Principal Consultant with CSA Global. Richard has been CEO, Managing Director and Director of Asian and Australasian companies. He has over 30 years of experience in profit growth and cost control, and new business opportunities including trading, corporate planning, strategic analysis, and market development in the minerals industry, and has been involved in managing and developing minerals operations and businesses in Australasia and Asia. He has expertise on the market available and present market situation for high-grade silica sand products (glass sands and fraccing sands).

Alan Robertson is an Associate Principal Mining Engineer. Alan has over 40 years' experience and has a distinguished career in the Australian Mining and Quarrying Industry. He is presently a Director of Ausrocks Pty Ltd. He is a Chartered Professional (CP) Fellow of The Australasian Institute of Mining and Metallurgy (The AusIMM), a Member of the Australian Institute of Quarrying (IQA) as well as a Member of the Minerals Industry Consultants Association (MICA).

Carl Morandy is an Associate Mining Engineer with over 10 years' experience in the Mining and Quarrying Industry. His expertise spans quarry planning and development applications, environmental management planning, sediment and erosion control planning, handheld small-scale mining, and quarry evaluations including preparation of Quarry Development Plans and net present value (NPV) analysis.

Rob Mackie is a Principal Consultant Geologist with the CSA Global Vancouver office. Rob is a professional geologist with 10 years' experience in the mineral exploration industry throughout North America.

Graham Jeffress is a geologist with over 27 years' experience in exploration geology and management in Australia, PNG, and Indonesia. He is Principal Geologist with CSA Global in Perth and manages the Exploration and Evaluation Division. Graham has worked in exploration, project evaluation and mining in a variety of geological terrains, commodities and mineralisation styles within Australia and internationally. Graham has completed numerous Independent Geologist Reports, Competent Person Reports, and Independent Valuation Reports. Graham was a Federal Councillor of the Australian Institute of Geoscientists for 11 years and joined the Joint Ore Reserves Committee in 2014.

1.5 Independence

Neither CSA Global, nor the authors of this report, has or has had previously, any material interest in Heemskirk or the Company or the mineral properties in which Heemskirk has an interest or the Company will have an interest. CSA's relationship with Heemskirk is solely one of professional association between client and independent consultant.

CSA Global is an independent mining industry consultancy. Fees are being charged to Heemskirk at a commercial rate for the preparation of this report, the payment of which is not contingent upon the conclusions of the report. The fee for the preparation of this report is approximately A\$46,500.

No member or employee of CSA Global is, or is intended to be, a director, officer or other direct employee of Heemskirk. No member or employee of CSA Global has, or has had, any shareholding in Heemskirk.

There is no agreement between CSA Global and Heemskirk as to either company providing further work for CSA Global.

CSA Global has not worked for Heemskirk in the past.

The work completed by CSA Global was not influenced by the Company, and reflects our objective critical analysis and professional judgement.

1.6 Results are estimates and subject to change

The interpretations and conclusions reached in this Report are based on current scientific understanding and the best evidence available to the authors at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however high these probabilities might be, they make no claim for absolute certainty.

HEEMSKIRK CONSOLIDATED LIMITED Moberly Project Valuation



The ability to achieve forward-looking production and economic targets is dependent on numerous factors that are beyond CSA Global's control and that CSA Global cannot anticipate. These factors include, but are not limited, to changes to site-specific mining and geological conditions, management and personnel capabilities, availability of funding to properly operate and capitalize the operation, variations in cost elements and market conditions, developing and operating the mine in an efficient manner, unforeseen changes in legislation and new industry developments. Any of these factors may substantially alter the performance of any mining operation.



2 Silica Sand and Frac sand Basics

2.1 Nature and Occurrence

Silica (silicon dioxide, SiO₂) occurs as the mineral quartz, a major constituent in many igneous and sedimentary rocks, and the most common detrital mineral in sandstone. As a commodity, the term silica is applied to quartz in all its forms — as vein or reef quartz, quartz pebbles, sandstone, quartzite, or as unconsolidated sand.

The term silica sand is applied to quartz sand in which SiO_2 is greater than 99%, with very little contaminant oxide contents such as Al_2O_3 , TiO_2 , CaO, Fe_2O_3 , and heavy minerals of less than 0.1%.

The main use of silica is for flat and container glass, with approximately 60% of each glass batch being silica sand. Silica sand is bonded with synthetic resins to make moulds and cores for casting metals in metal foundries. In oil drilling, well-rounded sand is used to prop open fissures in reservoir rocks to improve permeability. In the metallurgical industries, lump silica (quartzite) is used as a flux in metal smelting, and as a raw material for the manufacture of ferrosilicon. Silica is used in a variety of ceramics and specialty glasses, and is the raw material for manufacture of silicon compounds such as silicones, silanes, and high-purity silicon for semiconductors.

2.1.1 Fraccing (Frac) sand

Frac sand is a specialized type of sand that is added to fraccing fluids that are injected into unconventional oil and gas wells during hydraulic fracturing (fraccing or hydrofraccing); a process that enhances petroleum extraction from tight (low permeability) reservoirs. Frac sand comprises natural sand grains with strict mineralogical and textural specifications that act as a proppant (keeping induced fractures open), extending the time of release and the flow rate of hydrocarbons from fractured rock surfaces in contact with a petroleum well.

2.1.2 Frac sand Ore Reserves and Mineral Resources

Published data pertaining to the total quantity and distribution of frac sand Ore Reserves and Mineral Resources in the world are not available. Ore Reserve data is published by some publicly traded companies in annual reports and other media mostly as aggregated estimates for multiple operations.

2.2 Global Production

Several industries require silica as a major component of their production. In general, silica sand demand can be segmented into five major markets:

- 1. glass;
- 2. hydraulic fracturing;
- 3. foundries;
- 4. building products; and,
- 5. chemicals.

The glass manufacture and oil industries are the dominant silica sand customers. In 2011, together, they consumed around 58 % of the total silica production (Mansour, 2015).

World consumption approximates 120 Mt/yr (SA Gov. 2017). Quartzite, sand and gravel used for construction purposes are excluded from this category.



2.3 Exploration and Test Methods

Generally, most frac sand is a natural material made from high-purity sandstone and quartzite. Frac sand is relatively simple to identify and there are numerous ways, in the field, to test for it. The main items for consideration are:

- Silica Content (>99%);
- Grain Size Distribution;
- Sphericity;
- Roundness; and
- Crush Strength.

2.4 Mining and processing

Ideally, frac sand mines are open pit quarries with minimal overburden, in which loosely cemented to friable sand is removed by large excavators or power shovels. Commonly, it may be necessary to include blasting, along with additional overburden removal techniques. Following excavation, mined portions of the pit are backfilled. As well as open pit mining, other types of mining may include contour mining, underground mining, and hydraulic dredging (Wisconsin Department of Natural Resources, 2012).

2.5 Frac sand Specifications

The specifications for frac sand are based upon the standards for proppants determined by the American Petroleum Institute (API) and the International Organization for Standards (ISO). The current API/ISO Standards for frac sand (proppants) are defined in the API RP 19C/ISO 13503-2, "Recommended Practice for Measurement of Properties of Proppants Used in Hydraulic Fracturing and Gravel-packing Operations," which replaces RP 56 and RP 58 (American Petroleum Institute and others, 2008). API RP 19C/ISO 13503-2:2006 dictates the standard testing procedures used to evaluate and compare certain physical properties of proppants used in the above practices.

2.5.1 Quality and Technical Specifications

Major factors that determine the cost and application for frac sand include:

- grain strength, which is based on its SiO₂ content and internal structure;
- grain sphericity;
- grain size;
- grain size distribution; and,
- overall purity.

These physical properties impact on frac sand performance parameters such as conductivity and crush strength.

The technical specifications for frac sand are as follows:

- 1. Size fractions (measured in international, or ISO mesh sizes) typically sought are 20/40 mesh (meaning a particle size between 20 and 40 mesh, or 0.84 mm to 0.40 mm diameter), 40/70 mesh and 70/140 mesh. Other combinations are 30/50, 50/70 and 50/140 mesh.
- 2. Roundness and sphericity are measured on standard scales from 0 (least) to 1 (perfectly round/spherical), with acceptable figures beginning at about 0.6.
- 3. Compressive strength is measured at incremental crush pressures until the quantity of fines that are generated are >10% by weight. For instance, a proppant which generates 8% fines at 6,000 psi and 12% at 7,000 psi will be known as 6,000 (or '6K') product. 6,000 product is better and generally higher priced than 5,000 product, although some wells may only require 5,000 strength and in some circumstances even lower quality may be acceptable.



4. Conductivity is measured in a variety of ways but is essentially expressed as the permeability of a fluid through a thickness of sand sample which is under a certain compressive strength (e.g. 6,000 psi) over a set period of time (e.g. 50 hours), per foot at a certain temperature (150°F). The value is given in millidarcy-feet (md-ft) and the higher the better. Most frac sands produced in North America would have values for 40/70 sands between 250 and 450 md-ft at 6,000 psi over 50 hours.

2.5.2 Product Grades

In recent years, the product trend has been to finer grades (e.g. 40/70 and 100 mesh). The following Table 1 details the US Silica company (December 2016) market demand estimates by grade.

Table 1. US Silica company (December 2016) market demand estimates by grade

USA Proppant Demand by Mesh Size (%)										
Mesh Size	2014	December 2016								
20/40	26%	9%								
30/50	23%	18%								
40/70	40%	40%								
100 Mesh	11%	33%								

However, frac sand producer US Silica (Davis, 2016) has reported that they expect the trend back to coarser grades "we think that operators will ultimately migrate back to coarser grades. In fact, an informal survey of our customer base indicates a unanimous opinion that coarse sand demand will return. It is simply a matter of time..."

2.5.3 Consistency and Quality Control (ISO 9001)

Consistency of product quality is essential to gain and retain markets. Statistical quality control is required in production. Reports to ISO 9001 (2015) standard are required for marketing and product complaints. ISO 9001 is the world's most widely recognized Quality Management System. It belongs to the ISO 9000 family of quality management system standards (along with ISO 9004), and helps organizations to meet the expectations and needs of their customers, amongst other benefits.

ISO 9001:2015 specifies requirements for a quality management system when an organization:

- a) needs to demonstrate its ability to consistently provide products and services that meet customer and applicable statutory and regulatory requirements, and
- b) aims to enhance customer satisfaction through the effective application of the system, including processes for improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements.

All the requirements of ISO 9001:2015 are generic and are intended to be applicable to any organization, regardless of its type or size, or the products and services it provides.



3 Frac sand Markets and Pricing

3.1.1 Frac sand usage in unconventional oil and gas wells

Rockproducts.com (2017) report that the average amount of proppant used per unit distance for horizontal holes is expected to continue to climb with improved fracturing technologies, closer-spaced and increased number of stages per drill hole, and refreshing of previously developed wells.

Vertical well consumption 2011 to mid-2014 approximately 230 t/well: relatively constant

Horizontal well consumption

2008: 900 t over 1,500 m
 2010: 2,300 t over 3,000 m
 2014: 4,100-5,000 t average

o Recent: up to 9,000 t

Alternative figures for horizontal well consumption have been published by Fairmont Santrol (November, 2016) and they detail the following:

• 2014: 2,500–2,700 t per well

2015: 3,400–3,800 t per well

• 2016: 4,400–4,800 t per well

• 2017: 5,100–5,500 t per well

3.1.2 US Statistics and Projections

Table 2 highlights statistics and projections information taken from Smart Sand (January 2017) for proppant use in the US.

Table 2. Statistics and Projections Proppant use in the US: 2013 to 2020 (Smart Sand, January 2017)

Year	Proppant (M tons)	US Rig Count	Horizontal Wells (% of total)	New Horizontal Wells	Drill spend (US\$B)	Proppant per well (t)
2013	55	1,762	45	20,236	146	2,718
2014	73	1,862	52	23,674	157	3,062
2015	53	983	58	16,029	100	3,275
2016	30	501	64	8,331	49	3,601
2017	45	683	63	11,115	77	4,049
2018	59	830	63	13,236	103	4,458
2019	78	1,047	62	16,286	135	4,759
2020	85	1,089	62	16,860	144	5,042

The frac sand producers US Silica (Citi Research, July 2016) and Emerge Energy (January 2017) have published different figures for US proppant demand as follows in Table 3:



Table 3. US Silica and Emerge Energy figures for US proppant demand; 2013 to 2018

Year	US Silica	Emerge Energy
	Proppa	nt (Mt)
2013	41	39
2014	56	53
2015	45	43
2016	28	31-33
2017	45	50-56
2018	65	71-75
Note: Industr	y capacity 109 M	t in 2017

The Baker Hughes Drill Count, which is the business barometer for the drilling industry and its suppliers, states that that business in 2017 is expected to increase 30% from 2016. The following Figure 1 displays the weekly US and Canada Oil and Gas Drilling Rig Counts from January 2016 to January 2017.

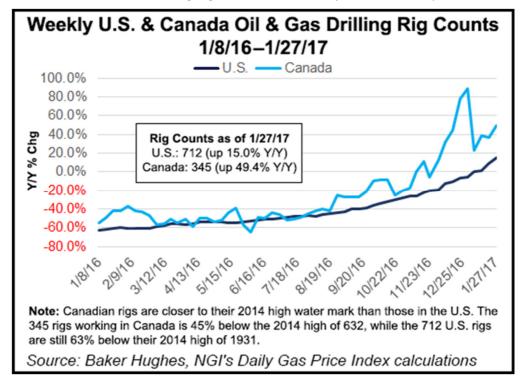


Figure 1. Weekly US and Canada Oil and Gas Drilling Rig Counts from Jan 2016 to Jan 2017

The Canadian well services group Calfrac (January, 2017) stated that the Western Canadian Sedimentary Basin active rig count is strengthening and the following Figure 2 displays recent activity.



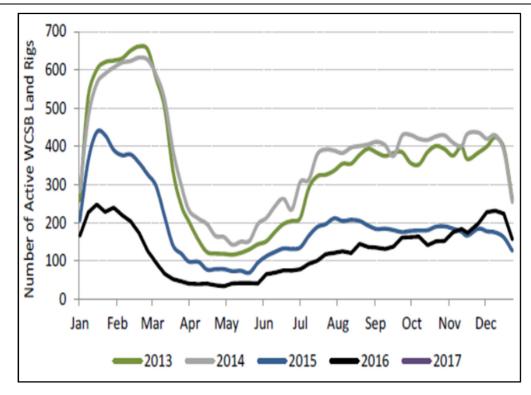


Figure 2. Calfrac - Western Canadian Sedimentary Basin active rig count (January, 2017).

The Baker Hughes Canadian drill rig data displayed in Figure 3 shows that the current increase in activity is still below historical levels.

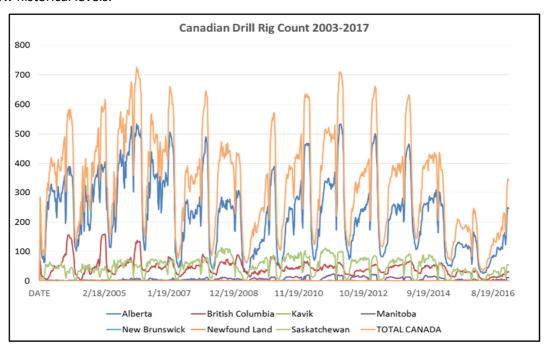


Figure 3. Baker and Hughes Canadian drill rig count 2003 to 2017

In a report published by Headwaters MB (2017) they note that "As a result of sand usage trends, the rig count no longer correlates to the ongoing demand for sand, and if rig counts are used as a forecasting metric in isolation, they are likely to significantly underestimate future sand demand."

The research and analytics group Navport (2017) estimated that the Canadian frac sand market will total 2.24 Mt in 2016.



3.1.3 North America Fraccing Sand suppliers and Heemskirk competitors

Recent data from a Headwaters MB (2017) Oilfield Services Report highlights that ten producers supply 65% of the industry 100 Mt capacity. In order of decreasing market share the are listed as follows:

- Unimin
- US Silica
- Fairmont Santrol
- Superior Silica Sands
- Preferred Sands
- Hi Crush Partners
- Eagle Materials
- EOG
- Badger Mining
- Chieftain

The Headwaters MB (2017) report details that future growth will be at the expense of smaller producers remote from the wells.

In recent reports received from Heemskirk they advise CSA Global that their main competitors will be

- Source Energy Services
- Preferred Sands LLC
- Badger Mining Corporation
- Hi Crush Partners
- Superior Silica
- Sil Industrial Minerals
- Peaskie Minerals
- Canadian Silica Industries Inc

In addition, CSA Global considers that Emerge Energy Services, US Silica and Fairmont Santrol who all have transload facilities in Canada, as well as Unimin who has been a supplier to Canadian markets, are potential competitors.

CSA Global has also identified nine companies in Canada who are attempting to become frac sand suppliers. These are listed as follows: Stikine Energy Corp., Victory Nickel, Silica North Resources Ltd., North American Frac Sand Inc., Brilliant Sands Inc., Athabasca Minerals Inc., 92 Resources, Canadian Sandtech Inc. and Claim Post Resources Inc.

US Silica (Sept. 2016) state, "We believe that, over time, proppant customers will prefer to consolidate their purchases across a smaller group of suppliers with robust logistic capabilities and a broad offering of high performance proppants"

It is noted that Badger Mining, who set the quality benchmark with Northern White, and are a major competitor to Heemskirk, have five transloading facilities in Canada. Three of these (Fox Creek, Obed and Sexsmith, all in Alberta) were just recently announced (Badger Mining, 2016). Badger stated, "The expansion … is a key part of our plan to be the largest and most competitive supplier of industrial sand throughout the Deep Basin."

3.1.4 Canadian Sand Imports from USA (Trade Data)

The following Figures (Figure 4, Figure 5, Figure 6) details statistics for Canadian Sand imports from the USA (https://usatrade.census.gov/).





Figure 4. USA Sand Exports to Canada (2003 to 2016).

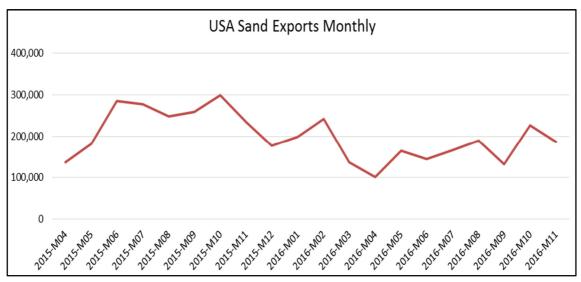


Figure 5. USA Monthly Sand Exports to Canada (April 2015 to November 2016).

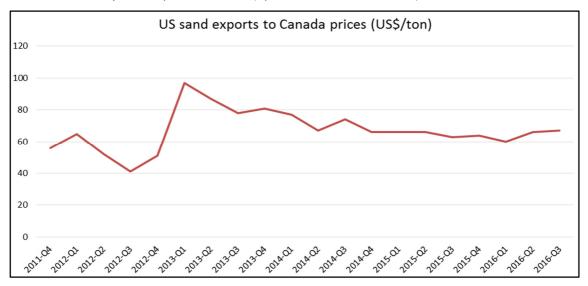


Figure 6. Average Quarterly Frac sand Price (Q1 2011 to Q3 2016) for USA Exports to Canada.



3.1.5 Moberly Project Frac sand Product and Market

When operational, the Moberly plant will be able to produce a range of frac and non-frac products. Heemskirk note that the emphasis of will be on the frac sand products between 20 mesh and 140 mesh, and more particularly on the more lucrative (20/40 or 30/50) and (40/70 or 50/70) mesh size ranges. The 70/140 mesh product is of lower quality compared to the coarser mesh sizes and commands slightly lower prices, but still presents at an attractive margin.

Frac Residue

The minus 140 mesh 'frac residues' will form the feedstock for a silica flour plant, as does dust collected in the bag house filters. The volume of this fine material produced will exceed the capacity of the flour plant. Heemskirk believe that the excess is likely to find a market with cement manufacturers, thus converting 100% of ore into saleable product (or at least, no waste).

Gordon Capital (2015) state that "The Moberly project is well-sited adjacent to major road and rail networks and overall demand in the Western Canadian Sedimentary Basin (WCSB) region remains positive, with estimated frac sand consumption now at 2.5 million tonnes per annum. Heemskirk also plans to exploit its logistical advantage in offering a competitive cost product into the Canadian market. Moberly Stage 1 is estimated to represent slightly less than 10% of regional (WCSB) consumption."

Gordon Capital also note

- "Despite rising demand for proppant, logistics remains the key success driver for frac sand operations across North America."
- "If energy prices remain subdued this may have longer-term impacts on supply-demand fundamentals however this is likely to be offset by the increase in frac sand intensity per well."
- "Growth in drilling activity in the WCSB continues along with the development of the Kitimat LNG Project and others along the coast of British Columbia"

A number of sampling programs have been carried out on the Moberly sand to understand the sand sizing throughout the resource.

Independent review work by CSA Global associates (Alan Robertson and Carl Morandy) was carried out based on the 'Eirich' sampling programs as described in Section 5.2.9 of the Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015). This section details the testing of samples from ten locations throughout the Moberly pit (although sample R9 was excluded from Eirich test), which were then processed and sized into 5 mesh divisions.

This assessment provided sufficient data to populate the sand sizing graph shown as Figure 7 and the sand sizing specification chart shown as Figure 8. CSA Global notes that the results highlight the suitability of the Moberly Project to produce frac sand.



Moberly Silica Sand Size Analysis

Moberly S	Silica Sands
A. S.	
Sieve	INPUT
Size	VALUES
(mm)	HERE
63	100.00
53	100.00
37.5	100.00
26.5	100.00
19	100.00
13.2	100.00
9.5	100.00
6.7	100.00
4.75	100.00
2.36	100.00
1.18	100.00
0.6	94.82
0.3	65.50
0.15	47.00
0.075	13.62

Sand												
Size Fractions					% passing							
	US Mesh	R1	R2	R3	R4	R5	R6	R7	R8	R10	Average	% Product
	>30	4.3%	6.0%	6.2%	6.1%	5.1%	2.0%	7.1%	5.0%	3.6%	5.0%	-24.3%
	30-50	34.9%	41.9%	32.2%	23.8%	29.8%	34.0%	18.4%	14.8%	34.1%	29.3%	10.8%
	50-70	13.3%	9.6%	18.5%	18.3%	19.7%	23.1%	24.1%	26.7%	13.2%	18.5%	-14.9%
	70-140	35.4%	29.0%	28.4%	35.9%	32.2%	29.4%	34.8%	40.2%	35.1%	33.4%	19.8%
	-140	12.2%	13.3%	14.7%	15.6%	13.0%	11.5%	15.2%	13.1%	14.0%	13.6%	13.6%

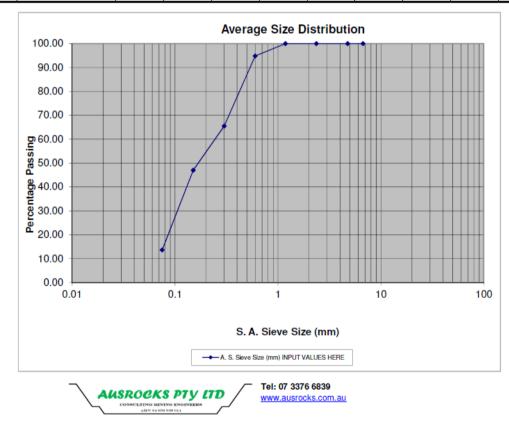


Figure 7. Moberly Project Silica Sand Sizing Analysis

CSA

QUARRY SPECIFICATION SHEET SAND & GRAVEL SIZING AND PRODUCT SPECIFICATIONS Moberly Silica Sands

THIS SPECIFICATION SHEET REMAINS THE PROPERTY OF ALAN ROBERTSON, AUSROCKS PTY LTD. USE BY OTHERS MUST SHOW ACKNOWLEDGEMENT OF THE AUTHOR.

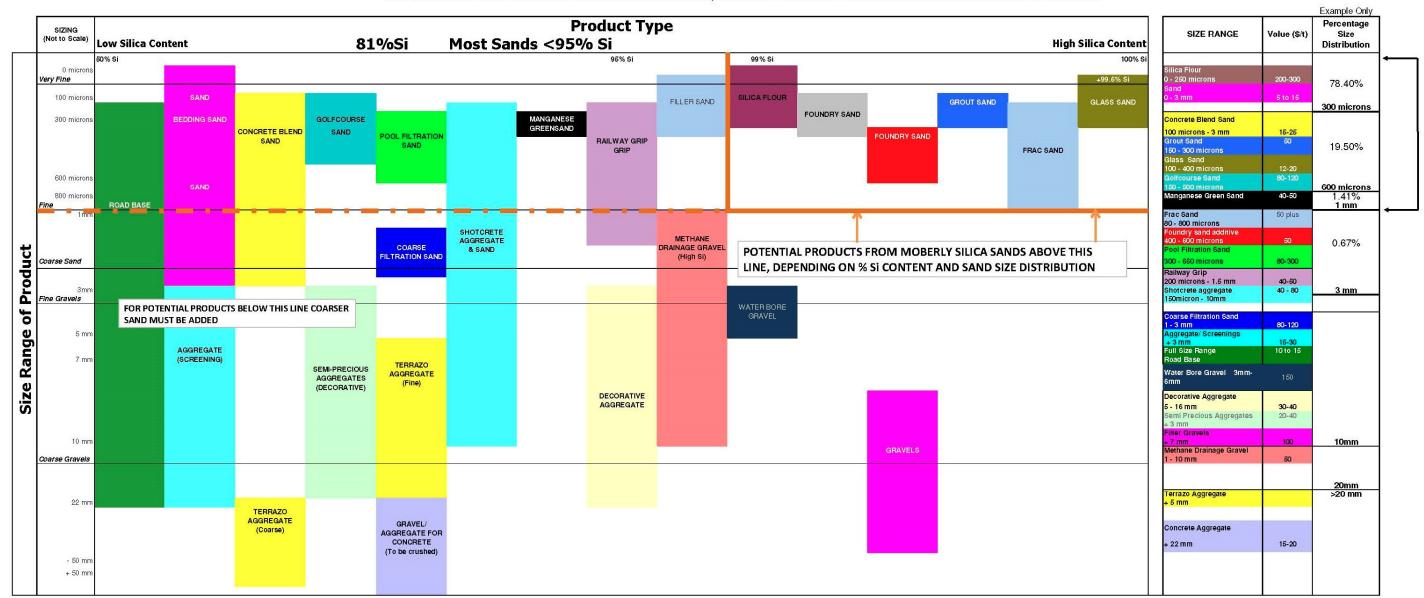


Figure 8. Sand Sizing Product Specification Chart
- Highlighting Moberly Project Product Range

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3.2 Frac sand Pricing

3.2.1 United States of America Pricing details for 2013/14

Based on the Rock Products (2017) data, the average Free on Board (FOB) pricing is detailed as follows:

- USA average US\$63/t FOB mine, US\$170/t well site
- Brown sands; US\$65/t FOB (lower transport cost)
- White sands: US\$55/t FOB average to US\$70/t coarser/cleaner grades

Brown sands are now 40% (2016, US Silica) and were 35% of 2013 market (relatively low resistance to pressure generally limits their use to a fraccing depth of about 2,400 m).

There is a noted trend to local deposits with the following statements of note: "The affordability of regional sands can outweigh the concurrent efficiency losses of an inferior product" (Headwaters MB 2017).

3.2.2 United States of America Pricing details for 2014/15

Superior Silica (September, 2015) have detailed an average US\$58/t FOB in 2014 and US\$32/t in 2015.

3.2.3 United States of America Pricing details for 2017

Natural Gas Intelligence (Davis, Nov. 2016) reported to be US\$25/t average with commentary as follows:

• Proppant pricing "is still at long term unsustainable levels"

Headwaters MB (2017) estimate an industry average US\$55/t at 2Q 2016 and producers averaging loss of US\$10/t. The major points in their report were,

- 1. Frac sand producers have little pricing power
- 2. Increasing completion density creates demand
- 3. Lower sand specifications drive local sourcing
- 4. Shift to In-Basin sales is defining survival
- 5. Value seen in streamlining the supply chain
- 6. Access will drive competitive advantages

The following Table 4 & Table 5 detail the US Silica (Mar 2015 and Sep 2016) volume of proppant sold and the average selling prices.

Table 4. US Silica: Yearly volume of proppant sold and the average selling price (2012 to 2015)

Year	Proppant Sold (M tons)	Av selling Price (US\$/ton)
2012	2.919	83.5
2013	4.078	85.2
2014	6.736	98.4
2015	6.101	70.6

Table 5. US Silica: Quarterly volume of proppant sold and the average selling price (2015 to 2016)

<u> </u>		ge seming price (2020 to 2020)
Quarter	Proppant Sold (M tons)	Av selling Price (US\$/ton)
Mar 2015	1.688	88.1
Jun 2015	1.244	74.2
Sep 2015	1.616	63.1
Dec 2015	1.553	57.2
Mar 2016	1.411	52.4
Jun 2016	1.333	48.7
Sep 2016	1.617	53.7

Eagle Materials (Sep 2016) have reported the following prices for proppant as detailed in Table 6:



Table 6. Eagle Materials: Volume of proppant sold and the average selling price (2015 - 2016)

Quarter	Proppant Sold (M tons)	Av selling Price (US\$/ton)			
Sep 2015	0.203	90.2			
Sep 2016	0.111	59.7			

Smart Sand (Sep., 2016) have reported the following prices for proppant as detailed in Table 7.

Table 7. Smart Sand: Volume of proppant sold and the average selling price (2014 - 2016)

Period	Proppant Sold (M tons)	Av selling Price (US\$/ton)			
2014	1.255	54.3			
2015	0.751	63.5			
2016 (9 mos)	0.552	40.2			

The USA Producer Price Index (Jan., 2017) for Hydraulic Fracturing Sand Indexed to December 2012 is detailed in the following Figure 9 and Table 8.

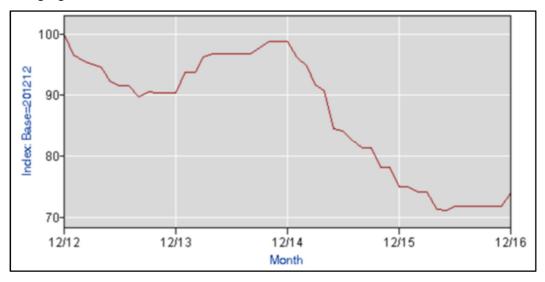


Figure 9. USA Producer Price Index for Hydraulic Fracturing Sand (Dec. 2012 to Dec. 2016)

Table 8. USA Producer Price Index for Hydraulic Fracturing Sand (Dec. 2012 to Dec. 2016)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2012												100.0	
2013	96.6	95.6	95.0	94.6	92.2	91.6	91.6	89.7	90.5	90.4	90.4	90.4	92.4
2014	93.8	93.8	96.2	96.7	96.7	96.7	96.7	96.7	97.8	98.7	98.7	98.7	96.8
2015	96.3	94.8	91.7	90.8	84.6	84.2	82.7	81.4	81.4	78.3	78.3	75.0	85.0
2016	75.0	74.3	74.3	71.4	71.3	71.9	71.9	71.9	71.9(P)	71.9(P)	71.9(P)	74.0(P)	72.6(P)
P : Prel	2016 75.0 74.3 74.3 71.4 71.3 71.9 71.9 71.9 71.9(P) 71.9(P) 71.9(P) 74.0(P) 72.6(P) P : Preliminary. All indexes are subject to revision four months after original publication.												

The major listed frac sand producers have published the following prices on Table 9 (which will include other fraccing products and services).



Table 9. North American Frac sand Producer – average prices Sept. 2016.

Company	Quarter	Sales (M tons)	Sales (US\$ M)	Av.US\$/t	Standard Deviation		
*Hi Crush Partners	Sep-16	1.083	46.546	43.0			
*Superior Silica	Sep-16	0.493	31.285	63.5			
**US Silica	Sep-16	1.617	86.782	53.7			
**Fairmont Santrol	Sep-16	1.754	103.14	58.8			
Eagle Materials	Sep-16	0.111	6.631	59.7			
Smart Sand Inc	Sep-16	0.230	10.927	47.5			
	Total	5.288	285.311				
			Average	54.4	7.2		
			Weighted Average	54.0			
	10.3						
(Conversion rate of 1.301 for C\$/US\$)							

^{*}Heemskirk nominated competitors

CSA Global also note that:

- North American Frac sand (NAFS) (www.nafsinc.ca) have inferred a constant selling price of C\$74/t in their Financial and Operational Projections for their frac sand project in Saskatchewan.
- Athabasca Minerals (<u>www.athabascaminerals.com</u>) who are developing a frac sand project at Fort McMurray, Alberta have given results of a PEA in early 2015 which used prices of:
 - a. 20/40 C\$195/t FOB Edson
 - b. 40/70 C\$170/t FOB Edson
 - c. 70/140 C\$155/t FOB Edson

In their September 2016 MD&A, the company commented, "With the uncertainty in oil prices, the corporation will be limiting any capital spending on this project until greater certainty surrounding pricing and domestic frac sand demand is established."

3.2.4 Logistics (and cost)

Logistics are a significant cost and can be either a major competitive advantage or disadvantage. Estimates of Heemskirk and major current and potential competitors' costs of product delivered to the main fraccing sites will be required to set competitive prices and to quantify the real market availability for Heemskirk.

3.2.5 Moberly Project Frac sand Pricing and Sales Recommendations

An internal draft marketing document received from Heemskirk specifies a (constant) selling price for frac sand of C\$84.5/t FOT (ex-works; Free on Truck/Train).

The justification for this price is based on information:

- Provided by one company/customer (Encana);
- On one site (Montney);

^{**} Other or Potential competitors



- On one competitor/product (Northern White);
- From over one year ago (1st Jan 2016); and
- On a delivered price reduction (incentive) of only C\$10/t.

During CSA Global's review, it was noted that the same selling price was used in Moberly Frac sand Final Feasibility Study (Heemskirk Consolidated, 2011) and in the Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015).

A more detailed, robust, and comprehensive pricing analysis is required to be confident in this one-off pricing assumption. This should involve estimates of major current, and potential, competitors' costs of product delivered to the main well fraccing sites. Initial levels of pricing incentive, if so required (which CSA Global believes will be the case), should also be included. This will also provide profit maximisation by allowing different (maximum) prices to be set for different delivered locations, which capitalise on any associated strategic advantages.

In the absence of this detailed pricing information it is CSA Global's recommendation that an initial base price of C\$65/tonne FOT (Year 1) be assumed with annual price increases of C\$5/tonne to reach \$85/tonne FOT (Year 5). CSA Global's bases this recommendation on the information highlighted in Section 3.2.

Table 10 details the recommended pricing data. For sensitivity analysis, it is recommended that variations of \pm C\$5/tonne be used.

Table 10: Moberly Frac sand and Silica Flour Pricing inputs for CSA Global Model

		Year 1	Year 2	Year 3	Year 4	Year 5	Source
Frac sand		\$65	\$70	\$75	\$80	\$85	Dr R Flook
Silica Flour	·	\$140	\$140	\$140	\$140	\$140	Dr R Flook

CSA Global note that Heemskirk have customer encouragement for supply of frac sand at prices potentially higher than the recommended values (Table 10). CSA Global understand that there are presently no supply contracts in place.

In the absence of sales contracts, it is recommended that the following sales projections (tonnes per year) as outlined in Table 11 be assumed:

Table 11: Moberly Project Frac sand Production Rates

Full year of Sales	Base Case t/yr	Optimistic Case t/yr	Pessimistic Case t/yr		
1	100,000	150,000	60,000		
2	200,000	300,000	120,000		
3	300,000	300,000	180,000		
4	300,000	300,000	240,000		
> 5	300,000	300,000	300,000		

Based on the CSA Global's industrial minerals marketing experience, it is usual that full operational production takes some time to achieve, particularly for new product(s), from a new supplier, in a competitive environment.

Furthermore, based on CSA Global's knowledge of the market and the information detailed above, the background for the recommended sales projections outlined in Table 11 is are as follows:

- 1. The consumption of frac sand per well and in total is expected to increase.
- 2. However total demand is not expected to reach peak 2014 levels until about 2018 or 2019.
- 3. Also, existing industry capacity is not expected to be exceeded before 2020 or later.
- 4. Most frac sand suppliers are not currently profitable (see 3.2.3) so there is a strong incentive to improve prices and/or volume.
- 5. Although there were indications of small price increases in the December 2016 quarter, it is expected that most suppliers will initially target increased volume rather than prices.

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- 6. It is considered unlikely that the prices achieved in 2014 will be reached again (in constant dollar terms); see item 3 above.
- 7. It is CSA Global's experience that initial pricing incentives of about 10% of delivered cost are required to take sales from a competitor and then maintain it against counter offers from incumbent suppliers.
- 8. The size of the Canadian frac sand market has been estimated to be between 3 Mt/yr and 6 Mt/yr. Even on the lowest demand estimate, and with the expected increase in market volume, the Heemskirk long term sales target of 300,000 t/yr is considered reasonable.
- 9. Recommendations are also based on the Heemskirk assumption that Moberly White is a genuine competitor to the Northern White frac sand (a Tier 1 producer).



4 Property Location, Tenure and History

4.1 Location of Property

The Moberly Project is located near the town of Golden, British Columbia (BC). The existing Moberly silica pit is 7 km due north of Golden, on the slopes of Mount Moberly. The existing processing plant site (the previous plant has been demolished) is located 16 km north-northwest of Golden, on the Trans-Canada Highway and Canada Pacific Railway. Calgary lies 215 km to the east-south-east. Figure 10 shows the locations of the pit, plant and the regional town of Golden.



Figure 10. Location of Moberly Operations, British Columbia, Canada (with infrastructure). (Source: Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015))

4.2 Tenure

CSA Global has independently verified the tenure details in Table 12 by carrying out a search of records of the BC Mines Department titles register. The status of all the tenure held by Heemskirk is classed as being in good standing.

As noted in Section 1.1 HCA Mountain Minerals (Moberly) Limited is owned by Heemskirk Canada Limited which in turn is a 100% owned subsidiary of Heemskirk.

A Free Miners Certificate, issued by the BC Mines Department is required to hold mineral tenure in BC and is renewable annually within a longer tenure period. HCA Mountain Minerals (Moberly) Limited holds a Free Miners Certificate which is current to 15th June 2017.

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Table 12. Mineral tenures held by Heemskirk for the Moberly Project

Tenure Number ID	Owner Name	Good to Date	Percent Owner-ship	Tenure Subtype Description	Title Type Code	Title Type Description	Issue Date	Area in Hectares
213089	HCA MOUNTAIN MINERALS (MOBERLY) LIMITED	1 st Nov. 2017	100	CLAIM	MC4	Four Post Claim	1 st Nov. 1976	150
213090	HCA MOUNTAIN MINERALS (MOBERLY) LIMITED	1 st Nov. 2017	100	CLAIM	MC4	Four Post Claim	1 st Nov. 1976	375
213099	HCA MOUNTAIN MINERALS (MOBERLY) LIMITED	5 th April 2017	100	CLAIM	MC4	Four Post Claim	5 th April 1978	200
213195	HCA MOUNTAIN MINERALS (MOBERLY) LIMITED	21 st Oct. 2017	100	CLAIM	MC4	Four Post Claim	21 st Oct. 1980	450
344488	HCA MOUNTAIN MINERALS (MOBERLY) LIMITED	8 th Oct. 2017	100	LEASE	ML	Mining Lease	8 th Oct. 1996	70.77
338588	HCA MOUNTAIN MINERALS (MOBERLY) LIMITED	10 th Aug. 2017	100	CLAIM	MC4	Four Post Claim	10 th Aug. 1995	500
576995	HCA MOUNTAIN MINERALS (MOBERLY) LIMITED	23 rd Feb. 2018	100	CLAIM	МСХ	Mineral Cell Title Submission	23 rd Feb. 2008	40.35



The location of the tenements is shown in Figure 11 and Figure 12.

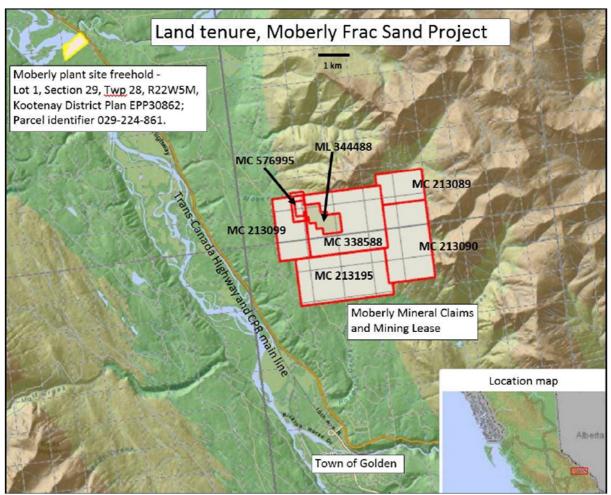


Figure 11: Moberly Project Mineral Claims and Mining Leases (Source: Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015))

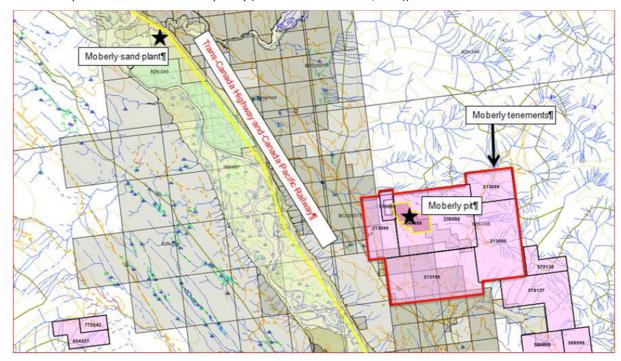


Figure 12. Location map showing Moberly tenements and pit in relation to sand processing plant. (Source: Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015))



4.3 Plant Land Title, Operating Permits and Licences

The Moberly sand plant lies on freehold land adjacent to the Trans-Canada Highway, the Canadian Pacific Railroad and the Blaeberry River. Formally it is Lot 1, Section 29, Twp 28, R22W5M, Plan 4182 and has parcel identifier 014 919-478. In the 1980's a local bylaw enabled all the land within 300 m of the Trans-Canada Highway to be 'Zone 4 - industrial (mineral processing)', with the balance of the land classified as Provincial Agricultural Land Reserve.

In 2012, an application was made to the Agricultural Land Commission to allow the land the subject of the Agricultural Land Reserve to be used for 'non-farm' purposes (i.e. waste storage and the like). Permission was granted in July 2012 subject to some conditions, such as the stripping and storage of topsoil. In 2013 permission was sought, and granted to allow the operation of an extended rail spur as 'non-farm use'.

The Heemskirk freehold land is shown bordered in red in the aerial photo in Figure 13.



Figure 13. Heemskirk freehold land – Moberly processing plant site (Source: Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015))

4.3.1 Air discharge permit

Air Permit PA-05907 was originally issued to Mountain Minerals by the BC Ministry of Environment, Lands and Parks in 1980, then re-issued in an amended form in 1994 and was transferred to HCA Mountain Minerals in 2005.

For the previous processing plant, the 1994 version of the permit allowed for the discharge of certain volumes of air containing no more than 230 mg/m³ of particulates from the building baghouse, the dryer baghouse and the silo baghouse at the processing plant, for no more than 8 hr/d, 5 d/wk. It also requires certain monitoring activities for airborne particulates at certain of the plant sites and of the ambient environment and reporting to the Regional Waste Manager on a semi-annual basis.



Air discharge was monitored at the building and dryer baghouse over several days every six months by Maxxam Analytics, a certified contractor. As of 2015, the last test appears to be in compliance with levels set by the permit.

The 1994 Permit also requires ambient dust sampling around the plant area. Three locations are sampled, 'North', 'South' and 'West', shown by red stars as follows in Figure 14.



Figure 14. Ambient dust sample points at Moberly plant site (red stars)

During the building of the new processing plant facilities in 2016 & 2017, Heemskirk continue to carry out the tests at these locations.

Heemskirk have sent details of new dust extraction equipment to BC Ministry of Environment. The update to existing permit is expected to be approved in January/February 2017.

4.3.2 Suspended solids discharge permit

Discharge Permit PE-06985 was originally issued by the BC Ministry of Environment in 1983 and was transferred to HCA Mountain Minerals in 2005. It allows the discharge of waste from 'a silica sand washing operation to settling ponds with no discharge to surface waters'. The original Permit specified a volume of discharge of 6,552 m³ per day, but no solids limit and required the regular clearing-out of the ponds 'in a manner acceptable to the Regional Manager' as a condition of the permit. In the 10 years following the issuing of the Permit, a number of variations were made. In 1993 the Permit was re-issued limiting the maximum amount of solids to be discharged to 104.8 t/yr, "based on 100 mg/l solids" in the allowed 6,552 m³ of effluent per day, for maximum 160 d/yr.

When being used, the settling pond material was excavated periodically and the solids placed on a heap behind the ponds, as allowed by the original permit and required in inspector's feedback. However, at the moment, no tailings are being produced and the existing tailings are being consumed by the silica flour processing plant.

The new frac sand plant is not expected to discharge suspended solids, but rather solids at low moisture content that will be stored in a heap until sold.



4.3.3 Water permit

Conditional Water Licence CL 63763 was issued by the BC Ministry of Environment in 1986 authorising the occupation of Crown Land for the purposes of extracting up to 576,000 gallons per day from the Blaeberry River for industrial purposes 'washing sand and gravel'. In 2009 the Licence was amended to reflect ownership of the plant site by Heemskirk Canada Holdings Limited.

Heemskirk developed a groundwater supply in 2012 – 2014. BC Groundwater Consulting Services Ltd (BCGCS), assisted with locating two potential well sites using and geophysical and geological investigation. Successful wells were drilled and screened at both sites in 2012. Pumping tests completed in 2013 and 2014 confirmed that both wells meet the rigorous American Water Works Association A100 standard for process water use.

In 2015, BGCS reported that the combined operating rate of both wells is 14.2 L/s (225 USgpm) throughout the year. Production can be increased to a maximum of 25.3 L/s (400 USgpm) from May - October. BGCS recommended installing severe duty submersible pumps and motors into the wells sumps to maximize production. Aquifer depletion is not a concern except if the wells are pumped continuously (24 hours per day) for more than 100 days. The rate of surface water withdrawal from the Blaeberry River is estimated at less than 1 % of low annual flows based on the above operating rates.

4.3.4 Propane

A Permit to use commercial gas equipment on site was issued in 1988 and is subject to annual renewal and payment of a fee. Currently the site does not have a permit but it will be renewed.

4.3.5 Rail siding

An 'Agreement for Private Siding' dated 1st January 1980 between Canadian Pacific Railway Limited (CP) and Mountain Minerals Company (then owner of the sand operation) allowed Mountain Minerals to construct the Moberly siding and join it to the CP rail line, and allow CP locos to use the siding.

An annual fee is payable to CP; this is currently in the order of C\$7,000 and is escalated annually by the 'track materials price index' published by a USA authority. Any modification of the Moberly rail siding to accommodate frac sand operations would require the consent of CP and be done by CP at Heemskirk's expense.

A letter from the BC Safety Authority dated 18th January 2010 to Heemskirk Canada confirms that the siding is not classified as a provincial industrial railway and does not fall under the Railway Act (BC) at the time.

In 2012, CP advised that works on the switches at the Moberly rail siding were required. Following discussion with Heemskirk, CP disabled the switches to allow better operation of the mainline, while the siding was not required. However, the switches will be replaced, likely with some charges when the siding is again in operation.

CP has recently stated to Heemskirk that they will reconnect the spur in the Spring of 2017. Heemskirk are awaiting confirmation on the reconnection date and a formal quotation for the work.

4.4 History

A silica mining and processing operation was first set up at the current locations in 1981 by Mountain Minerals Limited. Since that time the mining and processing methods have remained relatively unchanged. Tonnages quarried and processed have varied between about 80,000 t/yr and 120,000 t/yr. A rail siding off the Canadian Pacific Railroad main line, which runs between the Trans-Canada Highway and the processing plant, was built in the 1980s.

During most of the time of operation, the main customer for the silica sand was Owens Illinois, who had a glass bottle manufacturing plant at Lavington, BC. Other small volume sales were made for golf course sand, decorative stone and the like.



Heemskirk purchased Mountain Minerals Moberly from Dynatec in 2005 and also the freehold of the plant site for C\$1,791,899. The total consideration for the purchase of the Canadian business was \$5,266,026 inclusive of Mountain Minerals Moberly. At the time of purchase of the Canadian business, the Company recognised two critical factors in relation to Moberly. First, the silica mineralisation was both exceptionally pure and large in volume. Second, given the quality, the silica was noted to have enormous strategic importance in the North American, and more particularly Western Canadian, context. Lethbridge was noted at the time as a cash flow generator.

In 2008, the plant was modified by adding a 'fine grind' circuit to produce 'silica flour' (minus 325 mesh silica) used predominantly in high quality cements. An example is Steam Assisted Gravity Draining (SAGD) in the oil and gas industries. Later in 2008, Owens Illinois announced the closure of their bottle making plant at Lavington BC and hence cancelled the contract with Mountain Minerals, with compensation paid to Heemskirk of \$1,000,000. Since then, the silica flour plant has continued to operate, with each circuit able to produce up to 1,100 kg/hr of product and the silica sand circuit has operated subject to demand.

In 2010, Heemskirk began tests on existing Run of Mine (ROM) silica stockpiles to evaluate the product's suitability for use as 'frac sand'. MineSense Technologies Limited of Vancouver, and Kelrik LLC of Denver were engaged to assist in the test-work. Barry Hlidek of BJ Services in Calgary, a recognised frac sand technical expert, was also consulted as to the most appropriate approach to take.

A series of tests, mainly involving variations in crushing and grinding treatments on silica feed-stocks resulted in sands of industry standard size gradations of 20/40 mesh, 40/70 mesh and 70/140 mesh size ranges being produced and able to pass ISO tests for roundness, sphericity, conductivity and crush test criteria.

Further information on the work carried out at Moberly since 2010 is detailed in the following sections.



5 Geology and Exploration

5.1 Regional geology

The Moberly quartzite deposit is hosted within the Ordovician Mount Wilson Quartzite unit, which reaches a maximum thickness of 480 m near Golden (Ward, 2014). The quartzite is typically grey to buff coloured massive orthoguartzite with some evidence of crudely laminated and cross laminated beds near the base.

5.2 Deposit geology

The Mount Wilson Quartzite occupies the core of an overturned south-plunging anticline and it is reported that thrust faulting has caused local repetition of the unit. A major thrust along the western margin of the anticline swings to the east and truncates the unit just north of the present mine.

The quartzite is underlain by brown argillite of the Glenogle Formation, and overlain to the south by Beaverfoot Formation limestones and dolomites. Mining over the past twenty-five years or so has exposed the quartzite for 800 m along strike, 230 m in width, and 200 m vertically.

The geology has been described as relatively simple, however it is noted that the quartzite strata have been folded into an open anticline-syncline pair with a thrust fault along the axis of the syncline and that quartzite is mined from the crest of the anticline. The orthoquartzite unit has a strike of approximately 118° magnetic and is vertical to steeply dipping, with several upright cleavages noted.

The quartzite at the Moberly Pit has been variably de-cemented and ranges from hard quartzite to friable soft quartzite.

Ward (2016) has described the geology as "relatively simple; however, Ward notes that there are a number of fracture sets which have strongly shattered the formation mostly in the southern 100 m thickness of the deposit. The main fracture zone trends 360° (magnetic) and dips steeply to the north (Figure 15). A further fracture set is low angle and dips at up to 30° to the northeast. The fractures are sometimes slickensided.

Ward concluded that all of the various rock types, which were described as ranging from highly sandy to 'hard' quartzite and produced acceptable frac sand in test work and that selective mining was not contemplated. However, it was noted that selective mining may be adopted "with experience in yield" (Ward, 2016; page 22).

5.3 Exploration

5.3.1 1970s

The Moberly property has been mapped, drilled and sampled at several intervals since the 1970s. A report by Shanks (1977) described the quartzite as a "frosty white sedimentary quartzite with a clastic texture containing fine, well-rounded polished grains 1/8 to ¼ mm in diameter". Shanks reported on grid sampling and three core holes and concluded that the quartzite deposit could be a source of silica for silicon carbide, silicon metals and glass manufacture.





Figure 15: Strongly shattered quartzite along the southwestern contact of the deposit

Approximately 100 m of quartzite is fractured adjacent to the limestone contact. Photo: M Ward

5.3.2 1980s

Huss (1982) reported on exploration activities at the "Pax, Ralph, Contact, Sand and Access" silica claims owned by Mountain Minerals. The exploration included "tractor" trenching totalling about 1,300 m in the eastern part of the deposit; percussion and four diamond drill holes totalling 1,200 m in addition to a topographic survey and testing of two samples. The tractor trenches (see Figure 16) intersected a range of lithologies described as clean sand, medium sand, sand with cherty fragments and hard quartzite. The logged sand content in three of the diamond core holes ranged from about 20% to 70%, while the fourth hole was drilled to test hard quartzite and did not intersect friable sand.

5.3.3 2000s

Mining Advisory Pty Ltd (MAPL) reported on the geological mapping and collection of 20 samples of around 5 kg each from the Moberly Pit in June 2010, for the purposes of frac sand testing and to test for variability across the pit (Figure 18). MAPL described the deposit as being "quite inhomogeneous" and noted that the original hard quartzite had been de-cemented, which resulted in soft and friable quartzite. MAPL has noted that the sand occurs from isolated blebs 5 cm in diameter within hard quartzite matrix, to networks of coalescing blebs to almost 100% sand as entire beds or large irregular masses.

Four samples of about 350 kg each were collected from the Moberly Pit in May 2011 by MAPL (2011), Figure 17 details the sample locations. The samples were selected to include a range of qualities and included hard quartzite (see Photo 1) which MAPL noted was "unlikely to represent more than 10% of the total resource at the pit." The other three samples comprised friable material with 'free sand' content estimated to range from about 40% to 75%. Photo 2 displays an example of friable quartzite.

Ten additional samples of about one tonne each were collected from the pit and the plant stockpile in September 2014. The objective was to test equipment known as an Eirich Mixer to upgrade the quality of

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frac sand by removing silica growths and shards from the sand grains, and also to de-cluster grain aggregates. The location of these ten samples in shown in Figure 19. As illustrated by the selected results presented in Table 13, sample R2 (reasonably competent silicic sandstone) is the coarsest, while samples R7 and R8 (highly fractured, from the tectonised zone along the south-western contact) are distinctly finer.

CSA Global is therefore of the opinion that the Eirich tests demonstrated that frac sand grain size distribution (30 to 140 mesh) varies across the deposit.



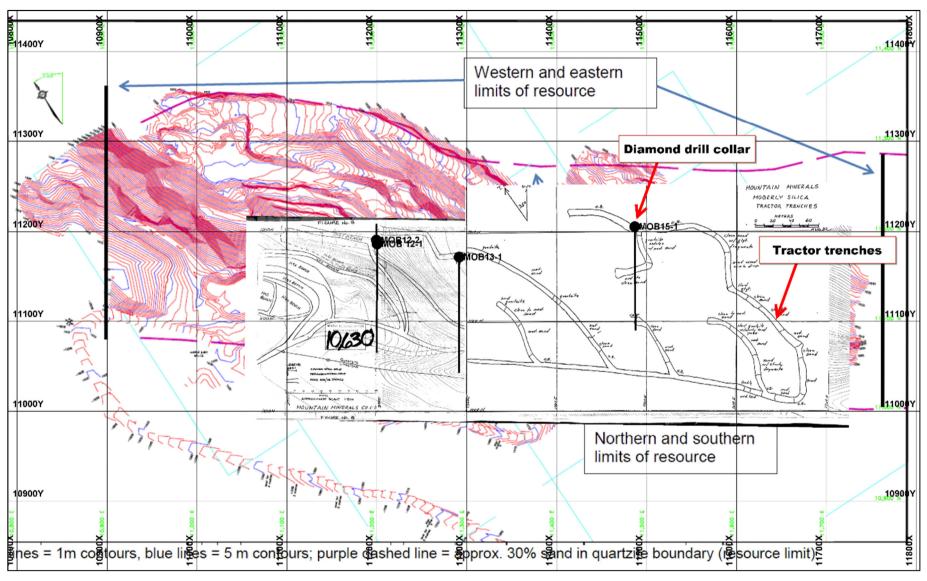


Figure 16: Geological mapping by Huss (1982) superimposed on current pit map Note tractor trenches and drill collars





Figure 17: Location of four samples collected by MAPL in 2011



Photo 1. Sample 1 - Hard quartzite Photo: M Ward

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Photo 2: Sample 2 - Friable quartzite
Photo by M Ward

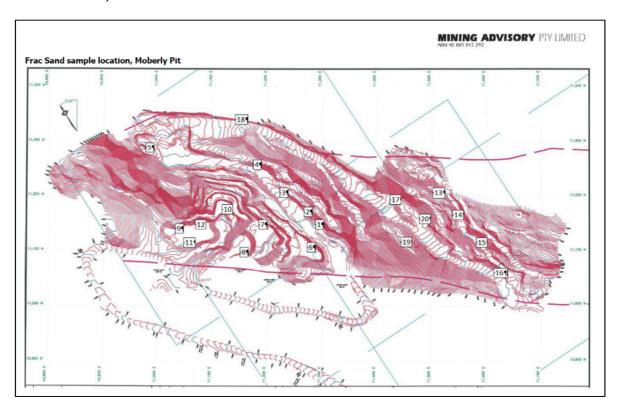


Figure 18: Location of the June 2010 Frac sand samples numbered 1 to 20 (MAPL, 2010)

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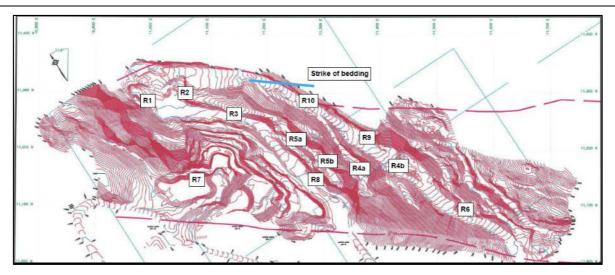


Figure 19: Location of the September 2014 Eirich Mixer samples (MAPL, 2014)

Table 13: Examples of size distribution of Eirich Mixer product samples

	AFTER EIRIC					,					Raw
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	average
+30#	4.3%	6.0%	6.2%	6.1%	5.1%	2.0%	7.1%	5.0%		3.6%	5.1%
30/50#	34.9%	41.9%	32.2%	23.8%	29.8%	34.0%	18.4%	14.8%		34.1%	29.3%
50/70#	13.3%	9.6%	18.5%	18.3%	19.7%	23.1%	24.1%	26.7%		13.2%	18.5%
70/140#	35.4%	29.0%	28.4%	35.9%	32.2%	29.4%	34.8%	40.2%		35.1%	33.4%
-140# (wet and	12.2%	13.3%	14.7%	15.6%	13.0%	11.5%	15.2%	13.1%		14.0%	13.6%
dry)	100.1%	99.8%	100.1%	99.7%	99.7%	100.0%	99.7%	99.9%		100.0%	99.9%
	100.176	33.076	100.176	33.1 76	33.1 70	100.076	33.1 76	33.370		100.070	33.376

Source: MAPL (2014). Note that this table was selected by CSA Global as an example of Eirich Mixer results and is not specifically representative of all Eirich Mixer results

5.4 Geological interpretation by CSA Global

CSA Global has collated some information from previous exploration reports with the objective of identifying any possible geological domains at the Moberly Pit. The method adopted by CSA Global was to import geology and sample location maps into Micromine $^{\text{TM}}$ software and use these as the basis for delineating geological domains.

The main sources of information for the geological interpretation were:

- Lithological descriptions of the twenty samples collected in 2010
- The 'background mapping for frac sampling' map reported by MAPL (2010)

5.4.1 Domaining based on sample descriptions

The first iteration was to domain the pit based on the sample descriptions and indicated three possible domains according to 'free sand' sand content from east to west:

- High free sand content approximately 60 to 80%;
- Medium free sand content approximately 30 to 70%; and,
- Low free sand content less than approximately 20%.

5.4.2 Domaining based on geological mapping

The second iteration was to interpret provisional domains around lithologies mapped by MAPL (2010). The lithologies and geological descriptions hand-annotated on the original map (Figure 20) include:

• Qualitative good (free) sand development;



- Broken ore;
- Silicified quartzite;
- Ferruginisation;
- Clay parting unit; and,
- Tectonised Zone.

The interpreted geology map is shown in Figure 21, from which CSA Global notes that:

- 'Good sand' (or free sand) development appears to be predominantly in the eastern part of the deposit.
- Silicified quartzite crops out in the north-eastern parts of the deposit.
- Broken 'ore' and ferruginisation seems to occur within a domain along the south-western part of the deposit, to the west of the 'clay parting unit' (the black dashed line in Figure 21).
- The total Mineral Resource extends over an area of approximately 216,000 m² and 'good sand' extends over at least 70,000 m² of the total. This suggests that, based on area, 'good sand' may conservatively account for at least 30% to 50% of the total resource.

CSA Global notes that the above geological interpretation is a simplification, as according to M. Ward not all of the pit was accessible at the time of mapping and sampling. CSA Global is however of the opinion that there are probably several geological domains within the deposit, and that these domains may yield products of differing quality. Such possible variation in product quality could be a benefit to supplying specific products to niche markets.

5.5 CSA Global Conclusions and Recommendations

CSA Global is of the opinion that:

- The Mount Wilson quartzite has been structurally deformed and it is likely that the quartzite may be fractured (shattered) or foliated within localised high-strain zones.
- Structural deformation in shear or fracture zones may negatively impact on quartz grain size and shape, in addition to physical properties such as crush strength.
- The geology of the Moberly Pit is not homogeneous, which implies that grade (quality) and yield of frac sand products may vary spatially.
- The Eirich Mixer frac sand tests demonstrated variable grain size and/or grain liberation characteristics across the deposit, which corroborates the concept that the deposit is not homogeneous.
- Based on one set of test results, the finest size distribution in the Eirich samples was from two samples nearest to the south-western contact of the quartzite with limestone.
- Frac sand product quality is expected to vary between geological domains.
- Such product variability could be a benefit in segmenting and supplying niche markets.
- Areas of 'good sand development' (free, friable sand) probably extend over at least 30% to 50% of the Mineral Resource area.
- Based on previous production history and test results, most of the deposit should be suitable for frac sand and other sand products.



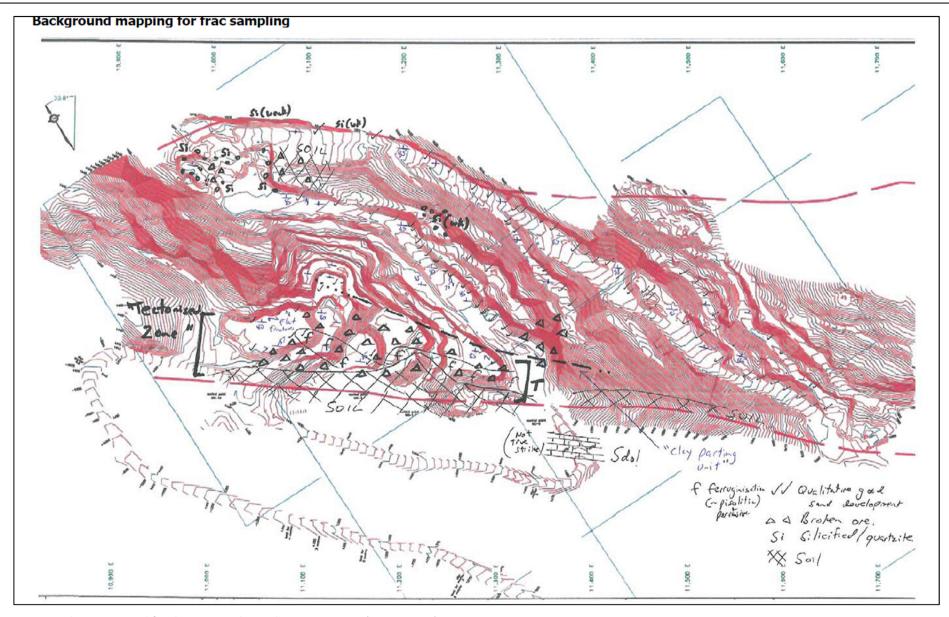


Figure 20: Geology map used for the Frac sand sampling programme (MAPL, 2010)



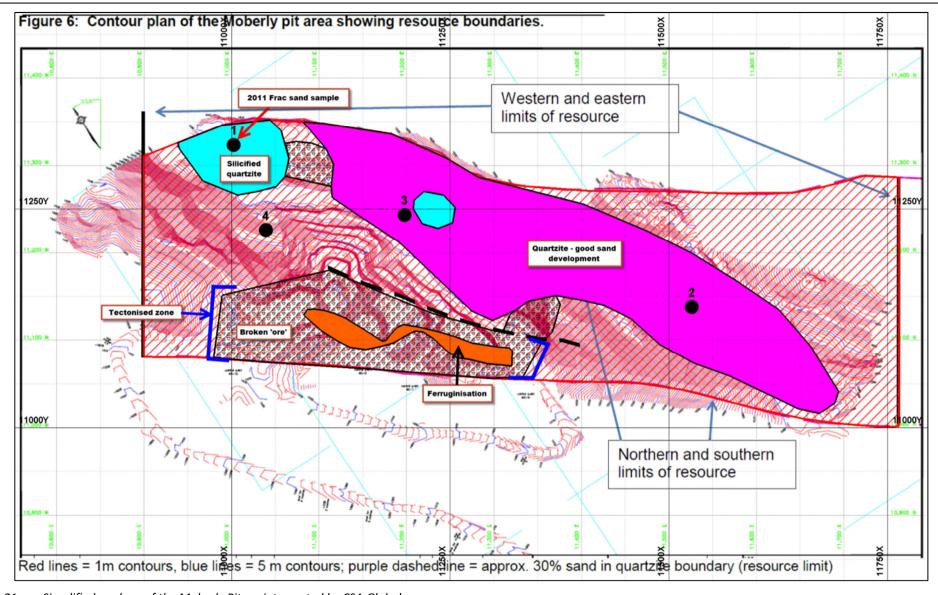


Figure 21: Simplified geology of the Moberly Pit, as interpreted by CSA Global Provisional, simplified geology domains based on the 2010 sample descriptions and the 2010 geology map. Note that not all of the pit was accessible at the time of mapping



6 Mineral Resource and Ore Reserves

6.1 Mineral Resource September 2016

Heemskirk has reported Indicated and Measured Mineral Resources for two types of silica sand product, namely 37.5 Mt of frac sand (30 to 140 mesh), or 50 Mt of silica product for glass and silica flour. The frac sand resource is expressed as an *in situ* tonnage at 70% frac sand yield, for 26.25 Mt Frac sand (30 to 140 mesh).

The complete JORC Table 1, Section 3 relating to this Mineral Resource estimate was released to the ASX by Heemskirk on 15th December 2015.

6.1.1 Methodology

The Moberly Deposit was assumed to be massive and largely homogeneous and the resource was estimated using a cross sectional technique (Ward, 2014; Heemskirk, 2015; 2016). No drill data was specifically used in the resource estimation, however confidence in depth extension was derived from holes drilled in the early 1980s (Huss, 1982).

As reported by Ward (2014, 2016), cross sections were generated using AutoCAD software from a pit topographic survey, and the area of each section was projected half way to the next section. A volume was calculated for each cross-section area and converted to tonnes by an average density of 2.5 t/m³. Density was measured using the water immersion method (Ward, 2014) and the results are presented in Table 14.

Table 14: Density (SG) results from Ward (2014)

	Quartzite	Approx. 10% sand	Approx. 30% - 50% sand	Approx. 70% sand
Dry SG	2.60 – 2.64	2.57	2.54 – 2.45	2.26
Saturated SG	2.65	2.6	2.60 – 2.50	2.37
SG excluding pores	2.65	2.660	2.63 – 2.56	2.39

6.1.2 Resource classification – Indicated and Measured

The resource was classified according to depth below the current pit floor, as Heemskirk considered that the current pit surface is well exposed in three dimensions and has been mined for over 25 years, yielding consistent quality silica, albeit mainly for the glass industry.

The Measured category for glass sand was taken from surface to 50 m below surface, and the Indicated category for a further 50 m below that. For frac sand, the Measured category was taken to 25 m below surface, with Indicated category a further 50 m.

6.1.3 Resource classification – Inferred

Although Inferred Resources were not reported in 2016, an earlier report by Ward (2014) defines Inferred Mineral Resources for frac sand or glass sand extending to 50 m below the base of the Indicated Resource, amounting to an additional 25 Mt in each case.

Ward (2014) also describes possible strike extensions where sandy quartzite has been exposed for about 200 m to the 11,800 N line. Sandy quartzite float and limited outcrop was noted to extend for several kilometres further east, which suggests potential for the discovery of additional resources.



Table 15: Estimated Mineral Resources for frac sand* markets reported in September 2016

	Dry tonnes (millons)			
Resource Category	2015	2016		
Measured*^	12.5 million tonnes @ 70% frac sand#	12.5 million tonnes @ 70% frac sand#		
Indicated*^	25.0 million tonnes @ 70% frac sand#	25.0 million tonnes @ 70% frac sand#		
Total Measured + Indicated*^	37.5 million tonnes @ 70% frac sand#	37.5 million tonnes @ 70% frac sand#		

Mineral Resources for frac sand include that proportion modified to produce Ore Reserves of frac sand.

Table 16: Estimated Mineral Resources for glass and silica flour markets* reported in September 2016

	Dry tonnes (millions) of silica product		
Resource Category	2015	2016	
Measured*	25.0	25.0	
Indicated*	25.0	25.0	
Total Measured + Indicated*	50.0	50.0	

^{*}Mineral Resources include that proportion modified to produce Ore Reserves.

In-situ silica for glass making sand and silica flour yields 100% saleable product and so is expressed as in-situ tonnes.

6.2 Mineral Resource validation

CSA Global imported a map of the Moberly Pit resource into Micromine™ software (Figure 22) and traced a polygon around the resource to obtain the horizontal area of the pit (*Figure* 23). The area (216,000m²) was multiplied by depth and a density of 2.5 t/m³ to derive a tonnage for each resource classification.

CSA Global is of the opinion that the *in situ* bulk density data of 2.5 t/m³ derived by Heemskirk is appropriate for this type of material, and has used this metric to estimate the tonnages reported in Table 17 and Table 18.

As shown in Table 17 and Table 18, this simple horizontal area method results in 40.5 Mt of *in situ* Frac sand material, or 54 Mt of *in situ* glass sand / silica flour. The Frac sand content is estimated to be between approximately 26 Mt and 28 Mt depending on the assumed yield (Table 19).

Table 17: Frac sand tonnage estimated by CSA Global (this report)

Resource area	Depth	Thickness	Volume	Density	<i>In situ</i> tonnes	Resource Category
216,000	0 to 25	25	5,400,000	2.5	13,500,000	Measured
216,000	25 to 75	50	10,800,000	2.5	27,000,000	Indicated
					Total 40,500,000	

Table 18: Glass sand and silica flour tonnages estimated by CSA Global (this report)

Resource area	Depth	Thickness	Volume	Density	In situ tonnes	Resource Category
216,000	0 to 50	50	10,800,000	2.5	27,000,000	Measured
216,000	50 to 100	50	10,800,000	2.5	27,000,000	Indicated
					Total 54,000,000	

Table 19: Frac sand tonnage yields based on in situ tonnages estimated by CSA Global (this report)

Table 15: The same termings yields success on months terminages communicated by continuous (minor operat)					
Resource Category	Frac sand Yield 2014 (64%)	Frac sand Yield 2016 (70%)			
	Frac sand tonnes	Frac sand tonnes			
Measured	8,640,000	9,450,000			
Indicated	17,280,000	18,900,000			
Measured + Indicated	25,920,000	28,350,000			

^{# 30} mesh to 140 mesh

[^] Frac sand Resources are not additive to Resources for glass making etc

Columns may not add up due to rounding



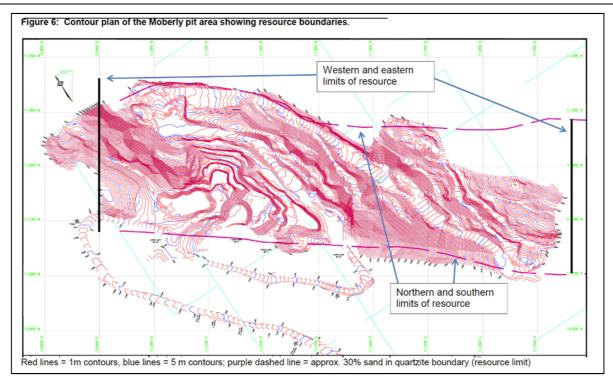


Figure 22: Map of the Moberly Pit showing limits of the reported Mineral Resource

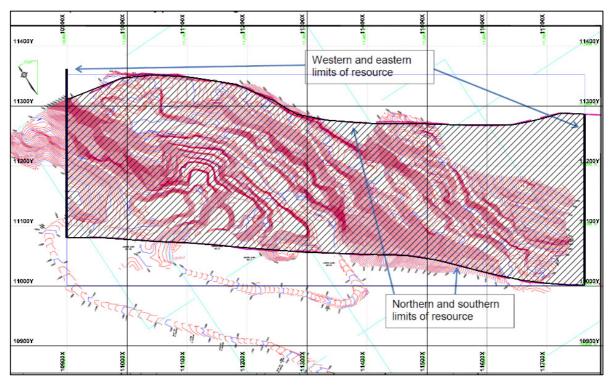


Figure 23: Area of Moberly Pit underlain by quartzite polygon (hatched) used by CSA Global to estimate the area of quartzite

6.3 Mineral Resource classification

Mineral Resources may be classified according to the JORC Code based on increased confidence in geology and grade (quality) continuity between points, as well as quality of information. Thus, as illustrated in Table 20, there should be sufficient confidence in Indicated and Measured resources to **assume** <u>and</u> **confirm** geological and grade (quality) respectively. There should also be **adequately** detailed and reliable geological



and sampling evidence for Indicated Resources and **detailed and reliable** geological and sampling evidence for Measured Resources.

CSA Global notes that an Indicated Resource should support mine planning, whereas a Measured Resource should support detailed mine planning.

Table 20: JORC Code 2012 Mineral Resource Classification Breakdown

Criteria	Inferred Resource	Indicated Resource	Measured Resource
Estimates support the application of Modifying Factors	-must not be converted to an Ore Reserve -reasonably expected that the majority of Inferredcould be converted to Indicatedwith continued exploration	-supports mine planning and economic evaluation of the economic viability of the deposit	-supports detailed mine planning and final evaluation of economic viability
Geological and grade (quality*) continuity between points	-sufficient to imply but not verify	-sufficient to assume	-sufficient to confirm
Quality of information	-limited geological and sampling evidence	-adequately detailed and reliable geological and sampling evidence	Detailed and reliable geological and sampling evidence

Source: Coombes (2016) *Quality measures are especially important for industrial mineral projects

6.3.1 JORC Code 2012 (Clause 49)

The JORC Code has specific requirements for reporting industrial minerals resources. Thus, for minerals that are defined by a specification, Clause 49 of The JORC Code 2012 requires industrial Mineral Resources to be reported "in terms of the mineral or minerals on which the project is to be based and must include the specification of those minerals".

Clause 49 also states:

"When reporting information and estimates for industrial minerals, the key principles and purpose of the JORC Code apply and should be borne in mind. Assays may not always be relevant, and other quality criteria may be more applicable. If criteria such as deleterious elements or physical properties are of more relevance than the composition of the bulk mineral itself, then they should be reported accordingly."

"Some industrial mineral deposits may be capable of yielding products suitable for more than one application and/or specification. If considered material by the reporting company, such multiple products should be quantified either separately or as a percentage of the bulk deposit."

6.4 CSA Global Conclusions and Recommendations

- Heemskirk has reported Mineral Resources for the Moberly Deposit in terms of Clause 49, according to product types described as
 - o Frac sand 30 to 140 mesh, and;
 - Silica sand with acceptable purity for glass and flour markets which have been supplied over the past two decades.
- The cross-sectional method used by Heemskirk to estimate global in situ tonnages is acceptable given
 the lateral and vertical extent of exposed quartzite in the pit, historical drill information and production
 over the past approximately 25 years.
- The *in situ* bulk density data of 2.5 t/m³ is appropriate for the Moberly Mineral Resource.
- The reported 37.5 Mt of frac sand Mineral Resources or 50 Mt of glass sand and silica flour Mineral Resource is reasonable.



- Although on a broad scale the Mount Wilson Quartzite may be deemed homogenous, and generally highpurity (low iron), there are local variations in geology across the pit that do not appear to have been accounted for in the frac sand resource estimation.
- The frac sand Measured Resource (or part thereof) may be more appropriately classified as Indicated, as
 the geological model does not appear to have sufficiently detailed geological and sampling evidence to
 support detailed mine planning.
- Additional geological mapping, sampling and frac sand product testing is recommended to increase confidence in geological and product domains, which would allow for detailed mine planning and hence improved product consistency.

6.5 Ore Reserve

CSA Global have carried out an independent validation of the ore reserve and has address key assumptions, parameters and methods used to convert the resources to reserves. These Modifying Factors include (but are not restricted to) mining, processing / metallurgical, infrastructure, marketing, legal / permitting, environmental, social, and governmental factors as well as the running of an independent Discount Cash Flow (DCF) model to show Economic viability. The modifying factors have been checked and detailed in Sections 3, 4, 7, 8, 9 & 11 of this report.

In summary, all permits (except amendment to dust permit) are in place for the 400,000 t/yr production rate including the 35-yr Mine Plan. Assumptions regarding the infrastructure and services required to operate the project are considered reasonable.

The financial model demonstrates that the outcome for the Ore Reserve project case is economically viable. Therefore, all Mineral Resources within the confines of the planned pit were converted to Ore Reserves.

CSA Global considers this Ore Reserve estimate to be both technically and economically viable.

6.5.1 Moberly Frac sand Ore Reserve Estimate

The Moberly Frac sand Ore Reserve Estimate is shown in Table 21.

Table 21. Estimate of Ore Reserves of Silica suitable for Frac sand, at 30 September 2016

	Dry tonnes				
Reserve Category	2015	2016			
Proved^	9.3 million tonnes @ 70% frac sand#	9.3 million tonnes @ 70% frac sand#			
Probable^	4.6 million tonnes @ 70% frac sand#	4.6 million tonnes @ 70% frac sand#			
Total Proved + Probable^	13.9 million tonnes @ 70% frac sand#	13.9 million tonnes @ 70% frac sand#			

- ^ Frac sand Reserves are not additive to Reserves for glass making, etc.
- # 30 mesh to 140 mesh
- Columns may not add up due to rounding

The information in this report that relates to Heemskirk Moberly Mineral Resources and Ore Reserves is based on information compiled by Heemskirk. The complete JORC Table 1, Section 4 relating to this Ore Reserve estimate was released to the ASX by Heemskirk on 15th December 2015.



7 Mining

7.1 Introduction

Mining of silica sand from the Moberly Pit was historically carried out by contractor operation. A similar arrangement is proposed for the frac sand operations. A contractor facilitates the extraction of rock from the benched operation, transport to an in-pit stockpile, and loads out to road trucks for transport to the plant some 9 km to the northwest. Operations at the pit are restricted to 5–6 month window in the year due to access restrictions in winter. However, it is proposed to have sufficient capacity to extract enough material for the whole year and stockpile at the plant within the available time.

7.2 Mining method

The mining method implemented at Moberly Project is a simple, selective and effective, use of excavators and dump trucks. Silica rock is loaded at the quarry face and dumped on a flat pad near the mine stockpile area, which is then slot dozed into stockpiles.

Overburden when encountered is hauled the shortest possible distance from the extraction area that does not compromise the future development of the mine. The mining method is consistent with historical operations at the site and CSA Global consider that this method is fit for use.

7.3 Cut-off grade

The assumption has been made by Heemskirk that 100% of the mined product is ore. This is a straightforward assumption due to the nature of the Mineral Resource being a bulk industrial mineral. Therefore, no defined cut-off grade is allocated, however during the Mineral Resource review there are a number of areas identified with geological differences that may require careful management to ensure the plant feed is not compromised. These silicified areas are readily identifiable and are expected to make up <10% of the resource area (MAPL, 2011). These silicified areas may result in a lower throughput in the plant due to the difficulty in liberating sand particles. The extraction schedule should allow for either blending these areas with more friable resource areas in the pit or avoiding mining altogether.

It is noted that reference to topsoil is only made with regards to reclamation, not mining. Although the majority of the mining area has been exposed there is likely to be some topsoil and/or overburden material excavated as the mine life progresses. It is assumed the cost of removing and stockpiling these materials is factored into the contractor mining cost.

7.4 Geotechnical engineering

In 2008, Golder Associates completed a geotechnical review of the site. This was undertaken to check the slope stability of the existing pit and review the future mine plans. Three different software programs (DIPS, SWEDGE and SLIDE) were used to assess the risks with inputs from the geotechnical face mapping that was conducted onsite. The following slope stability parameters were recommended:

- Bench Height: 10 m with an intermediate catch-bench width of 4.8 m at the intermediate bench elevation.
- Bench face angle of 78° to ensure that undercutting doesn't occur through bedding planes.
- Catch-bench width of 8 m at each double bench elevation

These recommendations were undertaken to account for Factors of Safety (FOS) of 1.9 in dry conditions and 1.7 for partially saturated conditions.



7.5 Mine plan

A 35-year mine plan has been completed by CKL Engineering in 2012 to suit a mining rate of 400,000 t/yr. This plan fits within the amended Mining Permit M181 and considers the geotechnical assessment as described above. The pit design has a conservative design as follows;

- 12 m high benches
- 15 m wide ramps
- 78° face angle
- 8 m wide safety berms
- 48.7° inter-ramp angle
- 12% ramp grade

12 m benches have been selected as an alternative to 2 m x 10 m double benches with a main bench width of 8 m and an intermediate bench width of 4.8 m, which is considered appropriate. The pit has been split into two phases, the West Expansion and the East Expansion. The West Expansion predominantly covers the existing mining pit whereas the East Expansion covers the upper mining areas, both pits eventually merge. These two phases will be concurrently mined to ensure a blended feed is provided to the plant.

7.6 Mine Schedule

Although mining will only occur in a three to four month period, the 35-year plan is scheduled on an annual basis to commencing in 2015. No GIS files were provided for the pit schedule so volumes could not be fully verified but a check volume was conducted and the assumptions made appear reasonable. One area where the schedule may need to be amended is the initial stages where the northern portion of the pit is extracted. This area is identified in Figure 21 as having a low sand content and being primarily silicified quartzite which may affect the processing plant performance. It is recommended that further investigation is placed on identification of silicified material and extraction scheduling so that an acceptable blend of friable and non-friable material is fed to the plant.

7.7 Run of Mine (ROM) stockpiles

The ROM stockpile is located at the processing plant site and is designed with a storage of 200,000 t (maximum of 400,000 t). The main reason for the large size of the ROM stockpile is to allow year-round operation of the plant due to limited access to the pit during winter. ROM stockpile is located on the southern side of the processing plant for road trucks to dump product transported from the mine. Material dumped from the trucks is loaded into the plant feeder by a stockpile loader.

7.8 Overburden dumps

According to the Reclamation Report (2016) overburden mined from the pit is pushed into overburden dumps within the pit footprint. A significant portion of the pit footprint has already been exposed and until new areas are opened up in the East Expansion overburden handling is likely to be kept to a minimum. It is assumed any overburden material is costed as part of the mining contractor rates. It is noted that this overburden is proposed to be used extensively for reclamation therefore is likely to be considered a valuable material later in the project life.

7.9 Environmental

The four main emissions anticipated from the mining process are noise, vibration, air and water. Noise emissions are likely to be generated during drill and blast activities, as well as the everyday operation of machinery at the pit. It is likely that these emissions can be controlled to an acceptable level and prevent nuisance to the surrounding neighbours. Noise and vibration are likely to be generated from the haul trucks as they transport material from the mine to the processing plant, this may require close control over air-



brake usage and speed limiting. Air emissions from the mine are primarily dust generated from blasting, movement of heavy machinery, windblown dust from stockpiles and truck haulage on unsealed roads.

7.10 Mine infrastructure

Minimal infrastructure is required at the pit due to its remote operation from the plant facility. Temporary buildings proposed for this area are considered appropriate given the campaign nature of the operation and the need to vacate the site over winter. No fixed power, water or sewerage is required to the pit.

7.11 Mining cost estimates (CAPEX and OPEX)

Mining and haulage activities are wholly managed by contractors, therefore CAPEX and OPEX estimates are locked in once contracts are executed. The information provided by the contractors for operating assumptions has been reviewed and is considered reasonable for the proposed operations.



8 Production

8.1 Haulage

Haulage from the pit to the plant is proposed using road trucks of 42 t capacity operated by contractors. The haulage will be aligned with the mining campaign to haul sufficient material to the ROM stockpile at the processing plant to sustain through the winter periods where access is restricted to the pit. The 16 km trip from the pit to the plant site poses minimal risk to the overall project as the operation can be ramped up or down as needed within the scope of the contractor agreement. It is noted that ongoing liaison with the residents along the haul route is required as part of the mines' community responsibility. Road transportation is impacted by the 'road bans' applied by the authorities after snow melts. Therefore, the surge of demand prior to spring should be predicted when scheduling production at the mine.

8.2 Processing

8.2.1 Background

The Moberly deposit is predominantly quartzite, which ranges from highly weathered (friable) to hard (silicified) quartzite, to produce the desired frac sand products a detailed processing system is required. Unlike some frac sand operations where sand is already liberated and readily available for screening or washing, the quartzite deposit at Moberly requires multi-stage processing, including dry crushing and screening, wet grinding and sizing, a drying process, then dry screening into products.

Heemskirk operates under an owner-operator model when the material is dumped at the processing plant located approximately 16 km north west of the mine.

8.2.2 Plant Design

The design of the plant has been an iterative approach which has been ongoing since early 2010. This approach has seen various changes primarily to optimise the recovery of sand within the #30-140 mesh sizing range.

The proposed flowsheet found in the Morrison Hershfield (APPENDIX F, 2015) report has been developed based on the test work undertaken to date. The process plant design is based on the simplified flowsheet (Figure 24) with unit operations that are conventional, well proven in industry and aligned with current industry practice.

The key criteria for equipment selection have been the suitability for duty, reliability, and ease of maintenance. Some components of the system have also been oversized where feasible to allow for future expansion of the plant to 600,000 t/yr.

The plant has been designed with the following general philosophy:

- Designed as fixed plant within predominantly enclosed buildings to suit the operating environment,
- Using various suppliers for different components of the plant due rather than a 'turn-key' package,
- Using a very experienced team with frac sand experts such as D. Olmen to oversee the construction and commissioning of the plant.



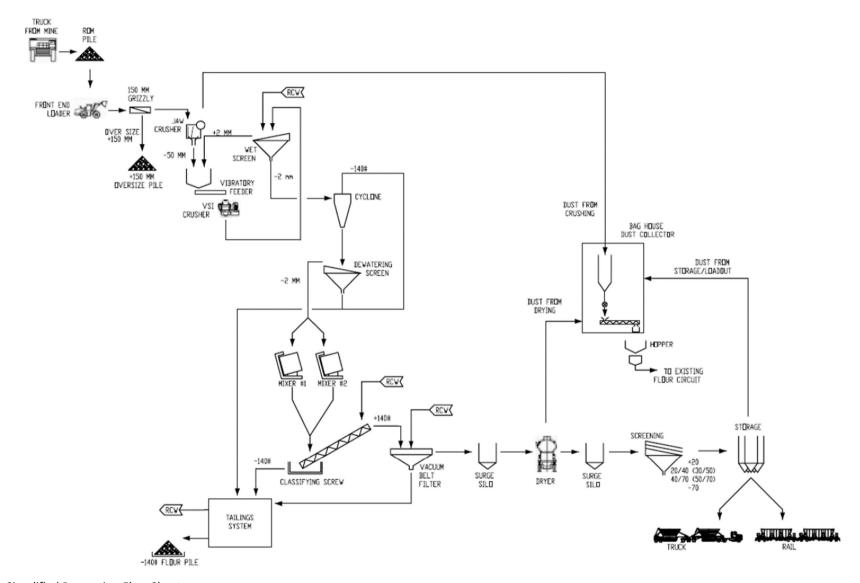


Figure 24. Simplified Processing Flow Sheet
(Source: Figure 54, Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015))



8.2.3 Processing Plant

The proposed processing plant at Moberly utilises both dry and wet processes with an aim to liberate as many individual sand grains as possible from the matrix without fracturing/crushing individual grains. To facilitate this liberation the quartzite is blasted, the oversize is separated for campaign crushing (if needed), and the product is dozer pushed to the mine stockpile for transport to the processing plant.

The +150 mm oversize is screened off and the -150 mm the material is crushed by a jaw crusher (with a -50 mm bypass) and VSI with any +12 mm oversize recirculated. The -12 mm material is wet screened with +2 mm oversize recirculated and the -2 mm dewatered and split into two Eirich mixers for wet grinding, the output flows through a classifying screw and a vacuum belt filter with the -140 mesh undersize going to tails and the remainder going to the drying process. After drying the material is dry screened and split into four product sizes.

The plant has been designed with a target minimum throughput of 50 t/hr or 300,000 t/yr. However, several sections of the plant can handle significantly more tonnage. It should be noted that investigations have been completed into the necessary upgrades to the plant to double the production (to 600,000 t/yr) however this has not been thoroughly assessed by CSA Global in this report. One key issue raised is with the assumption of availability and utilisation of the plant once commissioned. Heemskirk have assumed an overall productivity of 92% however an 85% rate is considered more appropriate for newly installed plant.

Table 7 in the Morrison Hershfield (2016) report received from Heemskirk outlines the design production rate of individual sections of the processing plant. It is clear that the main bottleneck in the system is the wet process being rated at 50 t/hr. It is noted that the dryer is also stated at 50 t/hr in Table 7 but elsewhere it is referenced at 100 t/hr.

In 2014, the Sepro mill was identified as a potential weak point (Section 5.2.8 of the Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015)) and two Eirich mixers capable of maintaining 50 t/hr were implemented in its place.

Based on the trials conducted the proposed use of Eirich mixers is a favourable change with appreciable increase in recoveries. In general, the design and development of the plant appears to have been collated over a significant time period with the input of various experienced frac sand professionals. CSA Global considers the current design fit for purpose with no fatal flaws identified, if the proposed commissioning plan is followed any minor issues will be able to be remedied in time and the plant should function as intended.

8.2.4 Product Storage & Distribution

Once processed the products are stored in a series of eight silos for distribution to either the rail loader or the truck loader. There is flexibility in which silo to use for each product. The proposed new rail spur will further increase loadout capacity. The proposed loadout facilities are considered appropriate.

8.3 Tailings

The frac sand process is expected to produce a fines by-product containing approximately -140 mesh sized material and water. The tailings are chemically inert and may be reused for other products including the existing silica flour plant or cement manufacture additives. It is proposed to store all tails on the western side of the plant site with none transported back to the pit. There is sufficient land area available to store large quantities of the material but care must be taken to ensure the stockpiled material does not generate excessive windblown dust or sediment which may cause nuisance.

8.4 Transportation of Product

The Moberly site is strategically located adjacent to the Trans-Canada Highway for truck haulage as well as train haulage via the rail spur off the Canada Pacific Railway. Access to these two vital transport options is

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critical to reduce the cost of transport to the market which commonly makes up a significant portion of the final selling price of frac sand. The proximity of reliable transport will assist with negotiating long term supply agreements. At this stage, no sale contracts have been provided so cost to deliver product is still dependent on project specific variables.



9 Infrastructure

9.1 Roads and Buildings

The processing plant site is accessed via Blaeberry River Road which maintains direct access to the Trans-Canada Highway. Blaeberry River Road is a sealed road which contains a level crossing for the Canada Pacific Railway, the crossing is provided with signals and boom gates to regulate traffic. The intersection at the highway contains appropriate sight visibility to safely accommodate turning heavy vehicles and is also provided with turning lanes.

The road access to the pit is further south along the Trans-Canada Highway via Hartley Road, Golden Donald Upper Road, a public gravel road then a private gravel access road to the pit (via lockable gate). The access is sealed up to the public gravel road and contains numerous rural residences and businesses. The intersections along the access road to the pit are appropriate for heavy vehicle haulage with turning lanes where required. The private access road is proposed to be upgraded as part of the frac sand project and shall provide reliable access to the pit outside of winter periods (October to April). The cost of this upgrade is budgeted at C\$1.7 million based on a design engineers quote.

Site buildings will include:

- Main Plant Building
- Primary Crusher Building
- Site Offices
- Warehouses
- Workshops
- Truck Scales

Existing buildings that will remain include the silica flour plant and the store which are in good condition. Storage of propane is carried out on a rental basis from the gas supplier, with one 68,100 L tank and three 1,000 gallon tanks supplied. The space available at the plant site is not constrained and new building locations have been selection with future expansion in mind.

9.2 Supply Chain and Product Transport

The site is approximately 694 km east of Vancouver and 281 km west of Calgary. The nearest town is Golden, some 16 km southeast of the site. The proximity to the local town with a population of about 4,000 people with a further 3,000 living in the district allows for adequate supply of skilled labour, trade services, fuel and other supplies as needed. Relationships exist with local suppliers for many consumables required to operate the plant. Reliable supply for electricity from BC Hydro is provided and ample power is available for the planned frac sand plant.

9.3 Water Supply

An assessment of the potential water supply to the plant from two wells has been completed as part of the Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015), (see 'logs and data for 2012 production water drilling program'). A further assessment titled 'Annexure BB report on environmental procedures for water bore development' was conducted, a maximum of 6.3 L/s is required for plant operation. This assumes that water supply for dust suppression and emergency plant operations during well downtime is sourced directly from the Blaeberry River (under licence). Some water will also be recovered through the dewatering stages of processing but the quantities are untested. Based on the initial estimated production from the two wells of 3.2 – 12.6 L/s, there is concern over the availability of water from the wells. However later testing in 2014 recommended a recommended pumping rate of 15.8 L/s from each of the two wells, which in well in excess of the anticipated plant requirements.

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Water supply to the pit is minimal and only required for dust suppression. This is supplied by a water truck which refills from a hydrant at the valley below. Management of dust suppression to eliminate dust containing respirable silica (-10 μ m size) is an important part of site risk management.

CSA Global has reviewed and finds reasonable, the assumptions and costs related to infrastructure.



10 Recommendations

CSA Global make the following recommendations:

10.1 Geology and Mine Planning

Additional geological mapping, sampling and frac sand product testing is recommended to increase confidence in geological and product domains, which would allow for detailed mine planning and hence improved product consistency.

10.2 Pricing

It is noted that Heemskirk have customer encouragement for supply of frac sand at prices potentially higher than the recommended values (Table 10). However, in the absence of firm off take contracts a more detailed, robust and comprehensive pricing analysis is required to be confident of pricing assumptions.

This should involve estimates of major current and potential competitors' costs of product delivered to the main fraccing sites. Initial levels of pricing incentive if so required should also be included.

This will also provide profit maximisation by allowing different (maximum) prices to be set for different delivered locations which capitalise on any associated strategic advantages."

Included in the pricing assessment should be risk assessment similar to that used by silica and frac sand producer US Silica in their Prospectus Supplement from 2016 (Appendix 1).



11 Valuation

11.1 Background

Mineral Asset means all property including (but not limited to) tangible property, intellectual property, mining and exploration tenure and other rights held or acquired in connection with the exploration, development of and production from those Tenures. This may include the plant, equipment and infrastructure owned or acquired for the development, extraction and processing of Minerals in connection with that Tenure.

Business valuers typically define market value as "The price that would be negotiated in an open and unrestricted market between a knowledgeable, willing, but not anxious buyer, and a knowledgeable, willing but not anxious seller acting at arm's length." The accounting criterion for a market valuation is that it is an assessment of "fair value", which is defined in the accounting standards as "the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's length transaction."

The VALMIN Code defines the value of a mineral asset as its Fair Market Value. Market Value means the estimated amount of money (or the cash equivalent of some other consideration) for which the Mineral Asset should exchange on the date of Valuation between a willing buyer and a willing seller in an arm's length transaction after appropriate marketing wherein the parties each acted knowledgeably, prudently and without compulsion. Also, see Clause 8.1 for guidance on Market Value.

Fair Market Value usually consists of two components, the underlying or technical value, and a premium or discount relating to market, strategic or other considerations. The VALMIN Code recommends that a preferred or most-likely value be selected as the most likely figure within a range after taking into account those factors which might impact on Value.

The concept of Fair Market Value hinges upon the notion of an asset changing hands in an arm's length transaction. Fair Market Value must therefore take into account, inter alia, market considerations, which can only be determined by reference to "comparable transactions". Generally, truly comparable transactions for mineral assets are difficult to identify due to the infrequency of transactions involving producing assets and/or resources, the great diversity of mineral exploration properties, the stage to which their evaluation has progressed, perceptions of prospectivity, tenement types, the commodity involved and so on.

For exploration tenements, the notion of value is very often based on considerations unrelated to the amount of cash which might change hands in the event of an outright sale, and in fact, for the majority of tenements being valued, there is unlikely to be any "cash equivalent of some other consideration". Whilst acknowledging these limitations, CSA Global has identified what it considers to be comparable transactions that have been used in assessing the values to be attributed to the mineral assets.

CSA Global's valuation is based on information provided by Heemskirk, Lion Capital and public domain information. This information has been supplemented by independent enquiries, but has not been independently verified. No audit of any financial data has been conducted. The valuations discussed in the Report have been prepared at a valuation date of 1st January 2017. It is stressed that the values are opinions as to likely values, not absolute values, which can only be tested by going to the market.

The choice of valuation methodology applied to mineral assets, including exploration licences, will depend on the amount of data available and the reliability of that data.

11.2 Valuation Methodologies

The VALMIN Code classifies mineral assets into categories that represent a spectrum from areas in which mineralisation may or may not have been found through to Operating Mines which have well-defined Ore Reserves, as listed below:



- Early-stage Exploration Projects Tenure holdings where mineralisation may or may not have been identified, but where Mineral Resources have not been identified;
- Advanced Exploration Projects Tenure holdings where considerable exploration has been undertaken and specific targets identified that warrant further detailed evaluation, usually by drill testing, trenching or some other form of detailed geological sampling. A Mineral Resource estimate may or may not have been made but sufficient work will have been undertaken on at least one prospect to provide both a good understanding of the type of mineralisation present and encouragement that further work will elevate one or more of the projects to the Mineral Resources category.
- Pre-Development Projects Tenure holdings where Mineral Resources have been identified and their
 extent estimated (possibly incompletely), but where a decision to proceed with development has not
 been made. Properties at the early assessment stage, properties for which a decision has been made not
 to proceed with development, properties on care and maintenance and properties held on retention
 titles are included in this category if Mineral Resources have been identified, even if no further work is
 being undertaken;
- Development Projects Tenure holdings for which a decision has been made to proceed with construction or production or both, but which are not yet commissioned or operating at design levels. Economic viability of Development Projects will be proven by at least a Pre-Feasibility Study.
- Production Projects Tenure holdings particularly mines, wellfields and processing plants that have been commissioned and are in production.

Each of these different categories will require different valuation methodologies, but regardless of the technique employed, consideration must be given to the perceived "fair market valuation".

The Fair Market Value of Exploration Projects and Pre-Development Projects can be determined by four general approaches: Cost; Market; Geoscience Factor or Income.

11.2.1 Cost Methods

The Appraised Value or Exploration Expenditure Method considers the costs and results of historical exploration.

The Appraised Value Method utilises a Multiple of Exploration Expenditure (MEE) which involves the allocation of a premium or discount to past expenditure through the use of the Prospectivity Enhancement Multiplier (PEM). This involves a factor which is directly related to the success (or failure) of the exploration completed to date, during the life of the current tenements.

Guidelines for the selection of a PEM factor have been proposed by several authors in the field of mineral asset valuation (Onley, 1994).

11.2.2 Market Methods

Market Approach Method or Comparable Transactions looks at prior transactions for the property and recent arm's length transactions for comparable properties.

The Comparable Transaction method provides a useful guide where a mineral asset that is comparable in location and commodity has in the recent past been the subject of an "arm's length" transaction, for either cash or shares.

In an exploration joint venture or farm-in, an equity interest in a tenement or group of tenements is usually earned in exchange for spending on exploration, rather than a simple cash payment to the tenement holder. The joint venture or farm-in terms, of themselves, do not represent the Value of the tenements concerned. To determine a Value, the expenditure commitments should be discounted for time and the probability that the commitment will be met. Whilst some practitioners invoke complex assessments of the likelihood that commitments will be met, these are difficult to justify at the outset of a joint venture, and it seems more



reasonable to assume a 50:50 chance that a joint venture agreement will run its term. Therefore, in analysing joint venture terms, a 50% discount may be applied to future committed exploration, which is then "grossed up" according to the interest to be earned to derive an estimate of the Value of the tenements at the time that the agreement was entered into.

Where a progressively increasing interest is to be earned in stages, it is likely that a commitment to the second or subsequent stages of expenditure will be so heavily contingent upon the results achieved during the earlier phases of exploration that assigning a probability to the subsequent stages proceeding will in most cases be meaningless. A commitment to a minimum level of expenditure before an incoming party can withdraw must reflect that party's perception of minimum value and should not be discounted. Similarly, any up-front cash payments should not be discounted.

The terms of a sale or joint venture agreement should reflect the agreed value of the tenements at the time, irrespective of transactions or historical exploration expenditure prior to that date. Hence the current Value of a tenement or tenements will be the Value implied from the terms of the most recent transaction involving it/them, plus any change in Value as a result of subsequent exploration. Where the tenements comprise applications over previously open ground, little to no exploration work has been completed and they are not subject to any dealings, it is thought reasonable to assume that they have minimal, if any Value, except perhaps, the cost to apply for, and therefore secure a prior right to the ground, unless of course there is competition for the ground and it was keenly sought after. Such tenements are unlikely to have any Value until some exploration has been completed, or a deal has been struck to sell or joint venture them, implying that a market for them exists.

High quality mineral assets are likely to trade at a premium over the general market. On the other hand, exploration tenements that have no defined attributes apart from interesting geology or a "good address" may well trade at a discount to the general market. Market Values for exploration tenements may also be impacted by the size of the land holding, with a large, consolidated holding in an area with good exploration potential attracting a premium due to its appeal to large companies.

11.2.3 Geoscience Factor Methods

The Geoscience Factor (or Kilburn) Method seeks to rank and weight geological aspects, including proximity to mines, deposits and the significance of the camp and the commodity sought.

The Geoscience Factor method, as described by Kilburn (1990), provides an approach for the technical valuation of the exploration potential of mineral properties, on which there are no defined resources.

Valuation is based upon a calculation in which the geological prospectivity, commodity markets, and mineral property markets are assessed independently. The Kilburn method is essentially a technique to define a Value based upon geological prospectivity. The method appraises a variety of mineral property characteristics as follows:

- Location with respect to any off-property mineral occurrence of value, or favourable geological, geochemical or geophysical anomalies
- Location and nature of any mineralisation, geochemical, geological or geophysical anomaly within the property and the tenor of any mineralisation known to exist on the property being valued
- Number and relative position of anomalies on the property being valued
- Geological models appropriate to the property being valued.

The Geoscientific Factor method systematically assesses and grades these four key technical attributes of a tenement to arrive at a series of multiplier factors.

The Basic Acquisition Cost (BAC) is an important input to the Kilburn Method and it is calculated by summing the application fees, annual rent, work required to facilitate granting (e.g. native title, environmental etc.) and statutory expenditure for a period of 12 months. Each factor is then multiplied serially by the BAC to



establish the overall technical value of each mineral property. A fifth factor, the market factor, is then multiplied by the technical value to arrive at the fair market value.

The Rule-of-Thumb (Yardstick) Method is relevant to exploration properties where some data on tonnage and grade exist may be valued by methods that employ the concept of an arbitrarily ascribed current in-situ net value to any Ore Reserves (or Mineral Resources) outlined within the tenement (Lawrence 2001, 2012).

Rules-of-Thumb Methods are commonly used where a Mineral Resource remains is in the Inferred category and available technical/economic information is limited. This approach ascribes a heavily discounted *in situ* value to the Mineral Resources, based upon a subjective estimate of the future profit or net value (say per tonne of ore) to derive a rule-of-thumb.

This yardstick multiplier factor applied to the Mineral Resources delineated (depending upon category) varies depending on the commodity. Typically, a range from 0.4-3% is used for base metals and PGM, whereas for gold and diamonds a range of 2-4.5% is used. The method estimates the in situ gross metal content value of the mineralisation delineated (using the spot metal price and appropriate metal equivalents for polymetallic mineralisation as at the valuation date).

The chosen percentage is based upon the valuer's assessment of the assigned JORC Code's Mineral Resource or Exploration Target category, the commodity's likely extraction and treatment costs, availability/proximity of transport and other infrastructure (particularly a suitable processing facility), physiography and maturity of the mineral field, as well as the depth of the potential mining operation.

11.2.4 Income Methods

The Income Approach is relevant to mineral properties on which undeveloped Mineral Resources have been identified by drilling. Value can be derived with a reasonable degree of confidence by forecasting the cash flows that would accrue from mining the deposit and discounting to the present day and determining a Net Present Value (NPV).

The Income Approach is not appropriate for properties without Mineral Resources.

11.2.5 Summary

A valuation report should make use of at least two valuation approaches. Where more than one valuation approach is adopted, the Practitioner should comment on how the results compare and the reasons for selecting the value adopted. If it is impractical to use two valuation approaches, the Practitioner must clearly and unambiguously outline the reasons for not doing so.

Regardless of the technical application of various valuation methods and guidelines, the valuer should strive to adequately reflect the carefully considered risks and potential of the various projects in the valuation ranges and the preferred values, with the overriding objective of determining the "Fair Market Value".

Table 22 shows the valuation approaches that are generally considered appropriate to apply to each type of mineral property.

Table 22. Valuation Approaches for different Types of Mineral Properties (VALMIN Code, 2015)

Valuation Approach	Exploration Projects	Pre-Development Projects	Development Projects	Production Projects
Market	Yes	Yes	Yes	Yes
Income	No	In some cases	Yes	Yes
Cost	Yes	In some cases	No	No

CSA Global considered the exploration maturity/development stage in deciding what methods would be suitable in assessing the value of the Moberly Silica Sand Project. The level of feasibility and costing that has been previously completed makes the income method the preliminary valuation method. Preliminary



background research shows that there is sufficient existent data to accurately to undertake a Market Appraisal Value method as a secondary valuation method.

11.3 Previous Valuations

There were no previous valuations available for comparison.

11.4 Income Method (Financial Model Inputs)

11.4.1 Overview

CSA Global received a financial model that was developed internally by Heemskirk and their financial advisors Lion Capital (Lion Capital, 2017). The financial model was completed as part of an updated internal review of the Moberly frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015).

Key inputs and parameters in the internal Heemskirk model were analysed and used where appropriate in the independent CSA Global Financial Model. The CSA Global Financial Model was used to evaluate the cash flow effects of the mining schedule, process plant design, and the relative sensitivities of major cash flow components as well as an estimate NPV and IRR.

The CSA Global Financial Model reports all cash flows and financial metrics, but does not incorporate debt repayment facilities. For simplicity, the model used Canadian dollars (C\$) as the base currency with no allowance made for forecasted exchange rate variations as the majority of the cash flows occur in C\$. Cash flows were estimated based on product pricing and cost escalation that were deemed appropriate through sourcing data from an internal valuation supplied by Heemskirk, existing contracts, desktop research and a CSA Global marketing study. A base case project NPV was calculated using a discount rate of 9.6%.

11.4.2 Income Method Inputs

Commodity Prices

CSA Global understand that there are presently no supply contracts in place.

As discussed in detail in section 3, CSA Global concluded that without detailed pricing information from a targeted marketing study, it is CSA Global's recommendation that an initial base price of C\$65/tonne FOT (Year 1) be assumed with annual price increases of C\$5/tonne to reach \$85/tonne FOT (Year 5). CSA Global's bases this recommendation on the information highlighted in Section 3.2.

Table 10 details the recommended pricing data. For sensitivity analysis, it is recommended that variations of $\pm C$ \$5/tonne be used.

Table 23: Moberly Frac sand and Silica Flour Pricing inputs for CSA Global Model

	Year 1	Year 2	Year 3	Year 4	Year 5	Source
Frac sand	\$65	\$70	\$75	\$80	\$85	Dr R Flook
Silica Flour	\$140	\$140	\$140	\$140	\$140	Dr R Flook

In the absence of sales contracts, it is recommended that the sales projections (tonnes per year) as outlined in Table 11 be assumed.

Based on the CSA Global's industrial minerals marketing experience, it is usual that full operational production takes some time to achieve, particularly for new product(s), from a new supplier, in a competitive environment.



Mining

Heemskirk has entered into a contractual agreement with Speers Contracting Inc to undertake the mining, and drill and blast of material, and a load and haul agreement with BNW Contracting for the loading of material at the mine, and transportation to the processing plant. Rates for each of the tasks and respective contractors have been negotiated and signed for the next two years as shown in Table 24.

Table 24: Contractor Rates 2017 and 2018 Moberly Silica Mine

Year/Haul Season	Speers Contracting Inc (Mining)	BNW Contracting (Load and Haul)
2017	\$6.65/t	\$6.65/t
2018	\$6.50/t	\$6.50/t

For the purposes of the CSA Global Financial Model the rates that have agreed upon within the contracts signed with Speers Contracting and BNW Contracting were utilised as inputs as current and reasonable values.

It should also be noted that from the information provided there was approximately 205,000 t on the ground at the processing plant ROM stockpile and another 117,000 t at the mine ROM pad. To account for this existing inventory in the DCF model, costs in the final year of the project cash flow (Year 30.5) have been reduced as inventory is run down and the final material is processed.

Yield

Based on metallurgical testing completed on samples on the site there was a varying degree of yields from the raw product feed. Four yields have been used for various stages of the project with a summary shown in Table 25. The yields are current estimates based on test work and not on prior production.

Table 25: Moberly Processing Plant Raw Material to Product Yields

Date	Yield	Source of testing
21/10/2011	64%	Preliminary Feasibility Study
30/11/2016	70%	Competent Person
3/2/2015	75%	Revised Feasibility Study Assumption
6/2010	86.5-53.8%	Range of Lithological and Spatial Testing

In their expert review, Morrison Hershfield (2015) detail the range of lithological and spatial testing which was undertaken in mid-2011. They note that this produced a range of values across four samples, and they state that "no single sample could be regarded as "typical" of Moberly ore feedstock. Rather the samples could be regarded as representative extremes that may be fed to the frac sand plant and test results could be combined to simulate potential mill feedstock.".

From the testing in the Moberly Frac sand Final Feasibility Study (Heemskirk Consolidated, 2011) it was the assumed average recovery rate was 64%, however this was increased in the Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015) by adding in Eirich Mixers to the processing plant design.

Despite this, for the purposes of completing DCF modelling, CSA Global has assumed that an overall yield of 70% is more realistic. This aligns with the annual Mineral Resource and Ore Reserve statements that are released by the Heemskirk and have been completed by a Competent Person.

Processing Plant Overall Efficiency

Targeted production for the Moberly Project in both the Moberly Frac sand Final Feasibility Study (Heemskirk Consolidated, 2011) and the Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015) has been 300,000 t/yr of product material.

This is achieved through the partially built processing plant, which will have an estimated raw material throughput of approximately 50 t/hr when completed. Below in Table 26 is the suggested Availability and Utilisation, Processing Time and Down Time that has been assumed in the Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015) as completed internally by Heemskirk.



Table 26: Plant Availability and Utilisation

Processing Time	Down Time	Overall Efficiency	Source
8059	701	92%	Feasibility Study – Heemskirk
7446	1314	85%	CSA Global Review Number

Using the initial assumptions as set out in the Moberly Frac sand Revised Feasibility Study (Heemskirk Consolidated, 2015) a combined availability and utilisation or overall efficiency of 92%. CSA Global has interpreted and made recommended a reviewed overall efficiency rate based on the following definitions:

- Availability: The percentage of time that a system or equipment is available to perform its required function or intended purpose.
- Utilisation: The percentage of time that a system is efficiently utilised when available to perform its required function or intended purpose.
- Overall Efficiency: Availability Rate x Utilisation Rate

CSA Global has reviewed the capabilities of the specified plant and finds that a more suitable input for the combined effective utilisation is 85%, which is a combination of a 92% availability and 92% utilisation.

Changes in the product yield and overall efficiency have also reduced the plants annual production capacity, with the annual maximum production rate as follows:

Hours per annum x Overall Efficiency x Raw Material Process Rate x Recovery = Annual Production

 $8760 \, hr \, x \, 0.85 \, x \, 50 \, t/hr \, x \, 0.70 = 260,010 \, t/yr$

Therefore, the maximum production rate of saleable frac sand with the Stage 1 plant is 260,010 t/yr.

Processing Cost Inputs

Inputs for determining the processing costs of the material were completed on a first principle basis. As the rest of the operation is contract managed, the processing plant proposes to use an owner operator model. The same methodology as completed in the Heemskirk Revised Feasibility Study was adopted, which required estimating a labour force, wages, electricity and propane, and maintenance costs to find an overall cost. A summary of the assumed inputs at full production are shown in Table 27.

Table 27. Operating Costs Processing Plant

Parameter	Cost	Units
Labour – Technical Services	\$607,000	Per year
Labour - Operations	\$3,260,000	Per year
Flour Processing Cost	\$0.92	Per tonne
Raw Storage and Handling	\$0.22	Per tonne
Crushing/Screening Costs	\$0.62	Per tonne
Wet Process Costs	\$0.71	Per tonne
Drying Costs	\$2.01	Per tonne
Screening Costs	\$0.18	Per tonne
Load Out Costs	\$0.09	Per tonne

From the assumptions that were made during the Heemskirk internal valuation there was only a slight variation in the input values. Instead of utilising a two-shift roster operating a 24-7 operation (considered unrealistic), a four-shift roster was implemented and this produced similar figures.

Overheads

Overheads for both the onsite and head offices in Calgary and Melbourne. Costs were sourced from the Heemskirk Revised Feasibility Study and reviewed with the following inputs used in the DCF model as shown in Table 28.



Table 28. Overheads

Parameter	Cost	Units
General Office Expenses	\$10,000	Per annum
Heating	\$5,000	Per annum
Safety and OH and S	\$10.000	Per annum
Dust Control	\$12.000	Per annum
Insurance	\$50,000	Per annum
Mineral Tenures	\$20,000	Per annum
Rail Siding Rental	\$8,000	Per annum
Licences, Permit and other fees	\$10,00	Per annum
Property taxes incl. Haul Road	\$20,000	Per annum
IT and Telecommunications	\$20,000	Per annum
Garbage, Cleaning, Water	\$8,000	Per annum
Freight Contracts	\$10,000	Per annum
Others	\$4,000	Per annum
Consultant, IT, Engineering, Geology	\$25,000	Per annum
Quarry Tax	\$0.15	Per t, >25,000t
Calgary and Melbourne Office	\$3,000,000	Per annum

Capital Cost Inputs

The frac sand plant comprises significant portion of the capital cost to commence the project to keep the plant properly maintained. The data for capital costing has either come from Heemskirk financial cost control report or researched values and is summarised in Table 29.

Table 29. Capital Cost Inputs

eest inputs	
Parameter	Cost
Processing Plant Install (Remaining) Canadian Contingent	\$13,738,000
Processing Plant Install (Remaining) US Contingent	\$1,823,470
Sustaining Capital	\$400,000

• Sustaining Capital has been calculated as a percentage items requiring maintenance and in the form of parts and materials. All labour to complete the required maintenance has been accounted for in the operating costs.

Price and Cost Escalation

The most recent outlook on the Canadian Economy by the International Monetary Fund (IMF) shows that economic growth is forecast to vary between 1.2% and 1.9% in 2017. Consequently, a price escalation of 1.6% per annum and a cost escalation of 1.6% was used in the CSA Global Model.

Discount Rate

The discount rate has three main factors:

- risk-free interest aspect;
- political risk aspect; and a,
- project risk aspect.

Firstly, to fairly assess the risk-free aspect the 10-Year Government Bond rate is used – which at the time of publishing this document is 2.6% (Source: https://www.bloomberg.com/markets/rates-bonds/government-bonds/australia).



Secondly, the political risk factor analyses the government policy, native title, competing land uses, and project location. This risk factor is set as follows.

- Low political risk: 2–3%.
- Medium to high political risk: 4–5%
- Extremely high political risk: 6–10%

For the Moberly Project CSA Global conclude that a low political risk is applicable, with a 3% rate applied, as the project is operated in a politically stable country with existing lease approval and history of successful mining operations.

Lastly, regarding project risk, the following factors apply:

- Very Low to Low project risk: 2–3%.
- Medium to High project risk: 4–5%.
- High to Very High project risk: 6–10%.

CSA Global conclude that the existing operations at the Moberly Project significantly reduce this risk. Furthermore, negotiated contracts until the end of 2018 all establish certainty of the operational costs to getting the material to the processing plant. However, as the plant has not be commissioned yet it is difficult to be certain about production of specific products, yields and availabilities. Also, there are no negotiated sales contract as yet, which gives a certain degree of uncertainty when establishing a fixed production rate. It is suggested that a medium project risk 4%, be applied.

A minimum discount rate is therefore estimated at 9.6% based on the above assumptions.

11.4.3 Sensitivity Analysis

Sensitivity Analysis was conducted by varying the different input parameters in the CSA model. This is to test the profitability of the project due to changes in various key inputs. Each of the key parameters are varied for a range of values while all other inputs are kept constant to see the range of values and determine the volatility to the project value.

Sensitivity Analysis was conducted on seven key parameters for the Moberly Project as shown in Table 30.

Table 30: Sensitivity Analysis

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Parameter	Parameter Input	Parameter Range	Value Range
Plant Utilisation/Availability	0.85	0.89 to 0.81	45.64 – 32.52
Plant Recoveries	70%	72% to 68%	45.12 – 33.07
Price/Cost Escalation	1.6%	2.0% to 1.2%	41.53 – 36.80
Capital Costs	Vary total of Capital Costs	-5% to + 5%	40.40 – 37.80
Operating Cost	Vary total of Operating Costs	-5% to + 5%	44.75 – 39.10
Total Costs	Vary Total Costs	-5% to + 5%	47.69 – 30.50
Product Pricing	Vary Product Pricing	-5% to + 5%	28.54 – 49.65

From the sensitivity analysis, it is clear that the major parameters effecting the NPV value range are the Plant Recovery, Total Cost and Product Pricing. With the reduction in the recovery from the CSA Global review, it is much more unlikely that the average yield drops below 70% and significantly reduce the project viability. Fluctuations in product pricing and total cost are more likely to occur, but the range of the values respectively (C\$28.54M–C\$49.65M) and (C\$47.69M–C\$30.50M) show a substantial, yet more or less equal, upside and downside risks.



11.4.4 Income Method – CSA Global Model Base Case and Value Range

Using the inputs discussed above, CSA Global developed a DCF model for the Moberly Project. The pre-tax base case scenario shows a NPV of C\$39.1 million using a discount rate of 9.60%.

All of the three sales projection production cases outlined in Table 11 were modelled. The base case was accepted as the main option and the others did not significantly vary the NPV.

The sensitivity analysis shows that varying the product prices produces the greatest range of values, (C\$28.5 - 49.7 million), with the total costs being a close second in terms of sensitivity (C\$47.7 - 30.5 million).

Based on the income method therefore, CSA Global conclude that the Moberly Project has a value between C\$28.5 million and C\$49.7 million, with a Preferred Value of C\$42 million.

The reason for the preferred valuation being greater than the base case NPV is that there are substantially more resources present at the project, as demonstrated by the additional 25 Mt Inferred Resources, which would underpin an extended project life.

11.5 Market Appraisal Value Method

The market appraisal value method has been used as a secondary method to corroborate the findings of the income method. From review of the project it was clear due to existing projects that there was enough data to complete this method often predominantly used as a first pass comparison with projects of similar status.

The 2H 2016 Oilfield Services Report (Headwaters MB, 2017) indicates that the US and Canadian oil and gas markets are on the way to recovery after a decline in prices up to 2016. In addition, with an increase in US oil production from 6.3 billion barrels a day in 2012 to 9.1 million barrels a day in 2015, the percentage of oil sourced from hydraulically fractured wells over that period has increased from 30% in 2012 to 51% in 2015 (Headwaters MB, 2017). There has also been an increase in the percentage of production from horizontal drilling with increased fraccing stages per lateral, resulting in increased use of frac sand per well. For example, increases were up to 200% per well in 2016 at EOG Resources Inc (Headwaters MB, 2017). This is despite a fall in demand of 17% from 2014 to 2015 with a further fall from 2015 to 2016 of 35% (Headwaters MB, 2017).

The trend towards increased use of frac sand from 2017 onwards should result in an increase in the market value of frac sand projects, dependent on their sand quality, production costs and proximity to market.

The most comparative project is the Emerald Quarries project located in Queensland, Australia distant approximately 320 km east of Rockhampton. This project produces a large range of sand and aggregate sizes up to 7 mm, having previously focussed on the sale of decorative aggregates, road base material and concrete sand up to 450,000 t/yr. Since 2015, Emerald Quarries has focussed on production of medium-high to high value dried sands including bore gravel, pool filter sand, #18/40 #16/20 and #20/40 mesh frac sand and specialty sands initially at 100,000 – 150,000 t/yr.

The current status of the operation is:

- 5 Mt of -10 mm sand mined and stockpiled on site.
- Site infrastructure established including maintenance facilities, drying plant (100 t/h), office and weighbridge.
- Automated bagging plant on site capable of bagging 1.5 t bulkabags at 150 t/h (also automatic bagging of 20 kg bags)
- CDE wash plant construction (\$A1 million) about to commence. This plant will produce a +0.40 mm
 -7 mm clean sand at 150 t/h and will use sedimentation ponds instead of thickeners.

As a comparison with Moberly, Ausrocks have valued Emerald Quarry at \$22MC in 2016, based on the value \$MC-\$MA. The comparison is below in Table 31:



Table 31. Moberly -v- Emerald Quarries Valuation

	Value 2017 Pre-tax (\$MC)	CAPEX to date (\$MC)	Resource (Mt)	Resource Value (\$C/t)	Comments
Moberly	39.1	21.5	37.5	0.47	Production Qtr 3 2017. Total CAPEX \$37.2M to 2019.
Emerald Quarries	22.0 (2016)	7	47.44	0.32	Production Qtr 4 2017. Total CAPEX \$8M to 2018.

With regard to US and Canadian valuations or sales, please refer to

Table 34 (North American Frac sand/Proppant Sand Sales. For North American projects, an exchange rate of 0.7US = C=A).

Table 34 shows recent sales (S) of Frac sand Projects in USA and Canada as well as recent valuations of projects (V) and valuations based on a Preliminary Economic Assessment (PEA). The projects considered include:

- NBR Sand LLC (US)
- Smart Sand Inc (US)
- Fairmount Santrol (US)
- Seymourville (Canada)
- Firebag (Canada)
- Emerald Quarries (Australia)
- Moberly (Canada)

In terms of the ratio of Project Value to Resource Tonnage, Table 32 is the summary for seven projects where data is available. Moberly is in the lower range of values.

Table 32. Ratio of Project Value: Resource Tonnage

Parameter	ter Project Value/Resource Tonnage (\$C/t)		Comments
CRS Proppants	1.38	1.38	No Infrastructure Value determined
NBR Sand	4.29	3.85	37.94 – 14.43
Smart Sand Inc	0.16		28.15 - 24.30
Seymourville	4.04	0.46	No Infrastructure Value determined
Firebag Project	6.88		
Emerald Quarries	0.46	0.32	
Moberly	1.04	0.47	
Average	2.61	1.30	
Standard Deviation	2.51	1.49	

In terms of the Production Rate -v- Project value, Figure 25 and Figure 26 show how Moberly is positioned. There is a reasonable correlation between the project value and the production rate up to 2 Mt/yr. By establishing a line of best fit and excluding Moberly, the estimated value for Moberly is \$C40 million.



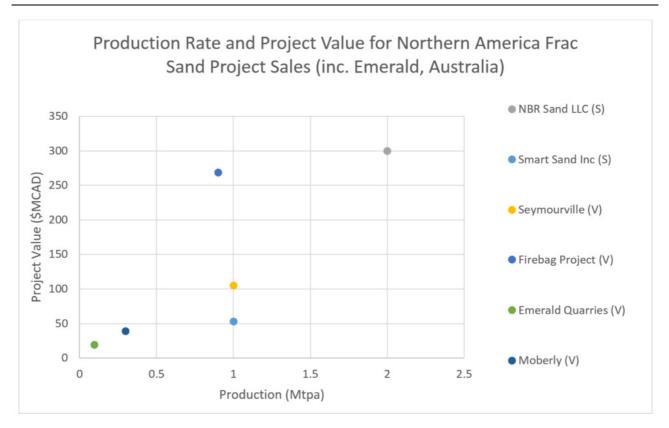


Figure 25. Production Rate and Project Value for Northern American Frac sand Project Sales (includes Emerald in Australia). (S = recent sales, V = recent valuation)

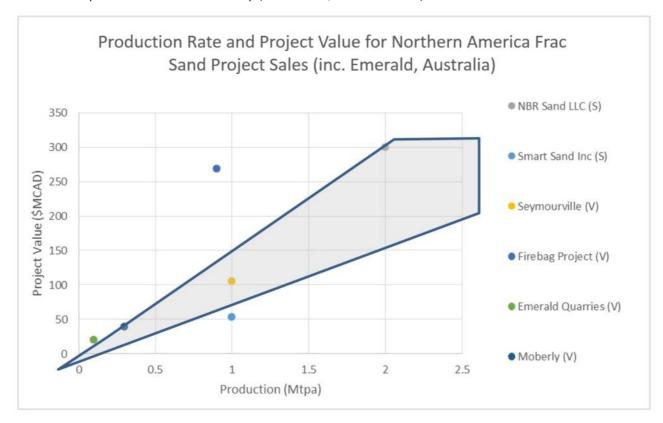


Figure 26. Production Rate and Project Value for Northern American Frac sand Project Sales (includes Emerald in Australia). (S = recent sales, V = recent valuation)



Table 33. Comparison of Projects with Similar Market Value

NPV COMPARISON OF NORTH AMERICAN & AUSTRALIAN FRAC SAND/PROPPANT SAND PROJECT SALES

Project Name/Location	Company/Location	Date of Sale	Sale Value (\$CM) or Valuation /PEA	Infrastructure Value (\$MC)	Resource Value (\$MC)	Production Rate (Mt/a)	Resource/Reserve Tonnage (Mt)	Ratio Sale Value to Production Rate	Resource Value (\$C/t)	Resource Type
Seymourville	Claim Post/Manitoba	Valuation 2014:NPV	105.00	93.00	12.00	1	26	105.00	0.46	Inferred
Emerald Quarries / Qld Australia	Emerald	Valuation 2016: NPV	22.00	7.00	15.00	0.3	47.44	73.33	0.32	Indicated
Moberly	Calgary	Valuation 2017: NPV	39.1	21.5	17.6	0.3	37.50	130.33	0.47	Measured & Indicated

 PEA = Preliminary Economic Assessment
 t
 ton
 0.9072 tonne

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 =
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 \$C
 =
 \$0.7US

Table 34. North American Frac sand/Proppant Sand Sales

(includes Emerald, Queensland Australia for comparison)

NORTH AMERICAN FRAC SAND/PROPPANT SAND PROJECT SALES

Project Name/Location	Company/Location	Date of Sale	Sale Value (\$CM) or	Infrastructure Value	Resource Value	Production Rate	Resource/Reserve	Ratio Sale Value to	Resource Value	Resource Type	Comments	
Project Name/Location	Company/Location	Date of Sale	Valuation /PEA	(\$MC)	(\$MC)	(Mt/a)	Tonnage (Mt)	Production Rate	(\$C/t)	kesource Type	Comments	
1 CRS Proppants LLC		Nov-14	225.00			0.798	163.10	281.95	\$1.38			
Preferred Sands LLC	Manitoba (5Mt/a) and Wisconsin (0.85Mt/)	Jan-15				6	40.82	0.00				
NBR Sand LLC	US Silica/Texas	Jul-16	300.00	30		2.00	70.00		\$3.86	"US Reserves"	Commenced 2008; 40/70 mesh & 100mesh Northern White	
Smart Sand Inc	Smart Sand/ Woodland Texas	Nov-16	53.17			1.00	336.00				Commenced prod June 2012 Northern white; 3.3Mt/a production capacity	
Fairmount Santrol	Ohio	Jul-16	230.82	195.97		7.5					Third Qtr 2016 loss \$21CM	
Seymourville	Claim Post/Manitoba	Valuation 2014:NPV	105.00	93.00	12.00	1	26	105.00	0.46	Inferred	Feasibility: Sale price \$C99/t; Discount Rate 10%	
	50 90.00 900.00 000.00						7		1000-1000	2 10 62 311 51	Capital Raising \$25M December 2	
Others								Name of the last o			Tier 1 product. No data since 2014.	
7 Firebag Project	Athabasca/Alberta	November 2014 PEA	268.34			0.9	39	298.16		Inferred	23 Mt clean sand; High sales price used.	
B Wisconsin	Victory Nickel										- 70 90 00	
Minago	20											
Emerald Quarries / Qld Australia	Emerald	Valuation 2016: NPV	22.00	7.00	15.00	0.3	47.44	73.33	0.32	Indicated	16.2Mt Resource 30 mesh- 200 mesh Large ra material sizes to 9.5mm.	
Moberly	Calgary	Valuation 2017: NPV	39.1	21.5	17.6	0.3	37.50	130.33	0.47	Measured & Indicated	Refer to CSA Global NPV in this report	

 PEA = Preliminary Economic Assessment
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 ton
 0.9072 tonne

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 \$C
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 \$0.7US

Frac Sand Projects in Canada

Brilliant sands (investing into Canada) https://globenewswire.com/news-release/2015/07/13/751551/10141328/en/Brilliant-Sands-Engages-Leading-Engineering-Firm-to-Develop-Canadian-Frac-Sand-Projects.html

- 1 http://files.shareholder.com/downloads/EXP/0x0x897053/F7E5273B-AC77-4E8E-A0A1-6CD2CFD5320B/EXP_FiscalYear_2016_Annual_Report.PDF
- 2 http://www.preferredsands.com/company/focus.html
- 3 http://www.prnewswire.com/news-releases/us-silica-to-acquire-regional-frac-sand-producer-for-210-million-300300155.html
- 4 http://247wallst.com/energy-business/2016/09/19/smart-sand-files-for-ipo/
- 5 http://fairmountsantrol.com/about/

 $http://investors.fairmountsantrol.com/investor-relations/news/press-releases/press-release-details/2016/Fairmount-Santrol-Announces-Upsize-and-Pricing-of-Secondary-Common-Stock-Offering/default.aspx \\ http://investors.fairmountsantrol.com/investor-relations/news/press-releases/press-release-details/2016/Fairmount-Santrol-Prices-Public-Offering-of-Common-Stock/default.aspx \\$

- 6 Seymourville, Manitoba. Claim Post. High Quality http://www.claimpostresources.com/pdfs/CPS_PP_lan_2014_Final.pdf www.theglobeandmail.com>newssources Nov, 2014
- 7 http://www.athabascaminerals.com/i/pdf/Preliminary-Economic-Assessment.pdf
- 8 Victory Nickel



11.5.1 Conclusion of the Market Appraisal Value Method Comparison

A comparison of market value for projects recently sold or subject to valuations in the past year indicates that Moberly compares closely with a project of similar size and material quality, Emerald Quarries and Seymourville (Claim Post, Manitoba). The comparison is summarised in Table 33, the main difference being that Seymourville has a high CAPEX component (C\$93 million), related to a proposed higher production rate (1 Mt/yr).

Based on these broadly comparable market values, CSA Global conclude that the Moberly Project has a value within a range of C\$28.5 million to C\$49.7million, with a Preferred Value of C\$39.1 million.

11.6 Preferred Value of the Moberly Project

In choosing a Preferred Value and Valuation Range for the Moberly Project, CSA Global considered discounted cash flow financial model which was flexed around a range of critical inputs, and compared this with an analysis of comparable transactions.

CSA Global conclude that the value of the Moberly Project lies between C\$28.5 million and C\$49.7 million, with a Preferred Value of C\$42 million.

The lower end of the range was chosen halfway between the income method and market method lower values; the higher end of the range was much the same for both approaches; while the Preferred Value is pegged somewhat above the base case from the DCF model to account for the potential resource base (as supported by the Inferred Resources).

There is significant range in the values derived for the Moberly Project. CSA Global has considered this range and concludes that it provides a reasonable representation of possible valuation outcomes for the projects, given the uncertainties inherent in valuing pre-development/development stage projects.

It is stressed that the valuation is an as to likely values, not absolute values, which can only be tested by going to the market.



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13 Glossary

Below are brief descriptions of some terms that may have been used in this report. For further information or for terms that are not described here, please refer to internet sources such as Wikipedia www.wikipedia.org

Altered, alteration Refers to physical or chemical change in a rock or mineral subsequent to its formation.

Anticline A ridge or fold of stratified rock in which the strata slope downwards from the crest. In

structural geology, an anticline is a type of fold that is an arch-like shape and has its oldest beds

at its core.

Argillite A sedimentary rock that does not split easily, formed from consolidated clay.

Assay Test to determine the content of various chemical elements in a sample

Diamond drilling Drilling method, where the rock is cut with a diamond bit, to extract cores.

Dip The angle that a structural surface, i.e. a bedding or fault plane, makes with the horizontal

measured perpendicular to the strike of the structure.

deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnes and a range of grade (or quality), relates to mineralisation for which there has been

insufficient exploration to estimate a Mineral Resource.

Feasibility study Is an assessment of the practicality and profitability of a proposed project.

Fissure A long, narrow opening or line of breakage made by cracking or splitting, especially in rock or

earth.

Flux In metallurgy, a flux is a chemical cleaning agent, flowing agent, or purifying agent.

Frac sand Frac sand is a specialized type of sand that is added to fraccing fluids that are injected into

unconventional oil and gas wells during hydraulic fracturing, a process that enhances

petroleum extraction from low permeability reservoirs.

JORC Code Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.

Kaolinite A clay mineral, with the chemical composition Al₂Si₂O₅(OH)₄.

Mesh Number
Number of openings per linear inch in a sieve. The higher the mesh number, the smaller the

openings in a sieve. E.g. 50 mesh = 0.3mm openings; 100 mesh = 0.15mm openings; 200 mesh

= 0.075 mm openings.

Metamorphism Term used to describe the effect on rocks due to heat and pressure from geological conditions

and events.

Mineral Resource A Mineral Resource is a concentration or occurrence of solid material of economic interest in

or on the Earth's crust in such form, grade (or quality) and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge including sampling. Mineral Resources are sub-divided in order of increasing geological confidence, into Inferred, Indicated

and Measured categories.

Modifying Factors 'Modifying Factors' are considerations used to convert Mineral Resources to Ore Reserves.

These include, but are not restricted to, mining, processing, metallurgical, infrastructure,

economic, marketing, legal, environmental, social, and governmental factors.

Ore Reserve An 'Ore Reserve' is the economically mineable part of a Measured and/or Indicated Mineral

Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at

the time of reporting, extraction could reasonably be justified.

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Orthoquartzite A clastic sedimentary rock that is made up almost exclusively of quartz sand (with or without

chert), that is relatively free of or lacks a fine-grained matrix; a quartzite of sedimentary origin,

or a "pure quartz sandstone".

Proppant A proppant is a solid material, typically sand, treated sand or man-made ceramic materials,

designed to keep an induced hydraulic fracture open, during or following a fracturing treatment

PSD Particle Size Distribution. Often measured using sieves, where a sample is separated onto

different size sieves. The limits of a PSD are usually defined according to the size ranges present

in a sample.

Quartzite Is a hard, non-foliated metamorphic rock which was originally pure quartz sandstone.

Sandstone is converted into quartzite through heating and pressure usually related to tectonic

compression within orogenic belts.

Reverse Circulation Drilling method where drill cuttings are returned to surface inside the drill rods. The drilling

mechanism is a pneumatic reciprocating piston known as a "hammer" driving a tungsten-steel

drill bit.

ROM The run of mine (ROM) ore refers to ore in its natural, unprocessed state just as it is when

blasted.

Silica Silica also known as Silicon dioxide is a chemical compound made of silicon and oxygen with

the chemical formula SiO₂

Silica Sand This is quartz that over time, through the work of water and wind, has been broken down into

tiny granules.

Slickensided In geology, a slickenside is a smoothly polished surface caused by frictional movement between

rocks along the two sides of a fault. This surface is normally striated in the direction of

movement.

Syncline A trough or fold of stratified rock in which the strata slope upwards from the axis.

Tonne Metric tonne (1,000 kg).



14 Abbreviations and Units of Measurement

2Q second financial quarter

Bt billion tonnes

ft feet

FS Feasibility Study

ha hectares
hp horsepower
kg kilograms
km kilometres

km² square kilometres

kt/yr thousands of tonnes a year, kt/yr

kW kilowatts

L/s Litres per second

m metre
mm millimetre
M Million
mPa millipascal
MPa megapascal
Mt million tonnes
MT Metric tonnes

Mt/yr million tonnes per annum / million tonnes per year

Mo/Mos month/months

PFS Preliminary Feasibility Study

p/t per tonne

QAQC quality assurance and quality control (for sampling and assaying)

t metric tonnes /t per tonne

t/a tonnes per annum / tonnes per year

USD US Dollars

USD\$ United States Dollars

USD\$/t United States Dollars per tonne

USgpm US gallons per minute

t/hr tonnes per hour

t/m³ tonnes per metre cubed

μm micrometre wt% weight percent



Appendix 1: US Silica Preliminary Prospectus Supplement dated November 9, 2016

Risk Factors

- fluctuations in demand for commercial silica;
- the cyclical nature of our customers' businesses;
- operating risks that are beyond our control, such as changes in the price and availability of transportation, natural gas or electricity; unusual or unexpected geological formations or pressures; cave-ins, pit wall failures or rock falls; or unanticipated ground, grade or water conditions;
- our dependence on three of our plants for a significant portion of our sales;
- the level of activity in the natural gas and oil industries;
- decreased demand for frac sand or the development of either effective alternative proppants or new processes to replace hydraulic fracturing;
- federal, state and local legislative and regulatory initiatives relating to hydraulic fracturing and the potential for related regulatory action or litigation affecting our customers' operations;
- our rights and ability to mine our properties and our renewal or receipt of the required permits and approvals from governmental authorities and other third parties;
- our ability to implement our capacity expansion plans within our current timetable and budget and our ability to secure demand for our increased production capacity, and the actual operating costs once we have completed the capacity expansion;
- our ability to succeed in competitive markets;
- loss of, or reduction in, business from our largest customers;
- increasing costs or a lack of dependability or availability of transportation services and transload network access infrastructure;
- extensive regulation of trucking services;
- our ability to recruit and retain truckload drivers;
- increases in the prices of, or interruptions in the supply of, natural gas and electricity, or any other energy sources;
- increases in the price of diesel fuel;
- diminished access to water;
- our ability to successfully complete acquisitions or integrate acquired businesses;
- our ability to make capital expenditures to maintain, develop and increase our asset base and our ability to obtain needed capital or financing on satisfactory terms;
- our substantial indebtedness and pension obligations;
- restrictions imposed by our indebtedness on our current and future operations;
- contractual obligations that require us to deliver minimum amounts of frac sand or purchase minimum amounts of services;
- the accuracy of our estimates of mineral reserves and resource deposits;
- a shortage of skilled labour and rising costs in the mining industry;
- our ability to attract and retain key personnel;
- our ability to maintain satisfactory labour relations;
- our reliance on trade secrets and contractual restrictions, rather than patents, to protect our proprietary rights;

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- our significant unfunded pension obligations and post-retirement health care liabilities;
- our ability to maintain effective quality control systems at our mining, processing and production facilities;
- seasonal and severe weather conditions;
- fluctuations in our sales and results of operations due to seasonality and other factors;
- interruptions or failures in our information technology systems;
- the impact of a terrorist attack or armed conflict;
- extensive and evolving environmental, mining, health and safety, licensing, reclamation and other regulation (and changes in their enforcement or interpretation);
- silica-related health issues and corresponding litigation;
- our ability to acquire, maintain or renew financial assurances related to the reclamation and restoration of mining property; and
- other risk factors disclosed in our Annual Report on Form 10-K for the year ended December 31, 2015.

These factors should not be construed as exhaustive and should be read in conjunction with the other cautionary statements



Australia • Canada • Indonesia • Russia Singapore • South Africa • United Kingdom

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