

Heemskirk striving to service customers in  
the Western Canadian Sedimentary Basin

September 2014

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1. What is Frac Sand?
2. Frac market in North America
3. Frac products in Canada
4. Our proposition



# **1. What is Frac Sand?**



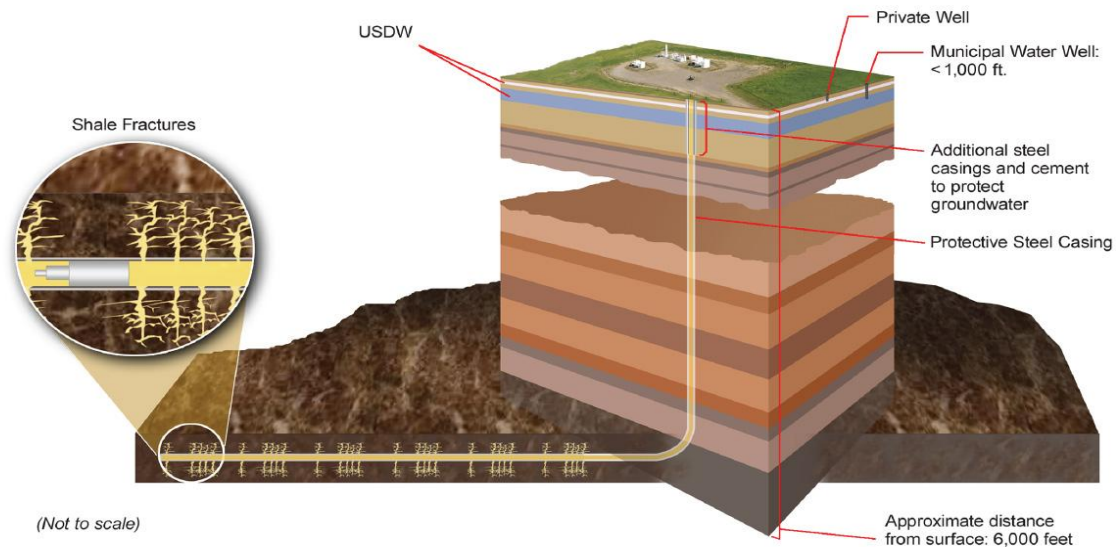
- "Frac sand" is a high-purity quartz sand with very durable and very round grains
- It is a crush-resistant material produced for use by the petroleum industry
- It is used in the hydraulic fracturing process (known as "fracking") to allow liberation of petroleum fluids, such as oil, natural gas and natural gas liquids from rock units that lack adequate pore space for these fluids to flow to a well
- Most frac sand is a natural material made from high purity "sandstone"



# Unconventional Oil & Gas Fracturing



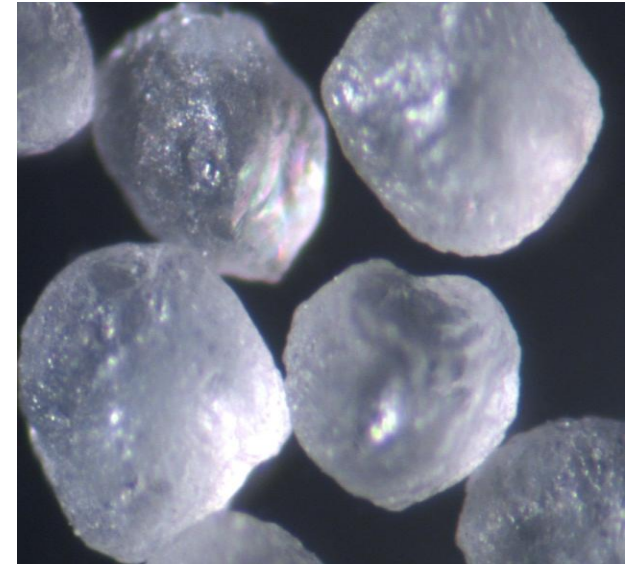
- High pressure fluids create a **fracture network**
- Fracture network is filled with a **proppant** suspended in solution to allow oil, liquids and gas to flow
- **Frac Sand** is the most commonly used natural proppant
- Unconventional oil & gas basins require different **size proppants** and specifications
- Only product not recovered is sand



Steel casing lines the well and is cemented in place to prevent any communication up the wellbore as the fracturing job is pumped or the well is produced. Shallow formations holding fresh water that may be useful for farming or public consumption are separated from the fractured shale by thousands of feet of rock.



- A proppant must be:
  - ✓ **Strong** to withstand high stresses
  - ✓ Chemically **Inert** / does not break down
  - ✓ **Pumpable** through well systems and fracture networks
  - ✓ Long-term **Permeability** to permit gas flow
- Naturally occurring, sized and round quartz sand grains are the industry standard known as “**Frac Sand**”
- ISO and API standards for frac sand proppants are required to be met by producers to allow drilling companies to consume the products



Moberly +5K 20:40 Sand as tested and confirmed by independent laboratory Proptester and StimLabs



## **2. Frac in North America**



# The Decade of Change in Frac Sand Supply North America



2003	2013
<b><u>Supplier Makeup</u></b> Sand = 4 Primary Supply > 85% Ceramic = 3 Primary Supply > 95% Resin = 2 Primary Supply > 95% 8 Billion Pounds Pumped	Sand = 63 Suppliers (4 Majors ~ 50%) Ceramic = 40+ in US and International Resin = 15 in North America 90 Billion Pounds Pumped
<b><u>Product Used</u></b> 20/40 Primary Sand Grade Ceramics 20/40 & 16/20 Primary 20/40 Curable Resin Primary	20/40, 30/50, 40/70, 100 Mesh Multiple Ceramic Grades 20/40 to 40/70 Tempered and Curable
<b><u>Well Type</u></b> Vertical/Conventional Wells Gelled Fluids Single to Few Stages	Horizontal/Unconventional Wells Slickwater and Hybrids Multiple Stages (12 to even 50!)
<b><u>Source &amp; Locale</u></b> North America = Proppant Exporter Centralised Proppant Sources	North America = Proppant Importer Regionalised Proppant Sources



- Proportion of Horizontal Wells is increasing
- Number of Fracs per Well is increasing
- Volume of Proppant per Frac is increasing
- Total demand for Frac Sand continues to grow and sand remains the most dominant frac consumable
- Landed price at Well Site is much more sensitive to freight rather than the supply source economics



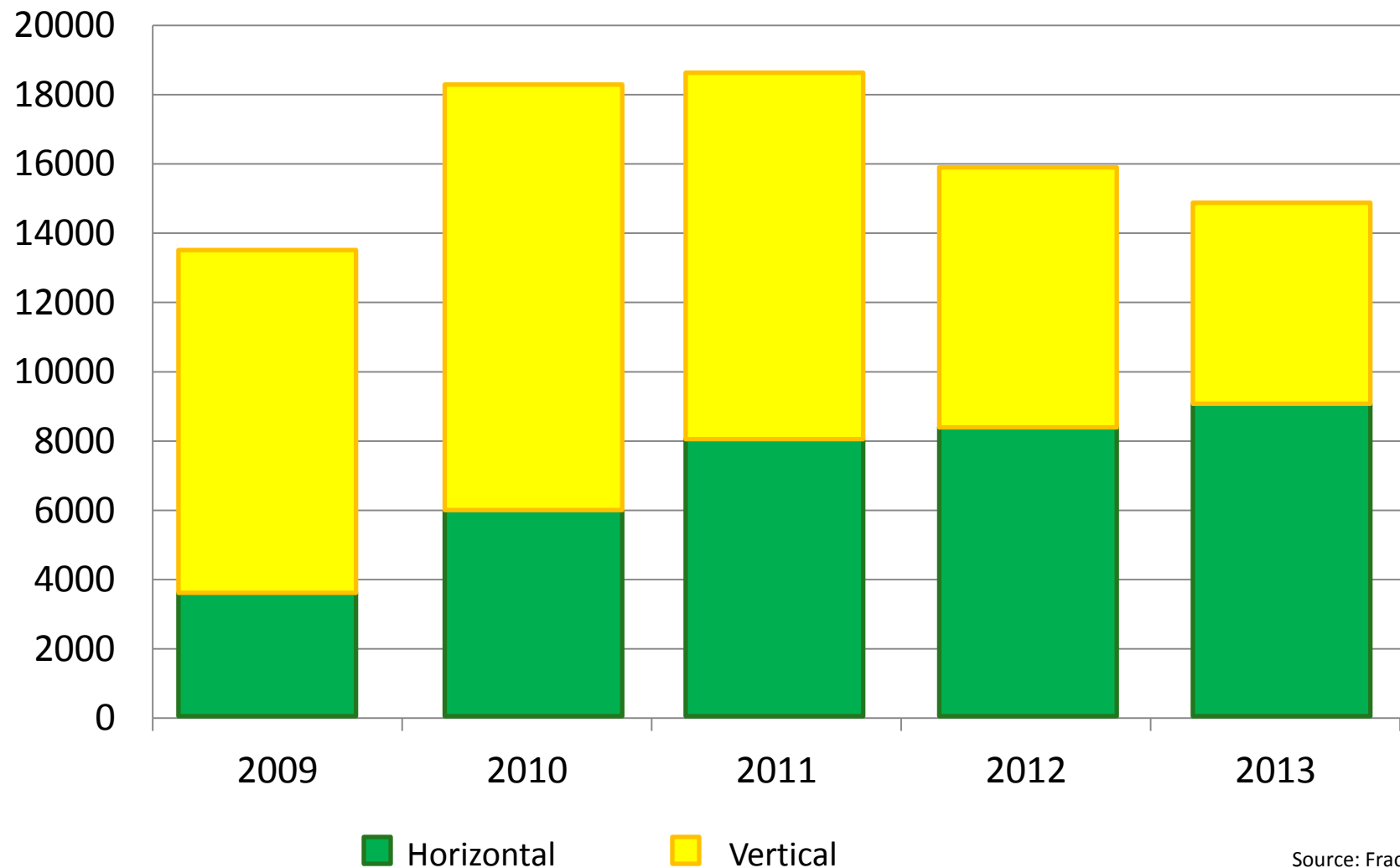
# **3. Frac Products in Canada**



- In the late 70's early 80's the primary frac sand market was for coarse grained material supplied into Central Alberta
- 1990's to mid 2000, Tier 1 American sand producers, at the request of the major pressure pumping companies, began pushing 20/40 sand fractures into Canada. Resin and ceramic proppants also began gaining foothold as wells became deeper
- By 2013, over 2.5 million tons of high quality frac sand was imported into Canada with an estimated 1.5 million tons being consumed from local sources

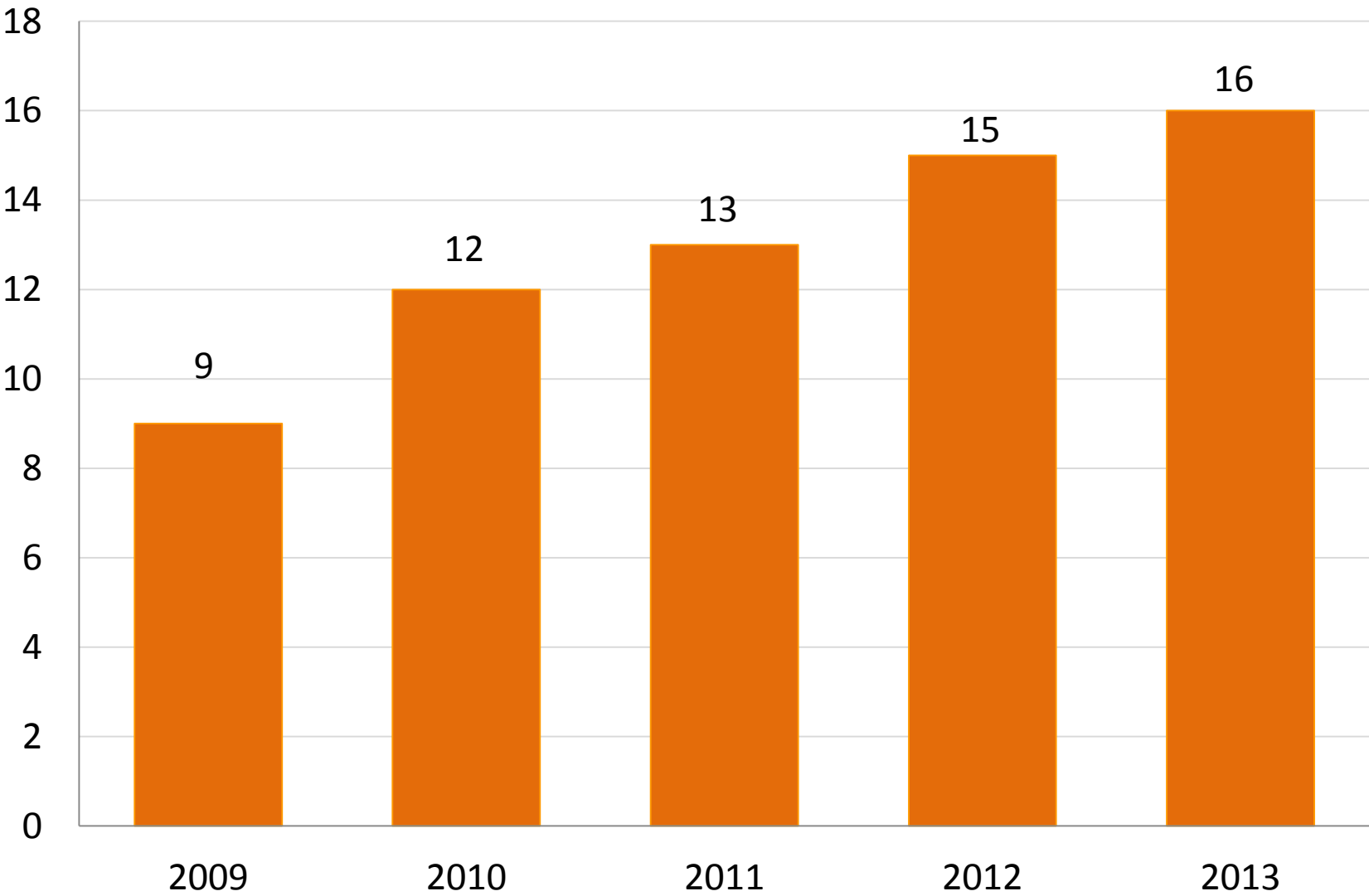


TOTAL NUMBER OF HORIZONTAL VS VERTICAL WELLS



Source: FracKnowledge

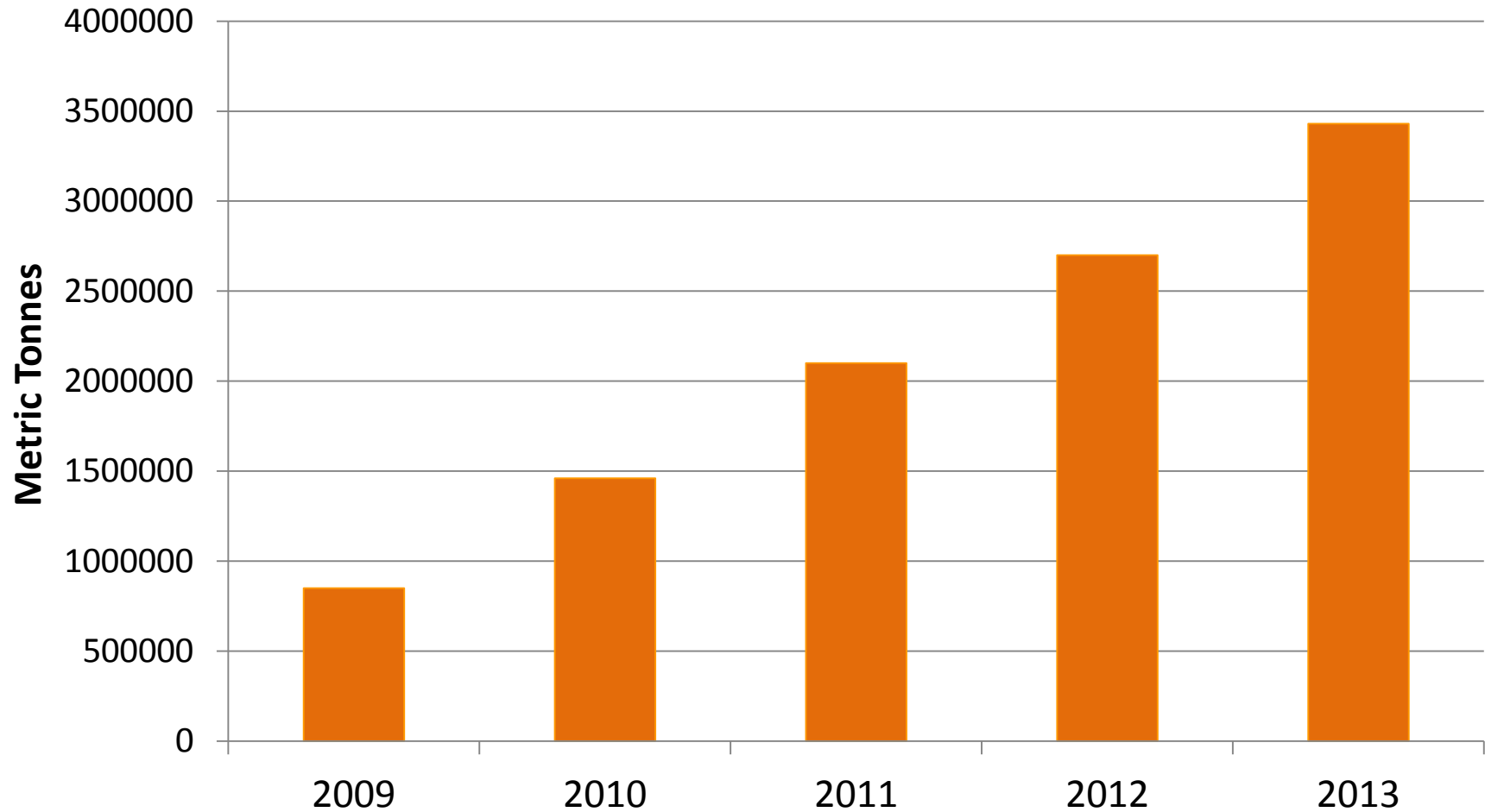
# Average Frac Stages Per Well



Source: FracKnowledge

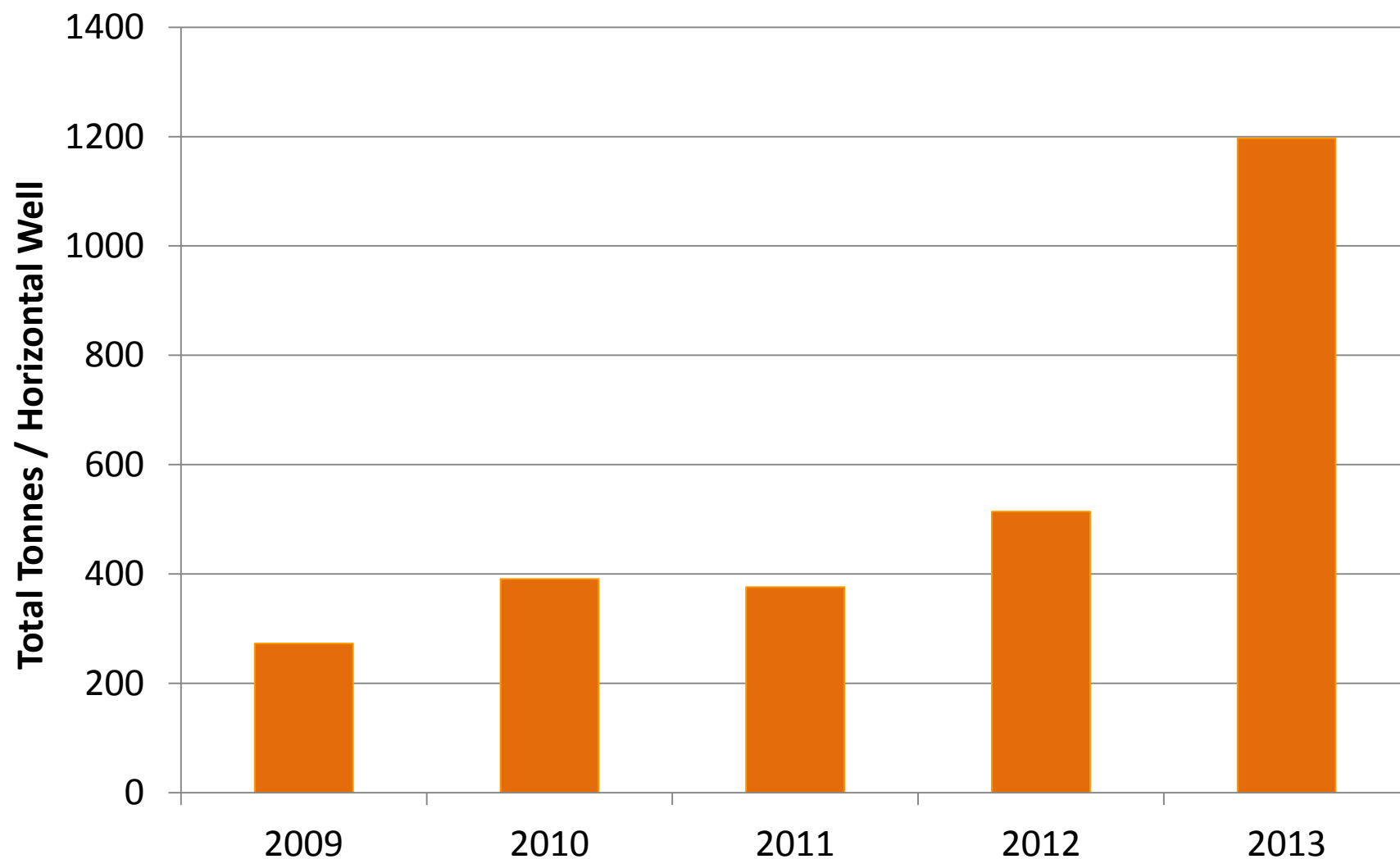


# Total Proppant Use



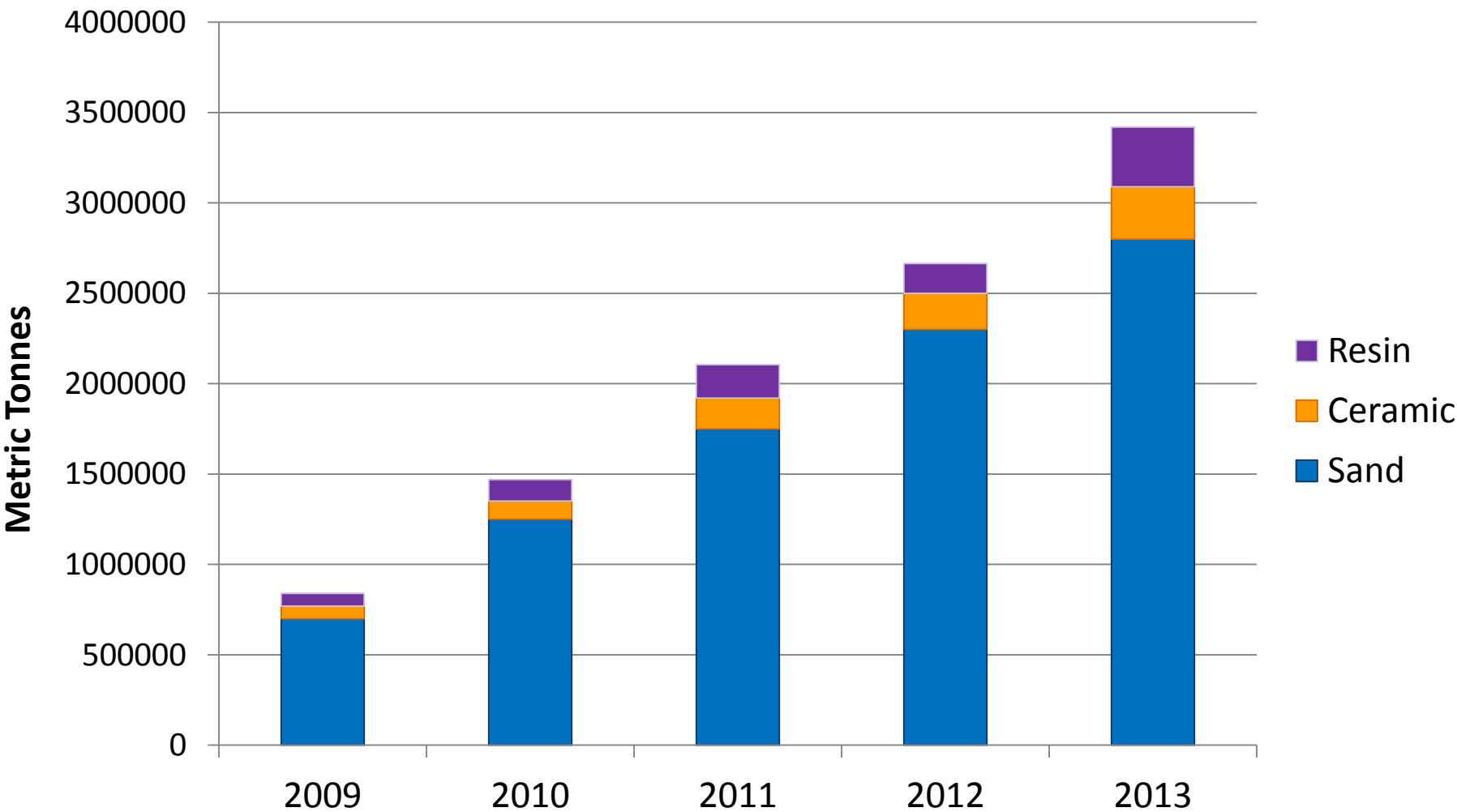
WCSB Approx 9 – 10% of North America 2013

# Total Tonnes Per Well Average



Source: FracKnowledge

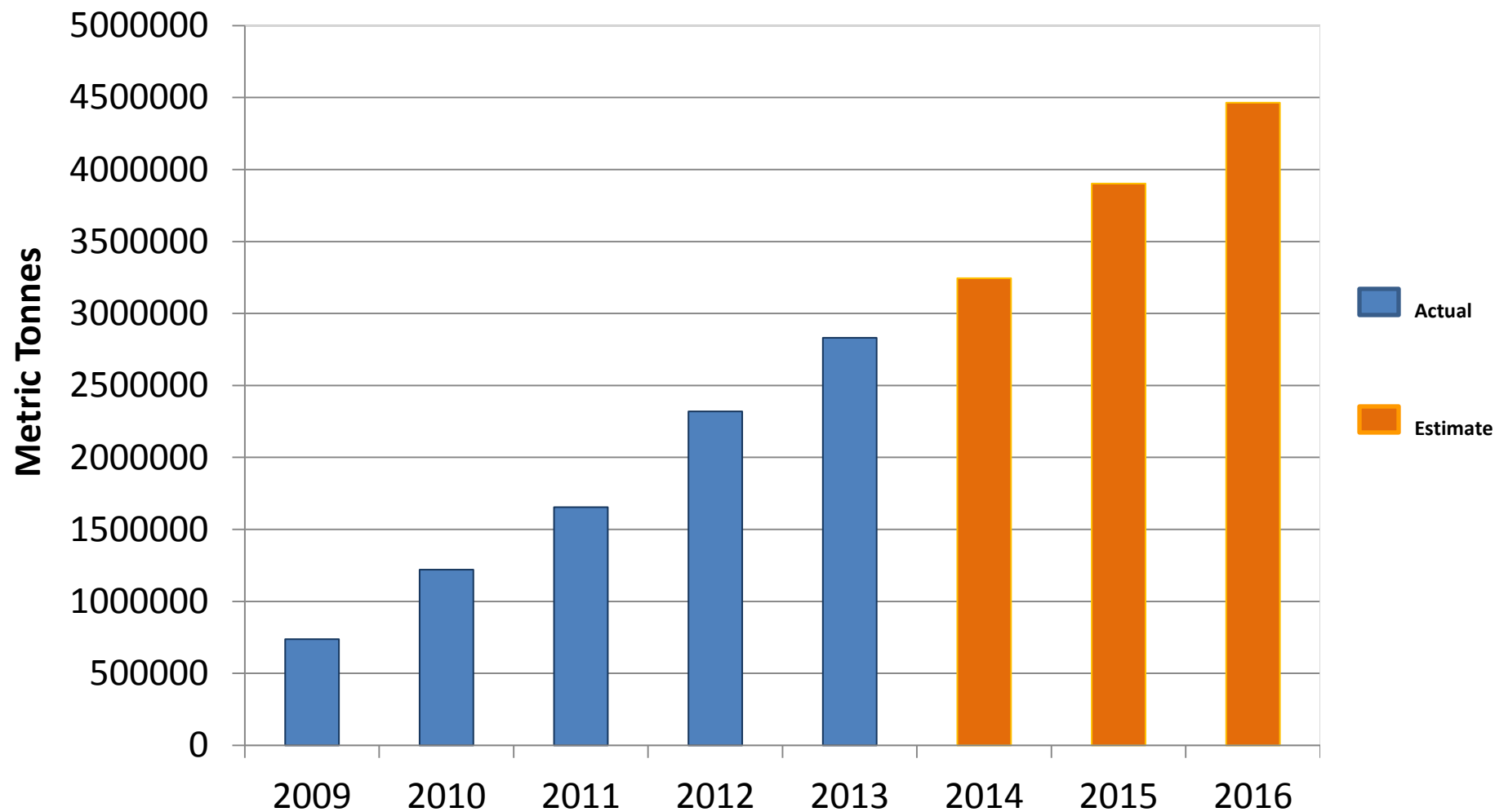
# Proppant Material Type



Sand is still the dominant proppant consumable

Source: FracKnowledge

# Medium Term Sand Use Projection as estimated by FracKnowledge



The WCSB ran out of sand in February 2014!!

Source: FracKnowledge



## 4. Our Proposition



Capital Structure	
ASX listed code	HSK
Ordinary shares on issue	154m
Current market cap at 10¢	\$15.4m
Unsecured convertible debt*	\$3.5m
Employee ordinary shares	2.0m
Cash & cash equivalents **	\$12.9m
Other financial assets – equity investments**	\$4.4m

Major Shareholders	
First Samuel	19%
Taurus Funds Management	6.9%
Acorn Capital	3%
Large Private Groups	16 - 20%

\* Unsecured, unlisted Converting Notes maturing no later than March 2015, \$2.74m payable in cash

\*\* As at 31 July 2014

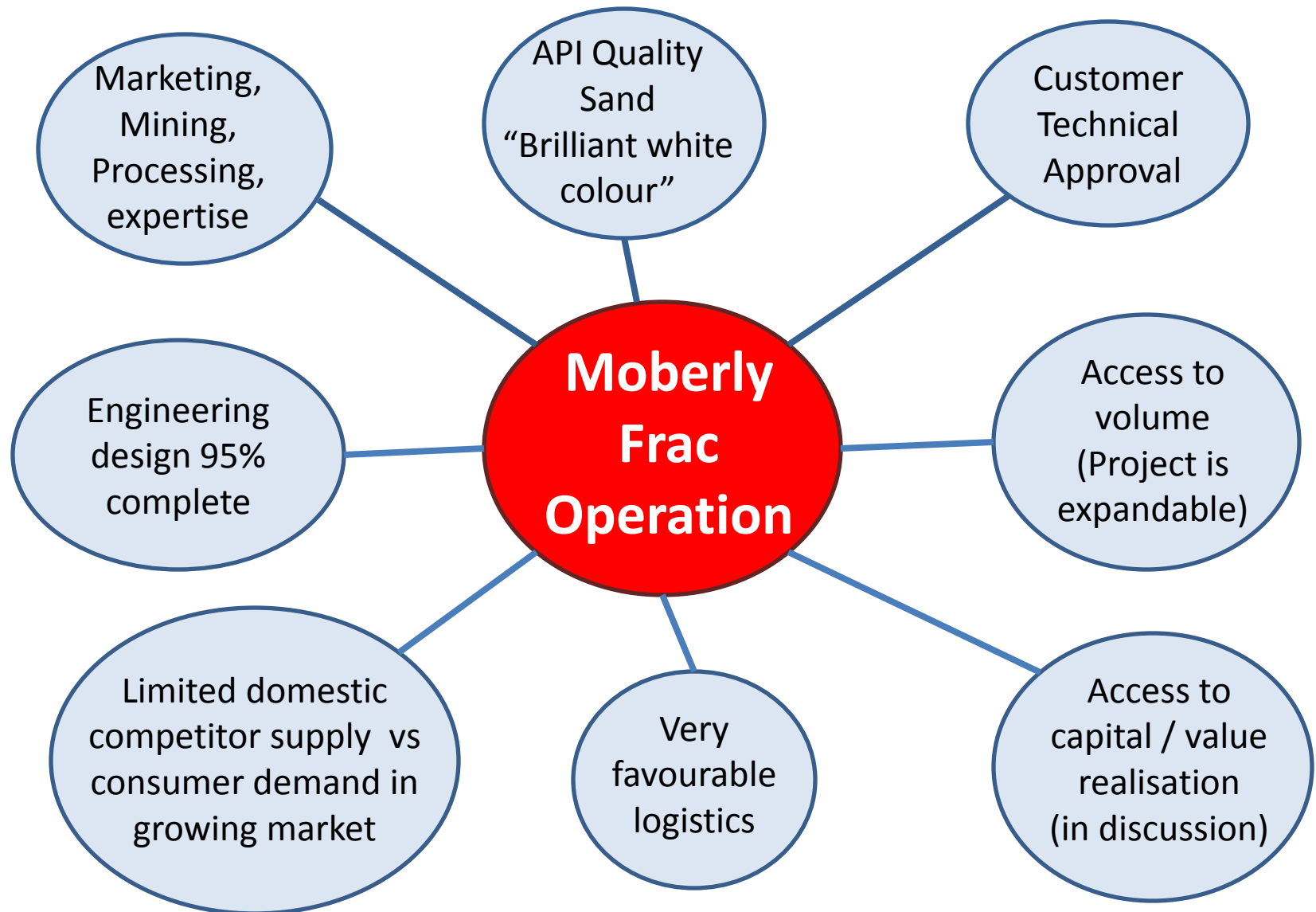




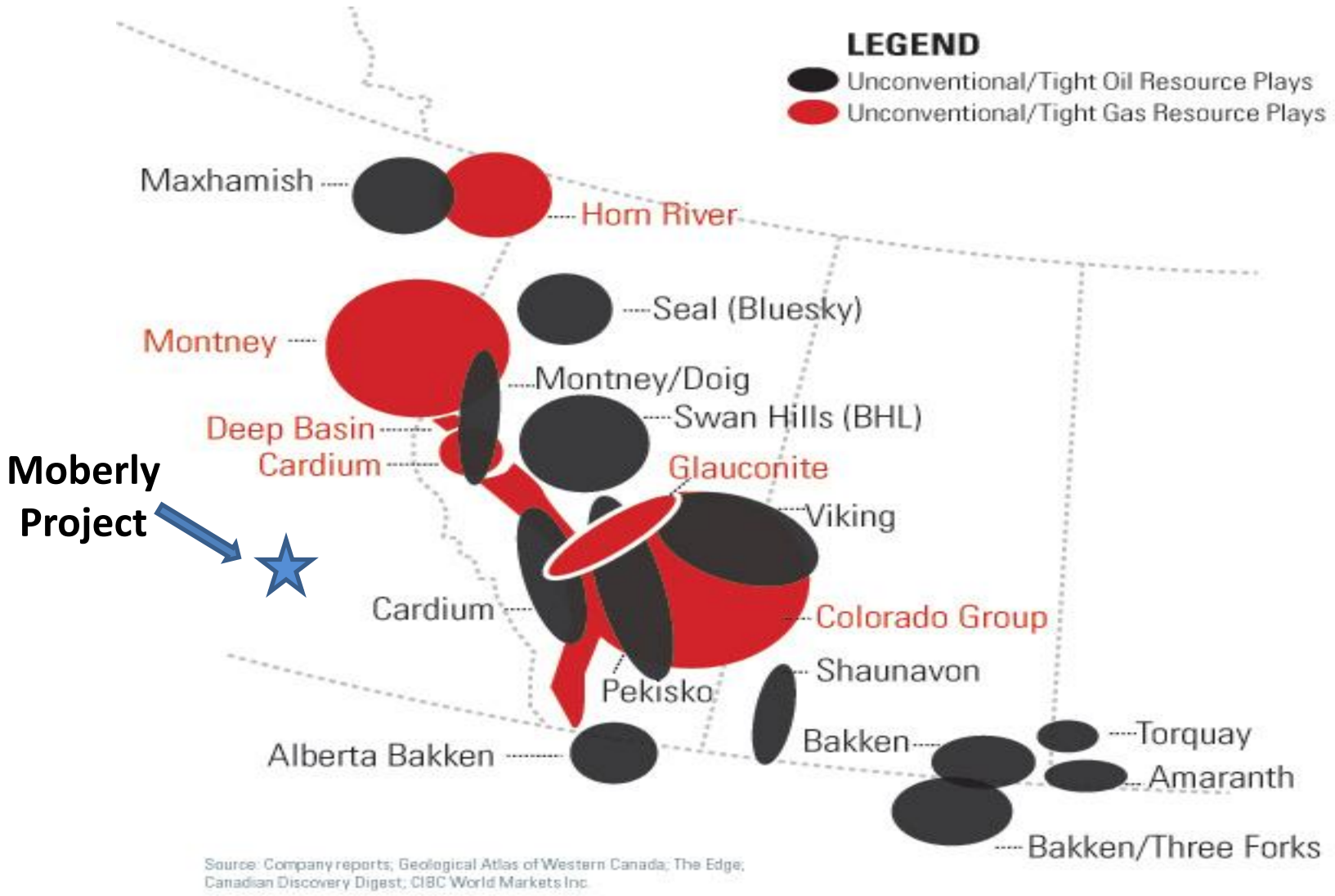
- Moberly is located 300 kilometres west of Calgary and is 100% owned by Heemskirk. It comprises a current open-pit mine and silica product production operation. The facility currently produces product for the oil and gas, coatings, recreational and landscaping industries
- It also includes a significant permitted but undeveloped long-life frac sand resource for potential sale into Canada's high demand petroleum sector and it is this project which the Company is now focusing on to develop as its flagship operation



# How Moberly stacks up in relation to Macro Drivers



# Moberly – favourable logistics



# A high return, high value project



- The capital cost estimate is C\$26m<sub>2013</sub>
- Initial design production rate is 300,000 tonnes of saleable frac sand per annum at full production (year 2 onwards)
- Estimated Project NPV<sub>7.5</sub> C\$66m
- Total assets of project valued at \$8.0m as at 31 March 2014
- Estimated Internal Rate of Return of 30%
- The Payback Period from start of production is approximately 3 years
- Construction time estimate 9 - 12 months from a development decision
- Project is readily expandable - not resource constrained



## Moberly Frac Project - Indicative Timeline

Months

+1 +2 +3 +4 +5 +6 +7 +8 +9 +10 +11 +12 +13 +14 +15

### Preconstruction

Design Development

Trade Tender Packages & Awards

Equipment Fabrication & Procurement

### Construction

Shop Drawings and Final Design Details

Site Preparation & Mobilisation

Equipment Installation

Process Building

Crushing & Screening Building

Office, Workshop & Dry facilities

### Exterior Works

### Commissioning

### Operating

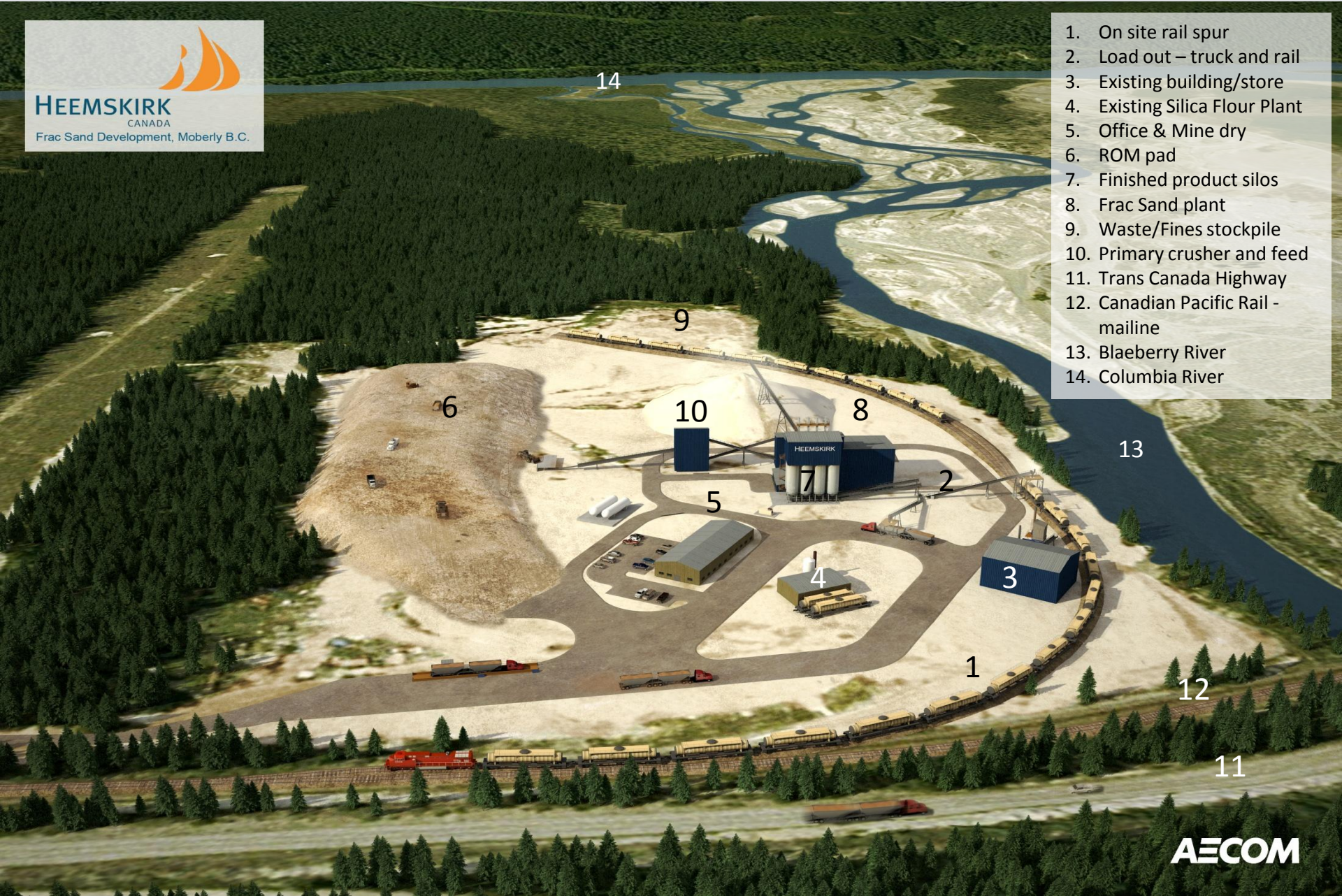
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# Planned layout - Moberly Plant Site



- 1. On site rail spur
- 2. Load out – truck and rail
- 3. Existing building/store
- 4. Existing Silica Flour Plant
- 5. Office & Mine dry
- 6. ROM pad
- 7. Finished product silos
- 8. Frac Sand plant
- 9. Waste/Fines stockpile
- 10. Primary crusher and feed
- 11. Trans Canada Highway
- 12. Canadian Pacific Rail - mainline
- 13. Blaeberry River
- 14. Columbia River





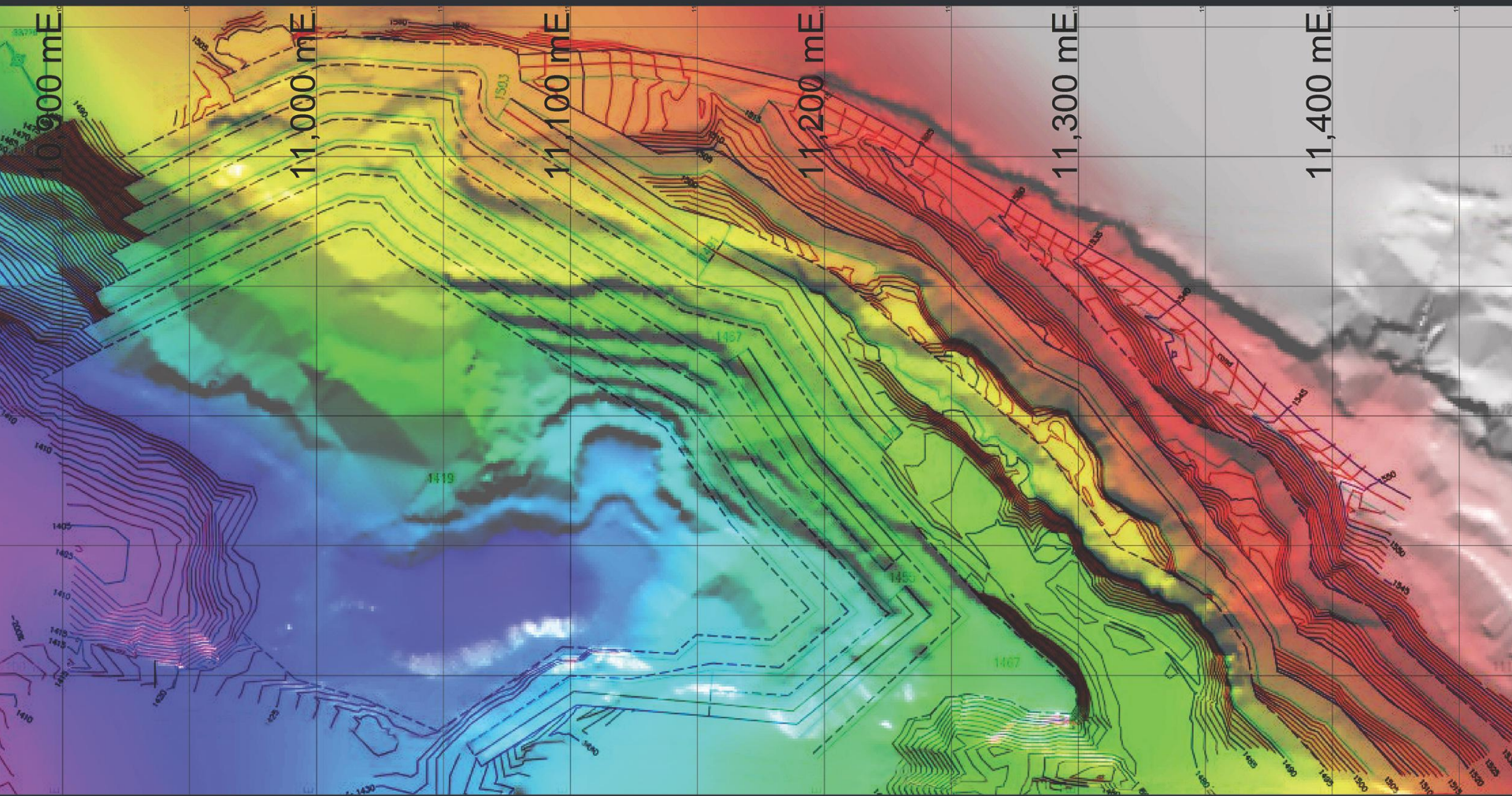
## Frac

- Detailed frac engineering and design work 90% - 95% complete
- High return project valued well in the excess of overall Company capitalisation
- Value at \$66m in NPV 7.5%

## Corporate

- Announced on 20 August 2014 we have entered into a period of exclusivity in relation to joint venture discussions with a major industry investor. Details at this stage are confidential
- Cash & cash equivalents and equity investments approximately \$17.4m
- Company retains a 15% position in Canadian listed tungsten producer Almonty Industries
- Company in a strong position to extract value from its Canadian business
- 154m shares on issue – trading at cash backing





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