zEroCor Tubulars Inc.

Technology Development

&

Commercialization Division

"Bringing Innovation to the Oil-patch"

403-234-7473

Who is zEroCor Tubulars

- 5 year operation focused on coated tubing
- Managed by 60+ years of oil-field experience
- Multi-million revenue operation
- Network of major oil-field operators
- Connected with >20 research institutes globally
- Track record of commercializing four product lines
- Experience with federal and provincial grants

Motive... **\$\$\$**

- Bridging the gap between research disciplines and the oil & gas industry
- Being the spark



- o Bring the oilfield to the research
- o "I never knew you had that problem"
- Development plan
- Marketing Plan

Technology Development & Commercialization Division

zEroCor Tech Division:

Identifies relevant technologies and obtains IP

Coordinates technology development

Leverages government grants and competitions to ease investment burdens

Obtains iterative feedback from end-users in industry

Markets commercialready product to industry Technology Development

Investment

Research Institutes:

Provide initial technology

Modify technology for commercial product

Conduct relevant testing procedures

Oil-field companies:

Provide Iterative feedback
Provide market for developed technology

Internal Budget:

Funds salaries
Initiates research engagement

External Investor:

Expands development & marketing budget

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Qualifying Technologies

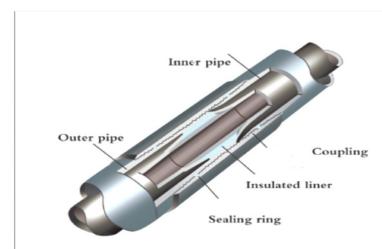
- 1. Reduce \$\$ cost to produce a barrel of oil
- 2. Time & Cost to Commercialize vs. Benefit
- 3. Qualify the Market
 - -size of market
 - -readiness of market

Commercial Example



Vacuum Insulated Tubing (VIT)

- Due to high Thermal Conductivity of conventional tubing (T/C 40 W/m deg.C), significant heat loss can occur from surface to bottom hole formation
- Vacuum Insulated Tubing (T/C 0.04W/m deg.C)
- can significantly reduce heat loss



RESULTS

- Reduced S/O ratio = reduced \$\$ to produce a barrel of oil
- •Reduced CO2/O ratio and natural gas consumption =reduced \$\$ to produce a barrel of oil
- Reduced temperature near wellbore protecting casing and cement
- •Improved steam placement in formation =reduced \$\$ to produce a barrel of oil
- Improve steam quality = reduced \$\$ to produce a barrel of oil

Current Technologies

- **High-temperature, low friction, Corrosion-resistant** Coatings for Steam Operations (SAGD, CSS): No coatings are currently available for rating of over 350 C. (Tier 7)
- **Non-invasive Leak Detection:** The technology uses transient wave analysis to determine air pockets, wall loss (internal and external), and leaks. (Tier 7)
- Nano-fiber Sensors: Small-scale, electro-spun, hyper-sensitive range of pressure, temperature, oxygen, H₂S sensors. (Tier 7)
- **Down-hole RFID Transmission:** Wireless transmission of data from down-hole sensors to surface using radio-waves. (Tier 2)
- **CO₂ to Methane Conversion:** Converts CO₂ back into methane using an enzymatic reaction (Tier 2)

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Questions???