

CanGas
SOLUTIONS

a  **CanElson** company
Drilling Inc.

"Your Energy Management Partner"

**2013 Williston Basin
Petroleum Conference**

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May 2, 2013

Who We Are



"Your Energy Management Partner"

- We optimize fuel savings
- We maximize the value of natural gas

What we do

Deploy low-cost compressed natural gas solutions:

1. Transport & deliver CNG to be used as a substitute for high-cost diesel fuel;
2. Collect, transport & deliver flare gas to a pipeline OR to be used as fuel to displace diesel;
3. Market & source both CNG & raw gas.



FLARE GAS: What We've Done

Over the past 2 years,

- We have conducted 13 flare gas capture projects;
 - ◆ 11 in Alberta & 2 in Saskatchewan
- Captured several million ft³ of raw gas & transported it over thousands of miles



Flare Gas Capture Process (to pipeline)

Loading Skid



Transport Trailer



- **Loading facility:**
 - ◆ Compression & dehydration
 - ◆ Loading post
 - ◆ Transport trailer
- **Unloading facility:**
 - ◆ Line heater
 - ◆ Pressure reducing valve
 - ◆ Unloading post

Unloading to Pipeline



Saskatchewan: Size of the Opportunity

Introduced S-10 legislation to eliminate flare gas in July 2012



Saskatchewan now has approximately:

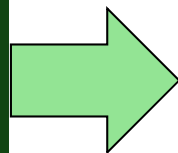
-40 oil batteries built after July 2012 that must comply now

-265 oil batteries that must comply by July 2015

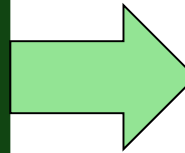
Saskatchewan Challenge

SK has very limited pipeline & gas plant infrastructure to offload collected flare gas to comply with the S-10 regulation.

What other options available?



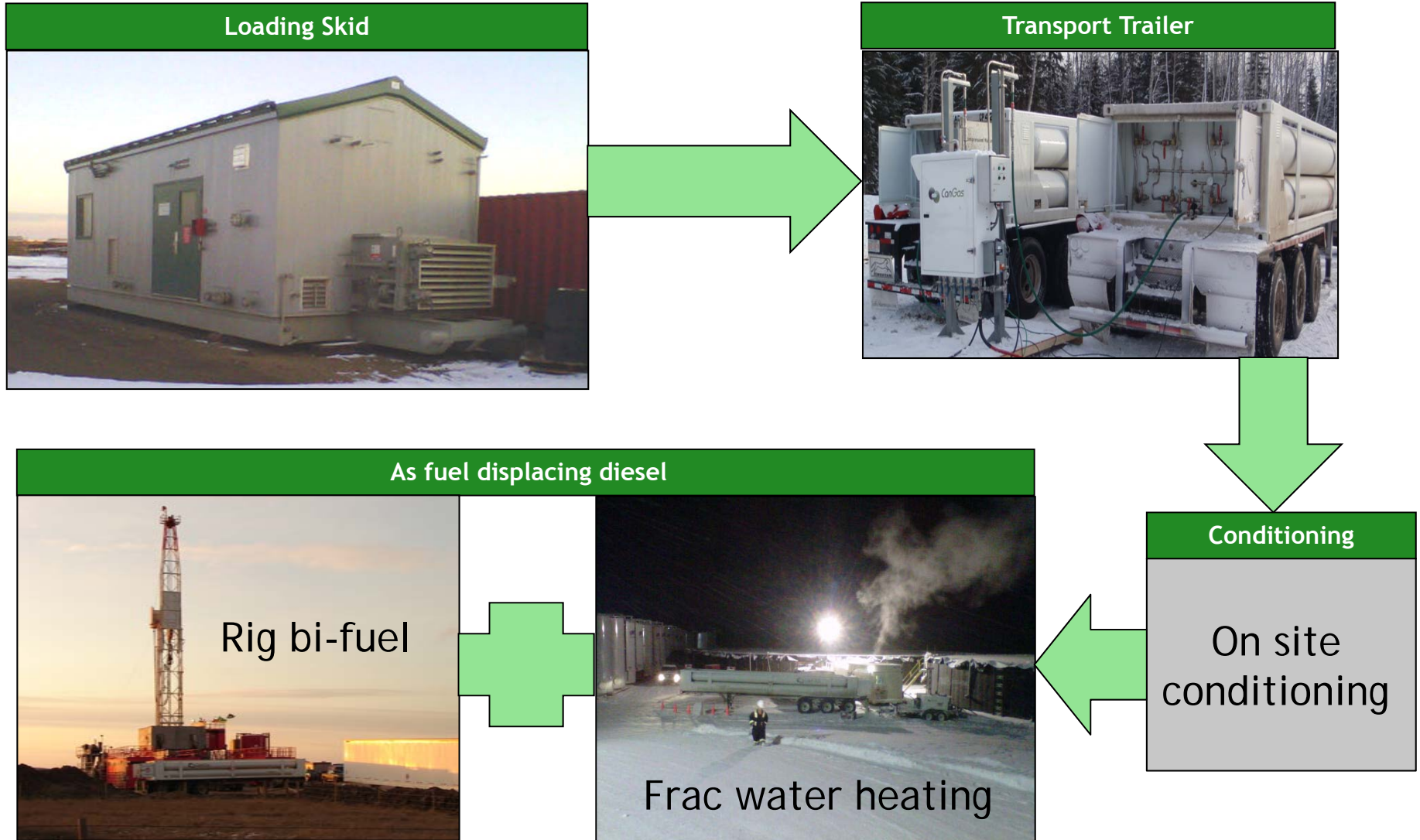
On site
conditioning



Fuel Supply

- Boilers
 - Rig boilers
 - Heat frac water
- Power generation
 - Bi-fuel kits
 - Rigs
 - Frac pumper

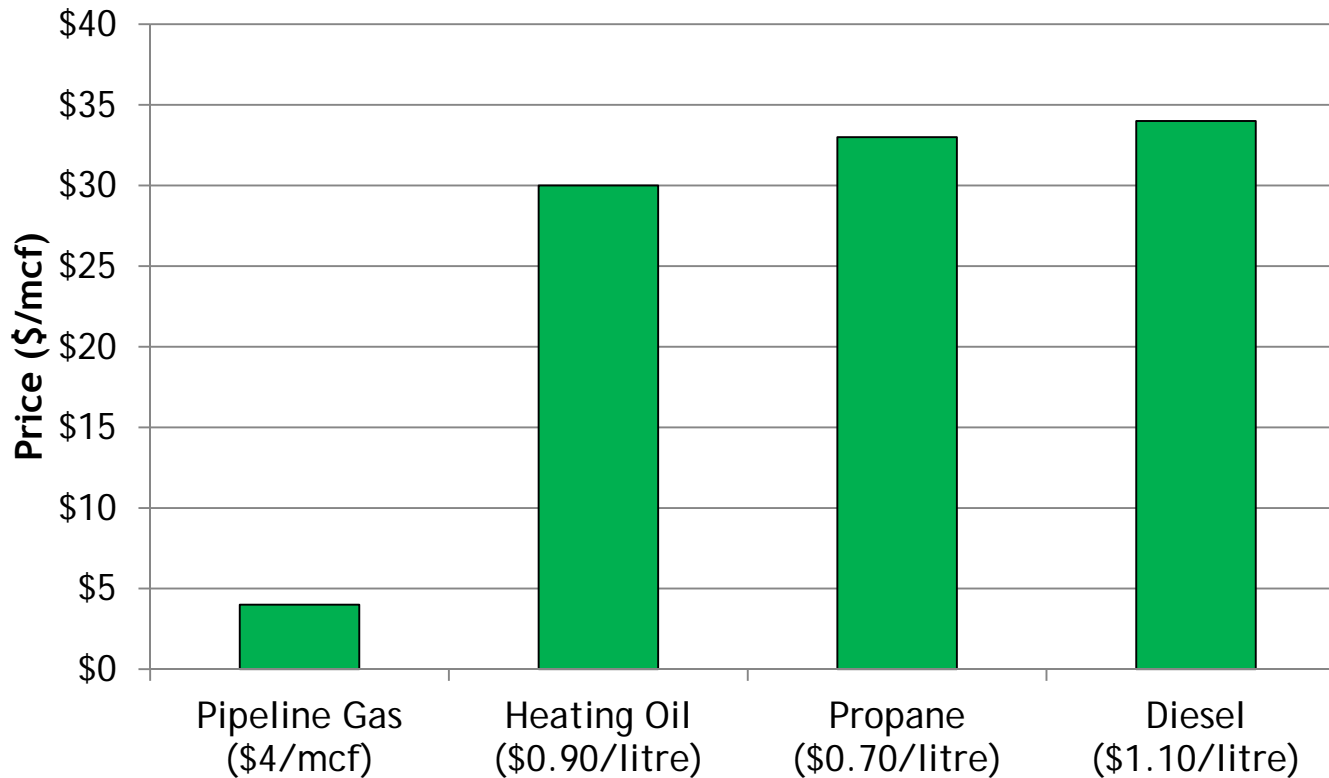
Flare Gas Capture Process (used as fuel)



Why use flare gas as fuel?

GAS IS JUST A FRACTION OF THE COST OF DIESEL

Energy Equivalent Price Comparison



- Price comparison on an energy equivalent basis

Case Study: flare gas captured and used as fuel

Problem: A large E&P company had been using high cost diesel fuel for heating frac water in their fields in central AB. While nearby, they had associated gas produced from oil wells being flared while testing.

Solution: CanGas captured the flare gas from one site and transported the gas to be used as the primary fuel for heating frac water saving the producer thousands in diesel cost.

Challenges Overcome

- ✓ Optimizing logistical costs
- ✓ Automated unloading facilities
- ✓ Matching compressor run time at the loading site with gas demand at the delivery site



Summary of Lessons Learned

- ◆ The cost effectiveness of transporting flare gas by truck is directly related to:
 - ★ The VOLUME (payload) of gas hauled
 - ★ The hauling distance
- ◆ With proper conditioning & logistics management, flare gas is a viable & cost effective option for replacing or reducing high cost diesel as fuel for boilers & power generation



Thank You!

Q & A ?

