

# OIL & GAS SUCCESS STORY

## Reduction of Methane Venting from a Gas Transmission Pipeline System

### Spectra Energy

#### Prince George, British Columbia, Canada

### OVERVIEW OF PROJECT:

**NAME OF COMPANY:** Spectra Energy

**LOCATION:** Spectra Energy operates 2,900 km of natural gas transmission pipeline in British Columbia (BC) transporting clean-burning natural gas from processing facilities in northeast BC to markets in BC, Alberta and the U.S. Pacific Northwest.

**RELEVANT SECTOR OF THE OIL AND GAS INDUSTRY:** Natural gas transmission

#### DESCRIPTION OF THE METHANE EMISSION REDUCTION OPPORTUNITY:

To ensure the safe and reliable transportation of natural gas, companies must regularly service the pipelines that move the gas from the field to distribution systems. When sections of pipeline are disconnected for inspection or servicing, a small amount of natural gas is released into the atmosphere. This planned depressurization of a pipeline is known as a “blowdown”. Spectra Energy has employed various methods that allow the company to significantly reduce the amount of pressurized natural gas that is released to the atmosphere when working on sections of its natural gas pipelines. These methods recover or combust the natural gas, which is 21 times more powerful a greenhouse gas as carbon dioxide.

**ACTUAL ANNUAL EMISSION REDUCTIONS: 41,784 TCO<sub>2</sub>E**

### PROJECT DETAILS

In this project, Spectra Energy employed three alternative methods that reduce the amount of uncombusted natural gas vented to the atmosphere. The first is to repressurize the gas and redirect it to a nearby pipeline system.

The second is to use a mobile incinerator to combust the gas in a safe and controlled manner. The process of incineration results in the release of CO<sub>2</sub> which is 21 times less potent in its global warming potential than the raw methane.

The third method is to use the pressurized gas to fuel a nearby compressor station.

While conventional pipeline blowdowns may be the only option in some situations, applying these effective technical solutions has allowed Spectra Energy to reduce emissions in a common industry scenario and support its sustainability goals.

Although blowdowns are not the largest source of greenhouse gas emissions from natural gas pipelines, the project has made a significant emission reduction compared to the business-as-usual approach and highlights the environmental rewards of innovative thinking.

### PROJECT DEVELOPMENT PLAN

The project has been in operation since 2008 and is now part of the decision-making process prior to carrying out any planned pipeline depressurization.



**Natural gas transmission pipeline under construction in British Columbia.**

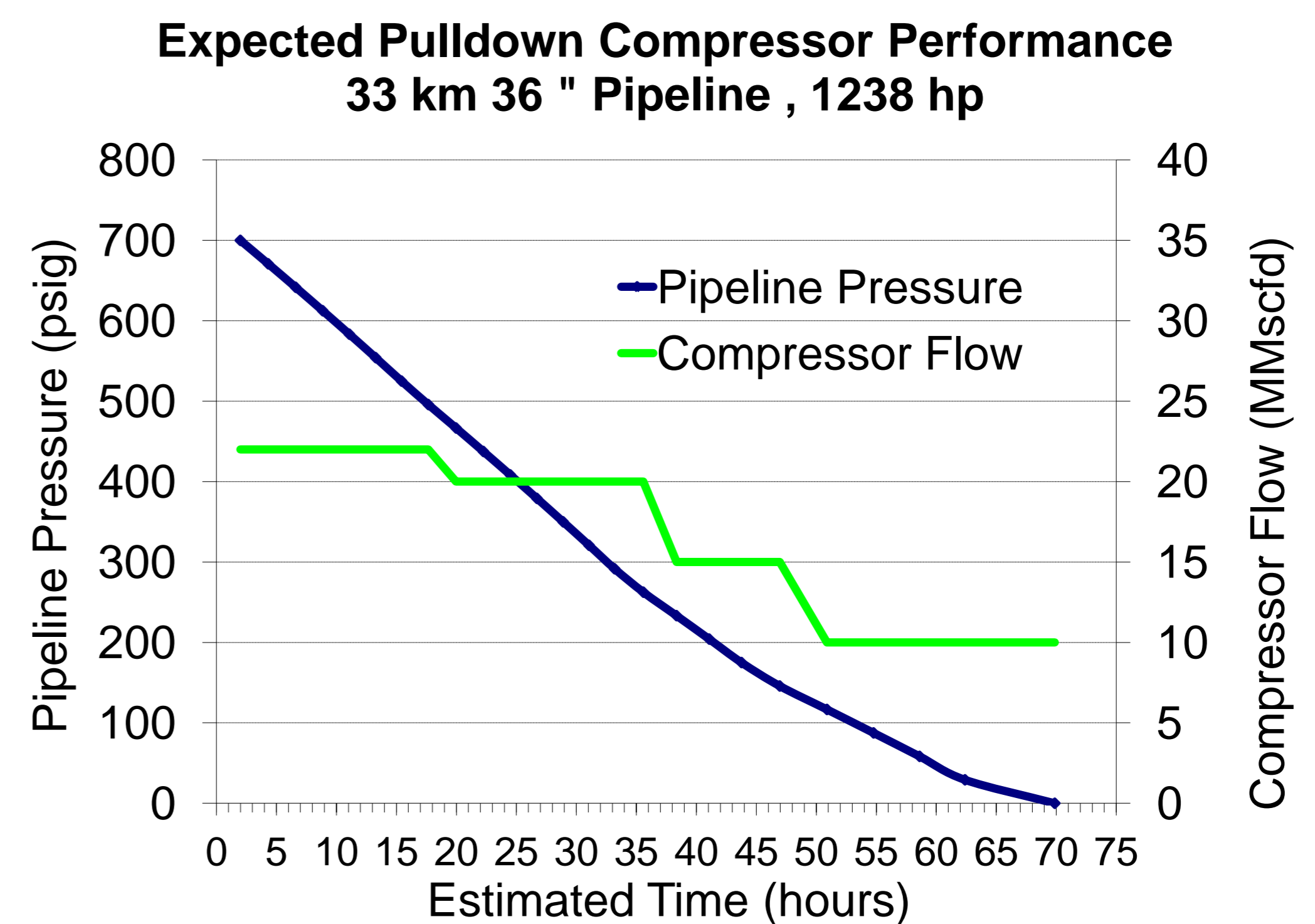


**Mobile pump-down compressor in use on Spectra Energy's natural gas transmission pipeline to reduce venting of methane gas during maintenance activities.**

## IMPLEMENTED TECHNOLOGIES



Mobile pump-down compressor in use on Spectra Energy's natural gas transmission pipeline to reduce venting of methane gas during maintenance activities.



## PROJECT CHALLENGES

Managing the risk of impacts to pipeline customers is a key challenge on this project.

The potential to use venting reduction techniques depends on the time available during a planned outage window which in turn depends on expected flow commitments during the outage and the time required to complete maintenance work. Hydraulic modeling of the pipeline is carried out to determine remaining capacity of the pipeline system and the possible duration of the outage. Critical outages are typically 3 to 6 days in duration.

The conventional practice of venting may still be used in preference to other techniques because it allows the pipeline to be depressurized quickly and safely with no added costs.

## ECONOMIC ANALYSIS/BENEFITS

The project economics vary from one outage event to the next and depend on factors such as pipeline pressure, diameter, length, location, access requirements and outage duration. However, without the sale of verified carbon offsets to Pacific Carbon Trust, the equipment rental costs for incineration and/or pumpdown processes and the associated labour costs, outweighed any benefits from conservation of marketable gas. To qualify greenhouse gas reductions as carbon offsets, the project had to demonstrate to third party auditors that the real financial obstacle was partially or fully overcome by revenues from offset sales.

## FOR MORE INFORMATION

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