

Methane Reduction from Natural Gas Dehydration in the DJ Basin



Producers
Technology Transfer Workshop

EPA's Natural Gas STAR Program
Glenwood Springs, CO
September 11, 2007

Installing JATCO Venturi systems to reduce methane, VOCs, and BTEX in DJ Basin, CO



Agenda

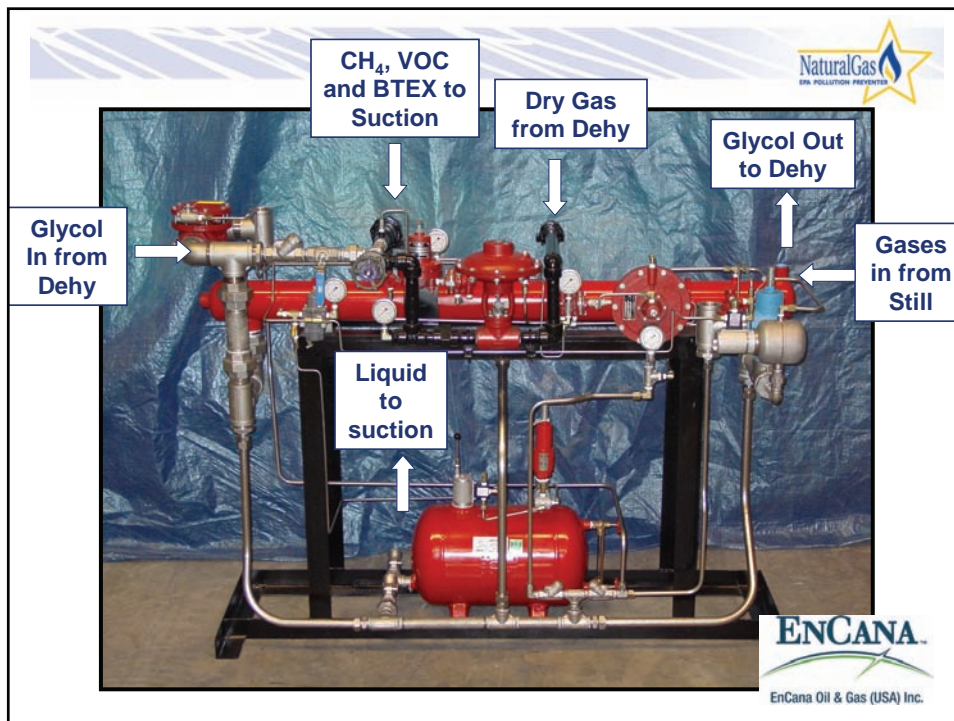
- 🔥 Emissions savings from Dehydration
- 🔥 Jatco Venturi Systems
- 🔥 DJ Basin Installations
- 🔥 Conclusion





Emissions savings from Dehydration

- 🔥 Technology used to route vapors back to the suction of the facility
- 🔥 At EnCana, in the DJ Basin, we use Jatco BTEX condensers and Venturi valves
- 🔥 All vapors post condenser are routed to the inlet via a venturi valve
- 🔥 Creates a closed loop system



Jatco - Operation

- ⦿ Shell and tube exchanger and venturi valve
 - ⦿ Rich glycol comes in from the dehy skid to the tube side of the condenser
 - ⦿ Methane, VOC and BTEX gases off of the still vent come into shell side of the condenser
 - ⦿ Glycol and gases exchange heat dropping out any entrained liquids in the gases
 - ⦿ Glycol exits the Jatco back to the dehy skid
 - ⦿ Liquids accumulate in a small pressure tank, and dump to inlet when full
 - ⦿ Gases are sent back to suction of compressor station via the venturi valve

Discharge to plant inlet

Gases in from Still Vent

Motive Gas Supply

Venturi Valve

Low pressure vent gas

High pressure Motive Gas

Discharge gas to suction

ENCANA.
 EnCana Oil & Gas (USA) Inc.



JATCO Venturi - Application

- ⚡ Must have high pressure motive gas
- ⚡ Motive gas can be from a compressor or dry gas from the dehydrator
- ⚡ Must have low suction pressures, or low pressure gas stream
- ⚡ EnCana's DJ Basin operations are applicable because we have suction pressures of 25 – 30 psi



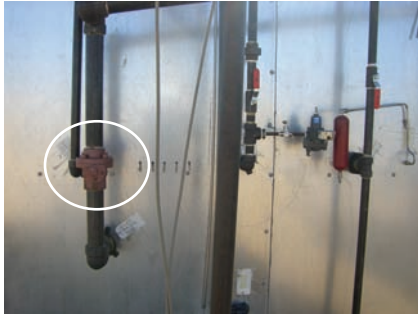
DJ Basin Installations

- ⚡ Installations on 5 dehydrators in the DJ and will have ALL dehydrators in DJ Basin controlled by end 2007.





DJ Basin Installations



A Balon valve was installed. When closed, no gases go to the Jatco. Allows for maintenance to be performed and prevents air from entering the system



Check valve installed to prevent liquids and gases leaving unit from re-entering



Costs of Installation

- 💧 Average unit cost ~ \$12,000
- 💧 Average piping cost ~ \$1,300
- 💧 Average installation ~ \$6,500
- 💧 Total Cost ~ \$19,800

- 💧 Technology allows for large emissions savings. Quantity of methane captured is small and will vary by site.
- 💧 Eliminates the need for a combustor





Conclusions

- ⚡ Jatco systems with venturi valve create a closed loop system for glycol dehydrators
- ⚡ Reduces methane, VOC, and BTEX emissions
- ⚡ Must have a high pressure “motive” gas to boost low pressure gas stream through the venturi valve.
- ⚡ Must have low pressure stream to accept the vapors
- ⚡ Great technology to reduce emissions and eliminate the need for combustion or incineration of vapors

