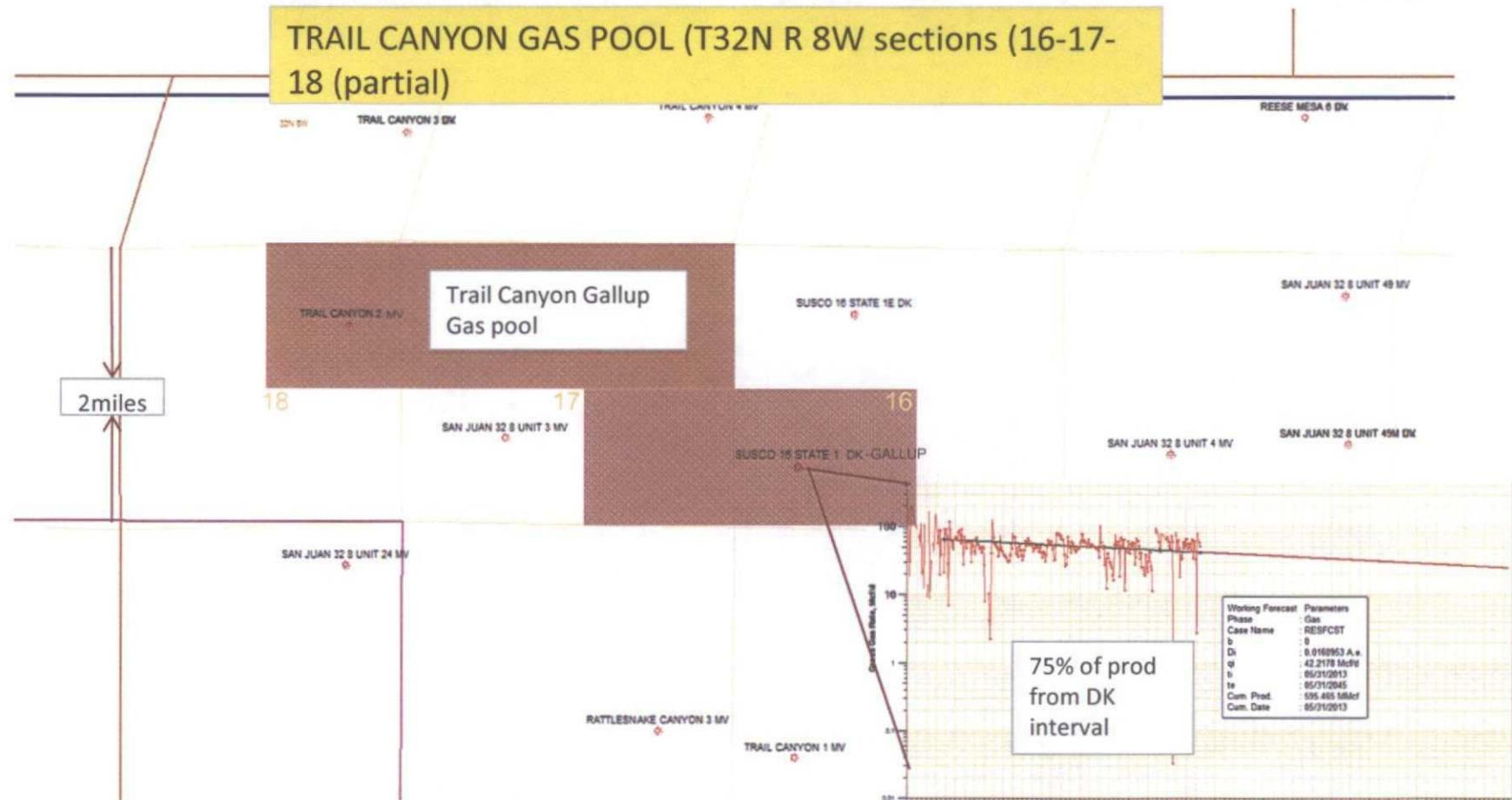


ConocoPhillips

# Engineering Exhibits

July 2013

# Trail Canyon



Wells In/  
Around

Insignificant water production

No Oil Production

## Comingle Criteria

- Marginal production from Gallup
- Fluid compatibility and water sensitivity/damage issues
- Pressure criteria
- Cross-flow issues
- Will commingling decrease the value of production?

# Trail Canyon

## Similar BTU content

Comp	Dakota	Mesaverde	Gallup
Methane	98.72%	97.24%	99.61%
Ethane	0.93%	1.97%	0.35%
Propane	0.17%	0.45%	0
i-Butane	0.04%	0.12%	0
N-Butane	0.03%	0.08%	0
i-Pentane	0.02%	0.05%	0
N-Pentane	0.01%	0.02%	0
Hexane+	0.08%	0.07%	0

Pressure differential does not pose a risk

Estimated Pressures	Dakota	Mesaverde	Gallup
	1100	950	1750

Line pressure  
**180 psia**

## Target zones

MV top perf 5600-5700      Frac pressure 3400psi @ 0.6psi/ft  
DK bot perf 8200-8300

## Comingle Criteria

- (a) Marginal production from Gallup
- (b) Fluid compatibility and water sensitivity/damage issues
- (c) Pressure criteria
- (d) Cross-flow issues
- (e) Will commingling decrease the value of production?

Footnotes are Calibri (body), 9 pt regular, gray

