

EPA NATURAL GAS STAR PROGRAM



EPA Welcomes a new Natural Gas STAR Partner



Devon Energy
becomes an
official partner in
the EPA Natural
Gas STAR
Program on
July 21, 2003

Summary of Devon Reductions

- Overall Reductions – 23.6 Bcf (through 2006)
 - Low Bleed Pneumatics 3.19 Bcf
 - **Reduced Emission Completions 15.9 Bcf**
 - AOF Testing 618 Mmcf
 - VRU's 1.28 Bcf
 - Dehy Controls 92.14 Mmcf
 - Plunger Lift Systems 1.22 Bcf
 - Flared Volumes 1.25 Bcf

Devon's Accomplishments

- Over 23.6 BCF in total methane emission reductions since 1990 (through 2006)
- 6.88 BCF reported for the year 2006
 - 68% from RECs
 - 14% from low bleed pneumatics
 - 5% from VRUs
 - 5% from flared volumes/reduced venting
 - 5% from plunger lift systems
 - 3% from other BMPs

Economics

| Year | Volume | Gas Price | Revenue |
|------|-------------|-----------|-------------|
| 1990 | 19.73 Mmcf | \$ 1.52 | \$29,989 |
| 1991 | 38.25 Mmcf | \$ 1.88 | \$71,910 |
| 1992 | 47.81 Mmcf | \$ 1.67 | \$79,842 |
| 1993 | 98.24 Mmcf | \$ 1.95 | \$191,568 |
| 1994 | 124.71 Mmcf | \$ 2.02 | \$251,914 |
| 1995 | 205.41 Mmcf | \$ 1.62 | \$332,764 |
| 1996 | 296.96 Mmcf | \$ 3.42 | \$1,105,603 |
| 1997 | 341.71 Mmcf | \$ 4.09 | \$1,397,593 |

Economics

| Year | Volume | Gas Price | Revenue |
|--------------|------------------|-----------|----------------------|
| 1998 | 254.81 Mmcf | \$ 2.20 | \$560,582 |
| 1999 | 272.54 Mmcf | \$ 2.29 | \$624,116 |
| 2000 | 846.36 Mmcf | \$ 3.77 | \$3,190,777 |
| 2001 | 714.42 Mmcf | \$ 4.51 | \$3,222,034 |
| 2002 | 623.60 Mmcf | \$ 3.16 | \$1,970,576 |
| 2003 | 1.14 Bcf | \$ 4.96 | \$5,654,400 |
| 2004 | 5.52 Bcf | \$ 6.15 | \$33,948,000 |
| 2005 | 6.16 Bcf | \$ 6.99 | \$43,058,400 |
| 2006 | 6.88 Bcf | \$ 6.57 | \$45,223,235 |
| Total | 23.58 Bcf | | \$140,913,303 |

FWB Success

- Implementation Manager discussed STAR opportunities with the Production Supervisor in the FWB
- Reviewed opportunities to reduce venting during cleanup procedures after fracs
 - Evaluated portable flare systems
 - Supervisor discussed it further with superintendents and foreman
- Completions Superintendent decided there was a better option available

FWB Reduced Emission Completions (RECs)

Previous procedure upon completion of the frac job

- Flow well back to frac tanks until clean up is completed
- Snub tubing in the hole while venting gas back to reduce the pressure on the well
- Run required tests to atmosphere to calculate the absolute open flow potential

FWB RECs

Current procedure upon completion of the frac job

- Install temporary flowline and meter run on location during completion process
- Flow well back to frac tanks until gas is encountered

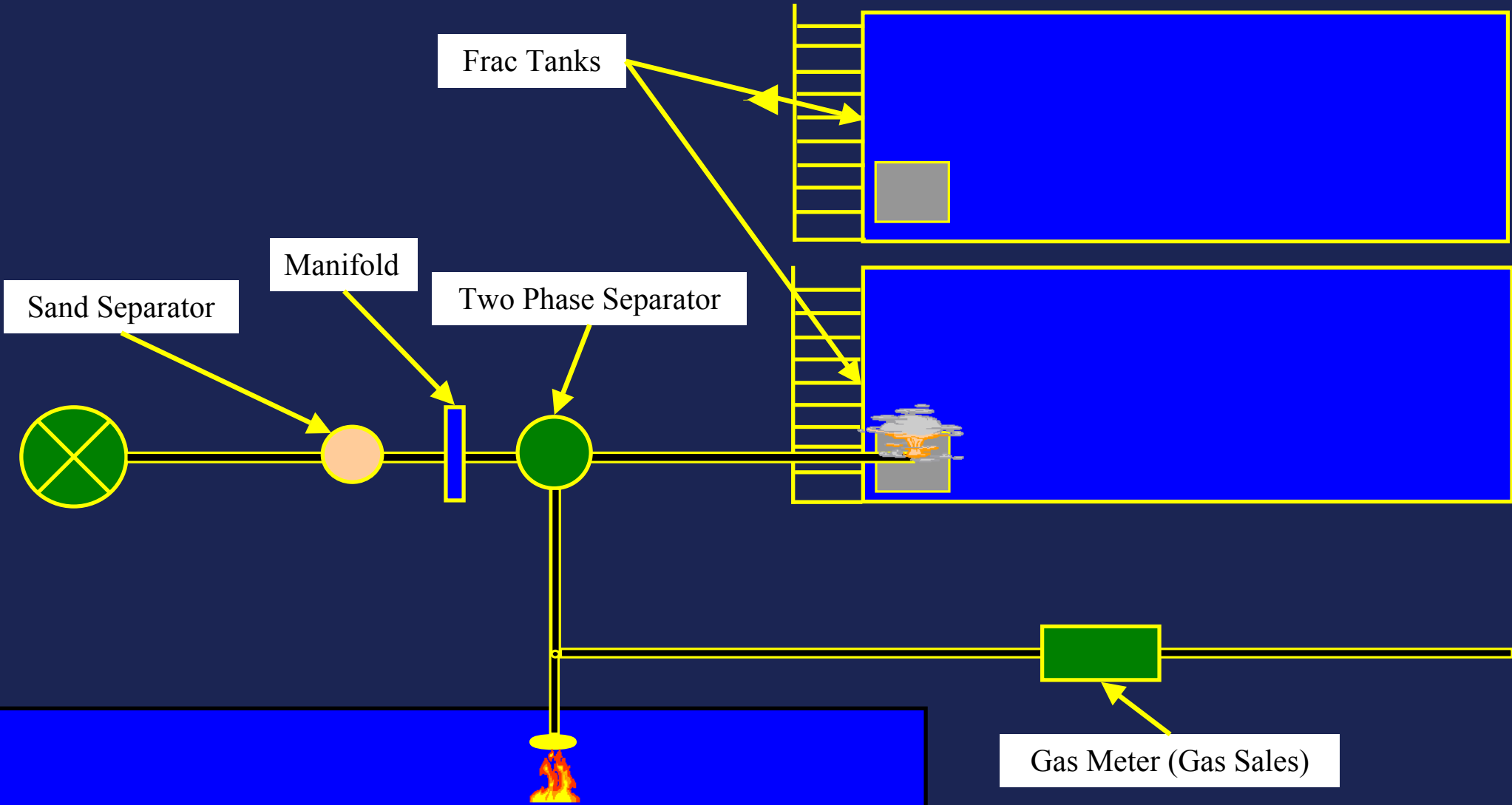


FWB RECs

- Turn well down line and *sale gas* while cleaning up the well
- Snub tubing in the hole while *selling gas* back to reduce the pressure on the well
- Run required tests *through sales* to calculate the absolute open flow potential



Flow Back Configuration



Benefits of FWB REC's

- Reduces the volume of methane emissions
- Allows wells to be cleaned up longer with better results
- Additional gas sales
- Safer work environment



Gas Sales Increase From the FWB RECs

Annual Additional Gas Sales Since the
Implementation of RECs in the FWB

| | |
|------|-----------|
| 2004 | 581,696 |
| 2005 | 1,182,097 |
| 2006 | 1,965,994 |

Economics of FWB RECs

Initiated RECs in the FWB in March of 2004

| Gas Recovered * (mcf) | \$6.57/mcf | Incremental Cost | Net Gas Sale Value |
|--|-------------------|-----------------------------|-------------------------------|
| 3,729,787 | \$24,504,701 | \$2,243,780 | \$22,260,921 |

* STAR credits – 3,151,670 mcf (methane - 84.5%)

Economics of FWB RECs

| | |
|--------------------------|----------|
| Average Additional Sales | \$64,486 |
| Average Incremental Cost | \$5,904 |
| Additional Revenue | \$58,582 |

devon

