

ExxonMobil

United States Production Company

*Natural Gas STAR Program Involvement and
Experience*



September 21, 2004

Overview

- USP Background
- Communication and buy-in
- Data Collection
- Reduction Opportunities:
 - Plunger Lifts
 - Replacement of high-bleed gas pneumatics
 - Environmental Vapor Recovery Unit

Background - US Production Company (USP)

- Formed in 2003
 - Previously 2 separate organizations (US East and US West)
- Consists of oil and gas production operations
 - Approx. 680 billion cf of gas in '03
 - Approx. 80 million bbls of oil in '03
- Produces in 11 states and Gulf of Mexico
- Employs approximately 2500 people
- Would rank 37th on Fortune 500 as a stand-alone company



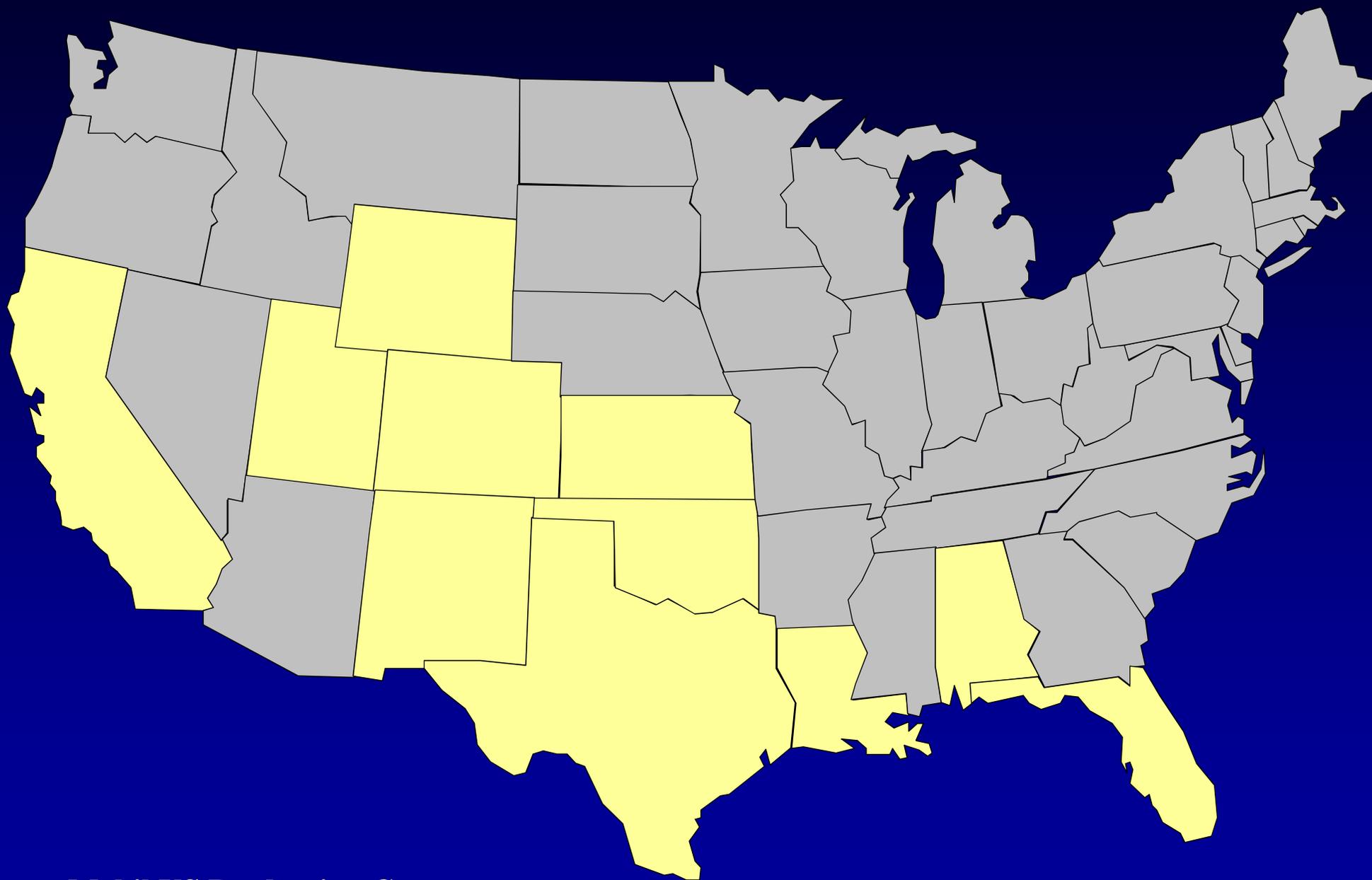
Flare - WY



*Electric-driven Injection Pump -
Salt Creek*

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Background - USP Production



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Background - US Production Company

- Facilities include:
 - Gas plants
 - Compressor stations
 - Offshore platforms
 - Drilling rigs
 - Tank batteries

- Operational Scope
 - Primary/Secondary/Tertiary Oil
 - Heavy oil
 - Tight gas
 - Depths to 17,000 ft
 - Vertical & horizontal wells



Nine Mile Point Platform - South Texas



Labarge Drilling Operation, WY

Communication and Data Collection

- Challenges
 - Size
 - Job rotation
- Approach
 - Brainstorming session with air team:
 - + Newsletter article
 - + Meetings with facilities engineers
 - + Field trips
 - + Project database
 - + Tracking tool

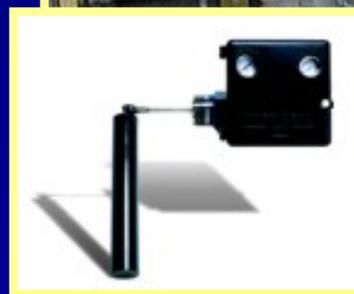
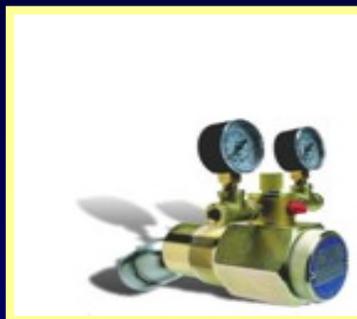


Plunger Lift Installation

- Many low-pressure gas wells must be vented periodically to prevent backpressure
- Installation of artificial lift such as plunger lifts eliminates or reduces venting
- Increasing number of plunger lift installations
 - In 2003, achieved methane reduction credit due to these installations
- Must be evaluated on individual basis to determine reduction amount, if any

Replacement of High-Bleed Gas Pneumatics

- Gas-driven pneumatics are one of largest sources of vented methane emissions
- Retrofit project at Sarita field realized savings of 40,000 kcf/yr with a quick payback
- Conducted company-wide study to determine whether any field still contain gas-driven pneumatics
 - Most already replaced
 - Discovered 3 fields still using
 - + Plan to evaluate cost/benefit of replacement options



Environmental Vapor Recovery Unit Technology (EVRU)

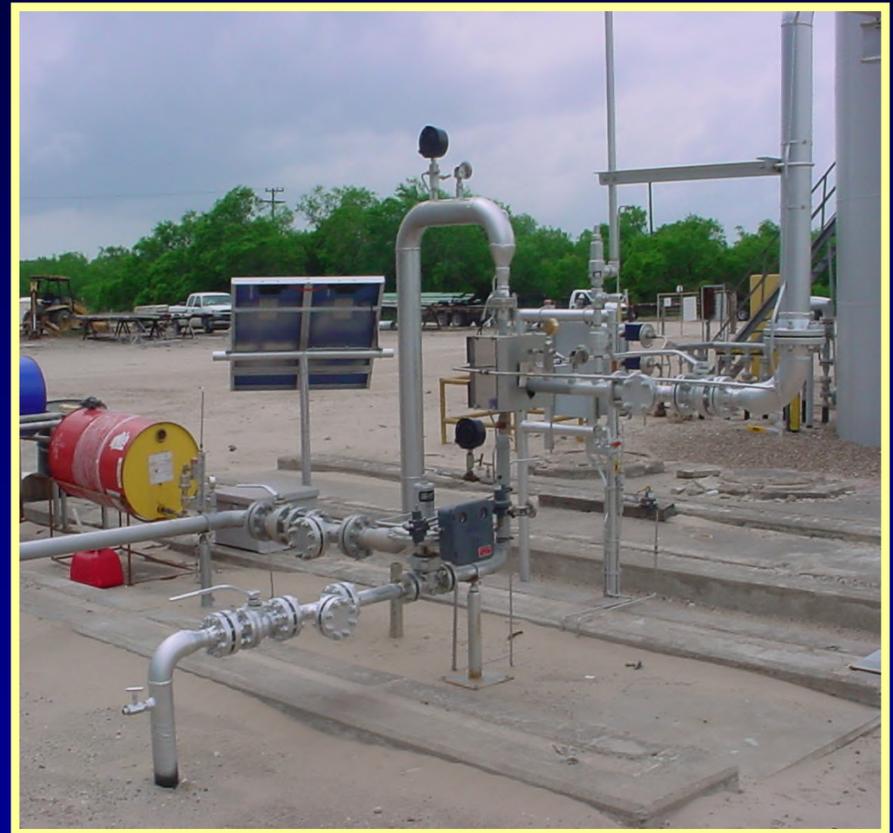
- **Traditional Vapor Recovery Unit (VRU)**

- Compressor driven:
 - + Reliability issues
 - + Maintenance requirements
 - + Resistance



Environmental Vapor Recovery Unit Technology (EVRU)

- **Environmental Vapor Recovery Unit (EVRU)**
 - New technology
 - Operates on the Venturi Principle (no compressor involved)
 - + Requires:
 - High-pressure motive gas stream
 - Low to intermediate pressure system to send gas
 - EPA issued Environmental Technology Verification Report



EVRU - Mariposa Compressor Station

Environmental Vapor Recovery Unit Technology (EVRU)

- **Advantages**
 - **Operational**
 - + **Requires no fuel**
 - + **Requires little space**
 - **Can be skid or pipe-mounted**
 - **Efficiency**
 - + **Almost 100% efficient (VRU - 95% efficient)**
 - **Maintenance**
 - + **Essentially no maintenance (no moving parts)**
 - **Implementation**
 - + **Quicker - buy-in and shorter delivery time**
 - **Compliance**
 - + **Reduced risk of noncompliance**
 - **Reliable and emissions-free**



EVRU - Mariposa Compressor Station

Environmental Vapor Recovery Unit Technology (EVRU)

- **System evaluated for use and implemented at Mariposa Compressor Station**
 - \$11,000/yr. operating expense savings
- **Payback period approx. 14 months vs. 7 months for VRU**
 - Due to higher capital cost of EVRU
 - Able to justify due to other benefits
 - + Reduced operating and maintenance costs
 - + Reduced downtime



EVRU - Mariposa Compressor Station

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