

2007 ESP Workshop

Summary of Presentations

Woodland Waterway Marriott Hotel

Prepared by
Cleon Dunham, Oilfield Automation Consulting
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Paper	Author(s)	Summary of Discussion
Purpose of this Document		
Purpose of this Document	Cleon Dunham Oilfield Automation Consulting	<p>The purpose of this document is to summarize the main points of the technical presentations at the 2007 ESP Workshop. If you wish to learn more, please review the actual papers. The papers are included in the Workshop notebook and on the Workshop CD. If you didn't attend the workshop, you can purchase a CD from the ESP Workshop committee.</p> <p>These summaries are based on my notes. If anything is presented incorrectly, the fault is mine, not the authors and/or presenters of the papers. The lead author (or at least the author who presented the paper) is shown in bold color with each paper.</p> <p>Attendance at this years workshop was:</p> <ul style="list-style-type: none"> • A total of 476 people attended the workshop. • They came from 27 separate countries. • 30% were from Operating Companies. The rest were from Service Supply Companies, Consultants, and Universities.
Opening Comments Session Chair: Noel Putscher, Medallion Exploration		
Opening Comments	Noel Putscher Medallion Exploration	<p>Noel Putscher of Medallion Exploration, General Chair of the Workshop, gave the opening comments.</p> <ul style="list-style-type: none"> • Noel welcomed the attendees. • He gave a safety presentation and made other announcements. <p>A special recognition to Boyd Moore who passed away on June 4, 2006. Recognition Boyd's contributions to the ESP Workshop is included in the ESP Workshop Notebook.</p>

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Keynote Address		
<p>Breathing New Life into a Maturing California Asset</p>	<p>Frank Komin President and General Manager, Oxy/THUMS Long Beach Company</p>	<p>Frank Komin gave a very interesting keynote address.</p> <p>A. Introduction</p> <ul style="list-style-type: none"> • THUMS Long Beach is now owned by Oxy. • Oxy’s proven reserves are 2.9 MM Bbls. • It is a world-wide operator in North America, South America, the Middle East, North Africa, and other locations. • Production is about 730 MMB/Day with 350 MMB/Day in the US. • Oxy is big in California, with major assets in THUMS, Elk Hills, and other location. This accounts for 25% of Oxy’s production. <p>B. History of THUMS Long Beach</p> <ul style="list-style-type: none"> • THUMS is in Long Beach Harbor, one of the busiest in the US. • It is part of the Wilmington Field, discovered in 1932. • This is one of the largest fields in the US. • After early production, there was up to 30 feet of subsidence. • Local residents opposed further development and production. • A water flood was started in the 1950’s to arrest the subsidence. • When subsidence was arrested, further development was approved under very strict rules. • In 1965, a consortium of Texaco, Humble, Union, Mobil, and Shell (thus the name THUMS) bought the field. • By 1969, production was 150,000 BOPD. • The wells are all drilled from islands in Long Beach harbor. The wellheads are all below grade so they can’t be seen from shore. • Today there are 1100 wells, with 2/3 producers and 1/3 injectors. All of the producers are artificially lifted by ESP. • The original architecture of the islands was by the same people who originally developed Disneyland. <p>C. Operations</p> <ul style="list-style-type: none"> • The field is operated by Oxy in cooperation with the City of Long Beach and the State of California. • Currently production is about 30,000 BOPD, with 96% water cut. • There is about 1.0 MMB/Day water injection. • There are 740 producers, 375 injectors, and 70

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		<p style="text-align: center;">megawatts of electricity is generated.</p> <p>D. Growth Plan</p> <ul style="list-style-type: none"> • For the last several years, the focus was on cost reduction. • Today it is on growth in both reserves and production. • The current expected life is 40 years. • The current strategy has been nicknamed G³ for Smart Growth, Strong Growth, Long-term Growth. <p>E. The Reservoir</p> <ul style="list-style-type: none"> • The field is small but very thick. • Net pay is up to 1000 feet, with 5000 – 6000 feet of gross pay interval. • There are many individual intervals. • Water flooding is a challenge. • Reservoir modeling is very important. <p>F. Drilling</p> <ul style="list-style-type: none"> • Some 380 drilling prospects have been identified. • Some of these are on additional property that Oxy has acquired in the Wilmington Field. <p>G. Technology Plan</p> <ul style="list-style-type: none"> • Plan to drill mostly horizontal wells to find pockets of bypassed oil, attic oil. • Using extended reach drilling. • Need to be concerned with using anti-collision technology to avoid drilling in to existing well-bores. • Most completions use frac packs to limit sand production for the benefit of ESP operation. • There is a concern with mechanical integrity of the wells and flowlines. The major lines are inspected for corrosion and leaks using smart pigs on an annual basis. • They are using guided ultrasonic inspection of lines. • Water flooding of the multiple layers is a large challenge. They are using profile control. <p>H. Artificial Lift</p> <ul style="list-style-type: none"> • ESP's have been used in the field for 42 years. • There are 740 wells in ESP; 700 are provided by Centrilift and 40 by Reda. • The ESP's produce 1260 B/D average • Run lives vary from 3 – 5 years, with 55 month average. • They focus on well failure analysis.

