2018 Wyoming Oil and Gas Fair
&
EORI

Oil and Gas Production:
Decision Making with Optimized Information
Wyoming Reservoir Information Tool - WyRit

Nick R. Jones
The mission of EORI is to facilitate a meaningful and measurable increase in recoverable reserves and production of oil and natural gas in Wyoming that may otherwise not be realized. Key to this is the effective and efficient transfer of relevant technology, information and knowledge to Wyoming producers. EORI believes that its mission is being met when producers consider EORI as a vital source of relevant technology, information, expertise and knowledge for Wyoming fields.
Oil and Gas recovery phases, Life of the Field

**Improved oil recovery (IOR):**
- Down-spacing,
- Reperforating, pumps,
- Engineering and facilities improvements

**Primary Recovery:** (Produces from original Reservoir energy)
Examples: natural water drive, pressure depletion, gravity drainage

**Secondary Recovery:** (Production enhancement with no chemical changes in rock induced)
Examples: Pressure maintenance by nitrogen injection, waterflood

**Enhanced oil recovery (EOR – Tertiary):** (using processes that change the chemistry of the system).
Examples: CO2, polymer, methane, ASP, microbial, thermal (steam)
Death by Data

Field Information
General Well Information
Geophysical Log Data
Injectivity Tests
Formation Factor
Pressure Tests
Fracture Gradient
Production Data
Expected Ultimate Recovery (EUR)
Inter-Well Communication

Production Tests (IPs)
Tracer Tests
Well History Information
Lease Operating Expenses (LOE)
Well Completion Information
Core Analysis
Saturation Values
Original Oil-in-Place (OOIP)
Injection Data
Well Test Data
Drill Stem Tests
Stratigraphic Correlation
Thermal Gradient
Asset Valuation
Geologic Structure
Stratigraphic Correlation
Geophysical Log Data
Information Resources
Key Data and Information Providers (Public)

Wyoming Oil & Gas Conservation Commission

University of Wyoming Geographic Information Science Center
Key Information & Service Providers (Commercial)
Optimized Data Management & Accessibility Resources

NREX – Wyoming Natural Resource and Energy Explorer

WyRIT – Wyoming Reservoir Information Tool
Wyoming Reservoir Information Tool (WyRIT)
Background and Going Forward

- Proposed in 2014
- Approved & funded by EORC
- Designed and developed in 2015
- Application was launched in February of 2016
- Associated with NREX in Summer of 2016
- Version 2.0 was launched in September of 2016
- Updates and changes planned for 2018
Collaboration is Key

- Enhanced Oil Recovery Commission
- Wyoming Geographic Information Science Center
- Wyoming Oil & Gas Conservation Commission
- Wyoming Geological Association
- Wyoming Pipeline Authority
- Seismic Exchange
- Enhanced Oil Recovery Institute
- Wyoming State Geological Survey
Functionality

Annual Production graphs

Core analysis charts (in press)
Injection included on Production Graphs
Functionality

Links to external data providers

Seismic attributes and links to SEI

Well attributes and links to WOGCC
Unique Functionality with Query and Search Tools
Custom maps and exports
Looking Forward
Acknowledgements and Credits

- Enhanced Oil Recovery Commission
- Wyoming Geographic Information Science Center
- Wyoming Oil & Gas Conservation Commission
- Wyoming Geological Association
- Wyoming Pipeline Authority
- Wyoming State Geological Survey
- Seismic Exchange
- University of Wyoming School of Energy Resources
- End users and beta testers

Special thanks and credit to:
Robert Meyer – WOGCC Data and Website
Robert Kirkwood – WyGISC Application Developer
Paddington Hodza – WyGISC Assistant Director
Is the information and data that is collected today adequate for tomorrow?

How is the information and data that is collected today going to help with optimization down the road?
References and Data providers

Thank You! Questions, Comments, Concerns

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