Enhancing Oil and Gas Recovery
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Enhancing Oil & Gas Recovery

- Oil and Gas Trapped at Depth and Pressure

Typical Oil and Gas Reservoir

- Porous rock
- Water
- Impermeable cap rock
- Gas
- Porous rock
- Oil
- Impermeable rock

The Well
- Oil or Gas Produced
- Surface Casing
- Cement
- Production Casing
- Perforations

Oil or Gas enters thru Perforations

Tubing
Packer

Looking Ahead
Enhancing Oil & Gas Recovery

• Oil and Gas Trapped at Depth and Pressure
• Primary Recovery via Pressure Depletion
  – Lowering Well Pressure Increases Recovery
  – Artificial Lift: pump, or gas added into well lowers pressure
  – Gas Compression: lowers well surface pressure
• Enhanced Recovery
  – Water Injection
  – Gas Injection (e.g. lean gas, rich gas, carbon dioxide)
  – Chemical Injection
  – Thermal Recovery
• Each Requires Specific Facility Equipment