



Bakken Multi-Well Drilling Pads & Nabors Rig Walking System

May 3, 2010

Agenda



- Hess Vision
- Nabors Walking Rig



- Can We Execute Safely?
- What is the Environmental Impact?
- It is Going to be Cost Effective?
- What is the Manpower Impact?



- Drilling
- Completions
- Facilities Construction/Land
- Production Operations
- Maintenance
- Global Supply Chain
- EHS
- Global Process Excellence

Multi-Well Drilling Pad – Design Approach



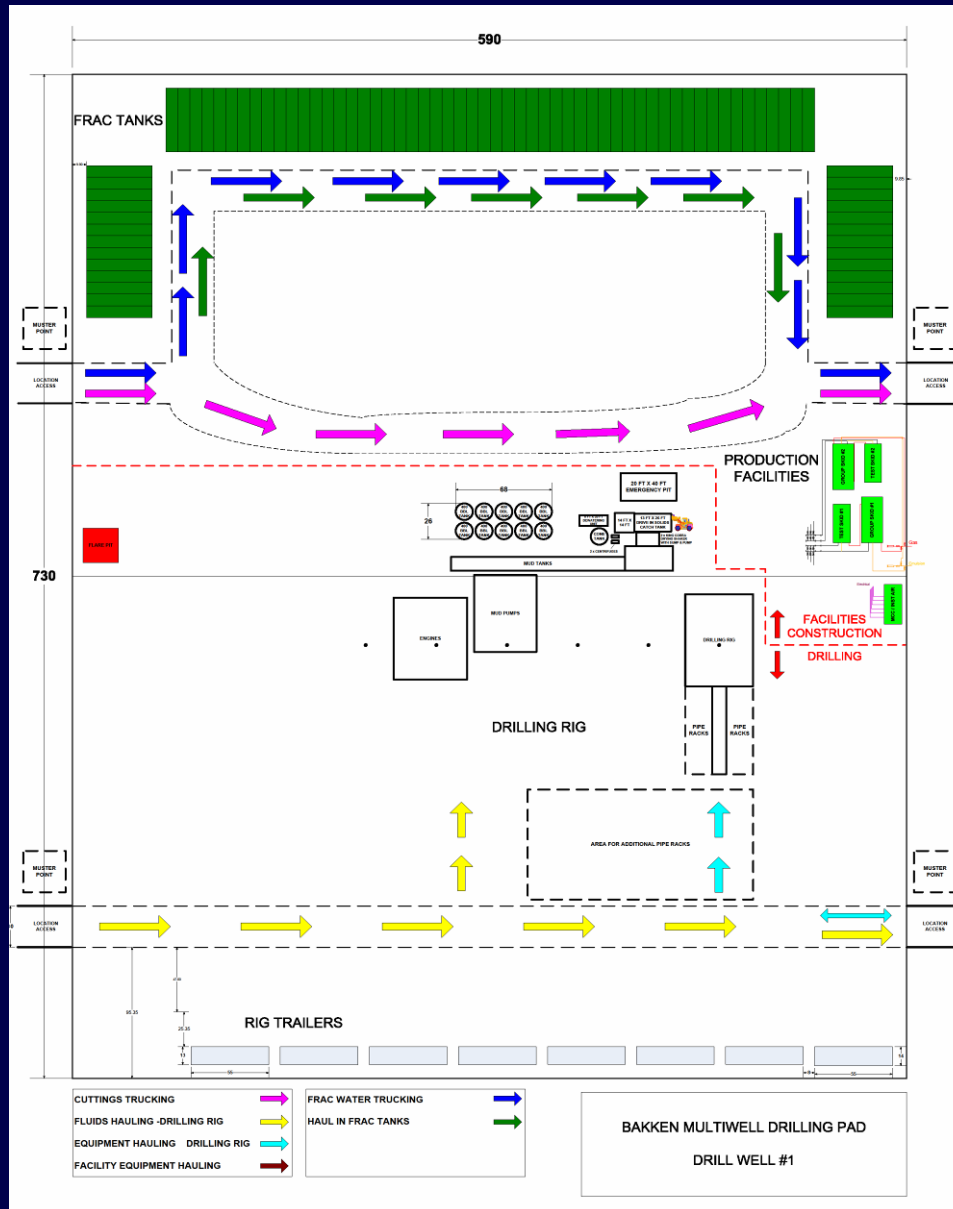
- Created Initial Pad Design (August)
- Framed Overall Process using SIPOC-R (Sept 17)
- Developed Swim Lane Maps/Work Procedures/Target Cycle Times (Sept 22)
- Developed diagrams for transportation, motion (Oct 6)
- Listed SIMOPS activities for risk analysis (Oct 6)
- Perform Risk Analysis and Develop Guide for SIMOPS activities (Oct 21)
 - Review Process Map, Layout Diagrams
 - Identify Risks
 - Develop HAZID Matrix
 - Identify Severity, Frequency, etc. and Develop Mitigation Plan (partial FMEA)
- Finalize SIMOPS Procedure (Nov)
- Communicate and Establish Stakeholder Buy-In (Dec 16)
- Modify Layout, Procedure / Implement Controls Per Risk Analysis (Dec/Jan)
- Develop Integrated Project Schedule (Jan/Feb)

Multi-Well Drilling Pad – Execution Procedure

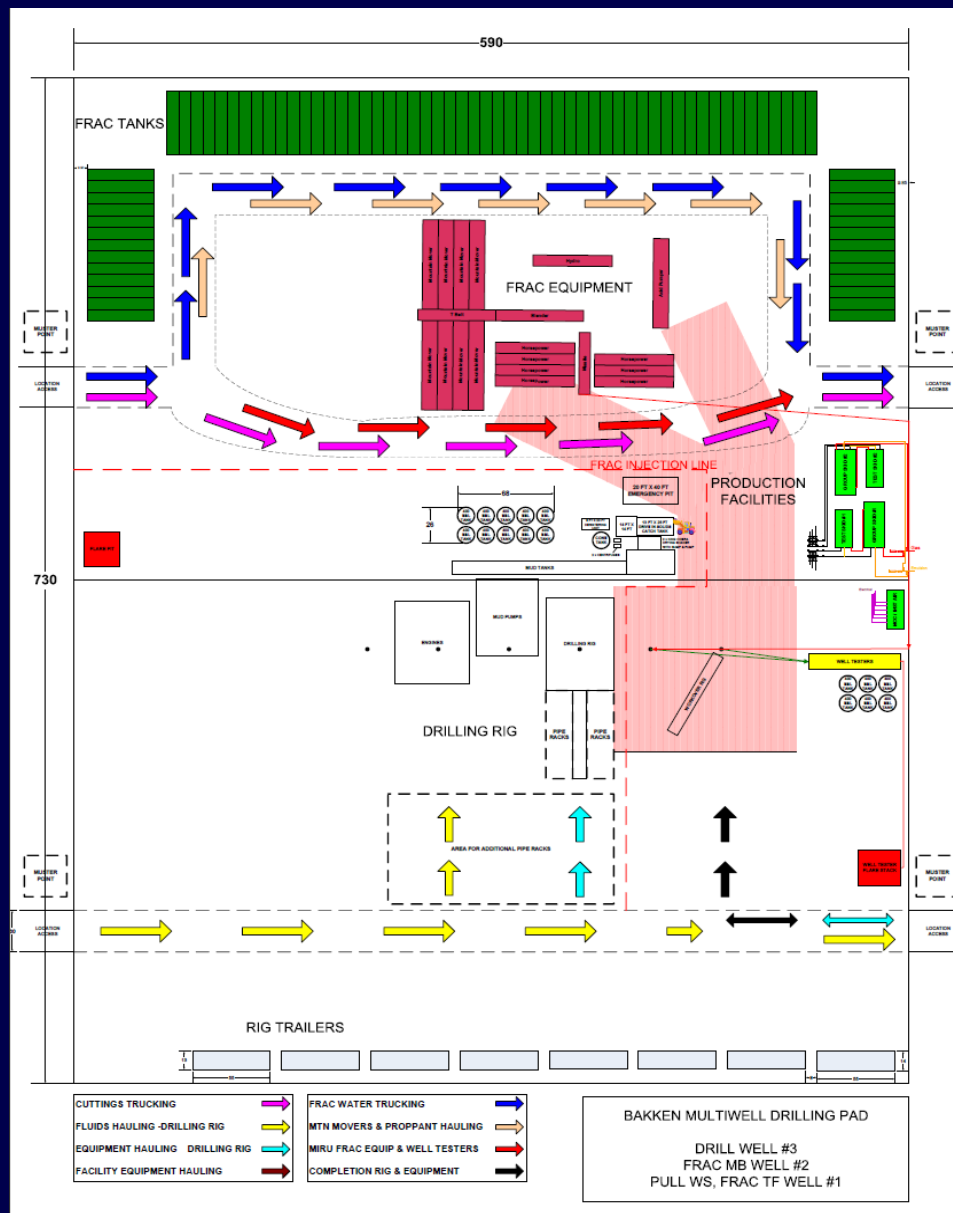


- The location size will be 10 acres for a six well pad. For comparison, previous locations were approximately 4 acres for a single well.
- A Spud Rig will be used to drill all six surface holes and set surface casing.
- Production Facilities will be built prior to moving in the “big rig”. Construction will start when spud rig is on Well #3.
- A “big rig” will then be moved in to drill six wells. This big rig can slide up to 100 feet without moving the “rig backyard”
- A closed loop mud system will be utilized on all drilling activities. Drill cuttings from the surface hole will be land farmed, and cuttings from the intermediate holes and laterals will be buried on location.
- The big rig will move in and drill wells 1 through 3, move the backyard, then drill wells 4 through 6.
 - Base Well Design
 - Dual Lateral with one Middle Bakken (MB) and one Three Forks Lateral (3F)
 - 12 total lateral per 6 well location
 - Each lateral will be stimulated with an 18 stage frac
- Simultaneously Operations will be done as much as possible (Example: The MB lateral on Well #1 will be fraced while Well #2 is being drilled).
- Transportation and motion on location will be managed to ensure safe and efficient operations.
- Manage location construction and access to minimize impact to landowners, wildlife, and local infrastructure (township and county roads).

Multi-Well Drilling Pad – Drill Well #1



Multi-Well Drilling Pad – Drill Well #3



Multi-Well Drilling Pad – SIMOPS Team Authorities



SIMOPS Team Member	Authority
PIC Site Supervisor	Final authority while “Big Rig” is on site.
Completions Supervisor	Responsible completion operations
Production Operator	Responsible for production operations
Shift Drilling Supervisor	Responsible for the drilling operations
Facilities Construction Supervisor	Responsible for facility construction operations
Maintenance Supervisor	Responsible for maintenance operations
Pipeline Installation Supervisor	Responsible for pipeline laying operations
Site Safety Officer	Responsible for safety on site
Site Access Officer	Responsible for all ingress and egress