DrillSafe Fluids Management and Bulk Mixer Inc.

Present

The Technology of Drilling Fluids Bulk Mixing and Material Handling

IADC Spark Tank
December 12, 2018

DrillSafe Fluids Management

Mission:

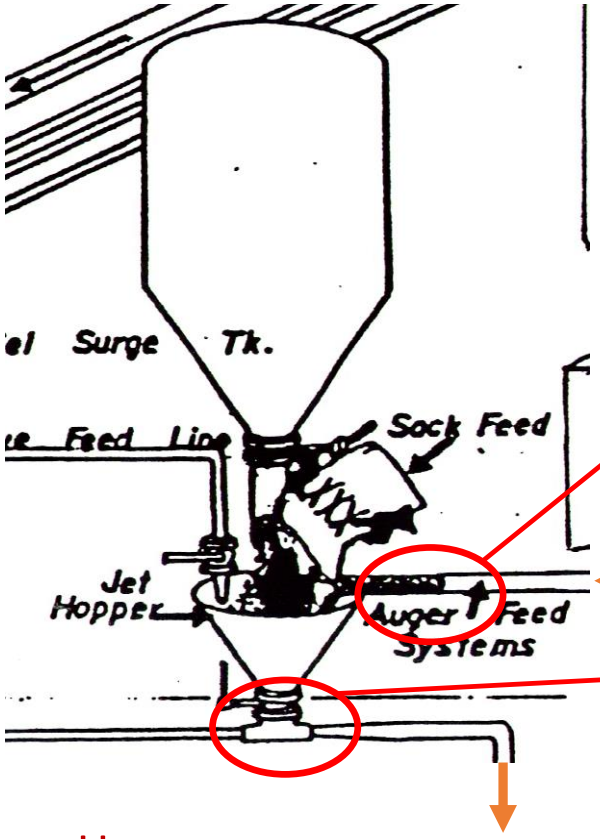
Provide high-quality drilling fluids mixing and material handling to reduce waste (cost) and support safe drilling operations – to become an industry standard.

DrillSafe Fluids Management

Problem:
The “Hopper System” is inadequate and needs to be replaced with new, state-of-the-art technology.

Solution:
Re-launch BMI into new company focused on cost reduction and managing drilling risks related to drilling fluids.

Problem illustration



Hopper
– built in 1920's

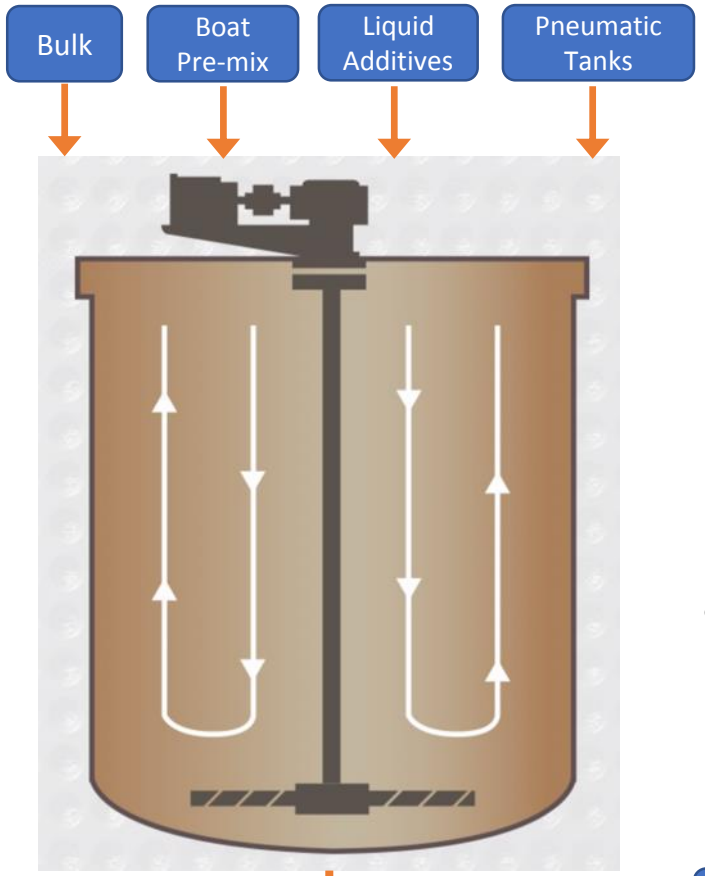
Mud pits

Sack cutters and big bag hoppers

Uphill augers don't work well with dry powders

Restrictions cause shut downs

Solution illustration



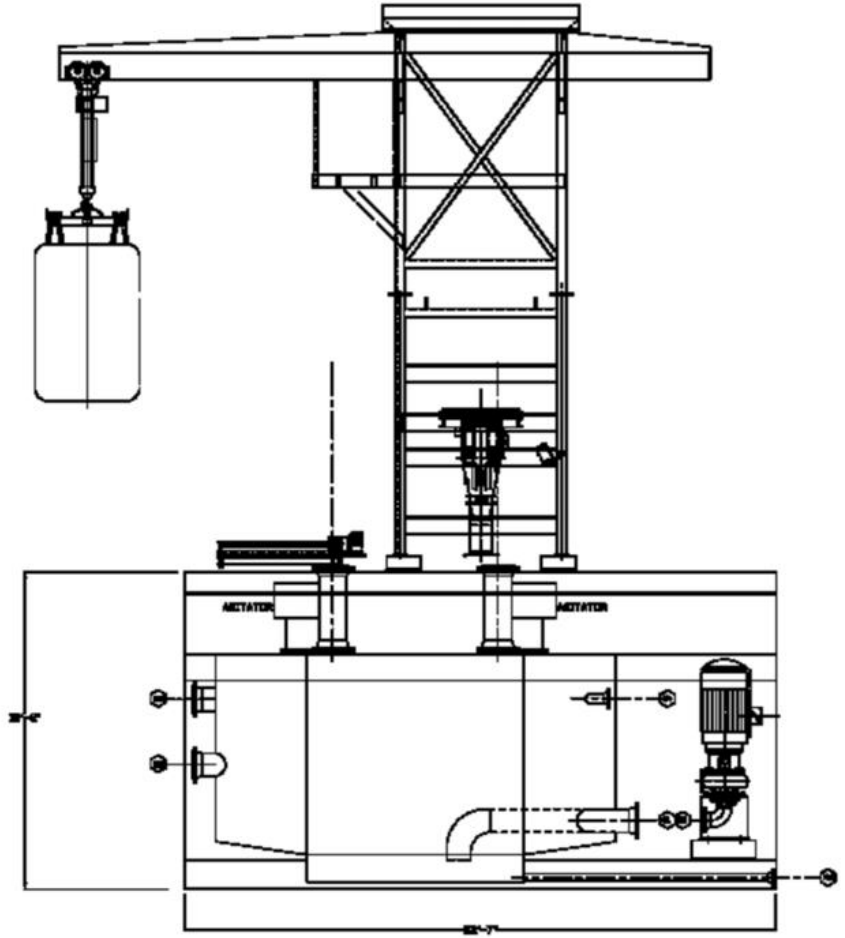
Mixer Technology

Flow pattern assures rapid, homogenous mixing

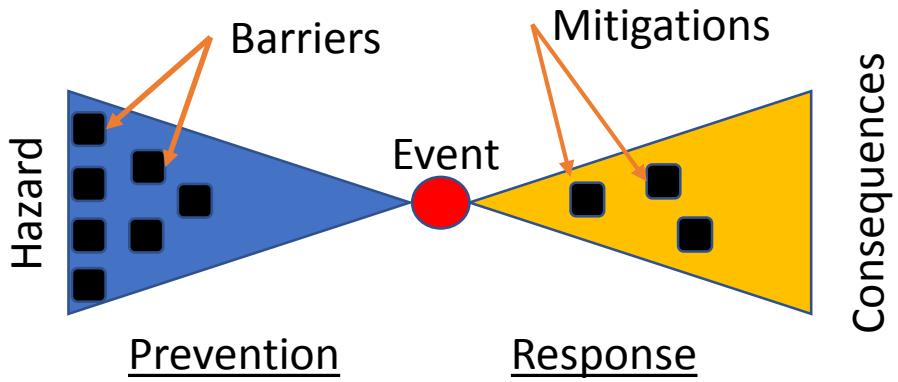
Builds volume quickly

Precision measurements and automation

Big bag material handling



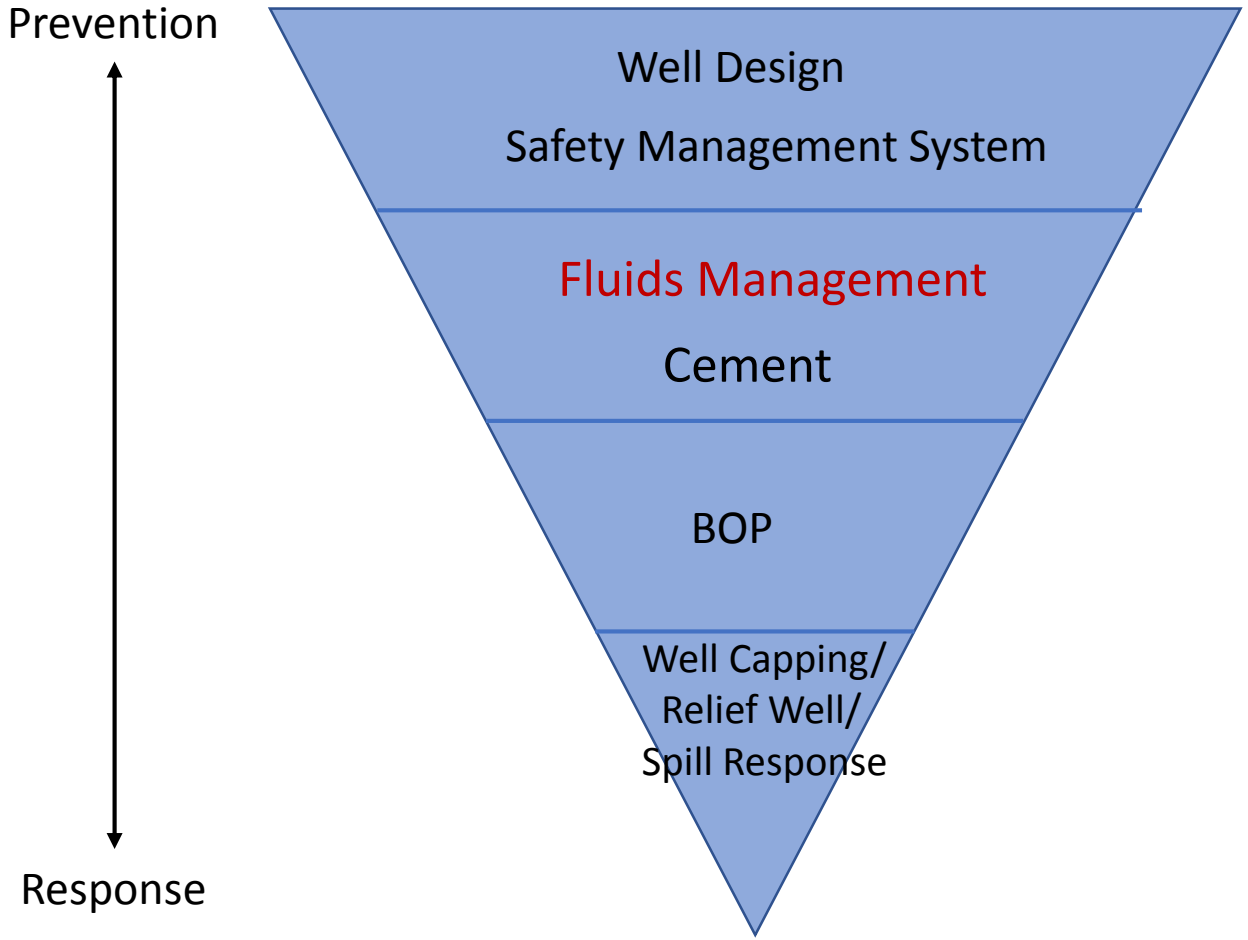
Safety Barriers in Drilling



"Designed and used properly, drilling mud, cement, and casing work together to enable the crew to control wellbore pressure."

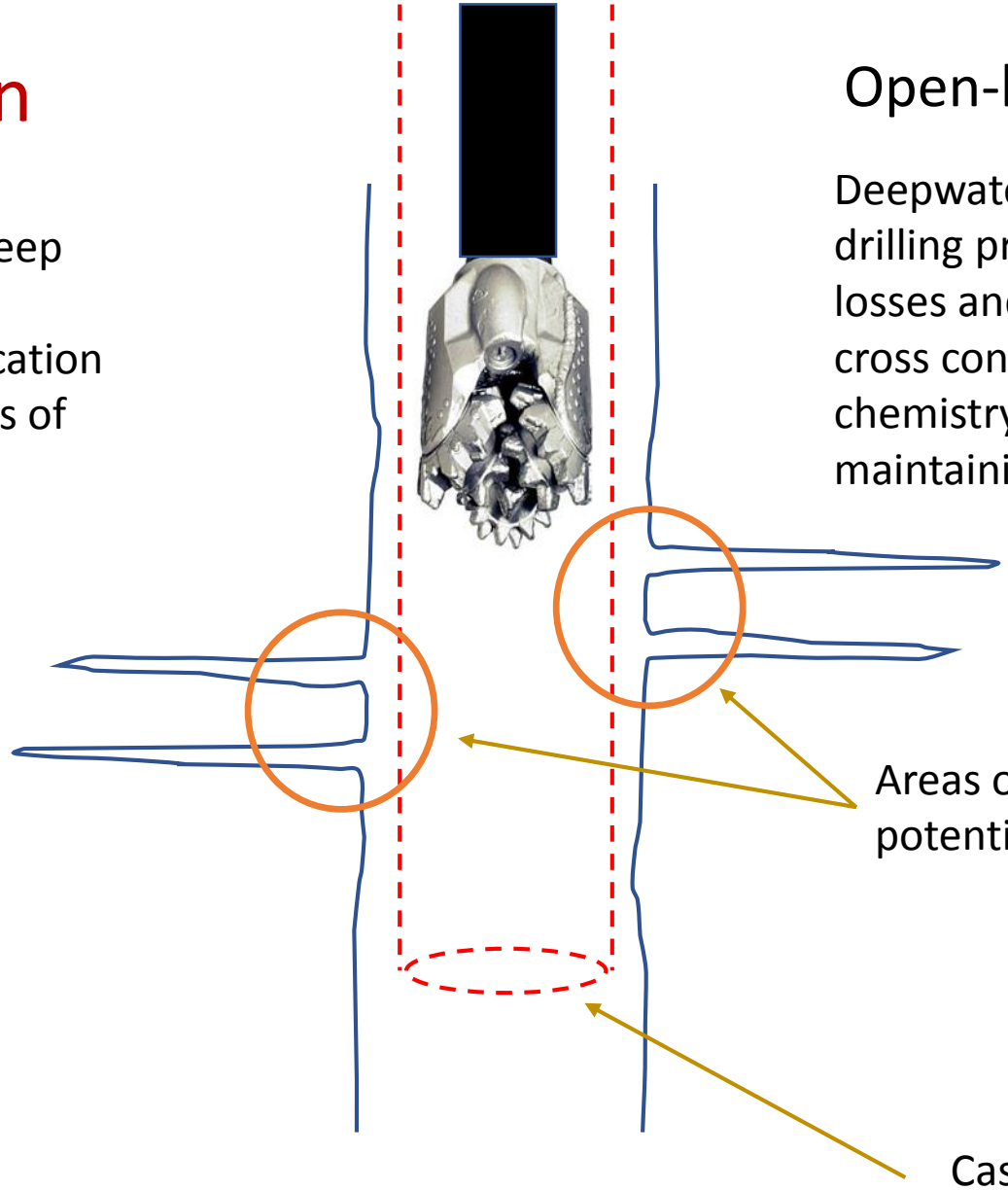
"In the days leading up to the final cementing process, BP engineers focused heavily on the biggest challenge: the risk of fracturing the formation and losing returns. John Guide explained after the incident that losing returns "was the No. 1 risk.""

- BP Oil Spill Commission Report



Drilling Margin

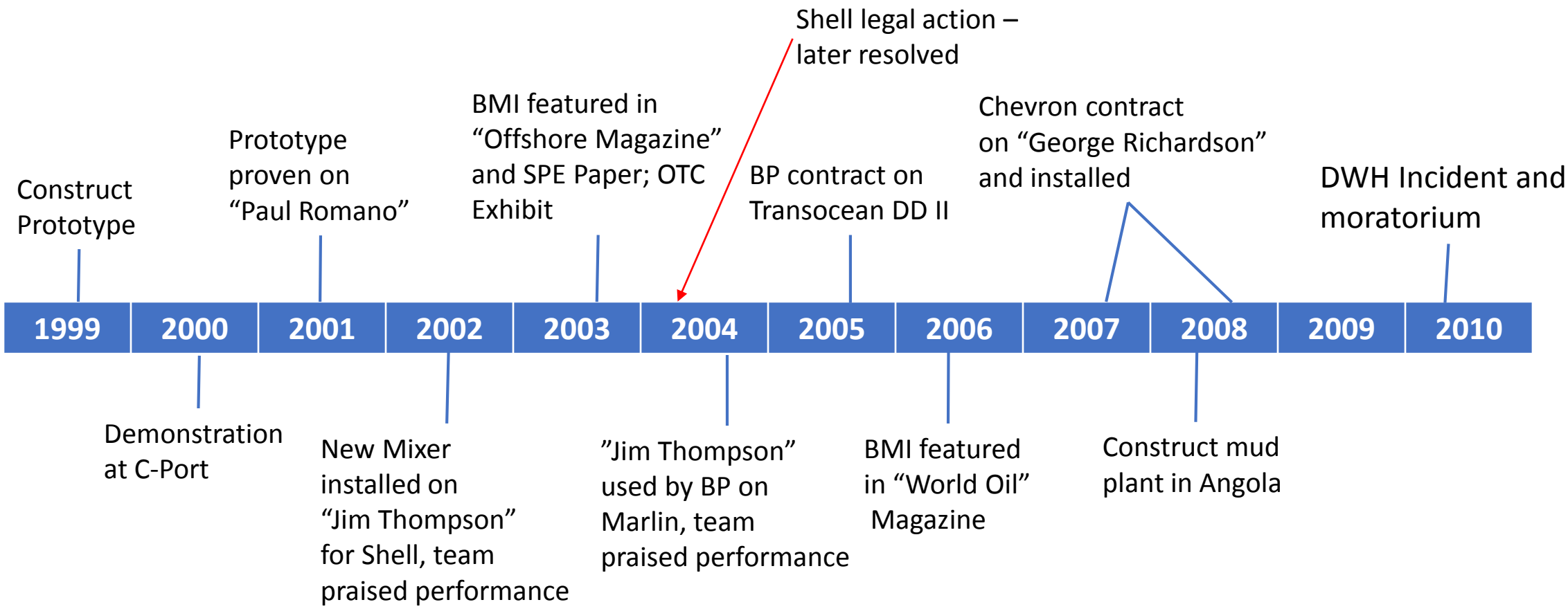
DWH lost the ability to keep track of their mud and flow volumes and the location of the mud in the process of preparing to leave.



Open-hole Drilling with fluid losses

Deepwater wells, like Macondo, with very small drilling pressure margins are prone to high fluids losses and subsequent formation fractures with cross contamination. Proper fluid density, chemistry, and loss control additives are essential to maintaining well integrity.

BMI Timeline



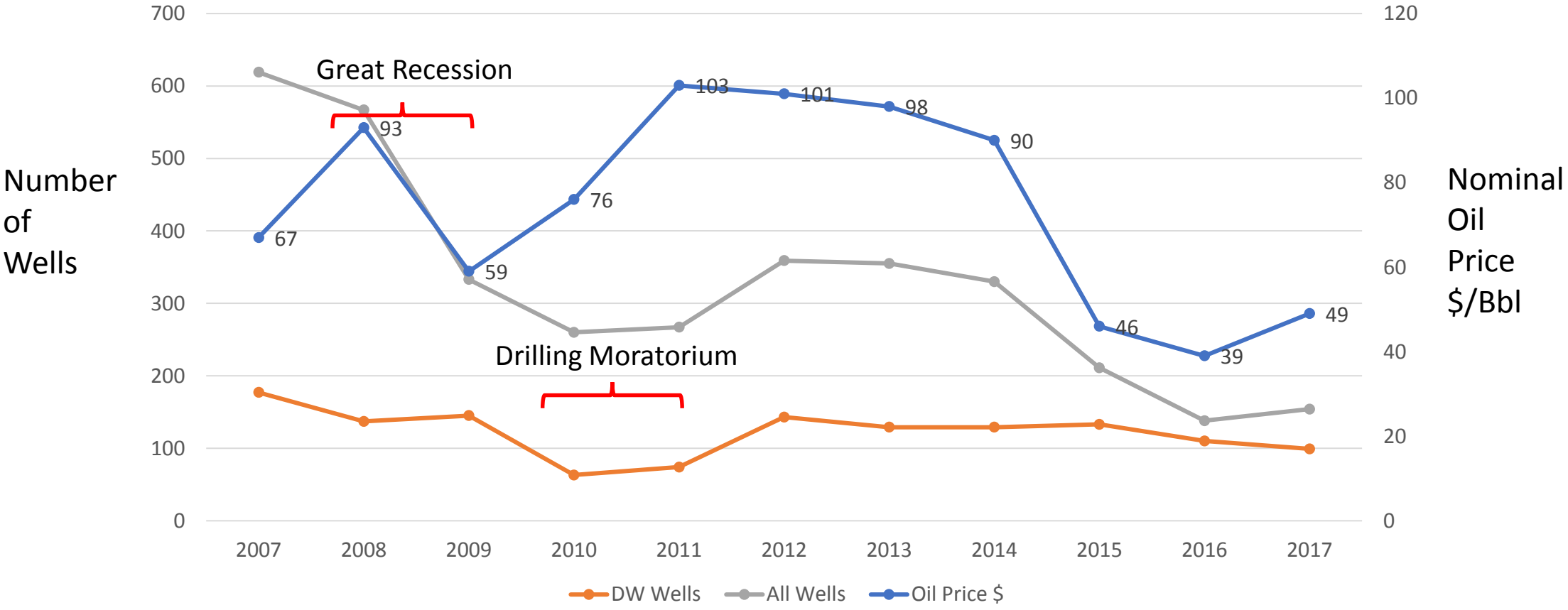
BMI Revenues

Company	Rig	Purchase Revenue	Rental Day Rate	Rental Revenue	Total Revenue
Shell	Noble Jim Thompson		$3,500	$2,555,000	
BP	Transocean DDII	$1,600,000			
Chevron	Angola land-based	$1,600,000			
Chevron	Transocean Richardson	$1,850,000			
Chevron	Rowan Gorilla 7		$3,000	$2,100,000	
Subtotals		$5,050,000		$4,655,000	$9,705,000

BMI Reasons for Failure

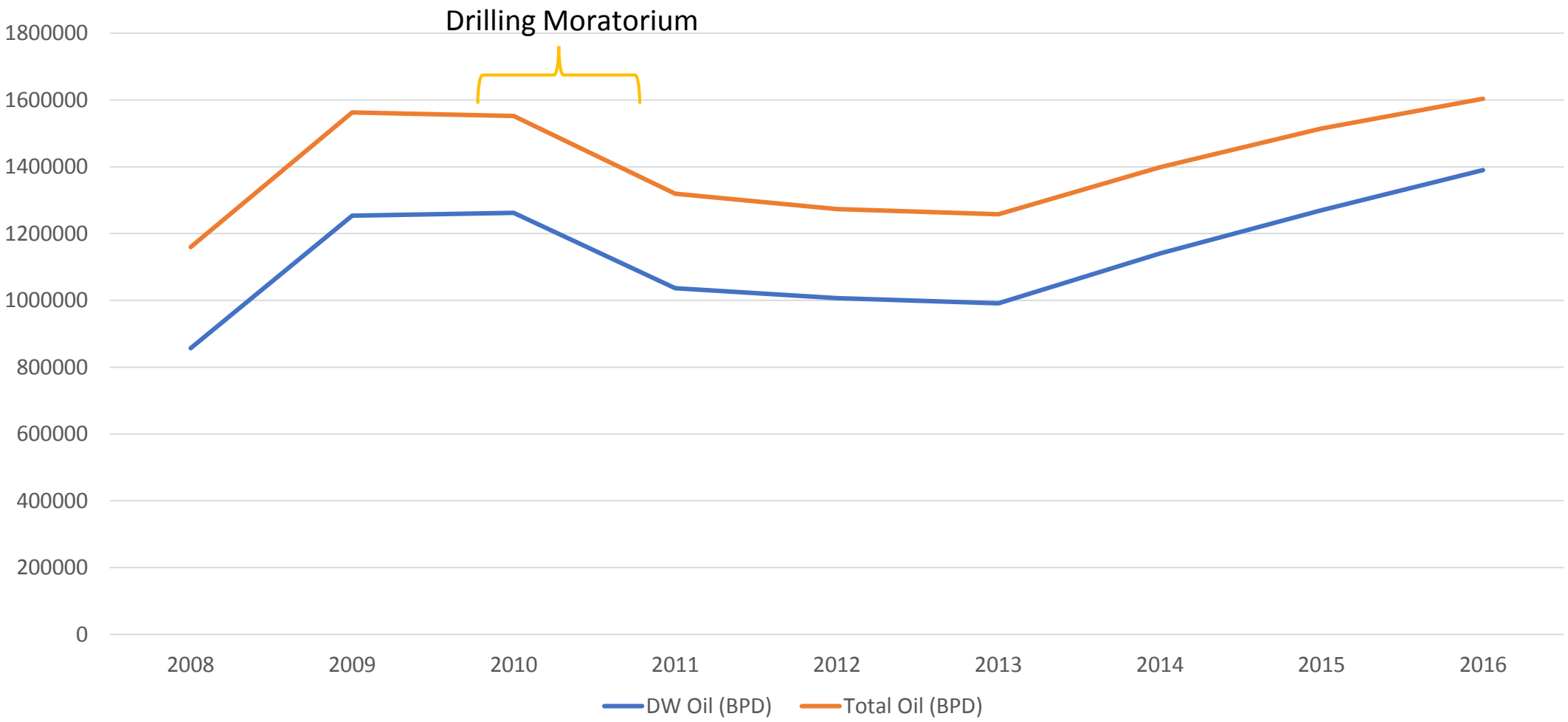
- Difficulty of small company working in the offshore
- Resistance from contractors with business models that benefit from waste
- Miss-fire with Shell
- “Great Recession” and DWH moratorium
- Industry not focused on risk management before 2010

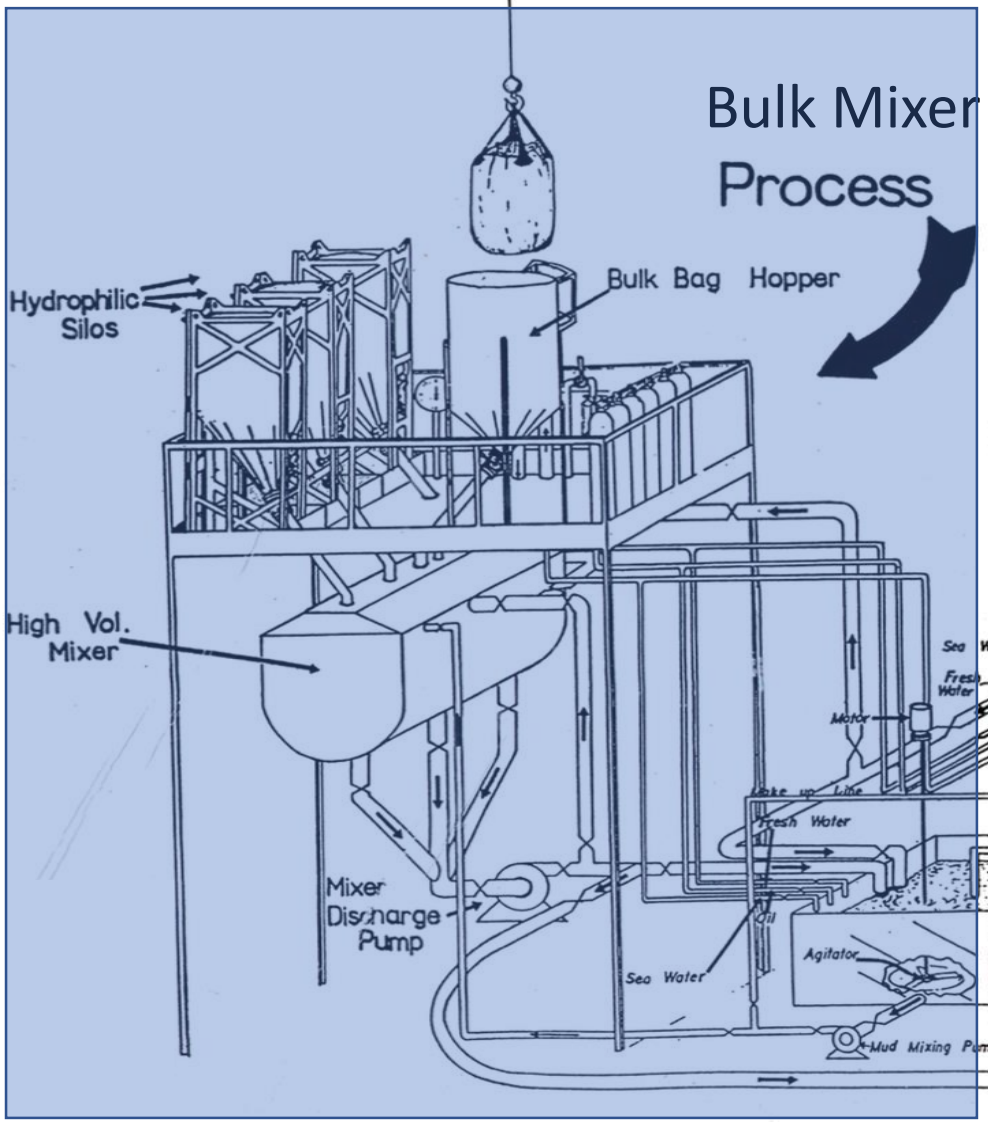
GOM Wells Drilled and Oil Price

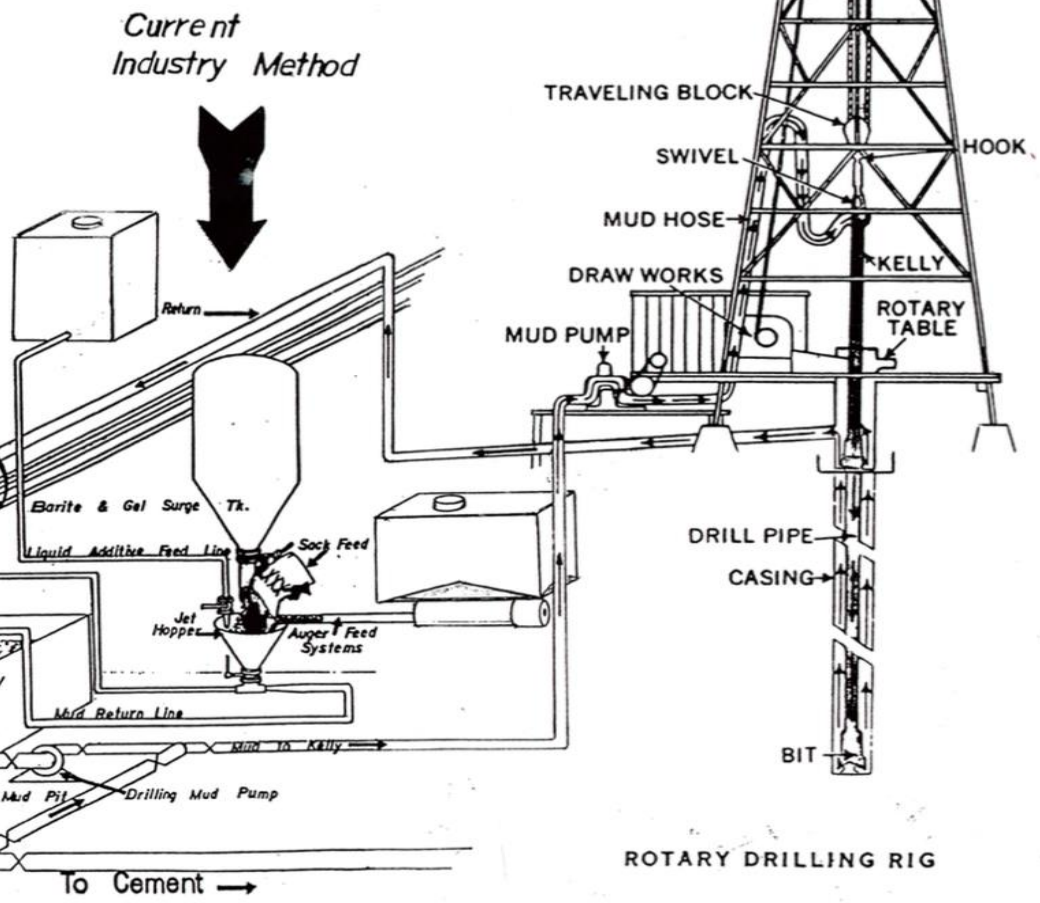


Ref: https://www.eia.gov/outlooks/steo/realprices/

GOM Oil Production







ROTARY DRILLING RIG

Noble Jim Thompson Semi-submersible Rig

Chevron Africa Mud Plant with Bulk Mixing & Loading

Benefits of Independent Mixing System

- Well Control and Well Integrity
  - Homogenous, high-quality controlled fluid chemistry reduces risk of borehole failures and formation fractures.
  - Mixes Lost Control Material (LCM) 5 times faster than hopper system.
  - Weights up mud 12 times faster than hopper (3000 vs. 250 sacks/hour).
  - Reduces risk of cement contamination with oil-based fluids which lead to slow or reduced cement setup.
  - Highly preferred by well control specialists “Wild Well” for achieving 20 PPG as fast as possible.
  - Enables automation of fluid properties, including precise mud weight and in-line measurements.
- Costs and Rig Time/Performance
  - Fastest way to build “pad-mud”.
  - Completely isolated from rig pit system minimizes risk of cross contamination.
  - Designed for easy and fast clean-out, allowing preparation for other mixtures, cement spacers, completions, and pills
  - Significantly improves performance of water-based mud (WBM) and allows deeper drilling with WBM.
  - Eliminates unmixed product lost over the shaker - saving 15-20% mud cost.
- Health and Environment
  - Eliminates or significantly reduces sack handling and sack waste.
  - Eliminates cleaning pits and disposal of unmixed chemicals in pontoons and mud pits.
  - Reduced risk of worker exposure.

Testimonials

After installation of Bulk Mixer:
“I will be the SOB to light the torch to cut this garbage off this rig.”
Three months later:
“I’m going to need to apologize for what I said”

- Mr. Sonnier, OIM of Jim Thompson rig

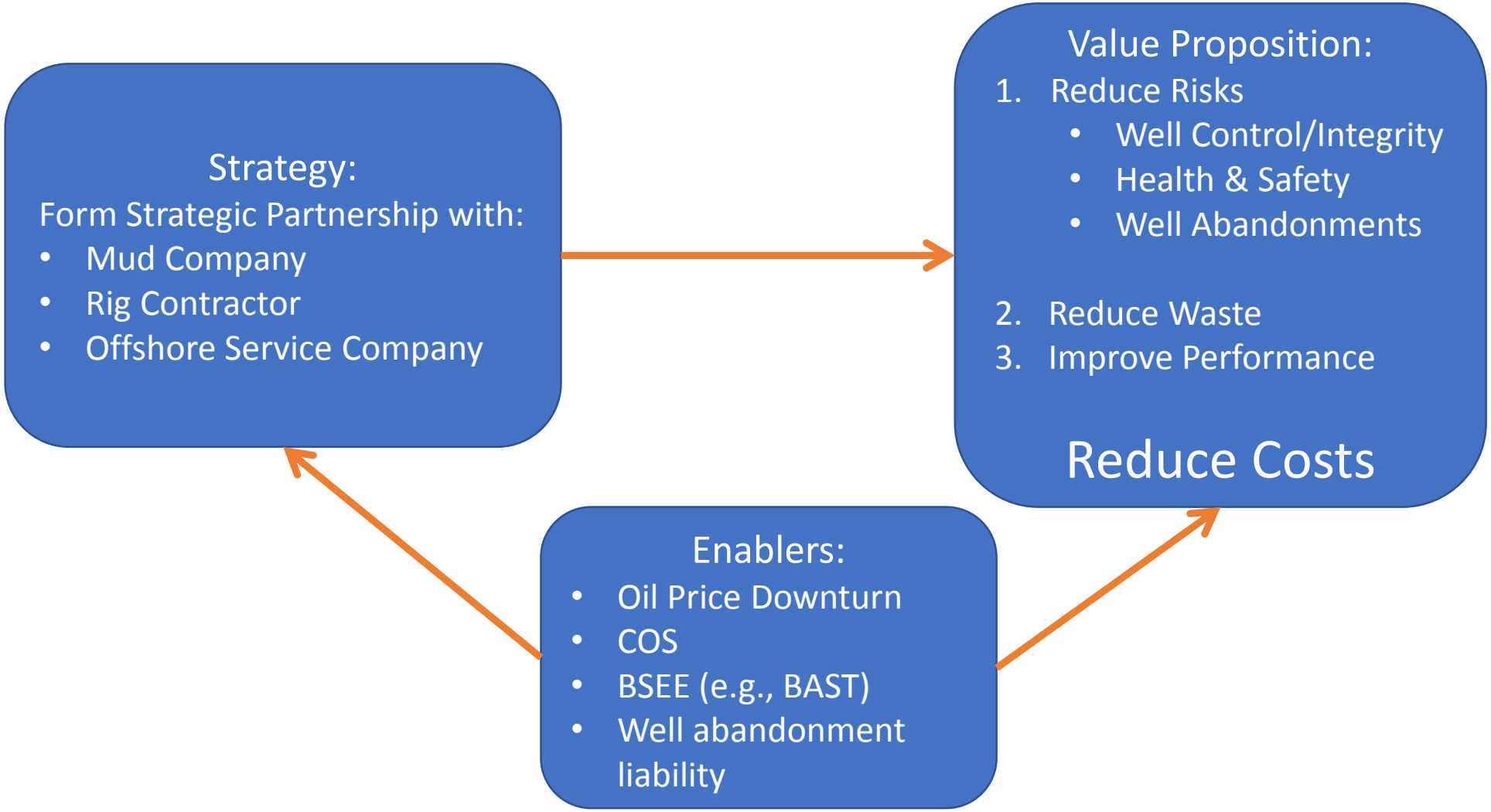
“I would never want to work another rig without a BM system.” --- “The system works very simply and performed much better than expected.” --- “The BM system is used all the time and makes it very easy to treat the mud and make changes to mud properties.”

- Mud Engineers, MI & BAKER-HUGHES

RAPID ADDITION OF CALCIUM CARBONATE - A 300 foot depleted sand section was successfully sealed off by adding 90,000 pounds (45 bulk bags) in 2 days.
“I would never want to attempt this without a Bulk Mixer System. The massive addition of material was completely clean and invisible to rig operations”

- The lead drilling engineer, *NOBLE JIM THOMPSON- GULF OF MEXICO-2004*

DrillSafe Business Model



DrillSafe Business Plan and Cash Flow

Year	Unit Sales		Sales Price/Unit*		Utilization Rate	Revenue		Total Revenue	Variable Cost/Unit		Marketing Cost	Fixed Cost Operations	Fixed Cost Administration	Total Costs	Cash Flow - Before Tax
	Rental	Sales	Rate/Day	Sales		Rental	Sales		Rental	Sales					
1	1	1	$4,500	$1,800,000	0.7	$1,149,750	$1,800,000	$2,949,750	$3,000	$850,000	$25,000	$150,000	$250,000	$2,041,500	$908,250
2	2	2	$4,500	$1,850,000	0.8	$2,628,000	$3,700,000	$6,328,000	$3,000	$850,000	$150,000	$250,000	$500,000	$4,352,000	$1,976,000
3	3	3	$5,000	$1,900,000	0.85	$4,653,750	$5,700,000	$10,353,750	$3,000	$850,000	$250,000	$350,000	$600,000	$6,542,250	$3,811,500
4	5	5	$5,500	$1,950,000	0.9	$9,033,750	$9,750,000	$18,783,750	$3,000	$850,000	$300,000	$500,000	$700,000	$10,677,500	$8,106,250
5	8	8	$5,500	$2,000,000	0.9	$14,454,000	$16,000,000	$30,454,000	$3,000	$850,000	$350,000	$700,000	$900,000	$16,634,000	$13,820,000

Notes:

* Includes one technician per unit

DrillSafe Team

- Blake Whitlatch – President and CEO
  - Mud Engineer, Drilling Fluids Advisor for Chevron Nigeria
- Kent Satterlee – Vice President and COO
  - Civil Engineer, Retired Shell, Consultant in Regulatory Policy and Advocacy
- Jimmy Morrison – Operations Manager
  - Mud Engineer/Advisor, Self-described “Red Neck”

Thank you!