

# Hydraulic Fracturing: services & equipment

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Richard Spears  
**Spears & Associates**  
Tulsa

May 2018

This Tulsa company and its affiliated data mining firm, Oilfield Logix, worked for 350 clients in 2017. With over 50 years of experience Spears & Associates provides business planning, analysis, activity forecasts and market research-based consulting services to the worldwide petroleum equipment and service industry.

# Spears & Associates



## THE SPEARS DIFFERENCE

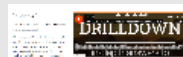
John and Richard Spears lead the firm's team of oilfield veterans and data analysts. Both brothers are former field engineers and operations managers for oilfield service companies. The brothers also hold board seats in privately held oilfield service companies active around the world, land and offshore. All four senior partners of the firm have decades of experience in drilling, completion and production products and services. Some of the firm's 350 clients include Baker Hughes/GE, Halliburton, Saudi Aramco, ExxonMobil, Fidelity, Blackstone and H&P. The client breakdown is 57% OFS, 27% Financial, 11% Oil Co. and 5% Consultants

## REPORTS AND PUBLICATIONS

Spears publishes the following quarterly deep dive reports: *Drilling & Production Outlook; Oilfield Market Report; Artificial Lift; Drill Bits; Directional Drilling; Cementing; Coiled Tubing; Completion Equipment; Hydraulic Fracturing; Proppant; Well Servicing; Water Management; Wireline.*

## BROADENING THEIR REACH

In addition to their paid services, Spears & Associates is also increasing their reach through free weekly podcasts. Weekly analysis, and an upcoming video series on YouTube



**100k**

Listens to weekly podcast The Drilldown



**5k-10k**

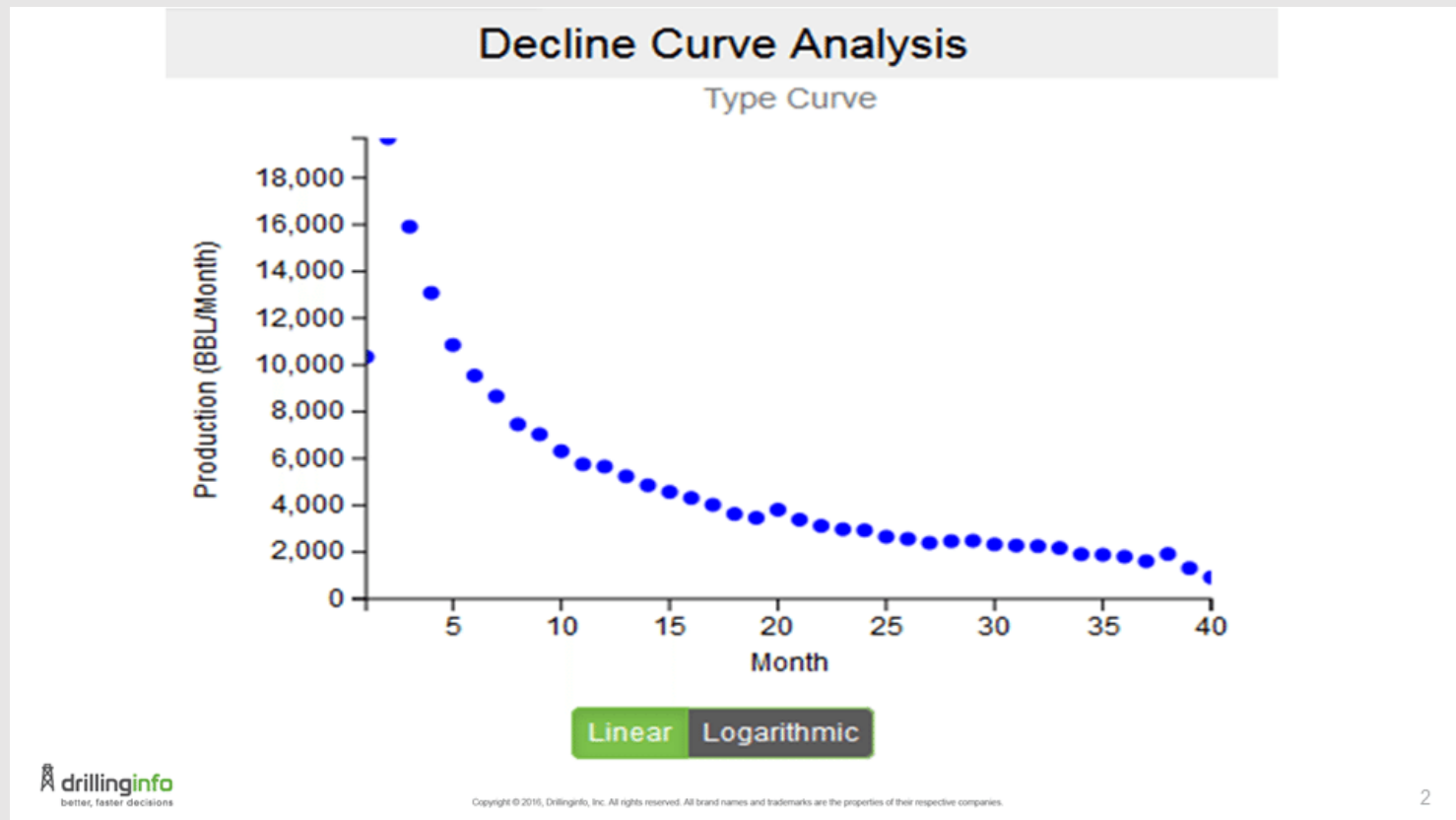
Readers of Spears & Associates' weekly Friday 300 word analytics report



**2 Weeks**

Until the launch of their dedicated YouTube Channel

# Remember This Chart



Day 1 is the best day of a well's life...each successive day is worse

# Take-away #1

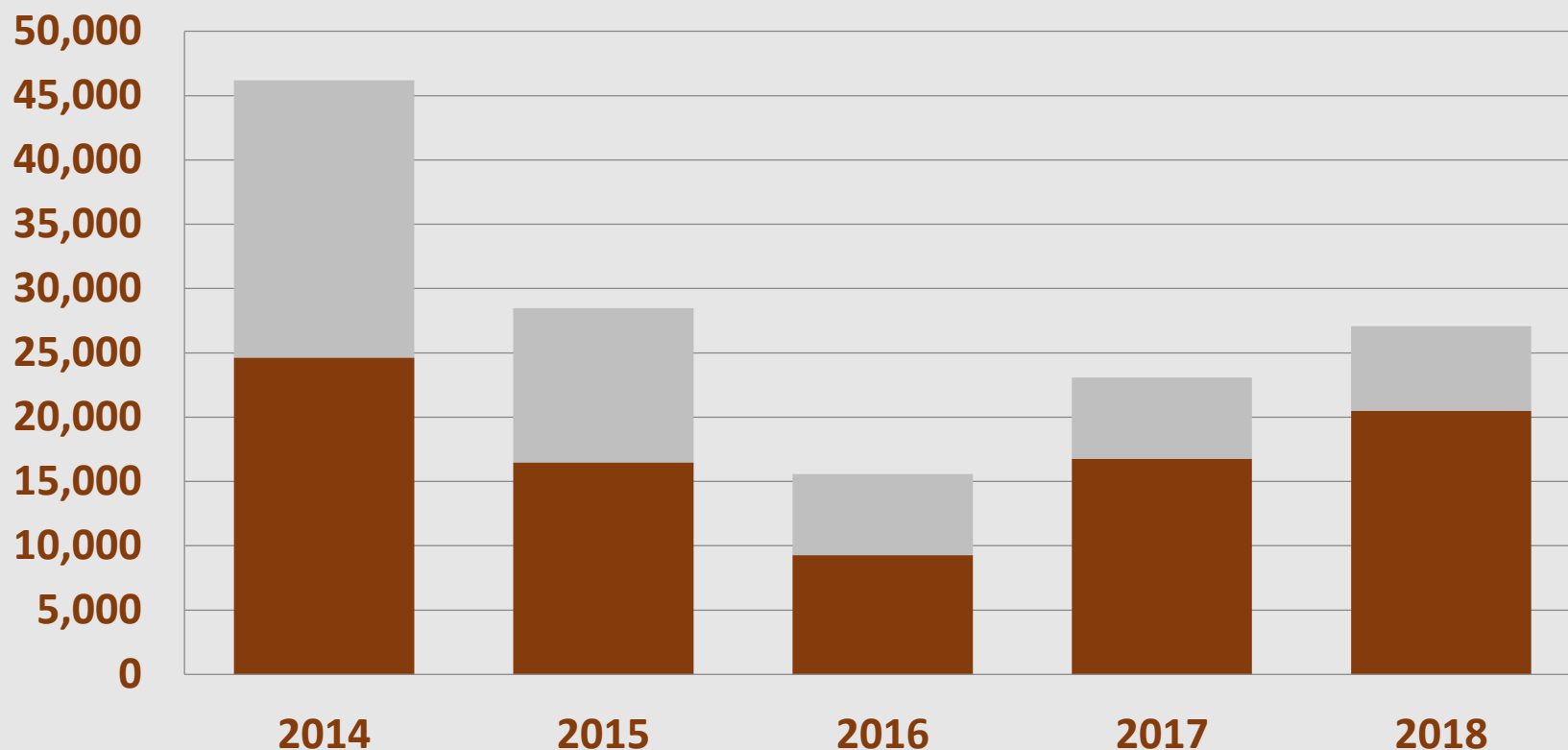
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Because US wells decline rapidly,  
16,000 wells must be drilled &  
frac'd each year **to keep US oil  
output flat.**

# US new well drilling

New Wells Drilled Per Year

■ Horizontal ■ Vertical



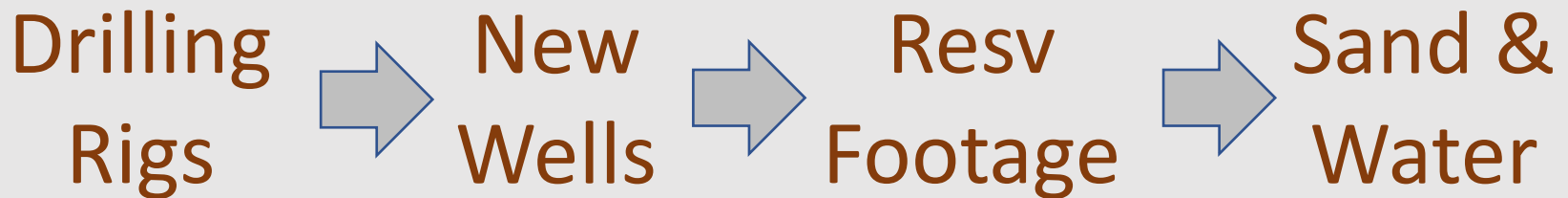
# Take-away #2

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In 2017 and 2018 the US will drill  
enough horizontal wells to make  
**oil production rise.**

# The 2018 environment

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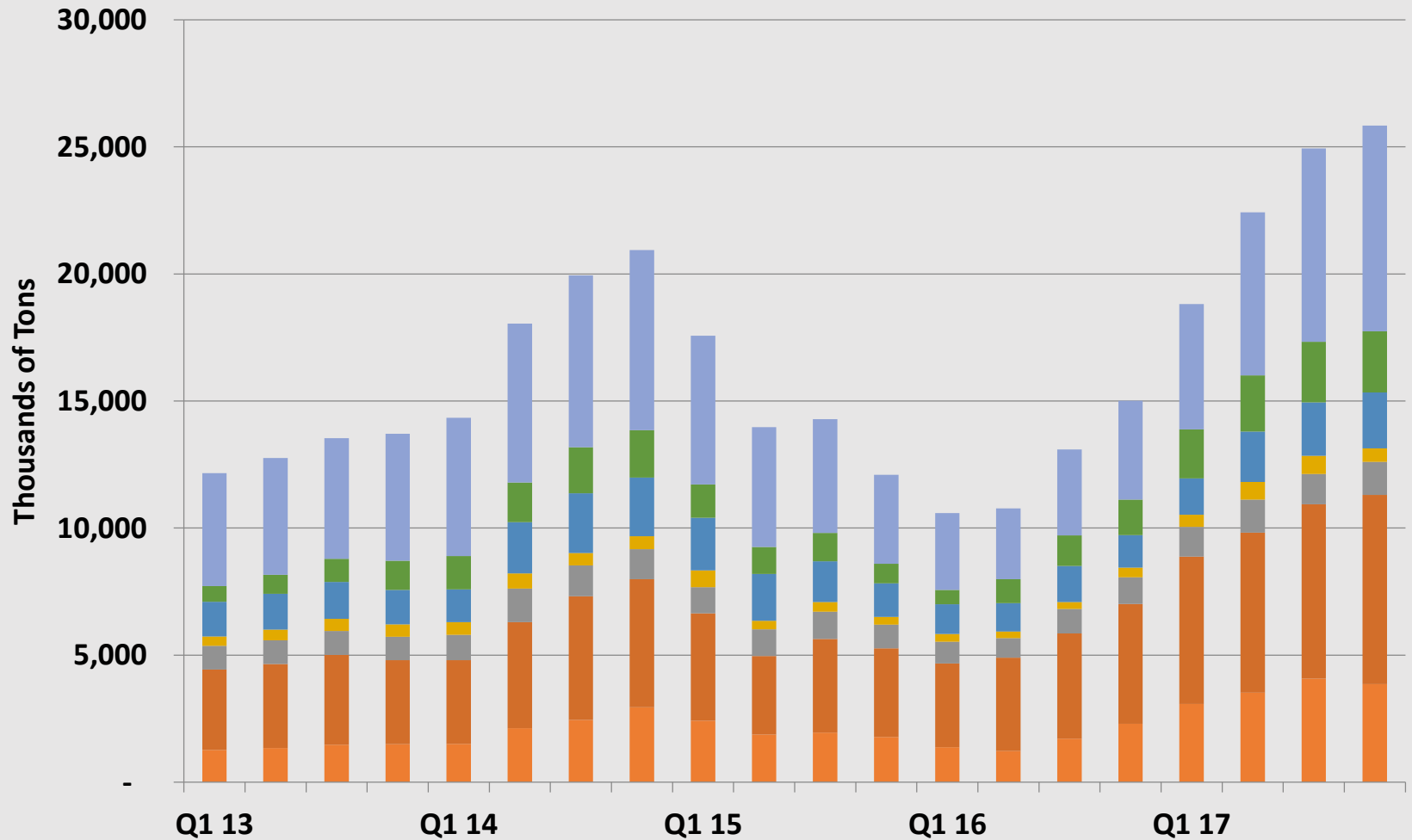
1000  
Rigs

27,000  
Wells

215 M  
Feet

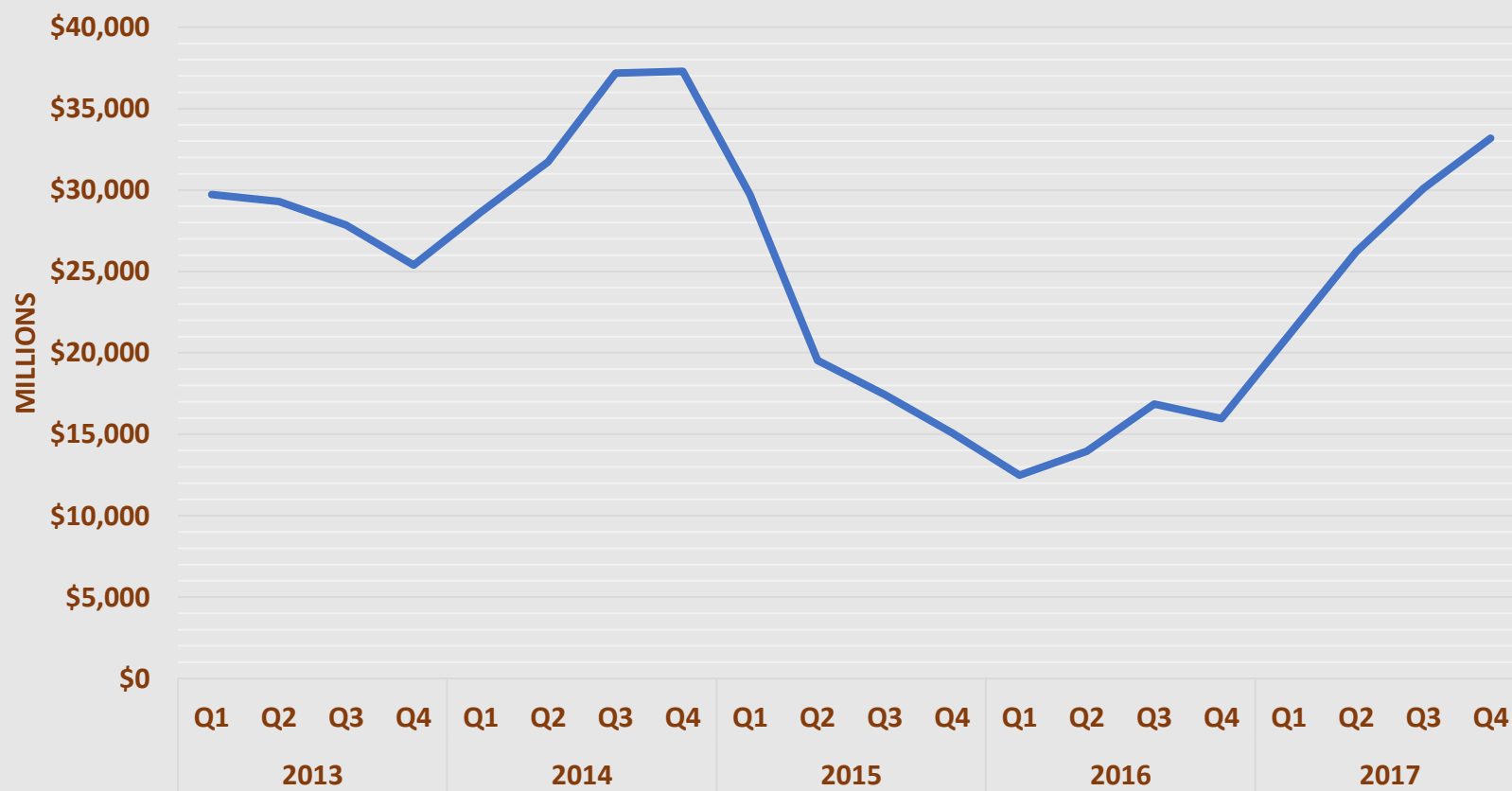
115 M  
tons

# Rail Shipments of Sand

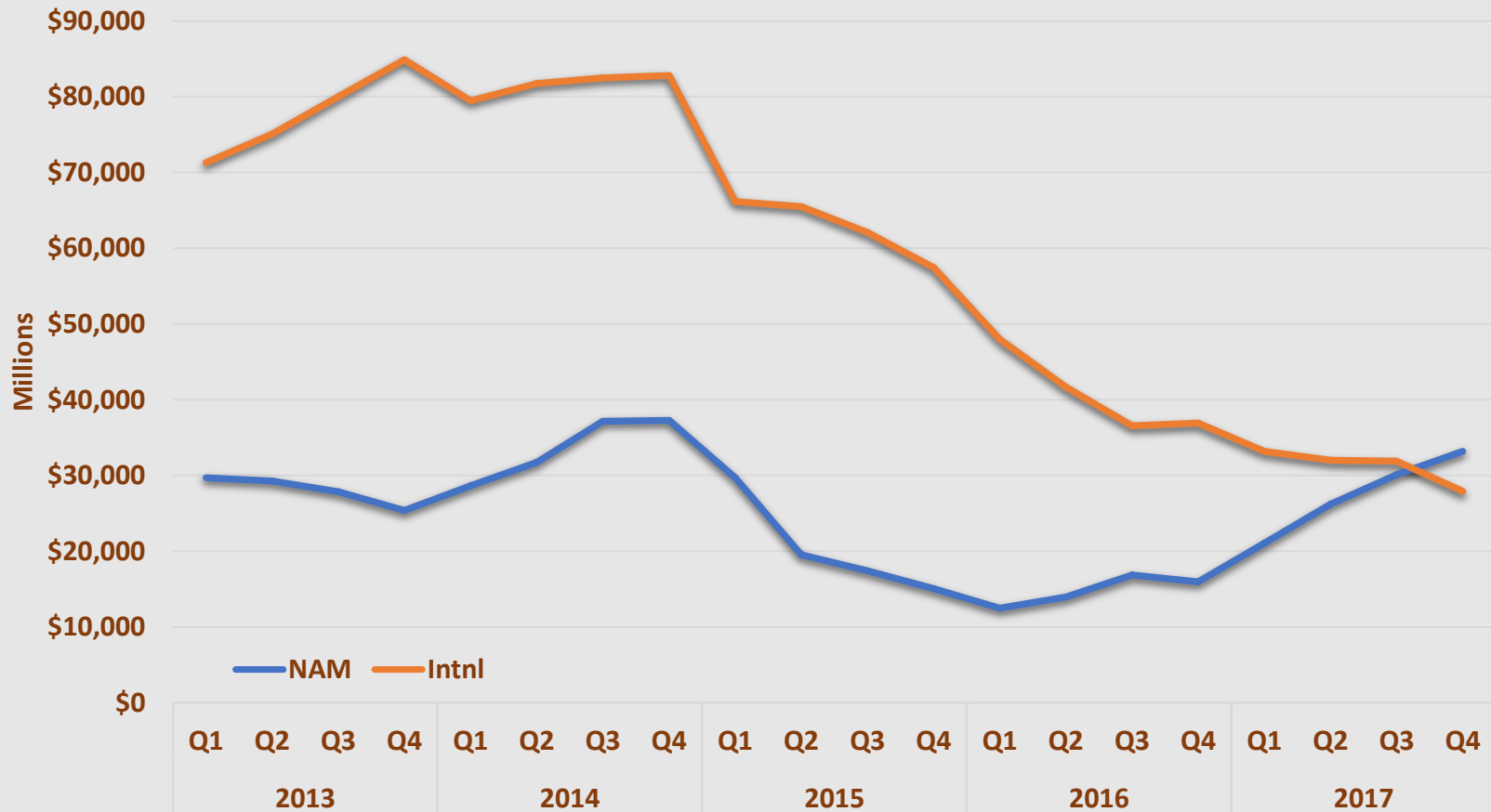




# NoAm Oilfield Spending



# Domestic v. Intl Oilfield



# Take-away #3

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Lack of international investment  
in new well drilling is causing  
foreign oil output to fall

# Take-away #4

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Even if international oil companies decided today to ramp up drilling, **first oil would be 5 years in the future**

# From site to drilling to frac



# Frac job ~1979



Frac job from 30 years ago...this is how China fracs today



# Frac job 3 weeks ago



100-stage frac on 3 wells in the STACK



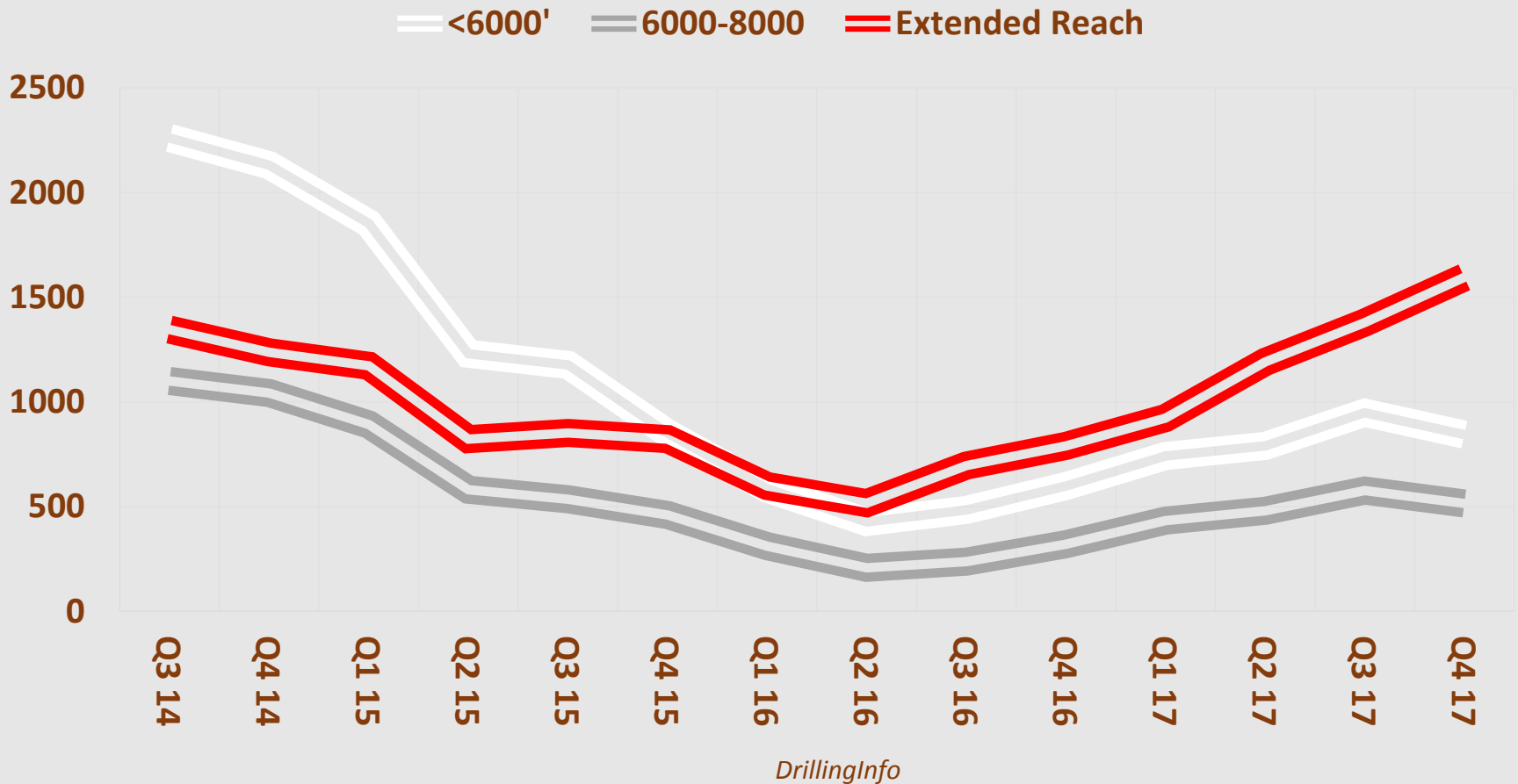
# Infrastructure today

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# Big Trend: Long laterals



# Big Trend: Intensity

	1978	2018
Time to drill 1 well	60 days	15 days
Wells per pad	1	1 - 25
% horizontal	0%	75%
Days to frac 1 well	1	7
Proppant per well	0.1 million lbs	14 million lbs
Cost in 2018 \$	\$3M	\$6M
Frac % of total cost	10%	40%

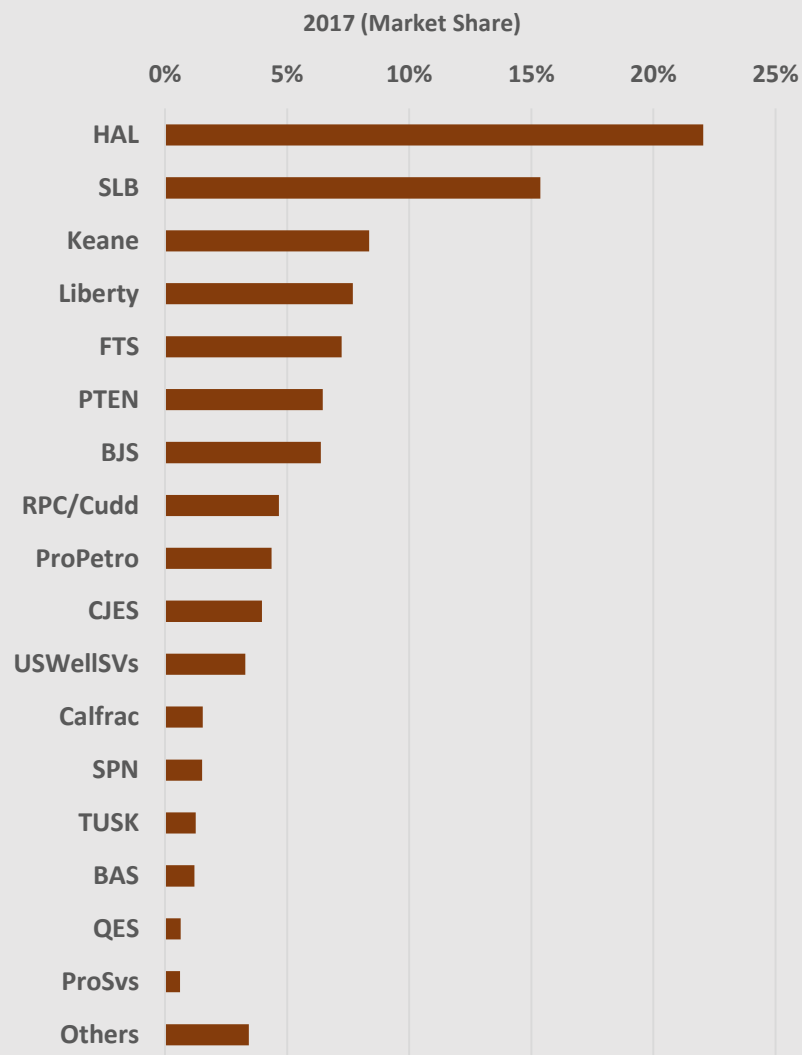
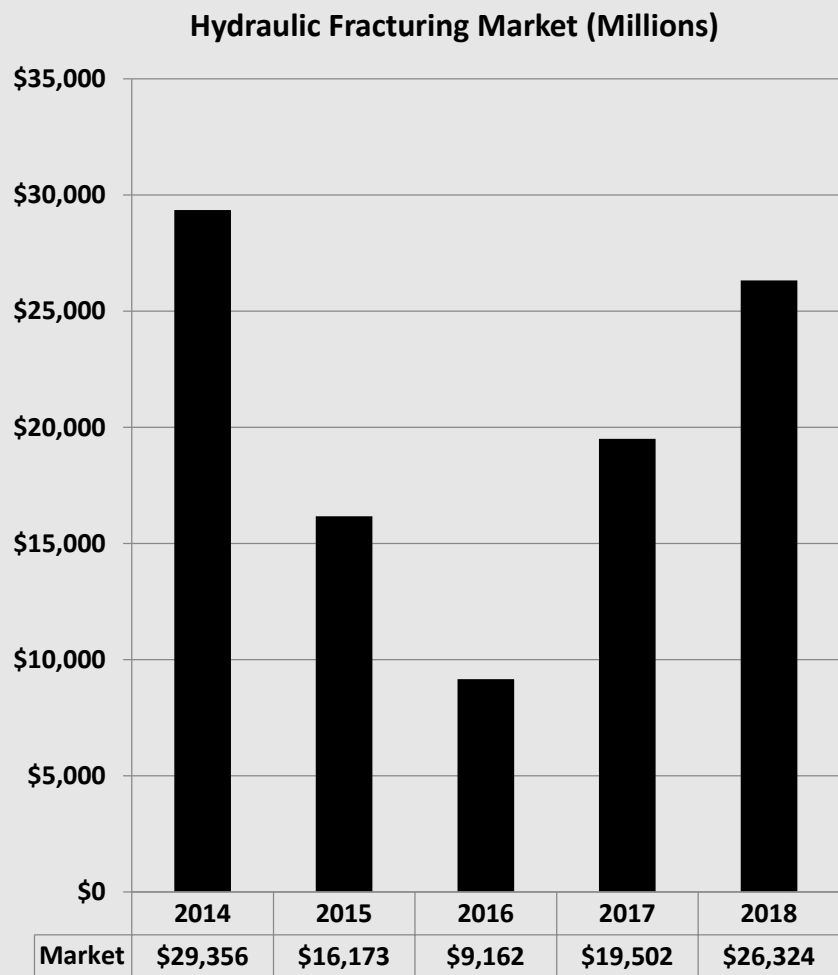
# Take-away #5

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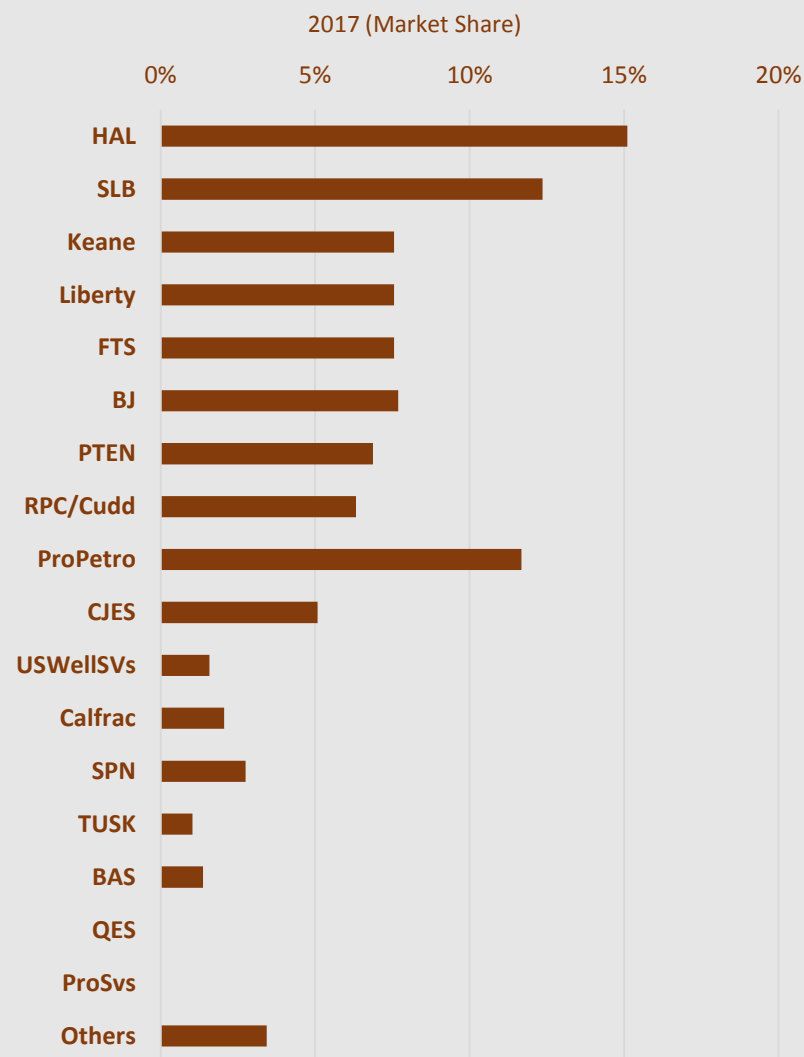
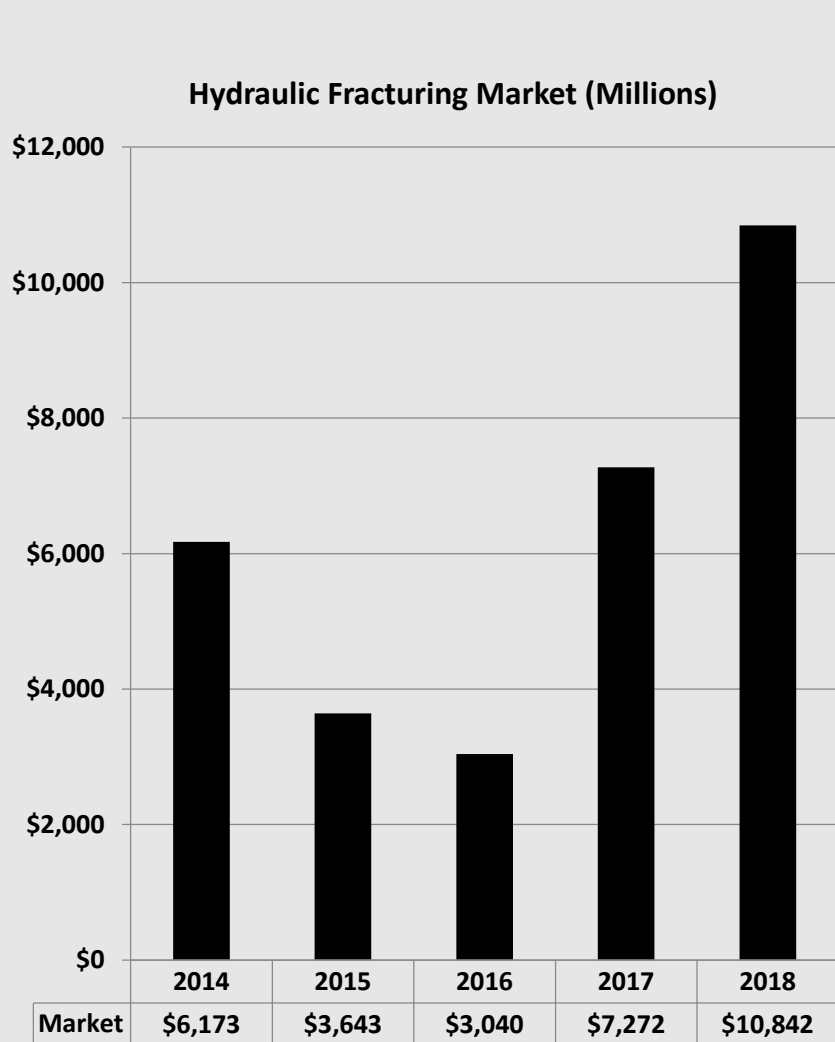
Frac jobs always grow in size and intensity.

**This trend will continue.**

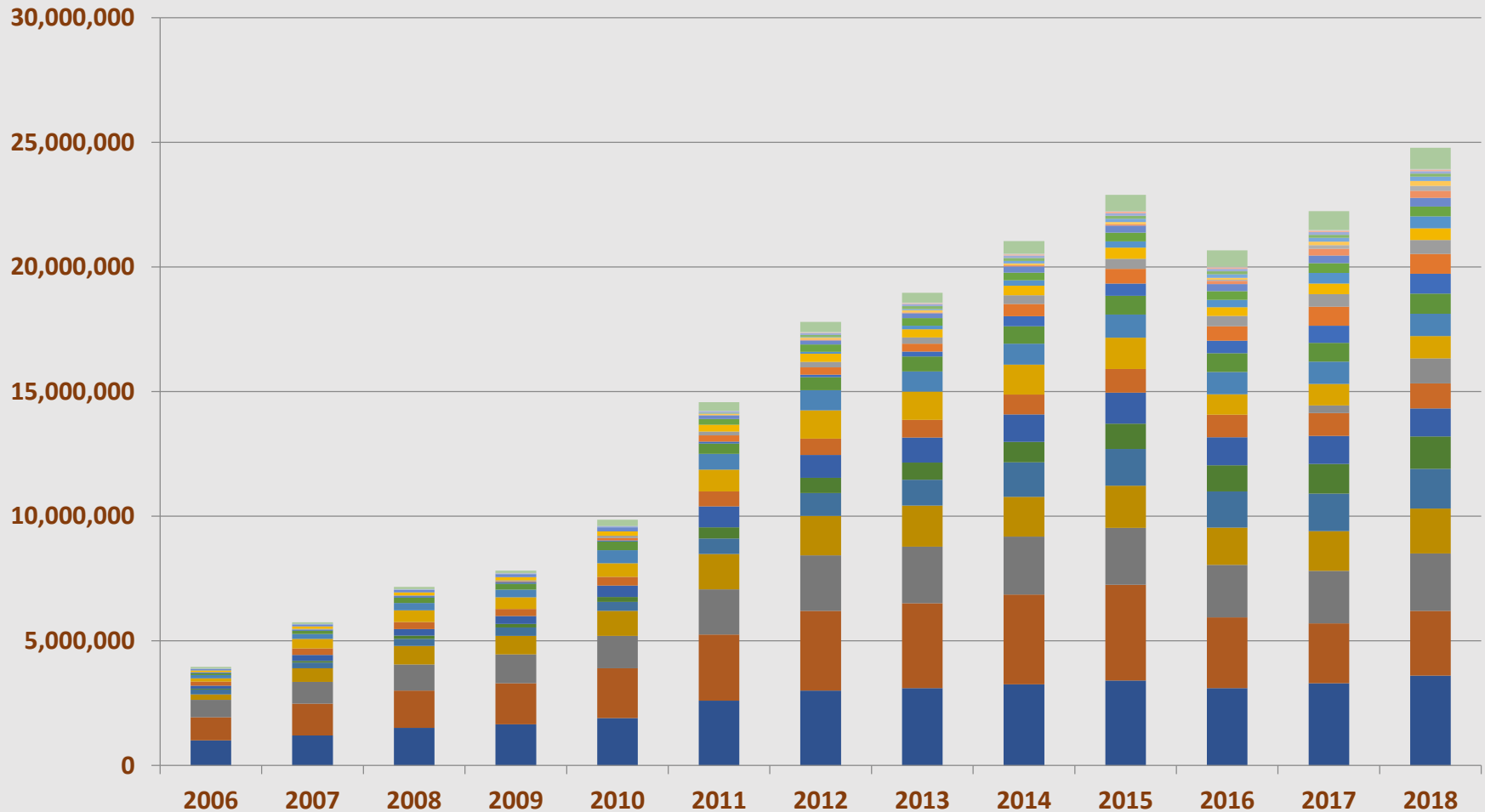
# US Frac Market



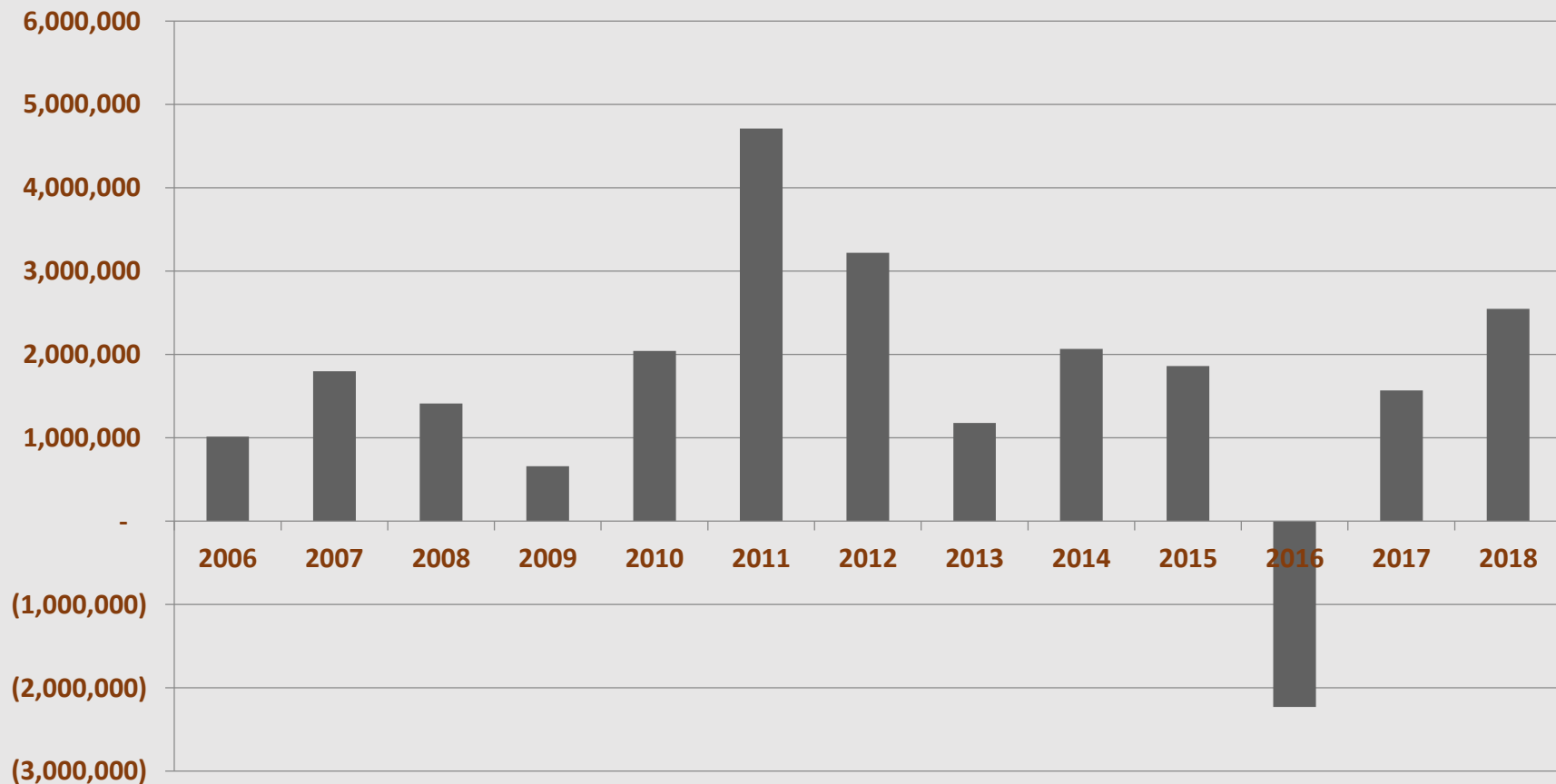
# Permian Frac Market



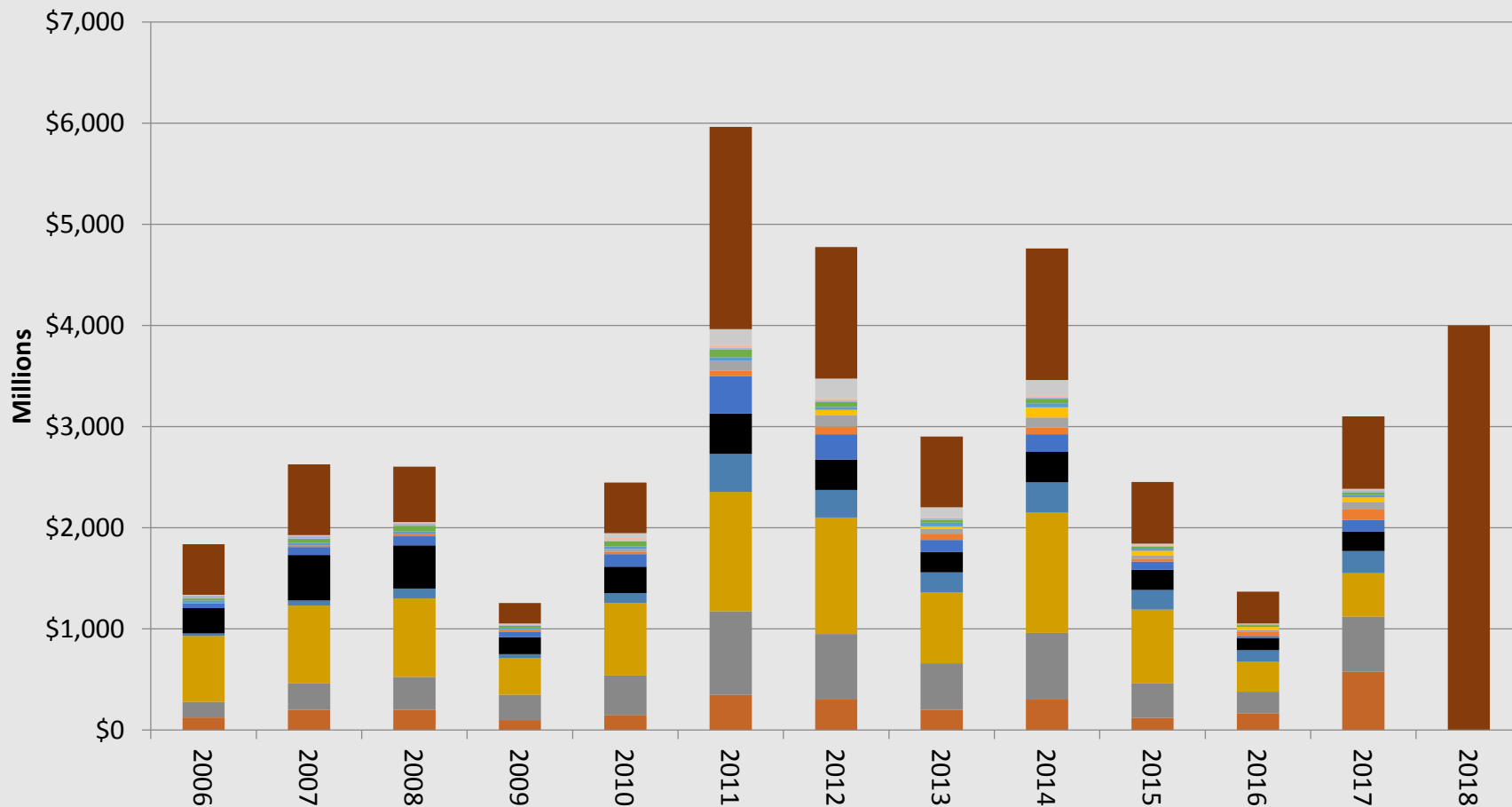
# NoAm Frac HHP



# Incremental Frac HHP

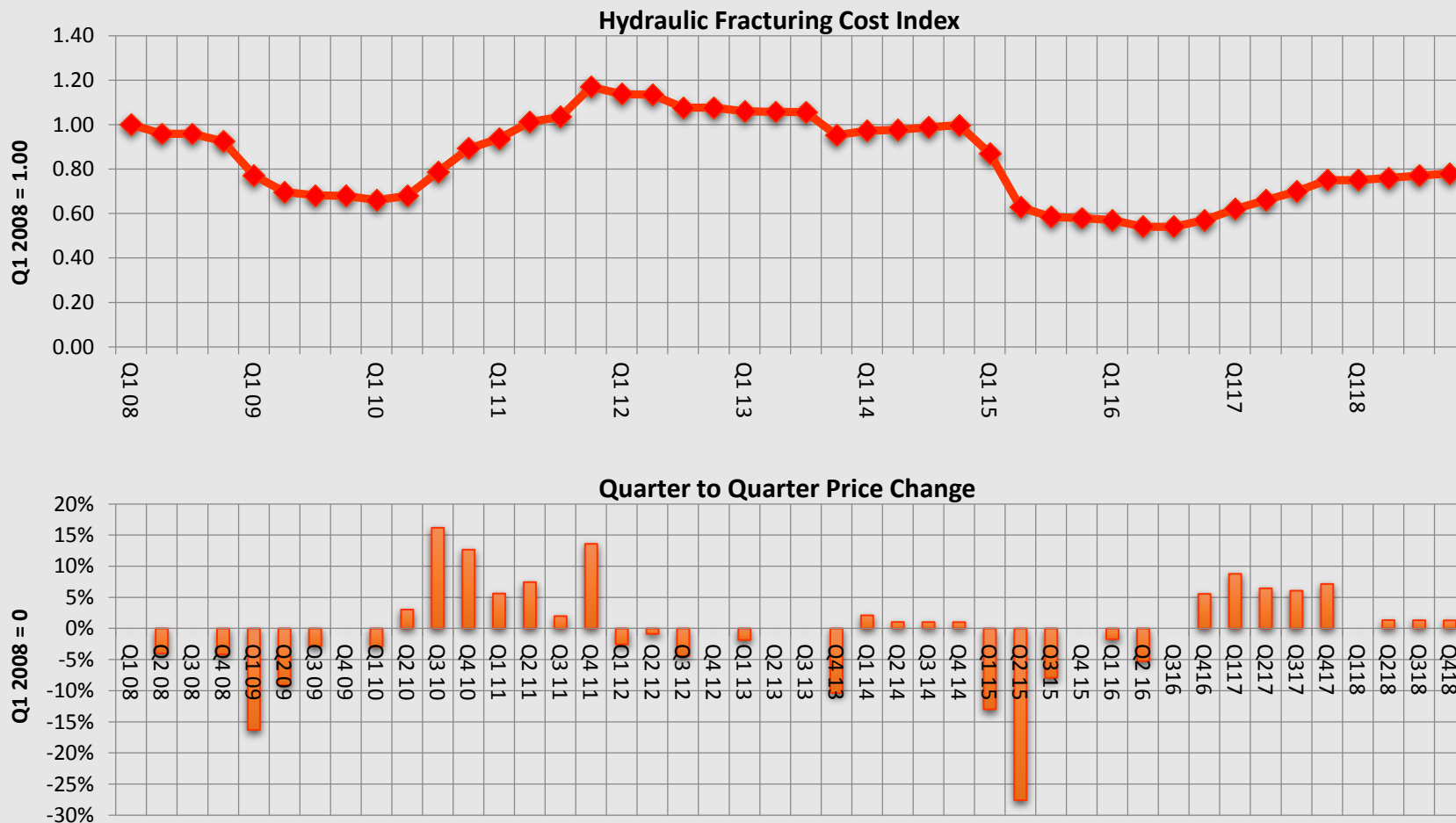


# Frac Equipment Mfrg

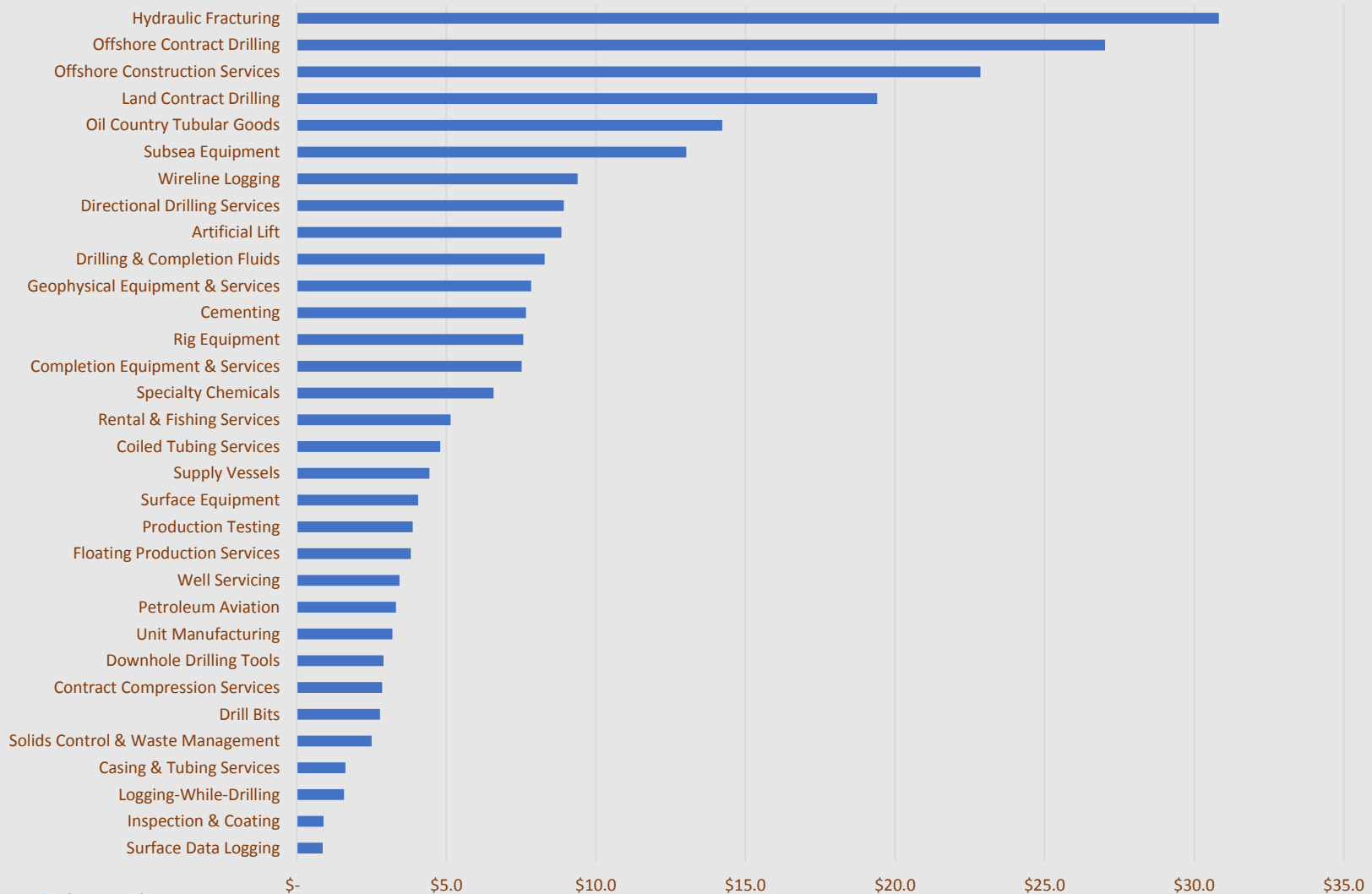




# Frac Pricing is Flat



# Oilfield Markets (B)

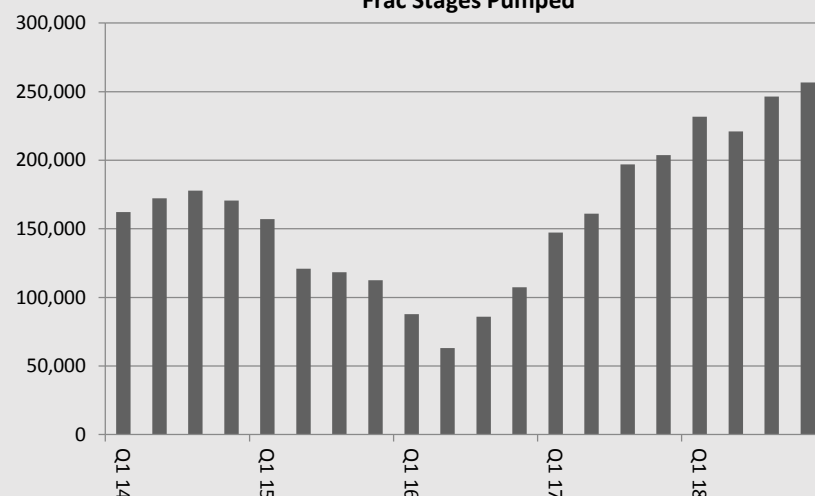


# NoAm New Well Metrics

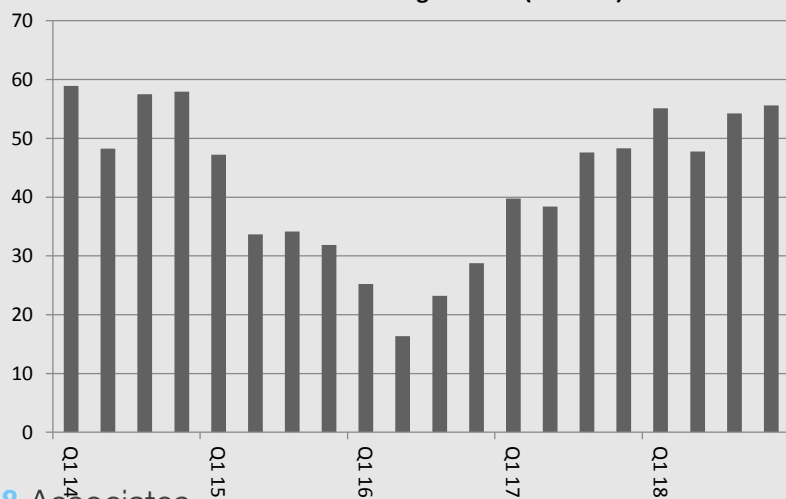
**New Wells Drilled**



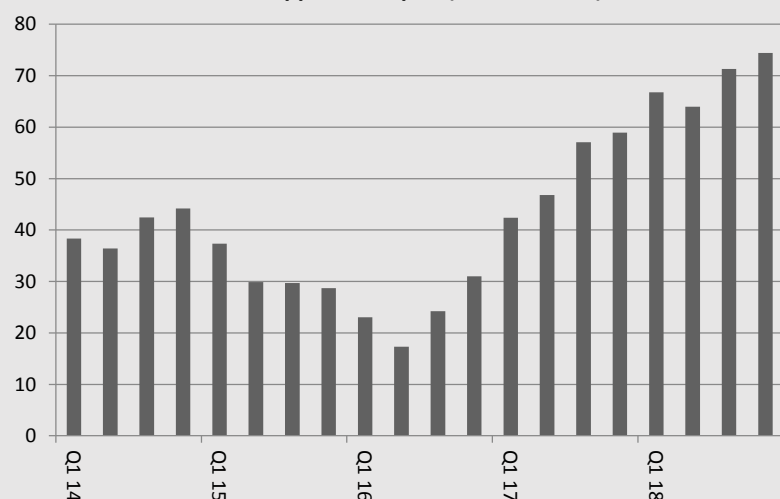
**Frac Stages Pumped**



**Reservoir Footage Drilled (millions)**



**Proppant Pumped (billions of lbs)**



# Free to investors



Weekly Podcast

Weekly Analysis

New Video Series

## Episode 48

How Did 2017 Turn Out for 5 Markets and 5 Companies?

We compare 2017 with 2016 to look at the change in revenue in five equipment and service markets and discuss how this impacted revenue growth for five "bellwether" oilfield service companies.



April 6, 2018

## STEADY AS SHE GOES

Our company measures oilfield equipment and service markets, with the flagship work being done in our quarterly Oilfield Market Report. The team just released its latest edition and here are the highlights:

First, the global oilfield is still growing. It is growing because US land is growing faster than international is falling, but any growth is good, right? The chart below plots the global oilfield equipment and service market's annual year to year change:

Annual Percentage Change

