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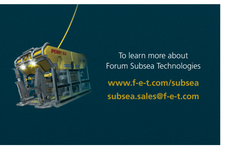

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2015 DEEPWATER SOLUTIONS & RECORDS FOR CONCEPT SELECTION

Going Deeper with Production Technology — May 2015

Prepared by: Chris Barton and Heather Hambling of Wood Group Mustang, E. Kurt Albaugh of Repsol E&P USA, Bob Mahlstedt of RamMark Services and David Davis of Offshore Magazine.

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Industry Acronyms

CT	Compliant Tower
DDCV	Deep Draft Caisson Vessel
SPAR	Deep Draft Spar
FSPSO	Floating Drilling, Production, Storage and Offloading System
FLNG	Floating Liquefied Natural Gas
FPS	Floating Production System
FPSO	Floating Production, Storage and Offloading System
FPU	Floating Production Unit
FSRU	Floating Storage Regas Unit
MonDOC	Cross between a semisubmersible and a truss spar
MODU	Mobil Offshore Drilling Unit
Semi-FPU	Semi-Submersible Floating Production Unit
SUTA	Subsea Tieback
TLP	Tension Leg Platform

Notes

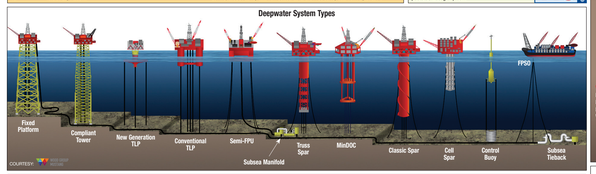
1. Through referenced throughout the poster, Hutton, Typhoon and Joliet TLPs, and Red Hawk Spar have been decommissioned.
2. World Records are noted in red throughout the poster.
3. Water Depth Capability, Throughput Capacity and Well Capability charts contain a sampling of vessels to demonstrate the capability range for each concept. The chart is not inclusive of all operating vessels.
4. Throughput Capacity Chart – gas processing capacity is converted to barrels of oil equivalent as follows: 6 MMscfd = 1 MBOE/D.
5. The Mexa Maritime Octahuvalb is qualified for two locations: the UK North Sea and the Gulf of Mexico. Well capability for the Chevriot facility is noted for both locations.
6. Canyon Express subsea tieback well capability is based on the same flow line loop.
7. Data for these comparison charts has been derived and updated from previously-published industry surveys as follows: TLP/TBLP survey data from February 2010, semi-sub survey data from January 2011, Spar/DDCV survey data from October 2012, and FPSO survey data from August 2014.

Information Accuracy: Every attempt has been made to identify, locate, and establish the most current and correct information available for all the various types of deepwater production solutions either sanctioned, installed, operating or decommissioned worldwide. No facility was intentionally excluded from this poster. In some cases the most current information was not included because information was not supplied in time or the project was not sanctioned at press time. We make no guarantee that this list is all inclusive. We have summarized information from company websites, press releases, and other sources of publication of information. We have collected the information from company brochures, interviews, press releases, industry publications, contractor supplied information, and websites. Neither Wood Group Mustang nor *Offshore Magazine* guarantees or assumes any responsibility or liability for any reference on the information presented. If any information is found to be incorrect, not current, or needs to be added, please send your comments to *posters@woodgroup.com*.

POSTER 119

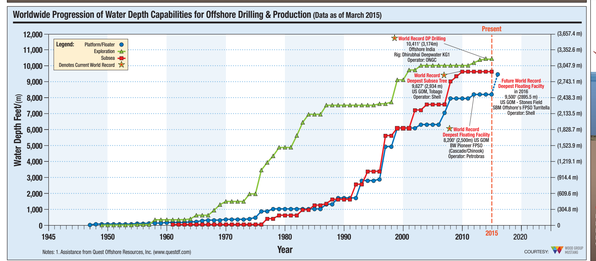
2015 Edition

Deepwater System Types



COURTESY: WOOD GROUP MUSTANG

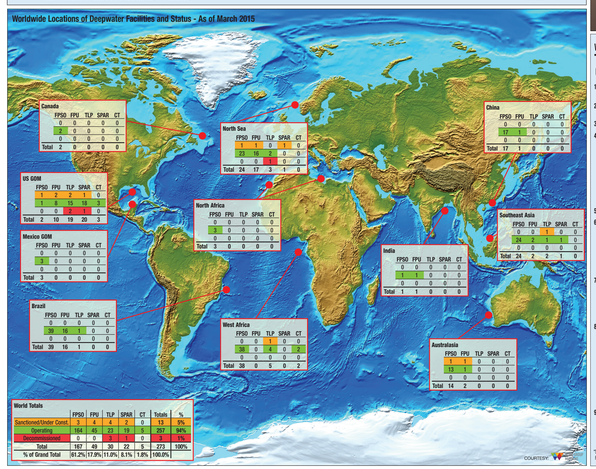
Worldwide Progression of Water Depth Capabilities for Offshore Drilling & Production (Data as of March 2015)



Notes: 1. Assistance from Quest Offshore Resources, Inc. (www.questdf.com)

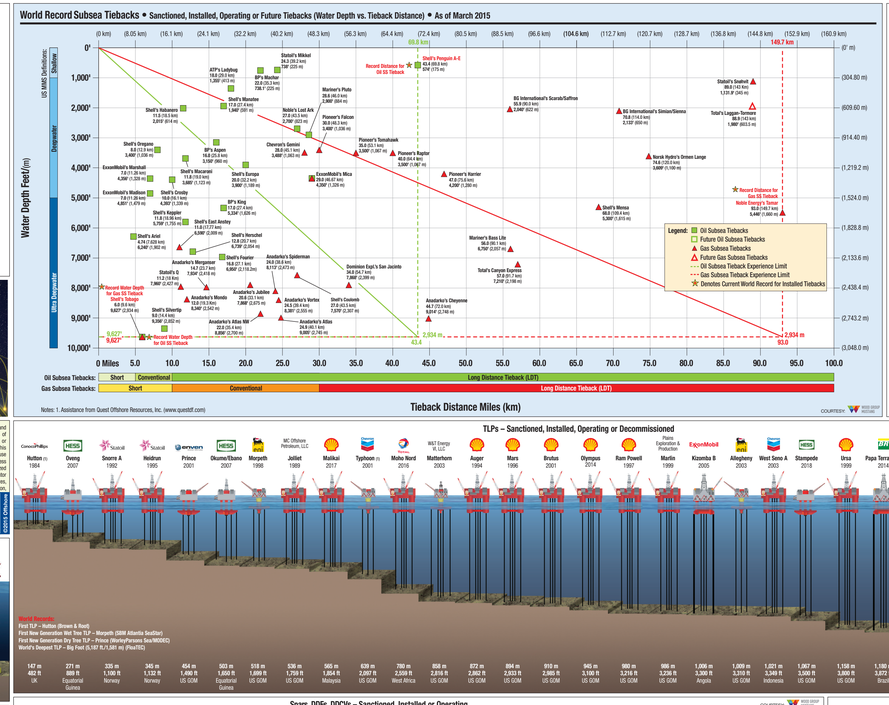
COURTESY: WOOD GROUP MUSTANG

Worldwide Locations of Deepwater Facilities and Status - As of March 2015



COURTESY: WOOD GROUP MUSTANG

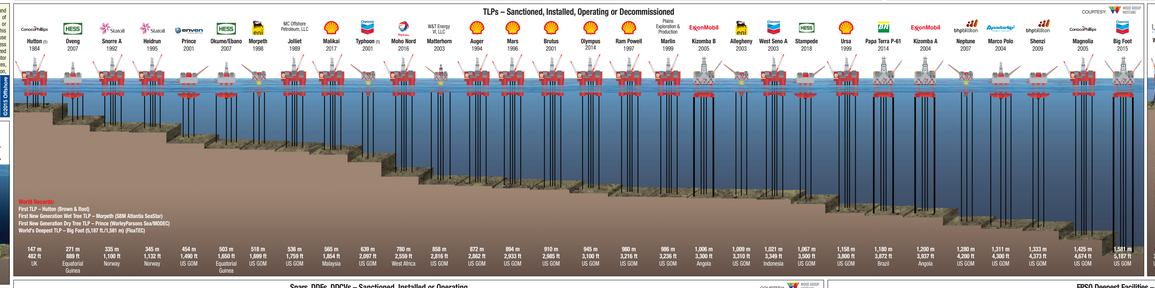
World Record Subsea Tiebacks • Sanctioned, Installed, Operating or Future Tiebacks (Water Depth vs. Tieback Distance) • As of March 2015



Notes: 1. Assistance from Quest Offshore Resources, Inc. (www.questdf.com)

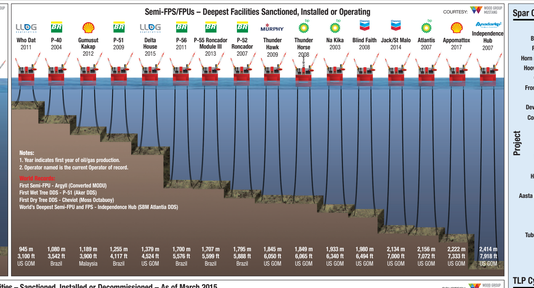
COURTESY: WOOD GROUP MUSTANG

TLPs – Sanctioned, Installed, Operating or Decommissioned



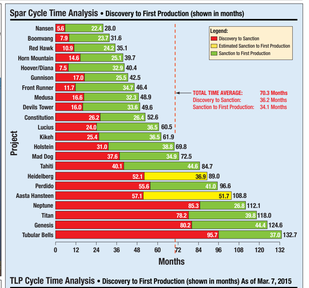
COURTESY: WOOD GROUP MUSTANG

Semi-FPS/FPUs – Deepest Facilities Sanctioned, Installed or Operating

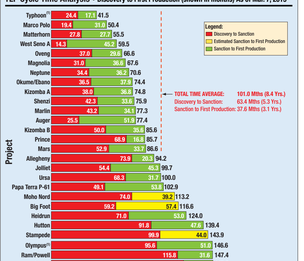


COURTESY: WOOD GROUP MUSTANG

Spar Cycle Time Analysis • Discovery to First Production (shown in months)

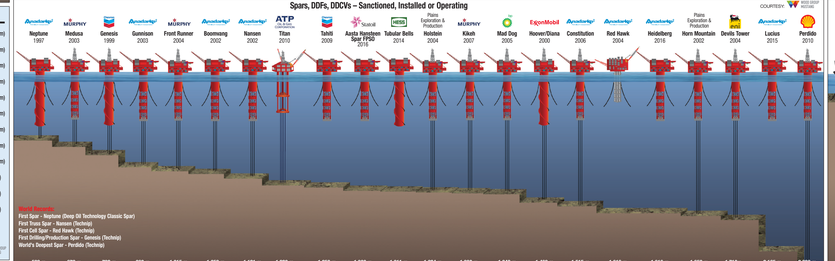


TLP Cycle Time Analysis • Discovery to First Production (shown in months) As of Mar. 7, 2015



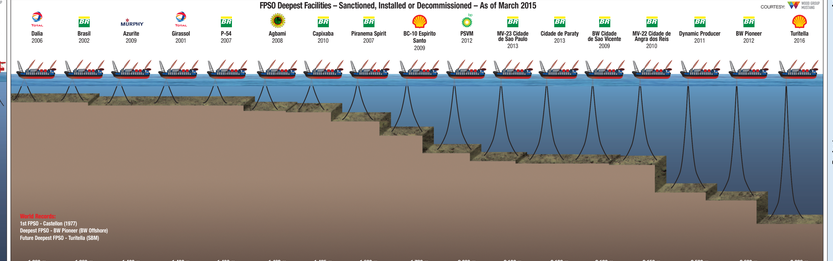
COURTESY: WOOD GROUP MUSTANG

Spars, DDFs, DDCVs – Sanctioned, Installed or Operating



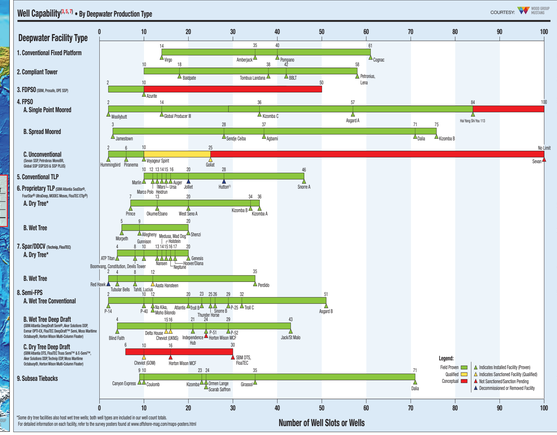
COURTESY: WOOD GROUP MUSTANG

FPSO Deepest Facilities – Sanctioned, Installed or Decommissioned – As of March 2015



COURTESY: WOOD GROUP MUSTANG

Well Capability(1,5,7) • By Deepwater Production Type



*Some dry tree facilities also host wet tree wells; both well types are included in our well count totals. For detailed information on each facility, refer to the survey posters found at www.offshore-mag.com/maps-posters.html

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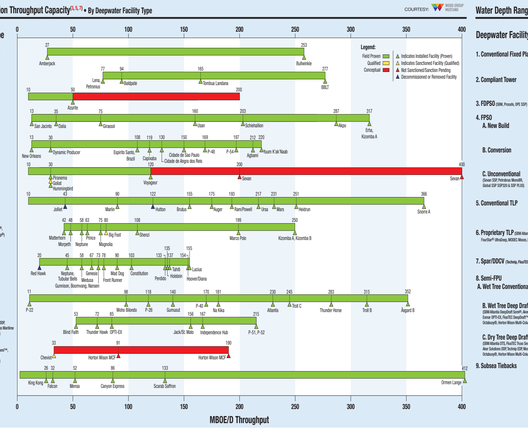
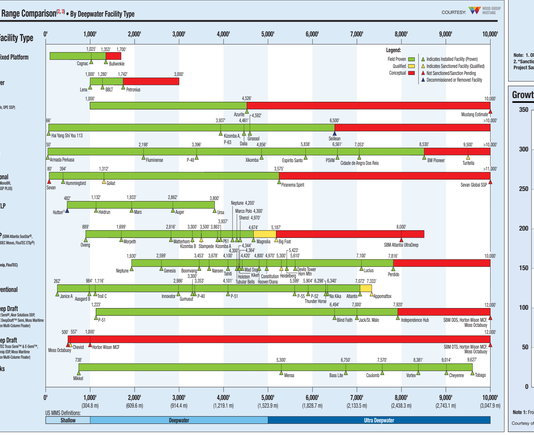
Total MBOE/D Production Throughput Capacity(3,4,7) • By Deepwater Facility Type



COURTESY: WOOD GROUP MUSTANG

Water Depth Range Comparison(2,5) • By Deepwater Facility Type



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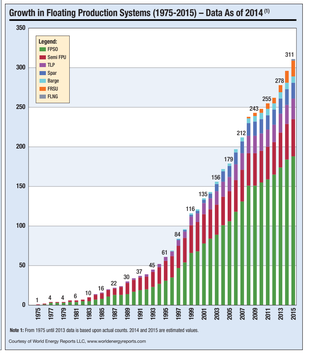
Growth in Floating Production Systems (1975-2015) – Data As of 2014(5)



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