Helix Fast Response System

GOM Subsea Oil Spill Control & Containment

Steve Scanio - Helix Energy Solutions
Acronyms / Terminology

Helix Well Containment Group – HWCG
Helix Energy Solutions Group - HESG
Helix Fast Response System – HFRS
Marine Well Containment Corporation – MWCC
Well Containment Plan – WCP
BSEE – Bureau of Safety and Environmental Enforcement
Cap & Flow
Capping Stack
Helix vessels played a key role in responding to the Macondo blowout Control and spill Containment.
Helix Q4000

- DP3 MODU
- US Flag – ABS classed
- 600 Te. Multi Purpose Tower (Derrick)
- 360 Te. / 160 Te. Deepwater Cranes
- 2 x 150 HP ROV’s
- 3,000 barrel fluid handling system
- Open deck versatile – not your typical rig
- Two (2) days disconnect time from well depending on operation
- Seven (7) Knots transit speed
Q4000 Extremely Versatile Capabilities

Well Intervention Activities

Dynamic Kill

Static Kill

With Evergreen Burners

HBOP recovery

- Arrived in staging area within 3 days of call-off
- Multi functional and ease of adaptability between operating modes
  - Containment
  - Dynamic Kill
  - Flaring
  - Static Kill
  - Recovery
  - Control platform for LMRP/BOP yellow pod
Q4000 Intervention Riser System (IRS) Package
15K & 10 K Well Capping Stack
FPU DP2 Helix Producer I

- Process Capacity:
  - 45,000 BOPD
  - 60,000 BLPD
  - 80 MMCFD (can be expanded)
- Lloyd’s Register Classed and BOEMRE and USCG approved FPU with quick disconnectable side mounted fluid transfer system
Present Level of Readiness

The Helix Fast Response System - Phase One
55,000 BOPD, 95 MMSCFD @ 8,000 fsw, 10k psi

Changing the way you succeed.
The **Helix Well Containment Group (HWCG)** was formed by 24 leading energy companies working in conjunction with Helix Energy Solutions Group with the mission to develop a comprehensive and rapid deepwater containment response system.

HWCG is an industry cooperative founded under the umbrella of Clean Gulf Associates (CGA).

The designated purpose was to manifest an effective response to a deepwater well control incident in the Gulf of Mexico.

CGA and HWCG members have contracted with Helix Energy Solutions for vessels, equipment and services necessary to contain a well.
Helix Well Containment Group (HWCG) Members

- Anadarko Petroleum Corporation
- Apache Deepwater LLC
- ATP Oil & Gas Corporation
- BHP Billiton (Americas), Inc.
- Century Exploration New Orleans, Inc.
- Cobalt International Energy, LP
- Deep Gulf Energy, LP
- ENI U.S. Operating Company
- Energy Resource Technology GOM Inc.
- Hess Corporation
- LLOG Exploration Company, LLC
- Marathon Oil Company
- Marubeni Oil & Gas (USA), Inc.
- Murphy Oil Corporation
- Newfield Exploration Company
- Nexen Petroleum USA Inc.
- Noble Energy, Inc.
- Plains Exploration & Production Company
- Repsol E&P USA Inc.
- Statoil Gulf of Mexico LLC
- Stone Energy
- Walter Oil & Gas Corporation
- Woodside Energy (USA), Inc.
- W&T Offshore

24 permits have been issued to HWCG members to drill in the Gulf of Mexico based on the Helix Fast Response System (HFRS).
Current Level of Readiness

• Capping Wells with maximum shut-in pressure of 10,000 psi and 15,000 psi with HWCG Trendsetter cap, at water depths to 10,000 ft.

• Capture and flowback operations to Q4000 and HP1 up to 55,000 BOPD and 95,000 MMSCFD, at water depths to 10,000 ft.

• Riser Porch for Flowback Operations to the HP1 has been installed on the Q4000
Typ. Storage Tanker Mooring Arrangement
Helix Fast Response System (HFRS) Philosophy

Clean-up

Clean-up AND Containment at Source

Available Assets used on Macondo

Long Term Solution

- Strong preference for operational GOM based vessels like the Helix Producer I and Q4000 with experienced crews vs. a modular system which will take longer to deploy and is less reliable
- Use versatile assets like the Helix Q4000 that can be used in containment and well kill modes

**Includes 10,000 BOPD processed on Q4000

3rd Q 2010

4th Q 2011

~ 2013+

* HPI and Q4000

Oil Response Plan

{Based on MSRC & Clean Gulf & HFRS* (10KSI, 10,000 ft, 55 KBOPD & 95 MMSCFD**)}

Clean-up AND Containment at Source

Scalable

Changing the way you succeed.
Key Takeaways

Response lessons learned:

• Operational vessels provide optimum means of response
• Experienced personnel are key to effect response
• Use of existing systems and procedures as part of response is essential to achieving safe, rapid execution
• Ability to accommodate change under high stress work conditions
• Response vessels and tools need a great level of flexibility
• All of the above is necessary to achieve a high standard of QHSE on site during response

HFRS Strength is in:

• Utilization of Operational and Maintained GOM Based Vessels as Core System Assets with Experienced Crews Poised to Respond
• Expansion Plans are Based on Achievement of Continuous Capacity Growth with Reasonable Commercial Structures and Achievable Targets

HFRS is Ready NOW to Execute Spill Response Operation to Specific Types of Subsea Wells