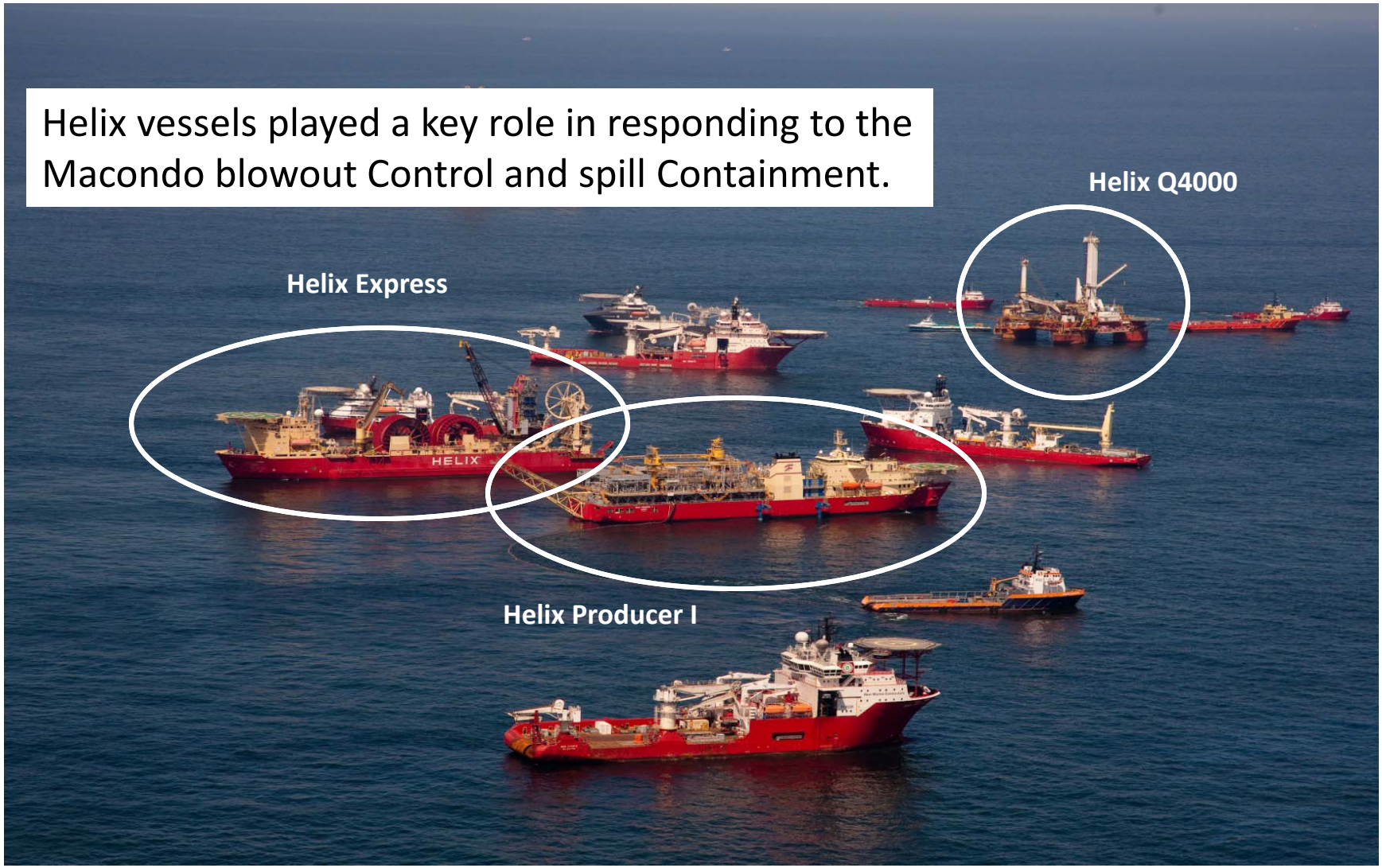
Helix Fast Response System

GOM Subsea Oil Spill Control & Containment

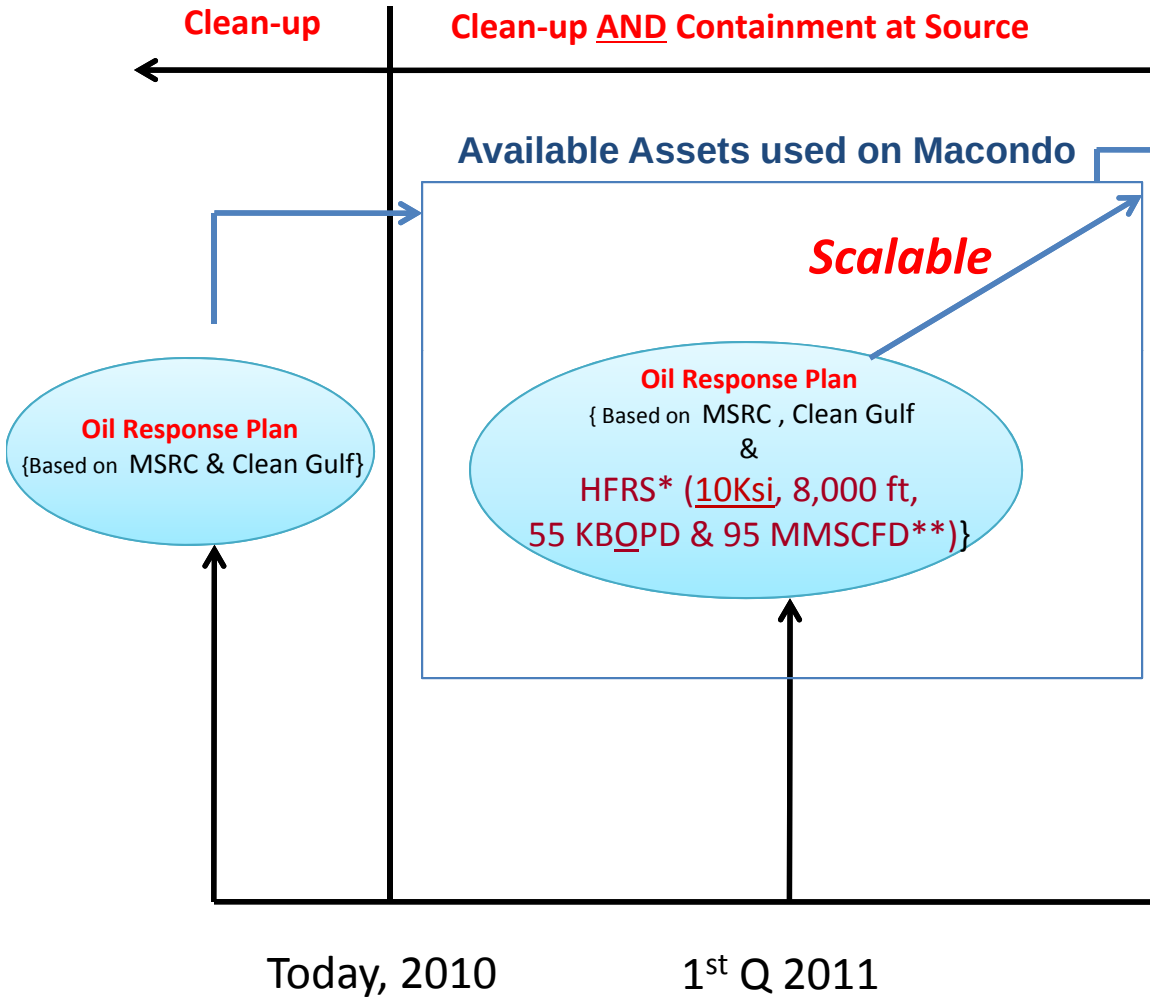
Majid Al-Sharif - Helix Energy Solutions

Helix Deepwater Scope of Operations

Helix Vessels at Macondo



Helix Fast Response System (HFRS) Philosophy



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

** HPI and Q4000*

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) 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

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

Heavy Lift & Construction Vessels

MSV DP2 Caesar

MSV DP2 Intrepid

MSV DP2 Express

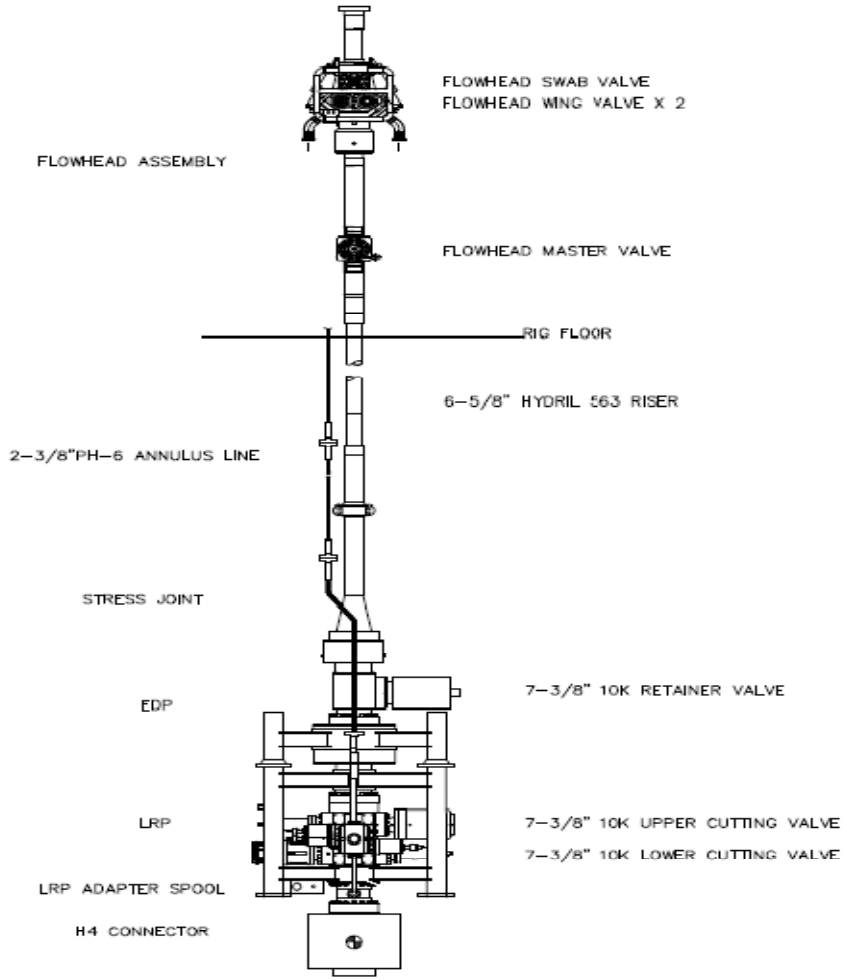
ROV's & Subsea Intervention - Canyon Offshore

Deep Cygnus

Island Pioneer

Olympic Triton

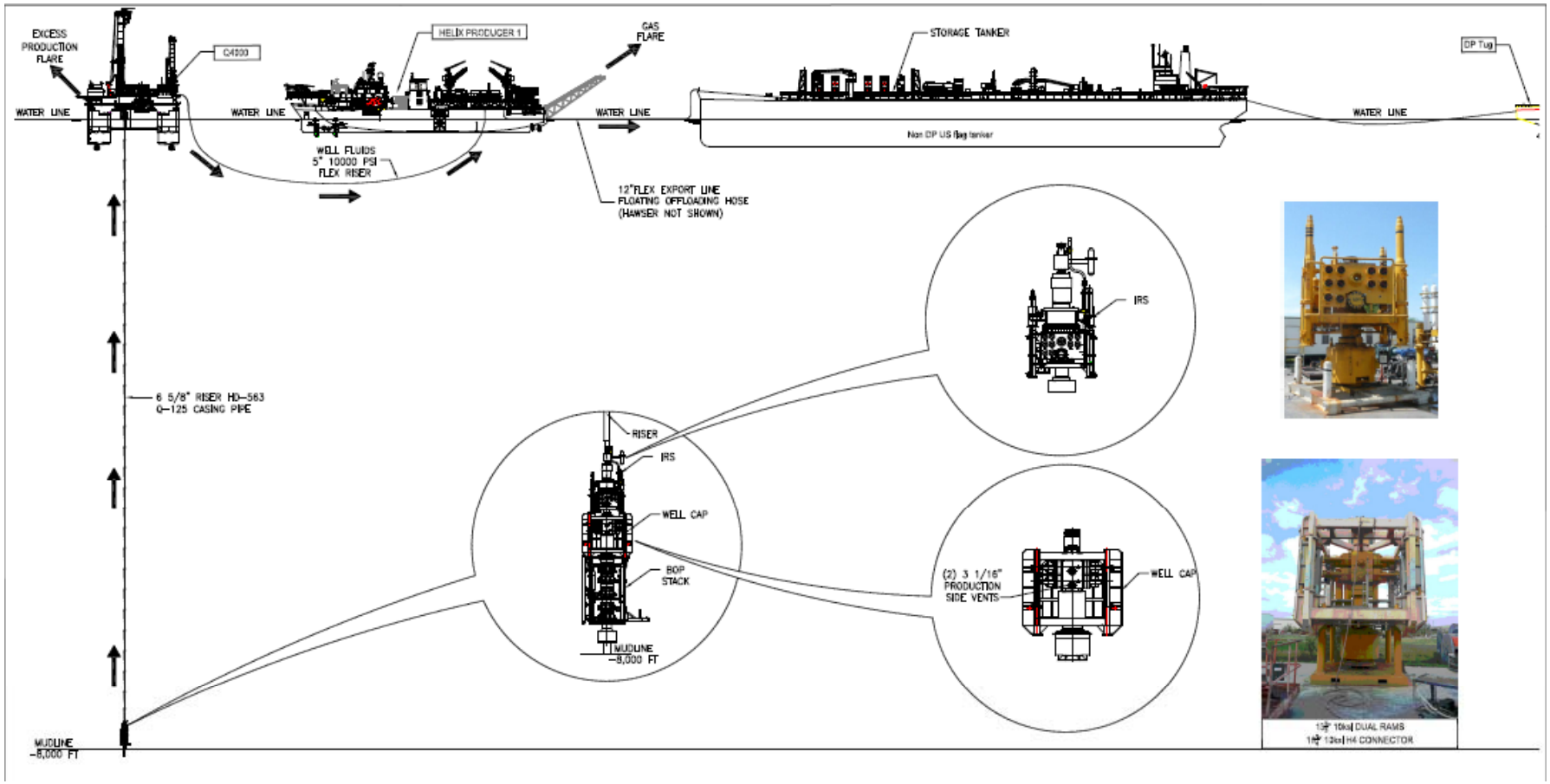
Q4000 Intervention Riser System (IRS) Package



HELIX 7-3/8" 10K INTERVENTION RISER SYSTEM

10 K Well Capping Stack (WCS)

Helix Fast Response System (HFRS)



Formation of HWCG

The **Helix Well Containment Group (HWCG)** was formed by 23 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 DW 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. Deep Gulf Energy II LLC
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.
Repsol E&P USA Inc.
W&T Offshore
Walter Oil & Gas Corporation
Woodside Energy (USA), Inc.
Statoil Gulf of Mexico LLC, Statoil USA E&P, Inc.
Stone Energy

Level of Readiness – NOW

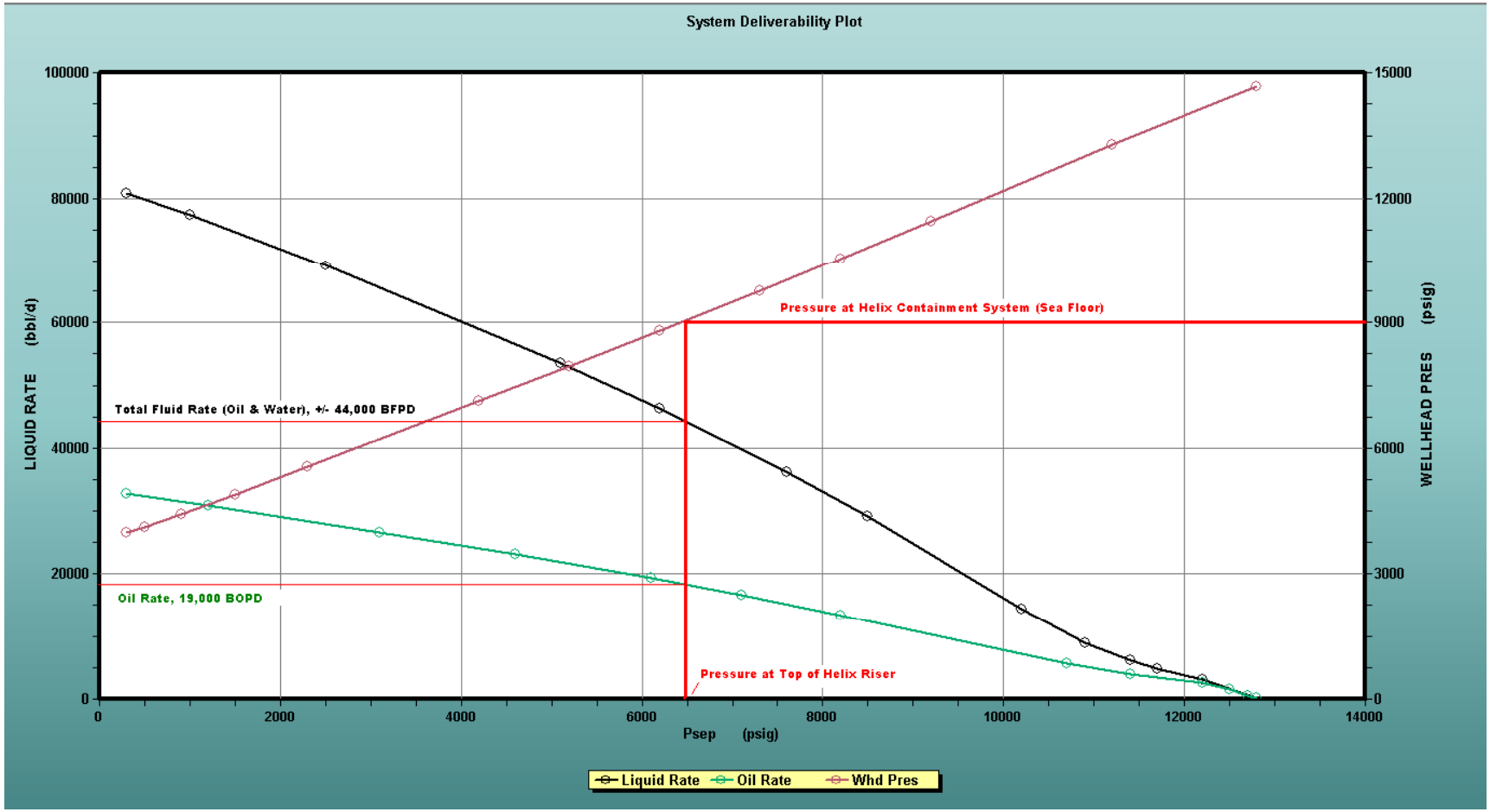
- Capping Wells with Max Shut-in Pressure of 10,000 psi at Water Depths up to 6,500 ft (8,000 ft Water Depth by April 11th) & (15,000 psi Well Cap by April 20th)
- Capture and flow back operations to Q4000 and HP1 up to 55,000 BOPD & 95 MMSCFD

Level of Readiness – 2012

- Capping Wells with Max Shut-in Pressure of 15,000 psi at Water Depths up to 10,000 ft.
- Capture and flow back operations up to 105,000 BOPD & 184 MMSCFD

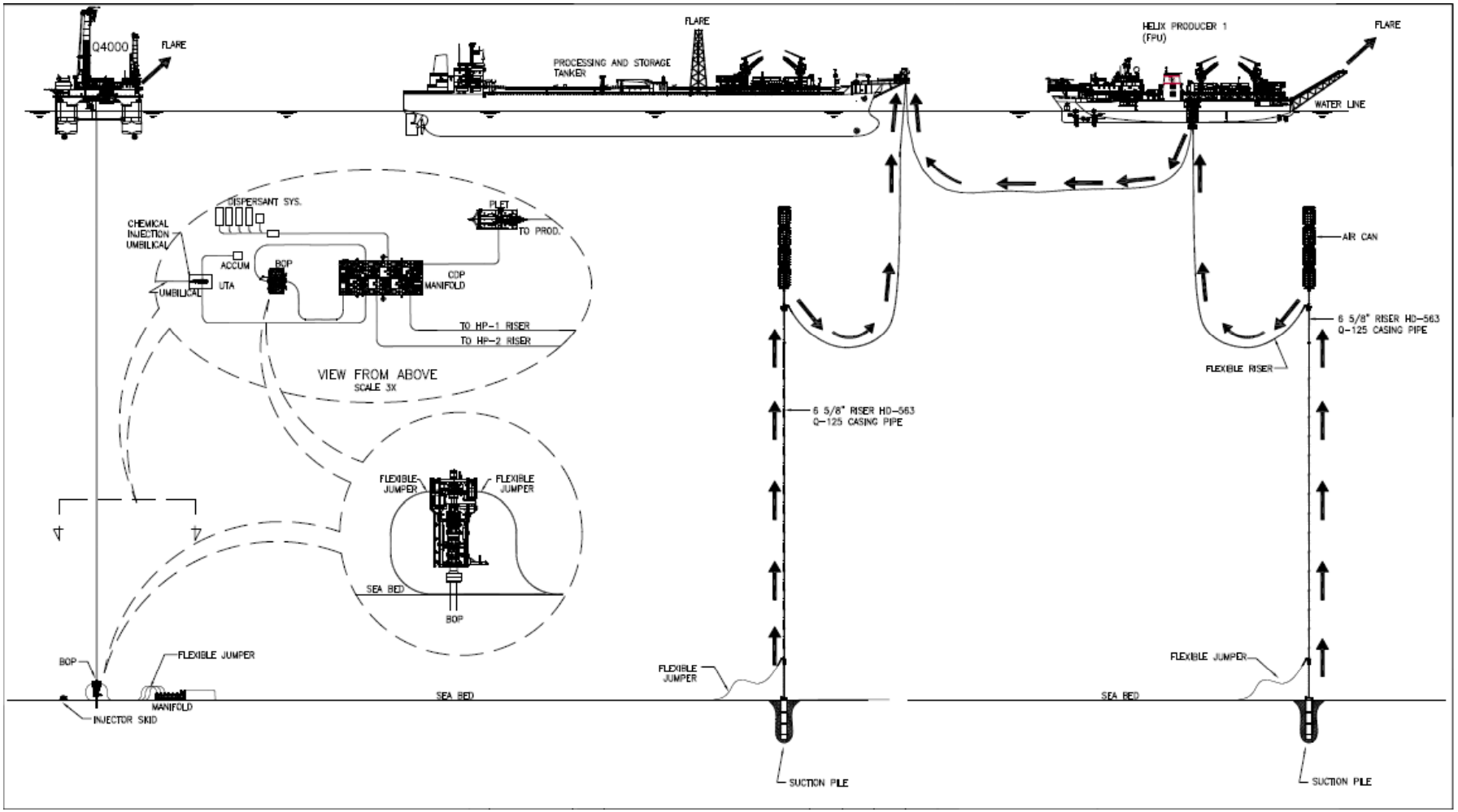
Containment Capacity Required << Well WCD

Real scenario of deepwater Miocene well: Worst Case Discharge (WCD) = 92,000 BLPD (38,000 BOPD). Helix containment system reduces overall liquid flow to 44,000 BOPD and oil to 19,000 BOPD by applying a 6,500 psi back pressure at the Q4000



Open hole flow rate as parameter to size containment response capacity is not proportional

Helix Fast Response System – Phase 2



Additional production capacity and system redundancies will become available as the system evolves.

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 Structure and Achievable Targets

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