

# Repsol well design and risk mitigation processes, the case of HPHT Jaguar-1 well (Guyana).



Regional Direction Exploration Latin America

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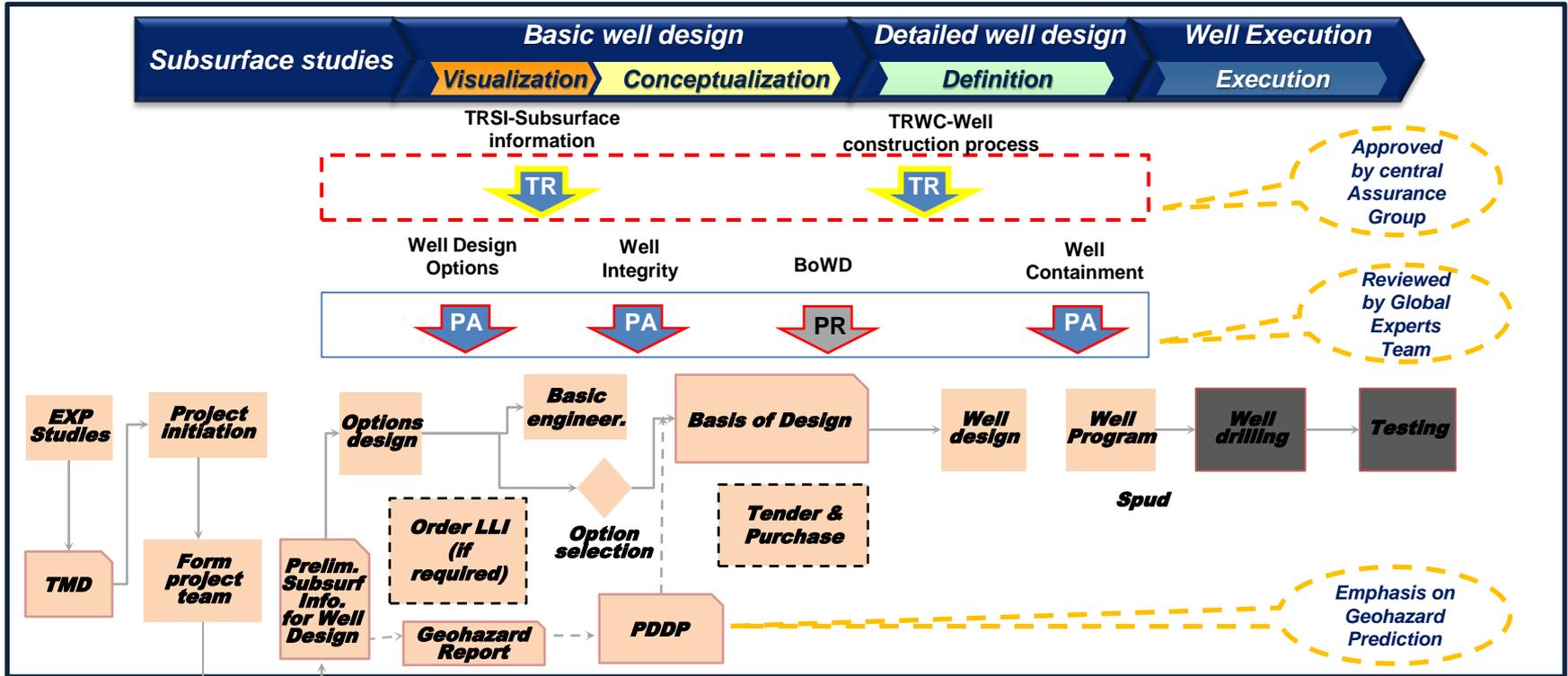
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## 1. Repsol Drilling Risk Mitigation Processes

- PRE
  - ✓ *Well planning*
  - ✓ *Risk identification and prevention tools*
  
- DURING
  - ✓ *Execution*
  - ✓ *Emergency Management*
  - ✓ *Critical Response Resources*
  
- POST
  - ✓ *Environmental and Socio-economic Restoration*
  - ✓ *Business Continuity*

# Repsol Drilling Risk Mitigation Processes

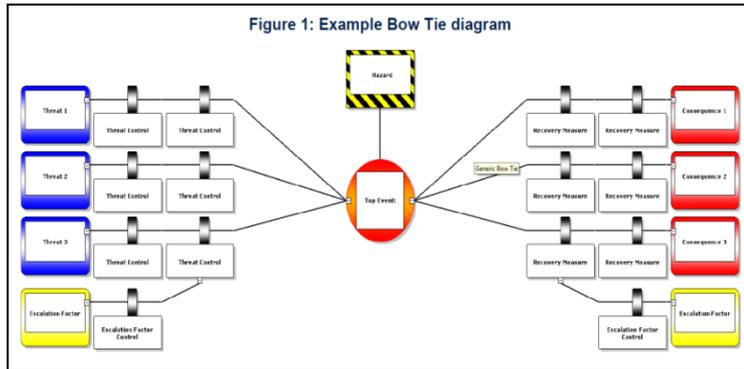
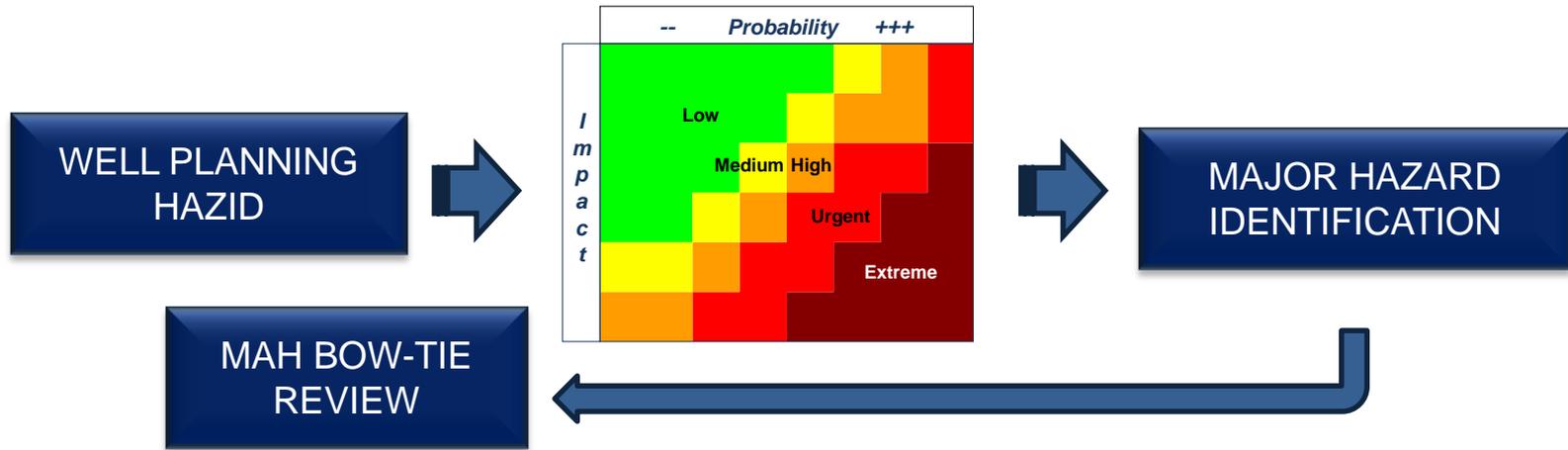
## PRE: Well Planning & Construction Process



12 to 24 months ----- 10's people ----- Multi-M\$ engineering

# Repsol Drilling Risk Mitigation Processes

## PRE: Drilling Hazard Identification and Prevention



**DEFINE:**

- ✓ Threat Controls
- ✓ Recovery Measures
- ✓ Escalation Factors

# Repsol Drilling Risk Mitigation Processes

## DURING: Technical Standards, Supervision, MOC



Entorno de colaboración

### Technical Standards

Well Construction Technical Manual and amendments site

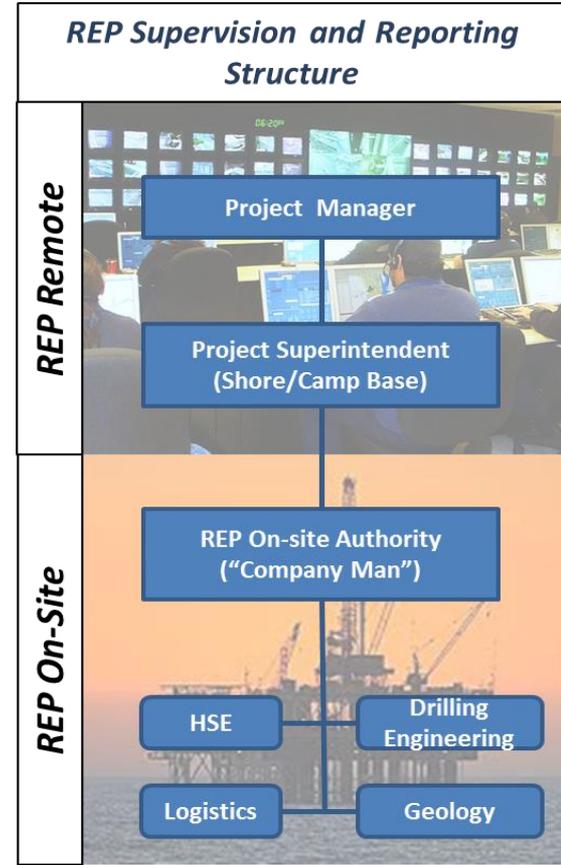
Disciplines: Geology, Geophysics, Petrophysics, Reservoir Engineering, Well Construction, Production Engineering, Facilities Engineering and Construction, Safety and Environment, Liquefied Natural Gas, GIP (Integrated Project Management), Operations and Maintenance, Special Interest Groups

**CLICK HERE TO OPEN THE WELL CONSTRUCTION MANUAL**

**REVISIONS & AMENDMENTS**

- Amendment Proposal
- List of Proposals
- Ask for a paper copy
- Proposal Form
- Help by e-mail
- PDF Version

Search Box



# Repsol Drilling Risk Mitigation Processes

## DURING: Global Critical Emergency Management



# Repsol Drilling Risk Mitigation Processes

## DURING: Critical Response Resources

### GLOBAL CRITICAL RESPONSE TEAM



- ✓ Modularity
- ✓ Training
- ✓ Quick Activation

### GLOBAL WELL CONTAINMENT STRATEGY



Wild Well Control Inc. MSA

### RESPONSE ASSETS

Critical Management Centres & Situation Rooms



Located in Madrid, Houston, Port of Spain, Lima and Rio de Janeiro

### OIL SPILL RESPONSE STRATEGIES



- ✓ [Local – MAA](#)
- ✓ [Regional – OSRL \(USA\)](#)
- ✓ [Global – OSRL \(UK\)](#)



# Repsol Drilling Risk Mitigation Processes

## POST: Recovery & Continuity



### ✓ **RECOVERY**

- *Environmental and Social Restoration*
- *Compensation*

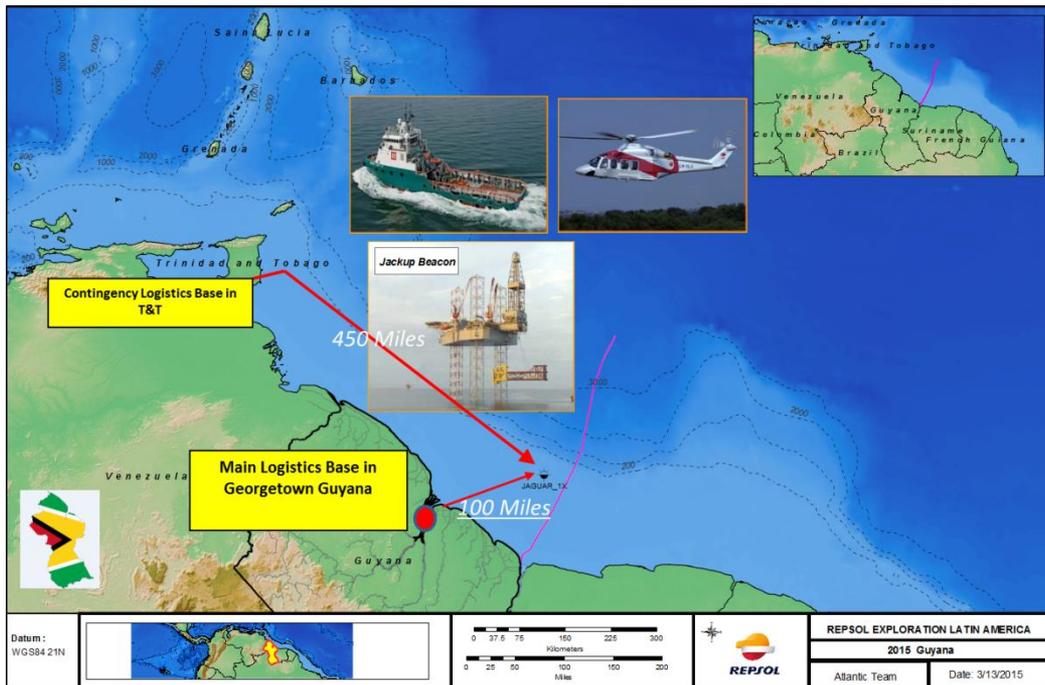
### ✓ **BUSINESS CONTINUITY – Lessons Learned**

- *Restructuring of the organization*
- *Realignment of the strategy*



# Repsol Drilling Risk Mitigation Processes

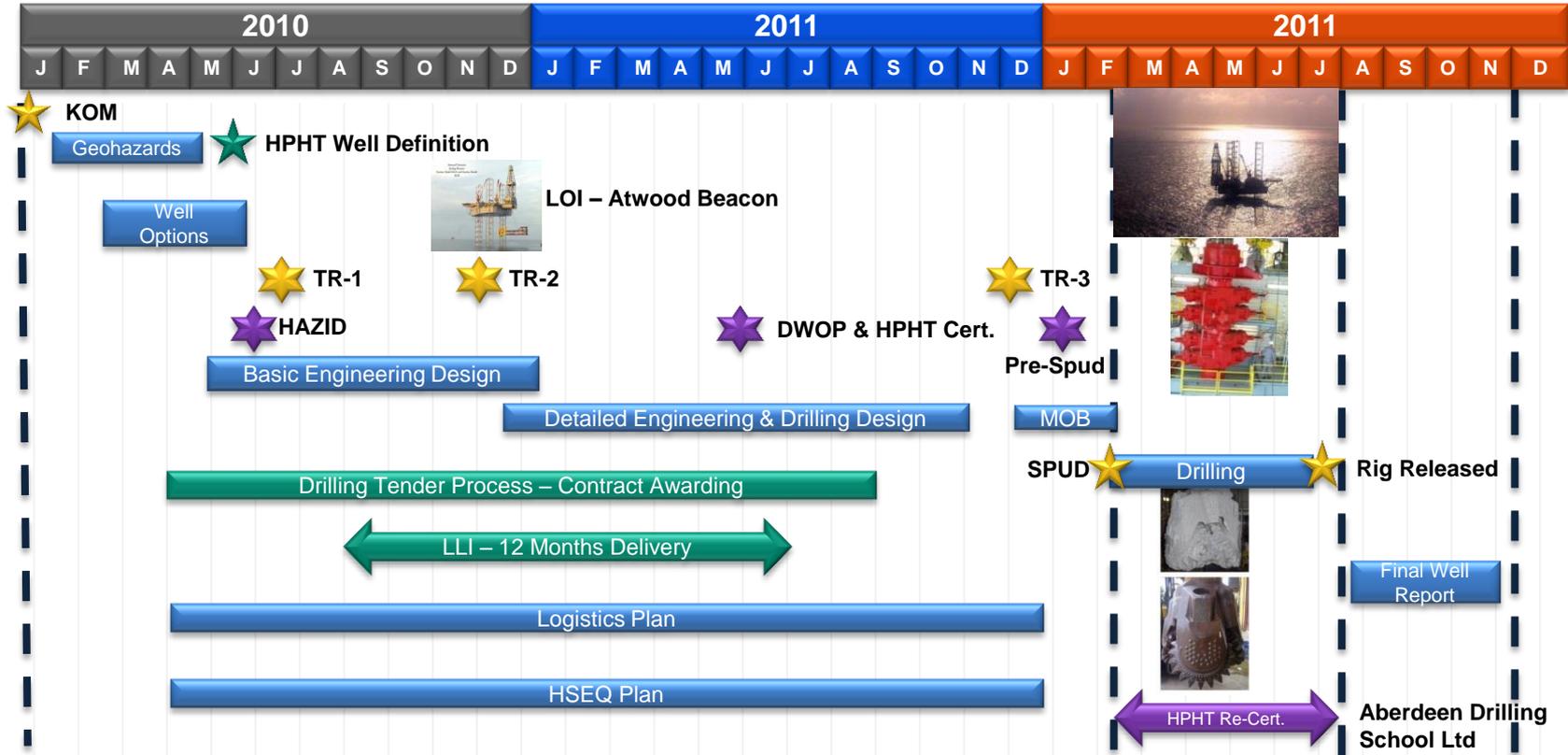
## The Jaguar 1 Well Case



- Remote area supported by Trinidad and Tobago at 450 miles.
- Previous to the drilling of Jaguar-1, only one additional well had been drilled offshore in Guyana in 20 years.
- Very good level of Cooperation by Local Authorities.

# Repsol Drilling Risk Mitigation Processes

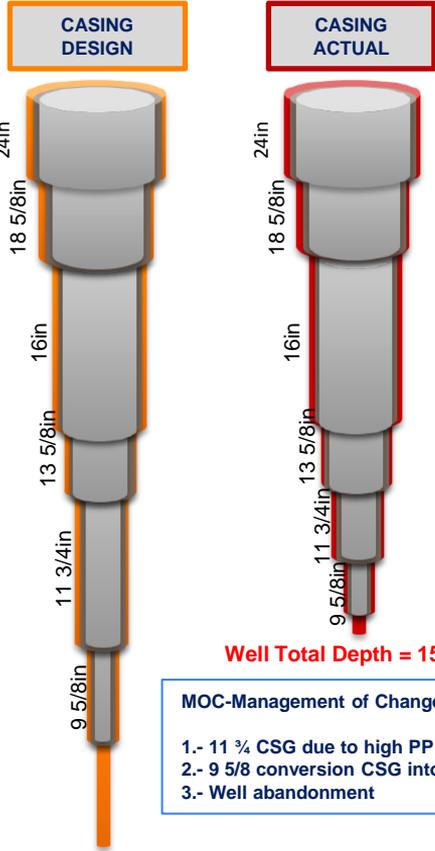
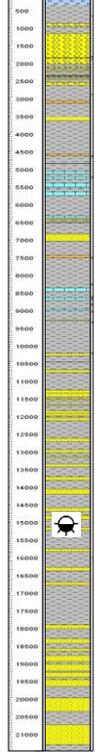
## The Jaguar 1 Well Case: PRE



**Project 100% Core Team = 35 people (extended team +20)**

# Repsol Drilling Risk Mitigation Processes

## The Jaguar 1 Well Case: DURING

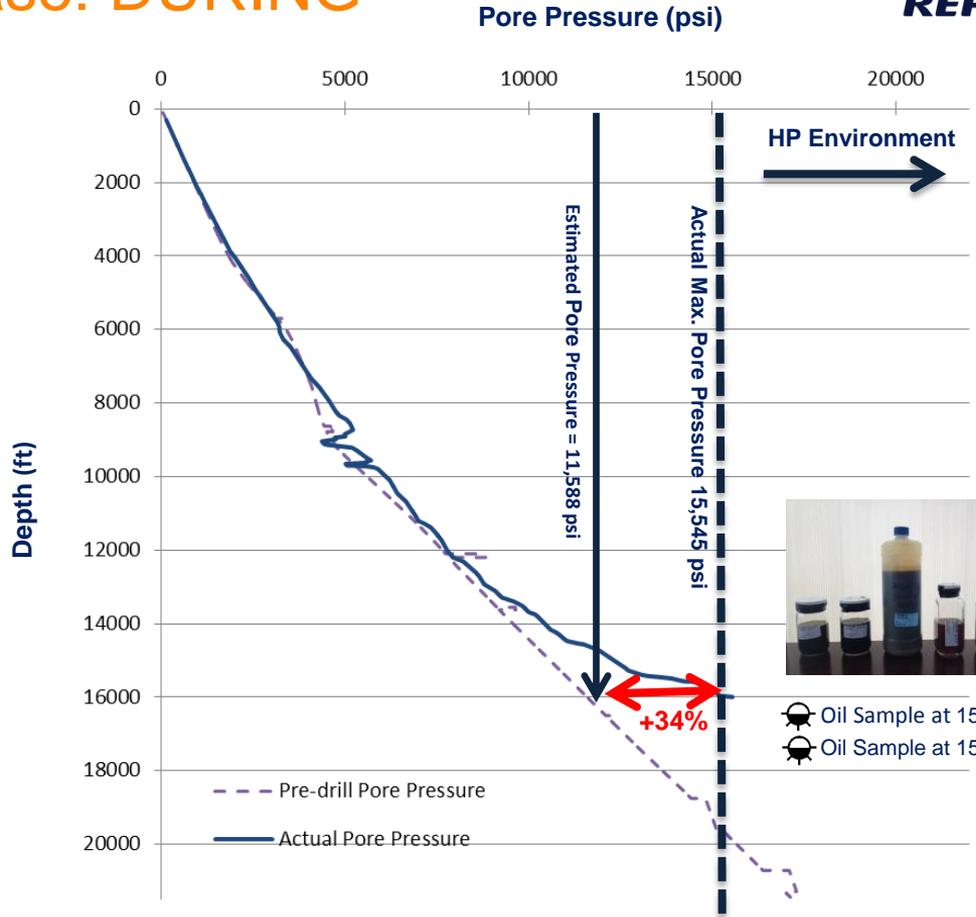


**Well Total Depth = 15,998ft**

**MOC-Management of Change**

- 1.- 11 3/4" CSG due to high PP
- 2.- 9 5/8" conversion CSG into Liner
- 3.- Well abandonment

**Prognosed Depth = 21,445ft**



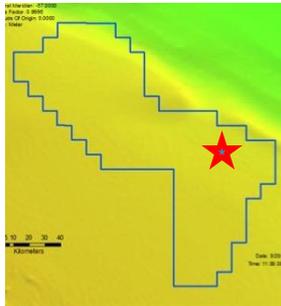
- Oil Sample at 15,442ft
- Oil Sample at 15,955ft

# Repsol Drilling Risk Mitigation Processes

## The Jaguar 1 Well Case: POST

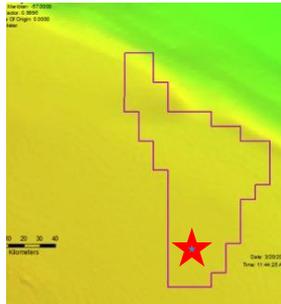


### Georgetown



1997

### Kanuku



2013



**THANK YOU**



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