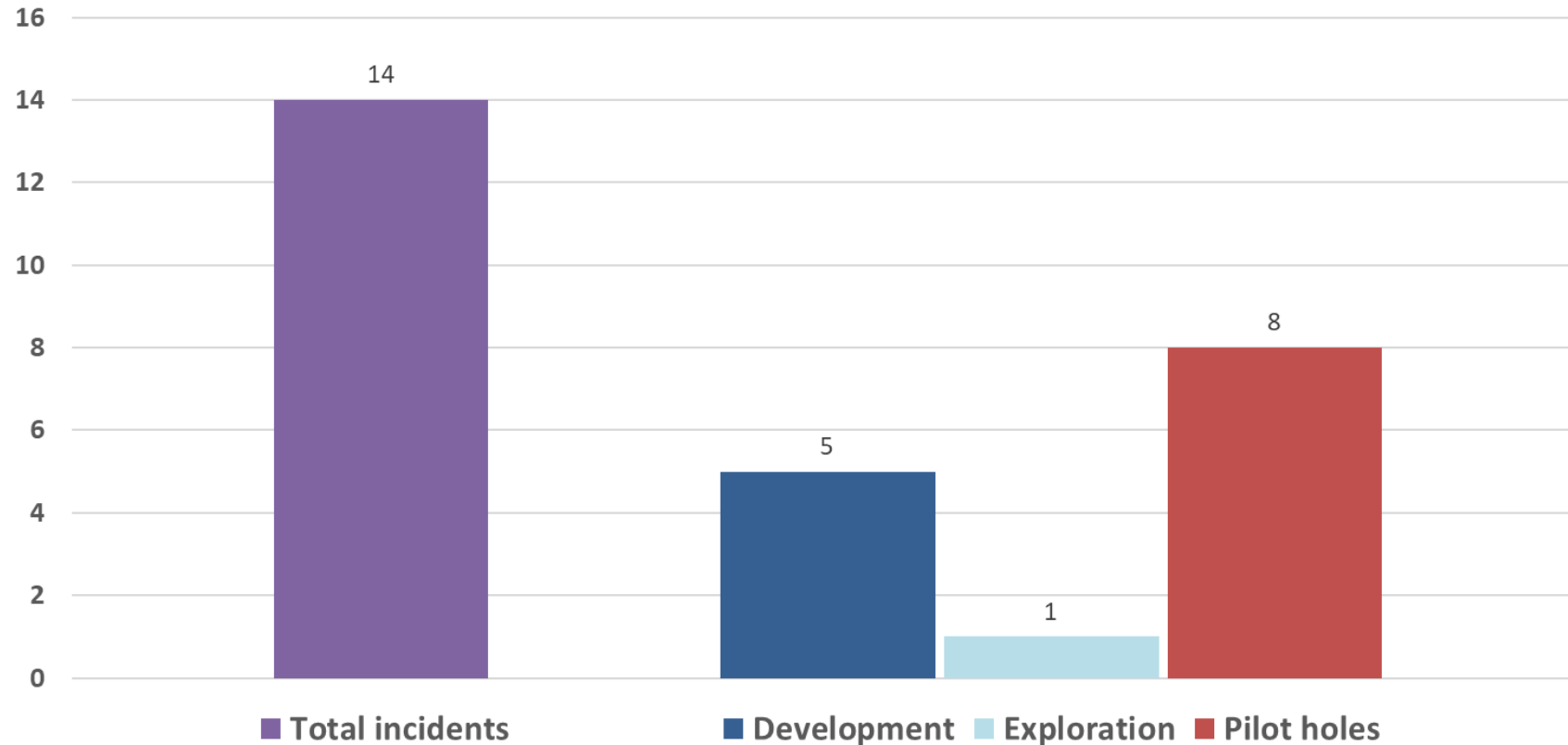


Incident Statistics & Focus

- Reduction of Well Control Risk
- Preventing Incidents

Vebjørn Nygaard and Roar Sognnes

Well control incidents in 2024

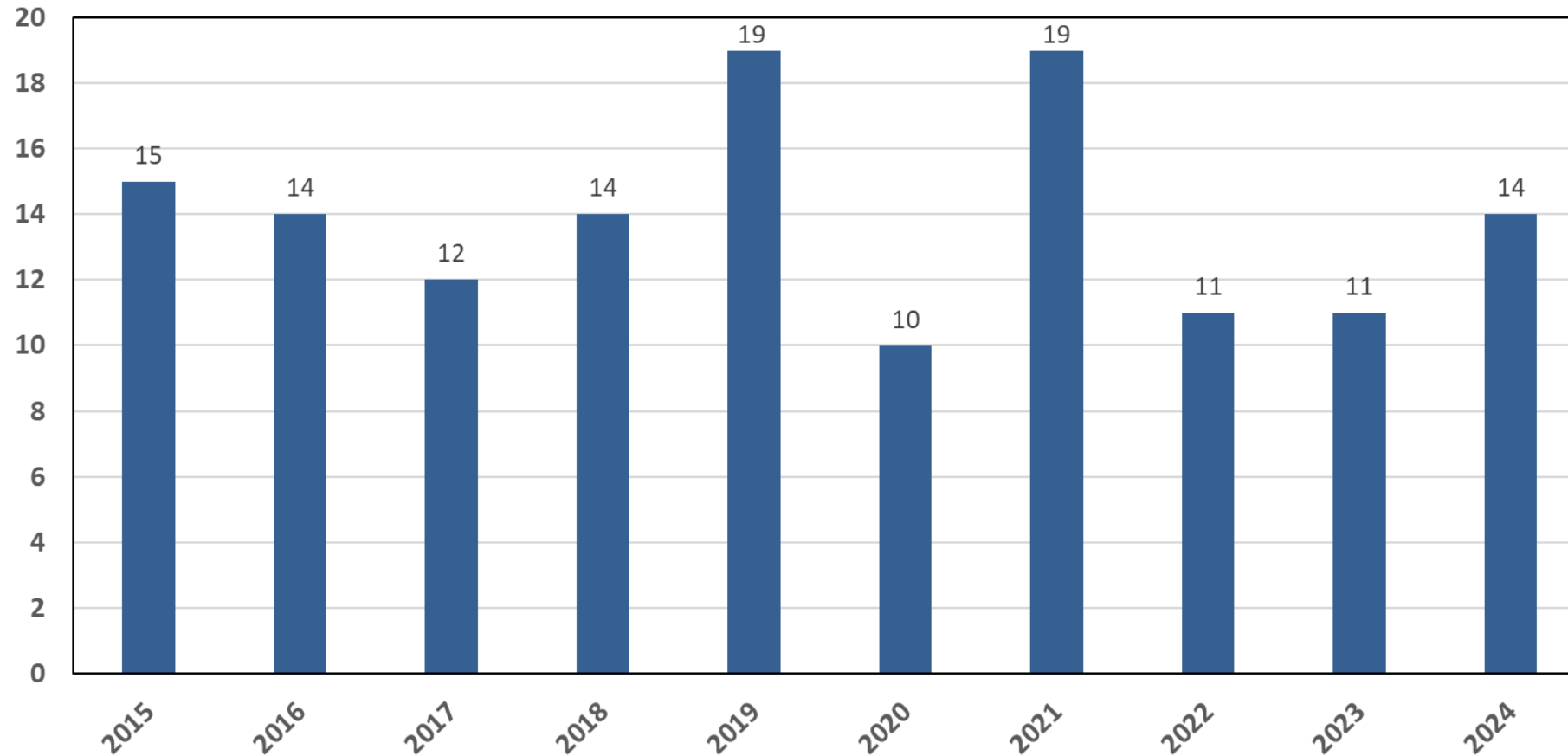


Only classified well control incidents

Reported incidents - not included the Havtil incident statistics (Trends in risk level - RNNP):

- 2 well intervention incidents
- 1 well integrity incident

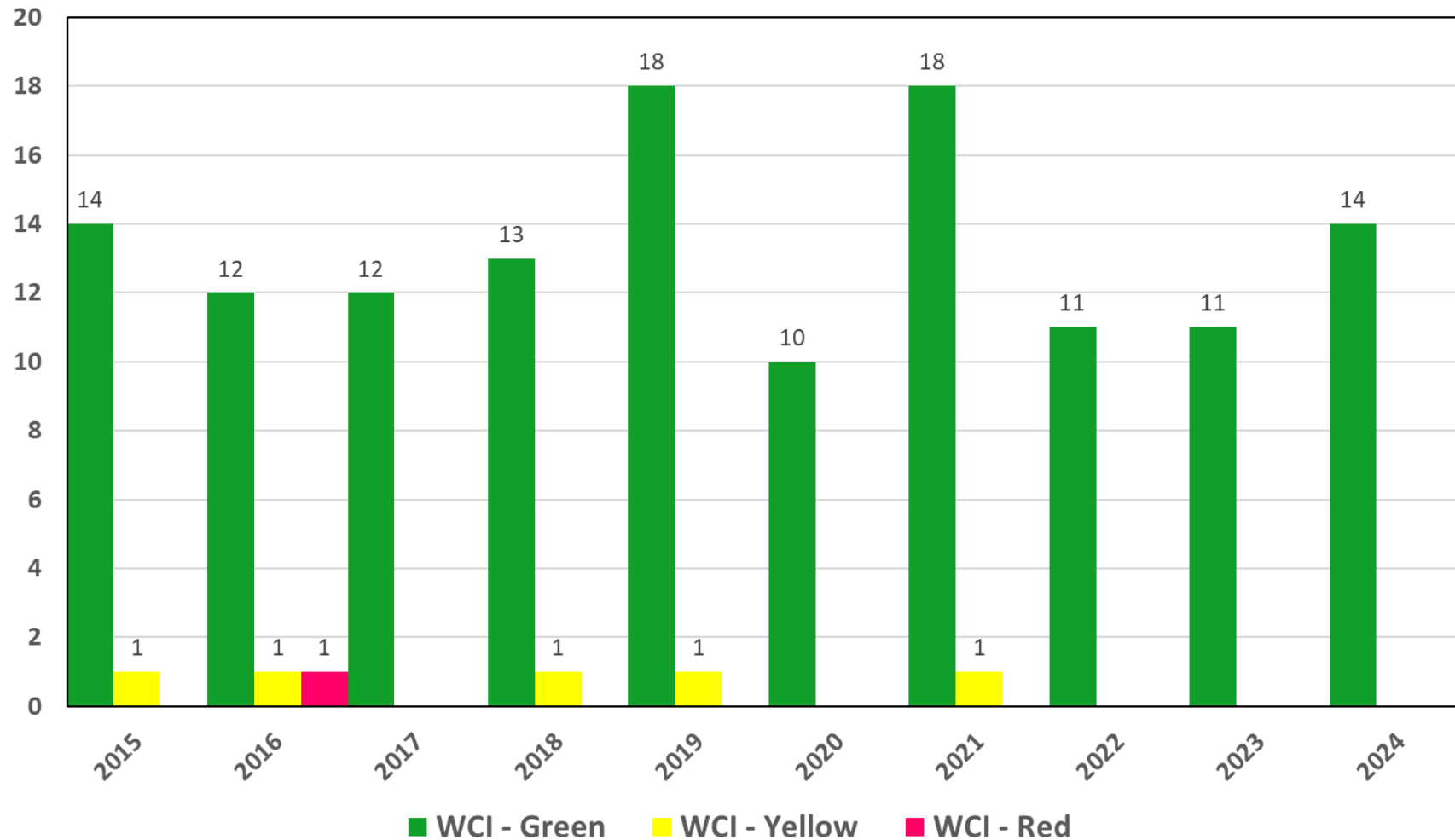
Well control incidents - 2015-2024



Average number of well control incidents per year for 2015-2024: 13,9

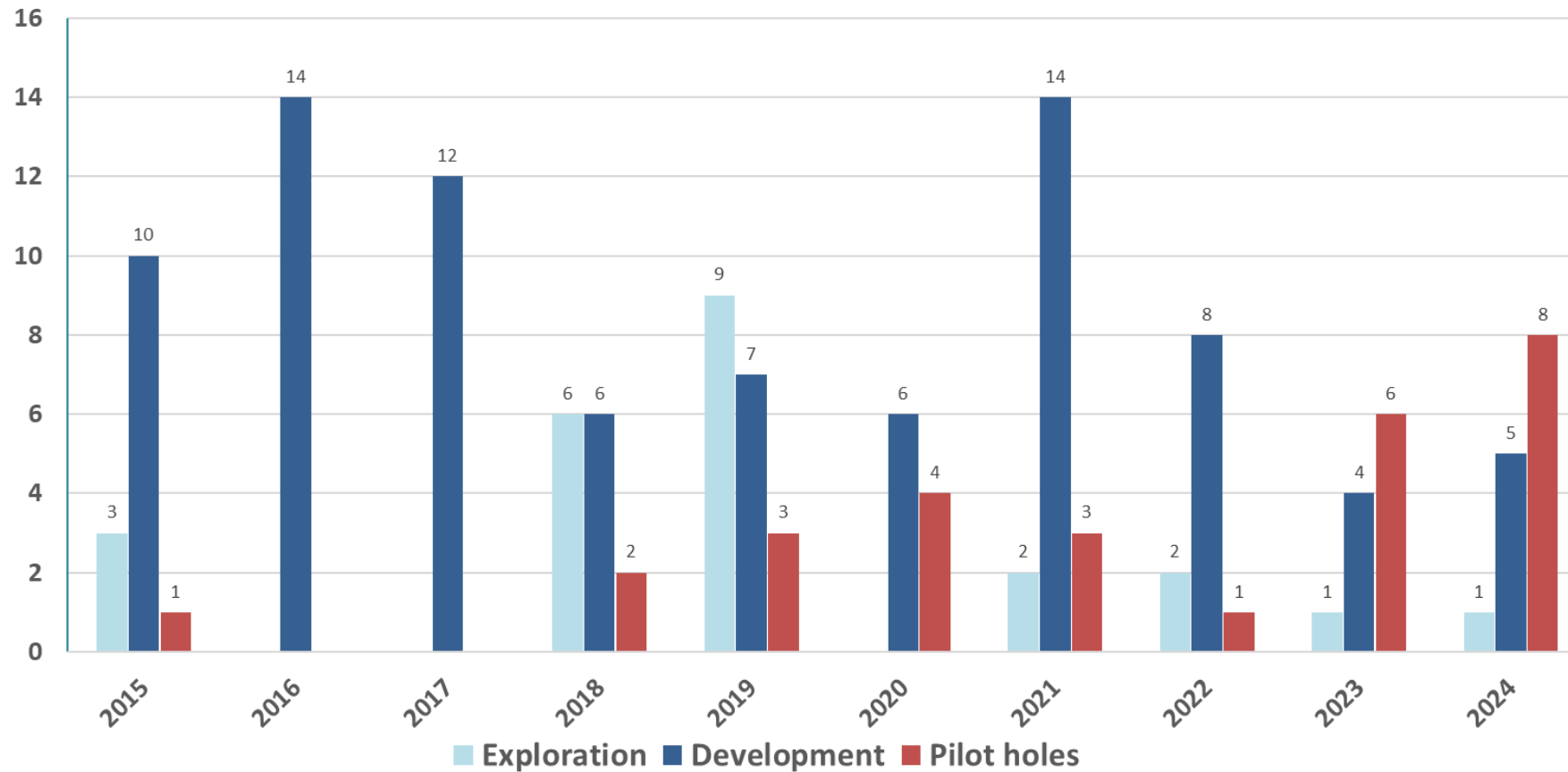


Categorization of well control incidents -2015-2024

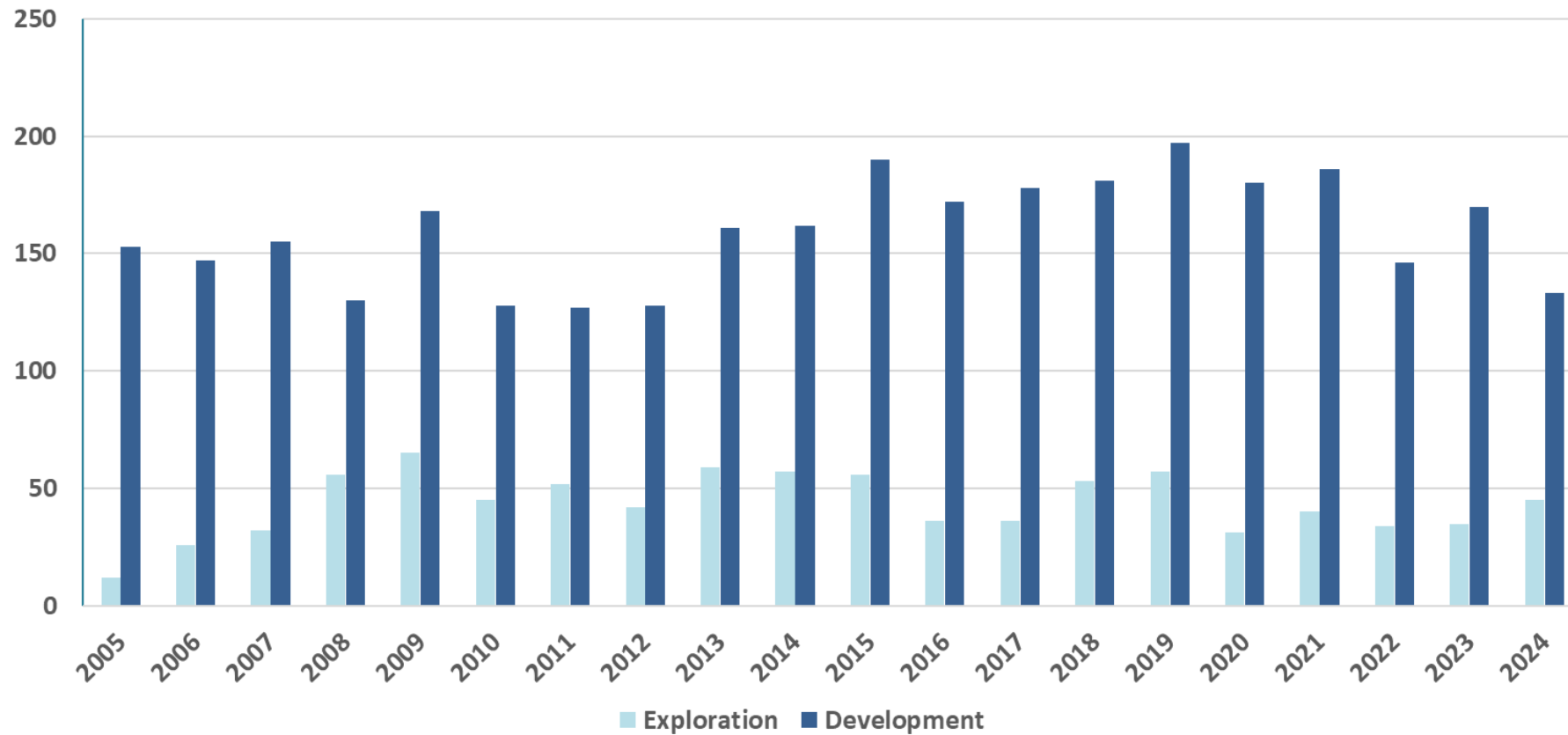


Degree of seriousness

Incidents per well type 2015-2024



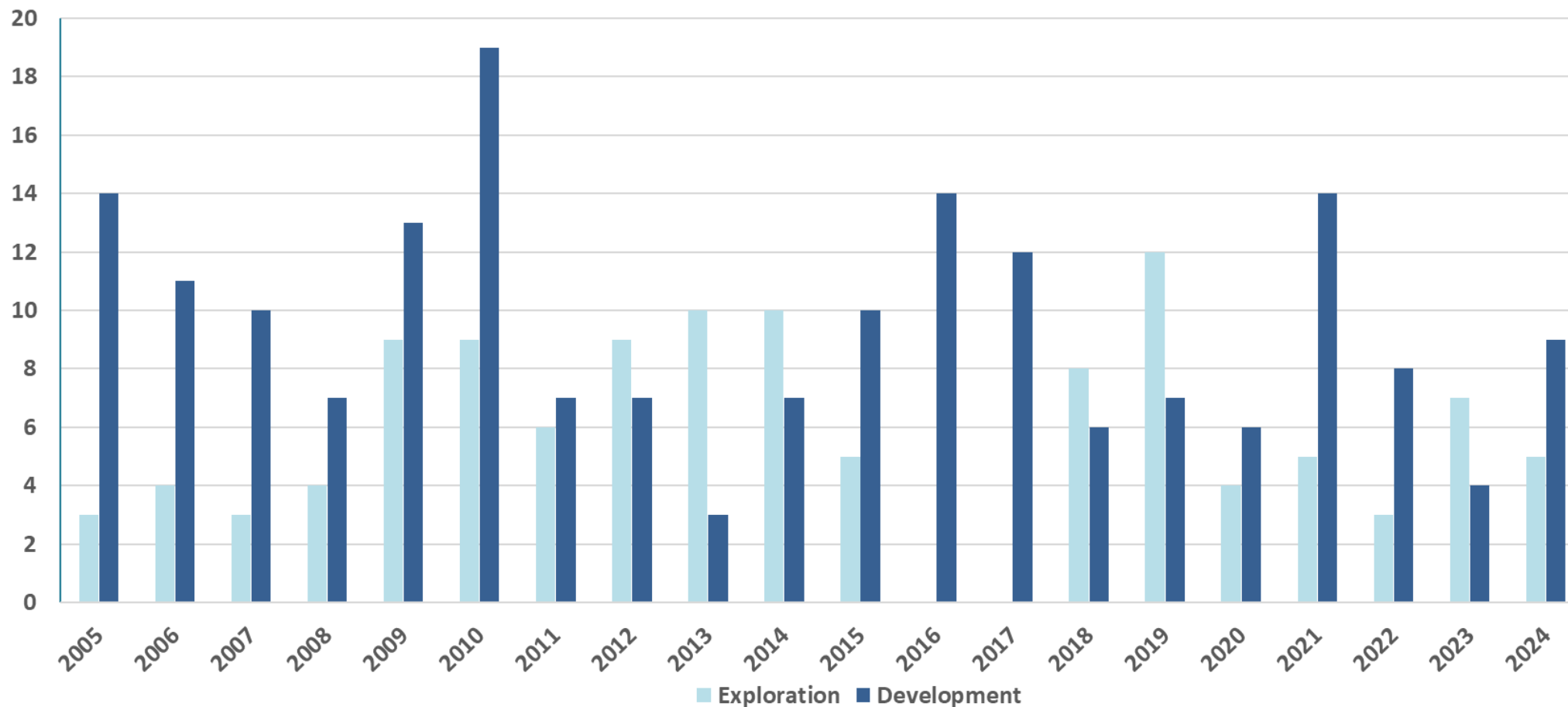
Spudded wellbores - 2005-2024



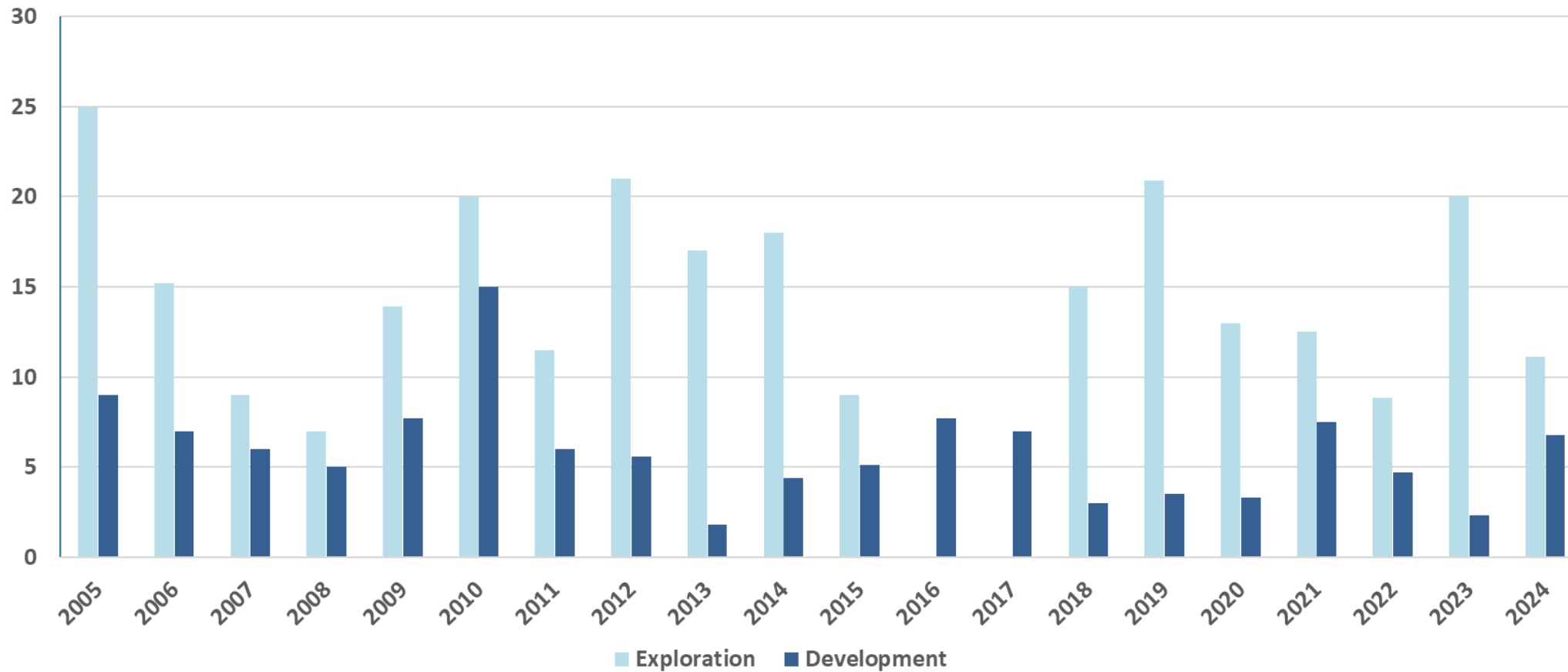
Norwegian Offshore Directorate statistics 2024:

- 133 development wells
- 45 exploration wells

Well control incidents per well type 2005-2024



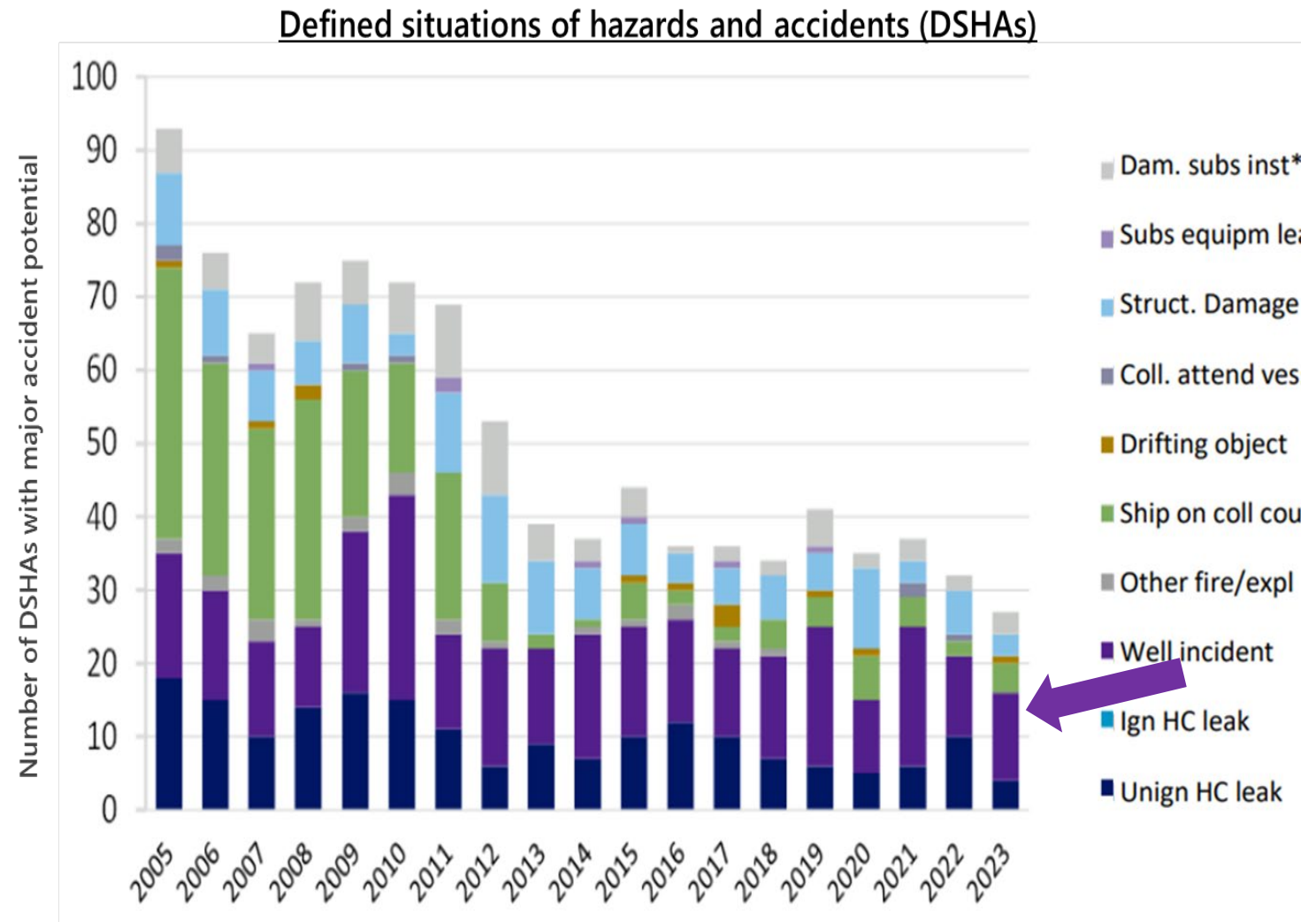
Incidents per 100 wells - 2005-2024



Well Control incident status – NCS

No significant reduction in the number of well control incidents on the NCS over the last decade.

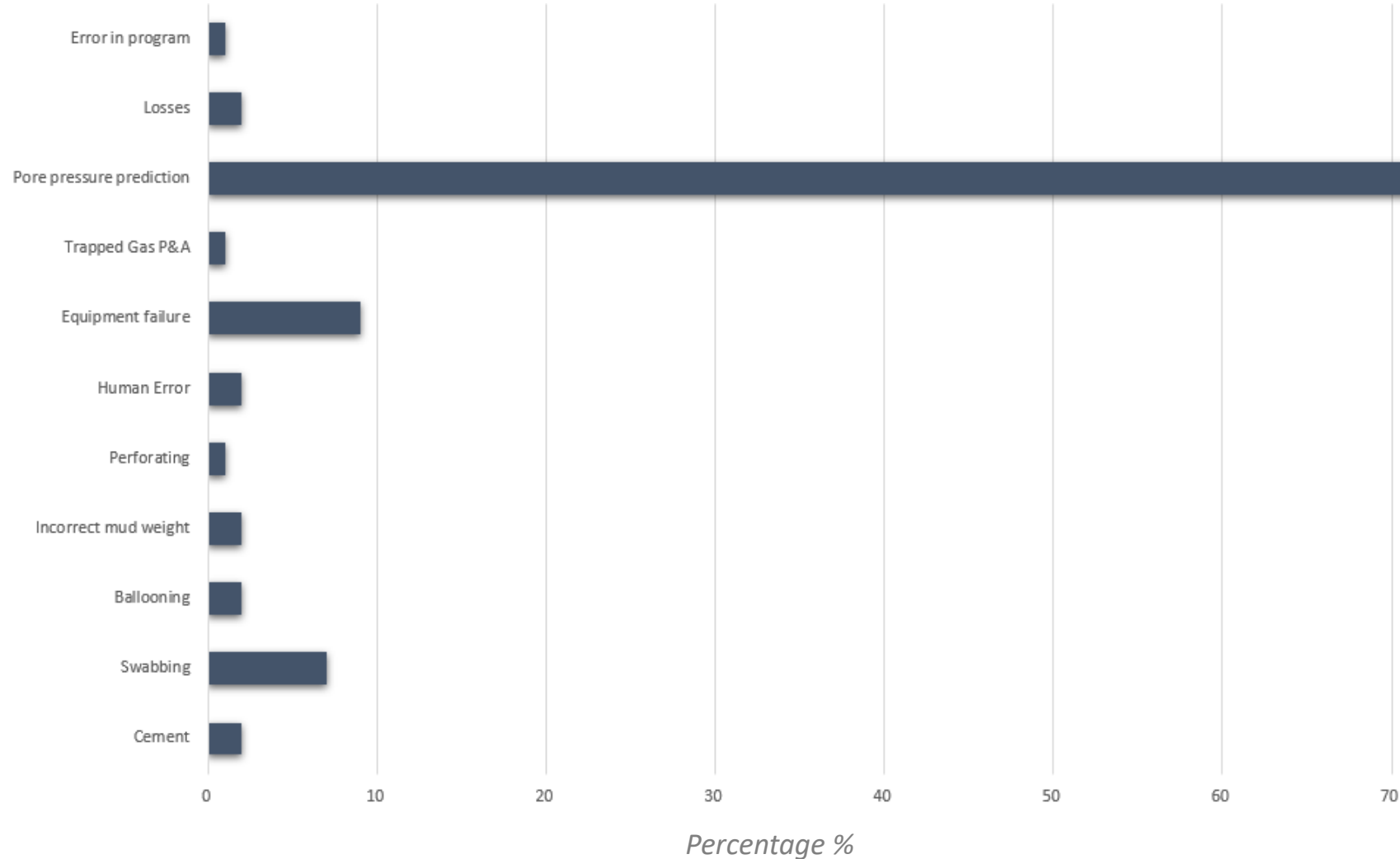
- Initiated a qualitative study to give more insight into causal factors and measures for well control incidents related to Norwegian petroleum activities.



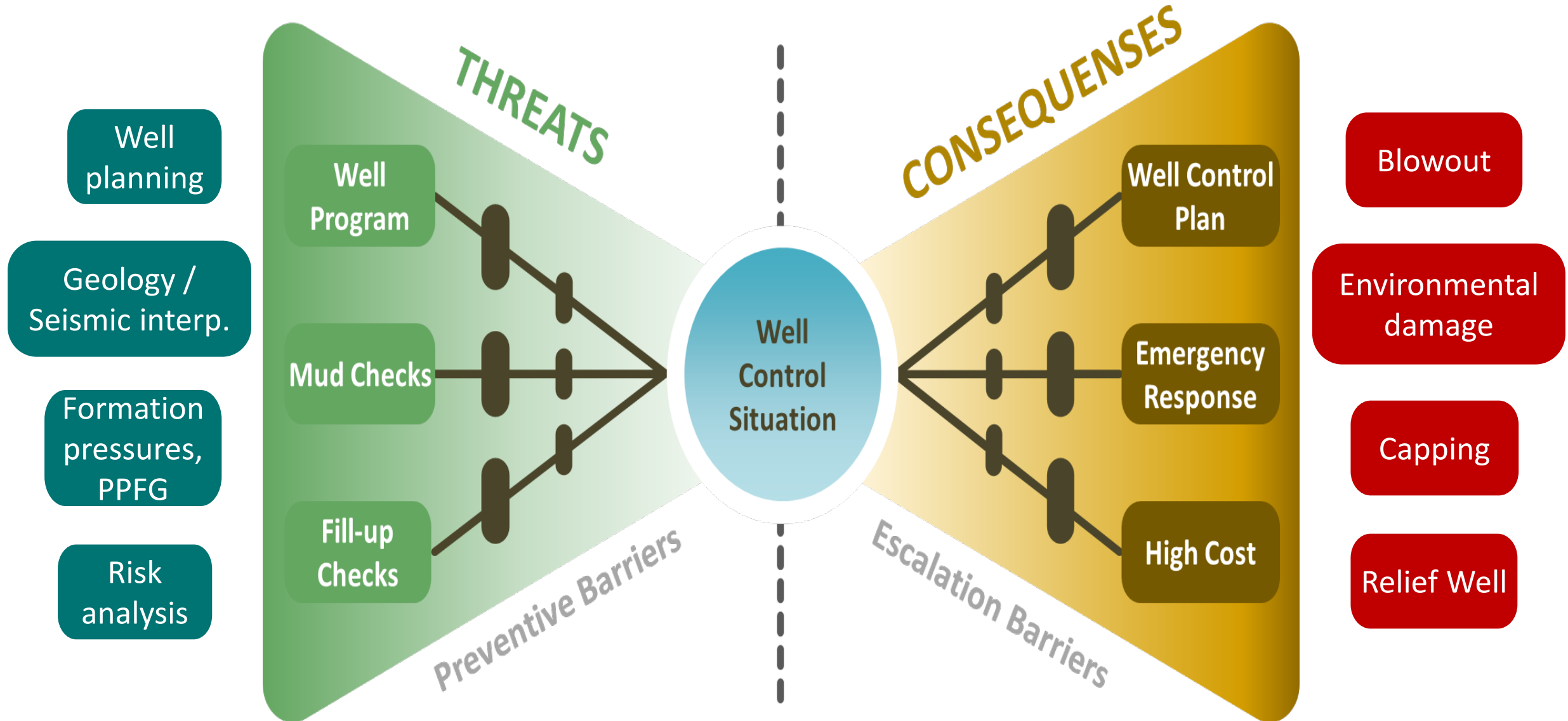
Trends in risk level in the petroleum activity (RNNP) 2023: Summary report

Qualitative RNNP Study 2013-2022 - Results

Main contributing factors of the 121 well control incidents reported, 2013 - 2022



Illustrating a Risk Picture in Well Control (Drilling)



Well Control key initiatives 2024



Ensuring Well Control Competence for each role

- Such as 024, NORSOK D-010 and IOGP guideline 476



Learning, experience transfer and training

- Such as IOGP guidelines 628, 501 & 502



Risk Management

- Using suitable methodologies in identification of Well Control risks in wells- and operational planning
- Report on CO2 Blowout Considerations
- Report on CO2 Well Control Simulation Software
- Report on Shallow Hazards - Challenges & Opportunities
- IOGP guideline 608 on Pore Pressure and Fracture Gradient analysis



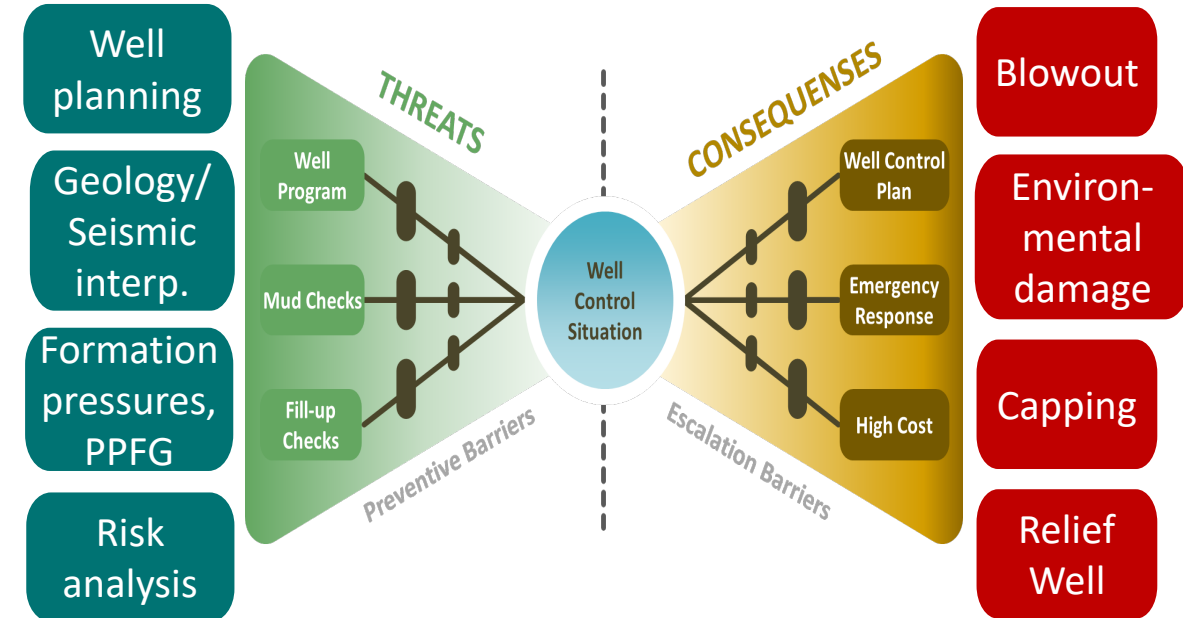
Change Management

- Change in drilling plans must include Well Control risk assessments



Well Control Equipment

- Maintenance and certification
- Digital possibilities, AI, and 24/7 BOP system monitoring
- New BOP technology
- IOGP guideline 594 on Source Control Emergency Response - Planning Guide for Subsea Wells



New guidelines adopted to Well Program and Well Control regulations

The guideline to Activity regulations § 81 Well programme

Second paragraph:

«For å oppfylle kravet til programmet som nevnt i første ledd, bør standarden NORSOK D-010 kapittel 5.3, 5.7, 5.11 og 10.3 brukes på området helse, arbeidsmiljø og sikkerhet. **IOGPs retningslinje 608** bør legges til grunn for prinsipper for reduksjon av usikkerhet i formasjonstrykk.»

The guideline to Activity regulations § 86 Well control

Fourth paragraph:

«Ved bruk av kapslingsutstyr på havbunnsbrønner bør standarden NORSOK D-010 kapittel 5.8.3 brukes. I planlegging av mulige kapslingsoperasjoner, der slike kan være egnet, bør **IOGPs retningslinje 594** brukes.»





Regulatory focus going forward

Prevention of Well Control incidents

❑ **Projects for 2025**

1. PPFG uncertainty & communication
2. Cemented shoe as barrier element

❑ **Well Control Systems & Equipment follow-up continues**

1. BOP Maintenance and certification
2. Digital possibilities, AI developments and 24/7 BOP system monitoring
3. New BOP technology



Thank you!

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