

# Miljøovervåking ved forflytting av borekaks ved avslutning, erfaringer og planer i Ekofiskområdet

Forum for Offshore Miljøovervåking 2023

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**Cautionary Note to U.S. Investors** – The SEC permits oil and gas companies, in their filings with the SEC, to disclose only proved, probable and possible reserves. We may use the term “resource” in this presentation that the SEC’s guidelines prohibit us from including in filings with the SEC. U.S. investors are urged to consider closely the oil and gas disclosures in our Form 10-K and other reports and filings with the SEC. Copies are available from the SEC and from the ConocoPhillips website.

# Innhold



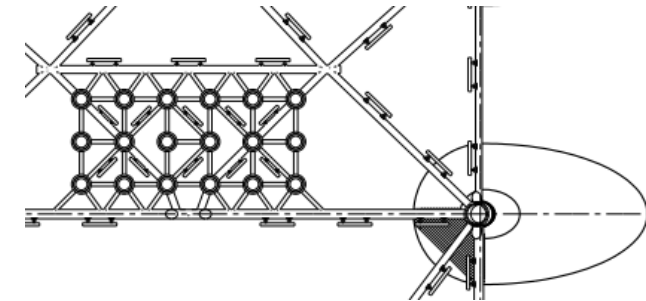
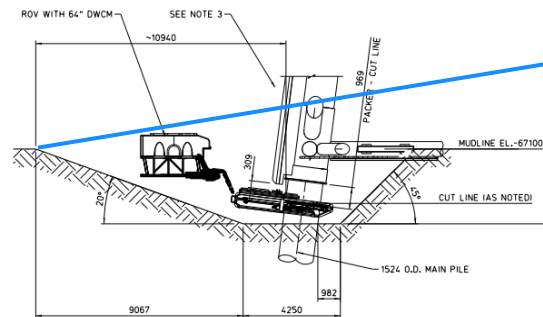
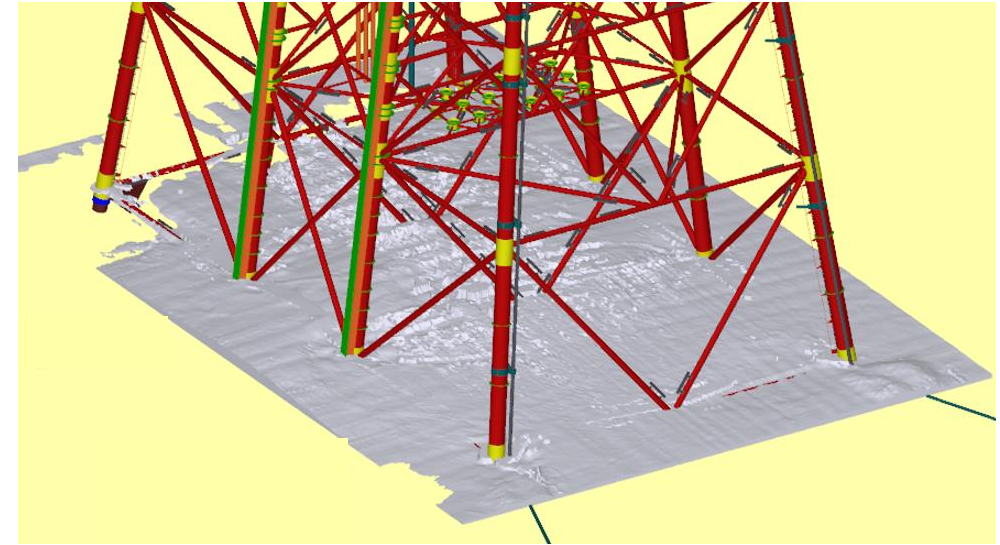
- Borekaks under innretninger og behov for forflytting av kaks
- Karakterisering av kakshaugen og miljøvurderinger
- Forflytting av kaks på Albuskjell 2/4 F
- Forflytting av kaks på Ekofisk 2/4 A
- Planlagt forflytting av kaks på Tor 2/4 E
- Revisjon av M300, anbefalinger for miljøovervåking under fjerningsoperasjoner

# Borekaks under innretninger og behov for forflytting av borekaks



## Krav til fjerning av innretninger

- OSPAR Decision 98/3, fjerning til under havbunn
- Kaks rundt plattformbein må flyttes, og havbunnsedimenter må også forflyttes for å få tilgang til å plassere kutteverktøy
- Kaks som dekker bunnramme og nedre brønnramme må flyttes for å utføre et sikkert løft.
- Innvending kutting av pæler kan redusere omfanget noe (om mulig)
- Sugemudring primært brukt som metode, samt grabb



# Karakterisering av kakshauger og miljøvurderinger



## Volum og areal

- Multibeam Echo Sounder (MBE)
  - Gjennomsnittlig havbunnivå
  - Plan relatert til bunnramme

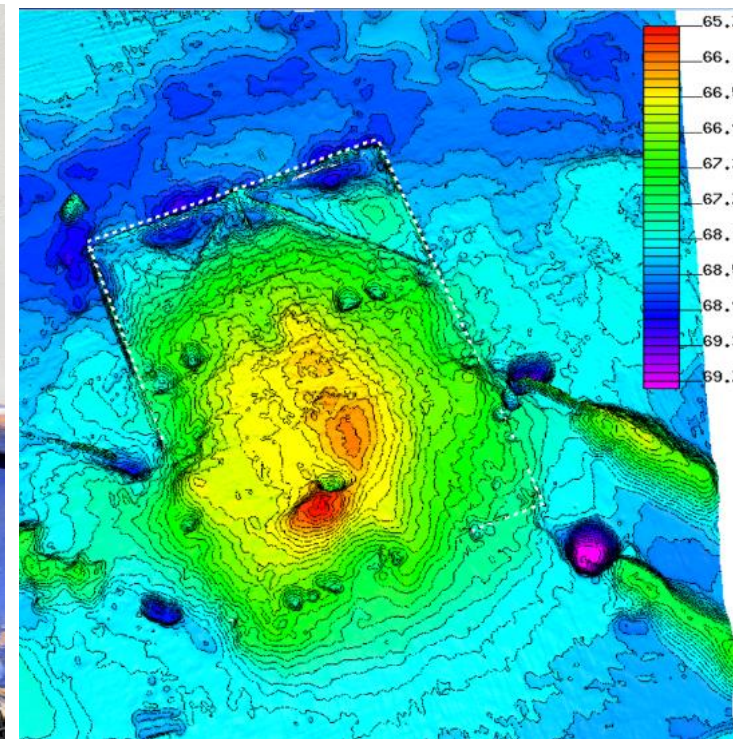
## Kjemiske/fysiske egenskaper

- Offshore Norge - Guidance for drill cuttings pile sampling
  - Gravity corer
  - ROV kjerneprøvetaker
  - Parametere basert på utslippshistorikk og erfaring.
  - Visuell beskrivelse

## Prøvetaking i planlagt deponeringsområde



Kjerneprøvetakere  
Foto: DNV



MBE - eksempel



# Albuskjell 2/4 F (2010)

Forurensingsgrad – Lav (for Ekofiskområdet)

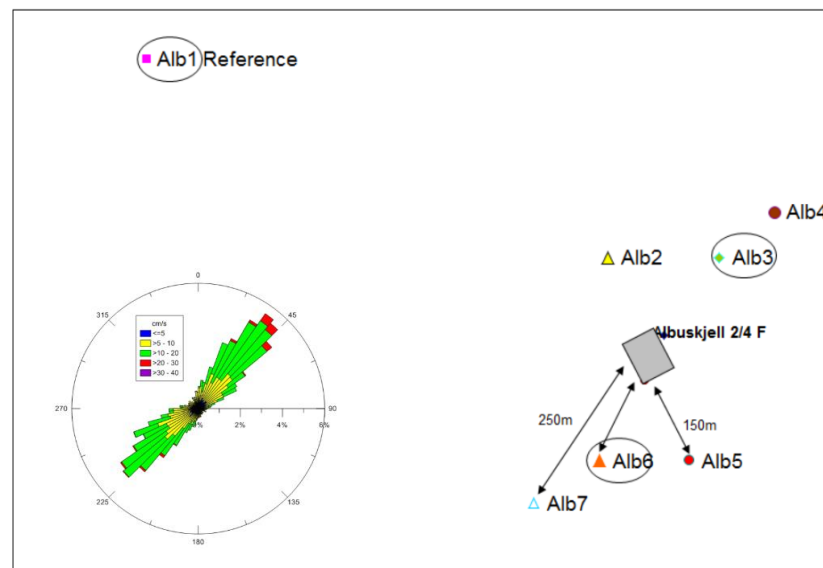
Mudringsmengde/periode

Overvåkingsprogram (DNV/NIVA)

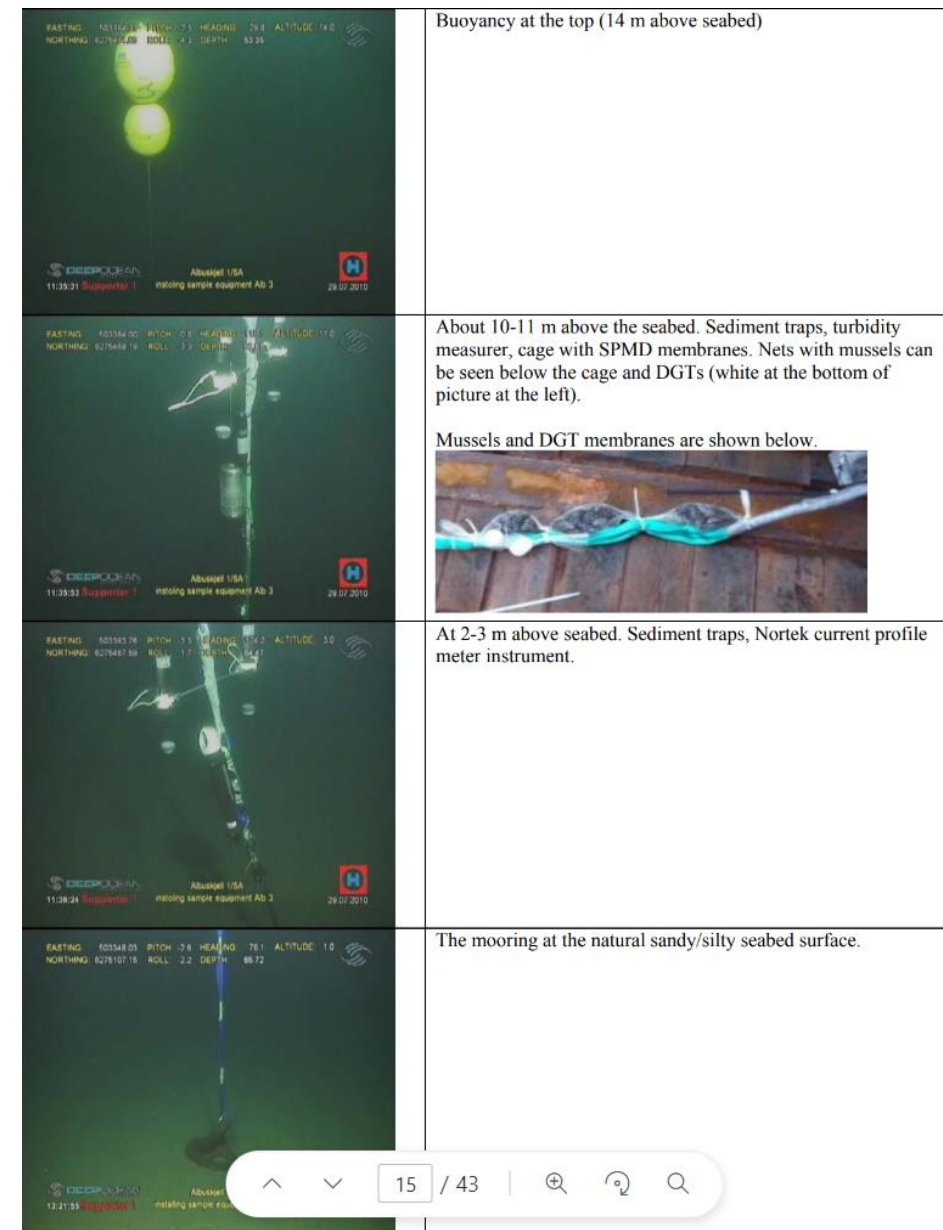
Overvåkingsparametere:

- Lagdeling (CTD)
- Visuelt med ROV
- MBE Plattform/nærområde

- Strømmålinger
- Turbiditet
- Sedimentfeller
- SPMD
- DGT
- Blåskjell
- Konklusjoner
  - Løste forbindelser
  - Spredning av partikler



Overvåkingsstasjoner, strømretning



Overvåkingsrigger (Foto: DNV)

# Ekofisk 2/4 A (2018)



Forurensingsgrad – Høy (for Ekofiskområdet)

Mudringsmengde/periode

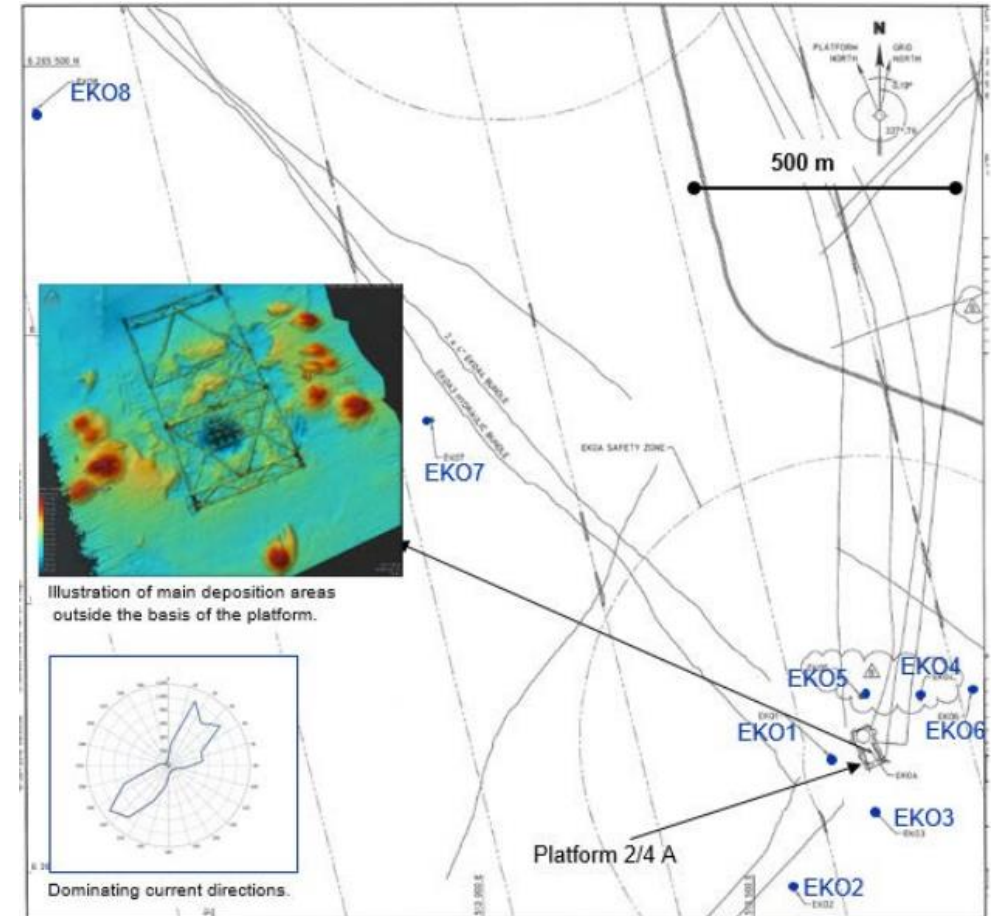
Overvåkingsprogram (DNV/NIVA)

Parametere:

- Lagdeling (CTD)
- Visuelt med ROV
- MBE (plattform og nærområde)

- Strømmålinger
- Turbiditet
- Sediment feller
- SPMD
- DGT

- Konklusjoner
  - Løste forbindelser
  - Spredning av partikler



# Tor 2/4 E



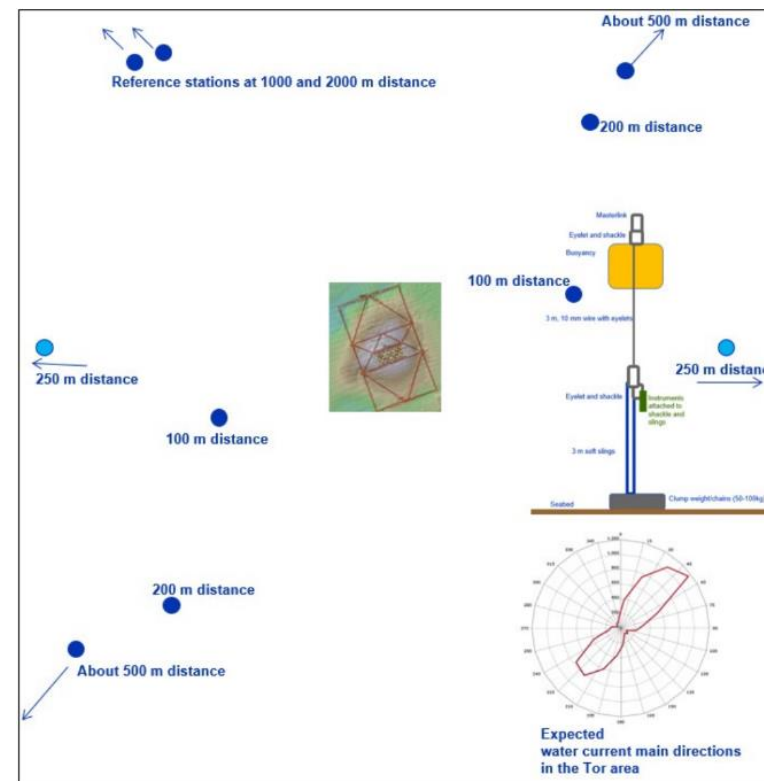
Forurensingsgrad – Middels (For Ekofiskområdet)

Mudringsmengde/periode

Overvåkingsprogram

Parametere:

- Lagdeling (CDT)
- Visuelt med ROV
- MBE (deponiområde)
- Strømmålinger
- Turbiditet
- Sedimentfeller



Overvåkingsprogram, skisse Tor 2/4E



# Sammendrag og anbefalinger



Effekter fra løste stoffer

Effekter av spredning av fast stoff

Revisjon av M300 på høring og foreslått krav til overvåking under fjerning

- Saker med forflytting av borekaks
- Boligplattformer og andre installasjoner med lav forurensingsgrad
- Forslag til endret formulering fra Offshore Norge sendt Miljødirektoratet:

*"Det skal gjennomføres undersøkelser før og etter avslutningsaktiviteter i et omfang som vil variere fra felt til felt".*

# Acknowledgments PL 018 Partners



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