



WELL EXPERTISE

Well Expertise-Rig intake report

Joint rig intake report


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JOINT RIG INTAKE REPORT

OSE-DNO-D-RA-0012 RIG INTAKE REPORT

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Osellar Decommissioning Project

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1 Introduction

DNO, Wellesley and INEOS have agreed to perform a joint rig intake of Borgland Dolphin to cover their 2021 well operations. Operations include permanent plugging and abandonment of three wells at Oselvar and drilling one exploration well, Gomez for DNO, drilling one exploration well, Fat Canyon for INEOS and drilling one exploration well, Hemispheres for Wellesley.

Each company will sign off the rig intake report on the appropriate template and add company and site-specific requirements.

The Rig Intake Team (RIT) has coordinated the verification activities. Technical and HSE personnel have been involved in executing the scope of work. Some involved personnel are external subject matter experts and others are members of the respective well delivery teams, in that way ensuring detailed well knowledge has been considered and incorporated in the rig intake activities.

Wellesley conducted a rig intake of Borgland Dolphin in August 2020 for the Schweinsteiger well, which is the foundation for this shared rig intake.

The Rig Intake is based on governing documents listed under chapter [1.4](#) and has been expanded to cover Norwegian MODU regulations.

Actions have been and will continue to be followed up in the “*Rig Intake Follow Up Register*” ([Appendix A](#)).

1.1 Purpose

This report summarizes the rig intake work and verifications carried out by DNO, Wellesley and INEOS to ensure the contracted rig, Borgland Dolphin can fulfil selected requirements for the Acceptance and Commencement of MODU's for operations on the Norwegian Continental Shelf and for the planned operations.

1.2 Scope

As part of the joint rig intake plan, DNO, INEOS and Wellesley have committed to conduct HSE and technical rig verifications, including IT and communication solutions.

A detailed description of the Rig Intake scope can be found in chapter [4.3](#).

This report summarizes the activities and findings of the joint rig intake process. The final evaluation and decision for acceptance of the rig to commence well activities for DNO lies with

the Drilling and Wells Manager. The acceptance is based on a risk-based readiness verification detailed in chapter 7.

1.3 Abbreviations and Definitions

The following abbreviations and definitions are used in this document:

Abbreviations/Definitions	Term
AfC	Application for Consent
AIS	Automatic Identification System
AoC	Acknowledgement of Compliance
ARPA	Automatic Radar Plotting Aid
BAT	Best available technology
BEP	Best Environmental Practices
BOP	Blowout Preventer
BSR	Blind Shear Ram
CM	Corrective Maintenance
CPA	Closest Point of Approach
CWO	Corrective Word Orders
DDM	Top Drive
DDAS	Dolphin Drilling AS
DDMS	Dolphin Drilling Management System
DSHA	Defined Situation of Hazard and Accident
DOP	Detailed Operational Procedure
DP	Drill Pipe
DROPS	Dropped Objects
DSV	Drilling Supervisor
EPA	Emergency Preparedness Analysis
ESD	Emergency Shutdown
EX	Explosive Proof
G-OMO	Guidelines for Offshore Marine Operation
HAZID	Hazard Identification
HAV	Hand Arm Vibration
HSE	Health, Safety and Environment
HSEQ	Health, Safety, Environment and Quality
HWDP	Heavyweight Drill Pipe
IFS	Name of Maintenance System
IMO	International Marine Organisation
ISM	International Safety Management
KPI	Key Performance Indicators
LARS	Launch And Recovery System
LED	Light-emitting diodes
LOPC	Loss of Primary Containment
LPR	Lower Pipe Ram

Abbreviations/Definitions	Term
LTE	Long-Term Evolution (Wireless Broadband)
LWD/MWD	Logging/Measuring while Drilling
MAH	Major Accident Hazard
Mbps	Megabit per second
MODU	Mobile Offshore Drilling Unit
MoM	Minutes of Meeting
MOU	Mobile Offshore Unit
MSC	Marine Surveillance Centre
MWM	Maritime Waste Management
NCS	Norwegian Continental Shelf
NDT	Non-Destructive Testing
NMD	Norwegian Maritime Directorate
Non-Conformity (NC)	A non-conformity is an inconsistency between actual conditions and specified requirements e.g., in form of legislation, contracts or conditions specified in Dolphins Management System. Any Non-conformity found during the verification requires written corrective actions from Dolphin.
NOROG	Norwegian Oil and Gas Association
NORSOK	Norsk Søkkel Konkurranseseposisjon
NPT	Non-Productive Time
Observation (O)	An observation is not a non-conformance, but something that could lead to a non-conformance, if allowed to continue uncorrected; or an existing condition without adequate supporting evidence to verify that it constitutes a non-conformance. Observations found during the verification require written comments from Dolphin with actions taken.
OEM	Original Equipment Manufacturer
OFFB	Operatørenes forening for beredskap
OIM	Offshore Installation Manager
ORA	Operational Risk Assessment
OSD	Oil Spill Detection Radar
PM	Planned Maintenance
PO	Purchase Order
POB	Personnel on board
PL	Production Licence
PPE	Personal Protective Equipment
ProArc	Document Management Software
PSA	Petroleum Safety Authority (Petroleumstilsynet)
PSW	Petroleum Support West
QRA	Quantitative Risk Analysis
RIT	Rig Intake Team
ROV	Remotely Operated Vehicle
RUG	Risk exposed groups (Risikoutsatte grupper)
SAP	Maintenance System

Abbreviations/Definitions	Term
SBV	Stand-by Vessel
SDS	Safety Data Sheet
SCE	Safety Critical Element
SECE	Safety and Environmental Critical Element
SJA	Safe Job Analysis
SSL	Stability Section Lead
STOP	Standard Operational Procedure
Synergi	Reporting System
Sypol	Chemical database
TaTo	Time-out for Safety
TBT	Toolbox talk
TCPA	Time to Closest Point of Approach
TD	Maximum drilling depth
VSAT	Very Small Aperture Terminal
WBM	Water based mud
WE	Well Expertise
WEAC	Working Environment Area Chart
WO	Work Order
WP	Work Permit
QRA	Quantitative Risk Assessment

1.4 Regulatory Basis and Requirements for the Rig Intake

Borgland Dolphin has Bermuda flag state and has obtained the required marine certificates from the NMD and a drill-class notification from DNV. The rig has been evaluated and checked towards relevant requirement included in the sub chapters below.

1.4.1 Regulations and Standards

- The PSA regulations
- The NMD regulations (“the red book”)
- Relevant DNV Standards
- Relevant NORSOK standards
- API standards
- G-OMO (Guidelines for Offshore Marine Operation)
- Norwegian Oil and Gas Association (NOROG) Guidelines

1.4.2 DNO Norge AS

- DNO BMS Process Rig Intake
- DNO-NS-D-KA-20 Rig Intake
- OSE-DNO-D-TA-0001 Joint Rig Intake Plan

1.4.3 Wellesley

- WE-M-PDP-P-03 How WE Manage Rig Intake

1.4.4 INEOS

- Doc. No. 63197 Rig Intake procedure

1.4.5 Dolphin Drilling AS:

- Relevant procedures from DDMS

2 Summary

Borgland Dolphin is an Enhanced Aker H-3, 4th generation, semi-submersible drilling unit with a 5th generation Drilling Package, capable of operating in harsh environments and water depths up to approximately 500 meters and has a max. POB of 100. The unit was built in 1977 as a flotel, vent through a major upgrade and was converted to a MODU in 1998/99. Borgland Dolphin operates under the flag of Bermuda from 21.08.20. An Acknowledgement of Compliance (AoC) certificate was issued by the Petroleum Safety Authorities (PSA), 30th September 2004.

The rig intake process has focused on Wellesley's rig intake performed for Schweinsteiger in addition to risk based and projects specific scope.

The main impressions/ findings from the rig intake are summarized below:

- There has been an open and good communication throughout the rig intake process. Documents have been sent on request without delay.
- Dolphin has good systems and practices regarding health, hygiene, medical emergency preparedness, and Covid-19 preventive measures.
- Still some corrective and planned maintenance work orders outstanding, however there are no safety critical elements overdue.
- According to Dolphins internal procedures a DROPS inspection shall be done every 6 months. A third part company carried out a DROPS inspection in August 2020, a total of 18 findings were identified and are now closed.
- A GAP-analysis and review process ref./1/ has been performed based on DNO's Company Management System and a complete list of DDAS procedures. No "Major Gaps" were identified during the review process that required an application for exemption. Minor gaps are bridged in the operational Interface document, ref./2/
- A Rig Inspection ref./3/ was carried out before spud and the impression was that Borgland Dolphin have a high focus on HSE, and the rig is run professionally by very competent crews. The verification team identified 13 findings, all observations. One finding is still open. The open finding is related to staircase on the wireline deck and is not critical for the Oselvar operation.
- A Tight rig verification was carried out before the rig left the yard and the rig appears ready for operations as no critical barriers were identified. 15 observations were presented and discussed in the closure meeting. No non-conformances were identified. The observations

were related to labelling, chemicals, focus on procedures, SOPEP equipment and bundling. Some focus must be given to operational specific environmental aspects and impacts. Substitution of chemicals should also be in focus for the operations in 2021. More detailed environmental requirements will be specified in the operational bridging document.

- Emergency preparedness: In general Dolphin have proved through both documentation and verification that their emergency response organisations and security measures are robust and found to be satisfying. In addition, DNO have the impression that Dolphin organisation emphasis learning between the different rigs.
- DNO has reviewed the ten (10) long term AoC exemptions, ref./4/ listed for Borgland Dolphin with respect to the planned well operation in accordance with the Norwegian Oil and Gas Association Handbook for AoC update. The non-conformances with compensating measures were reviewed and found acceptable for the Oselvar operation.
- 3rd party verifications were performed according to scope listed under [4.3.3](#). In total 91 findings were identified, and current status is that 6 findings are still open. None of these open findings are considered critical for the planned operations.
- Prior to accepting the rig on contract, DNO performed a readiness risk assessment, ref./5/.

Based on completion of the scope of work specified in the rig intake plan and the operational readiness review, it is the RIT's recommendation that Borgland Dolphin is qualified to operate for DNO on their Oselvar PP&A operation and Gomez Exploration well.

The recommendation is based on familiarization with Dolphin's Management system, history of audits and verifications including the Wellesley Rig Intake, structure of on- and offshore organization as well as the emergency response organization, the rig's technical condition, evaluation of maintenance systems, operational requirements and conditions. The details regarding the verifications are described in chapter 5 and 6, and the status of the findings is summarized in "*The Rig Intake Follow Up Register*" ([Appendix A](#)).

After the rig was finished with the Schweinsteiger well, it was moved and anchored up in Fedafjorden while waiting the Oselvar PP&A Operation and will remain there until planned departure on 21st March.

The remaining actions from the Rig Intake process will continue to be followed up through the "*Rig Intake Follow Up Register*" ([Appendix A](#)) in the Bi-weekly meetings with Dolphin.

3 Drilling Rig

The PP&A and exploration drilling operations will be conducted using the semi-submersible drilling unit Borgland Dolphin operated by DDAS, see Figure 3-1.

Borgland Dolphin is an enhanced Aker H-3 design, 4th generation semi-submersible drilling unit with a 5th generation drilling package. The unit was built in Norway in 1977 as a flotel, had a major upgrade and converted a MODU in 1998/99, and operates under the flag of Bermuda (as of 21.08.20).

The rig will be moored at the well location.



Figure 3-1: Borgland Dolphin

3.1 Rig Details

Rig Type	Column stabilised, semi-submersible	
	Enhanced Aker H-3 - 4 th generation Spec w/5 th generation Drilling Package	
	Anchored at location	
Ownership	Operated by: Dolphin Drilling AS	
	Owned by: Dolphin Drilling AS	
Classification	1A1 Column Stabilised Drilling Unit.	
Lifeboats	2 freefall lifeboats aft of accommodation (capacity 2x52)	
	2 freefall lifeboats forward in front of mud room (capacity 2x52)	
Mob boats	1 mob boat starboard	
	1 mob boat port side	
	Starboard crane is the designated crane for launching and recover either mob boat	
Life rafts	The rig is equipped with 5x Viking 25DKF+ life rafts each at the forward and aft ends. Each life raft has 20-person capacity	
Helicopter	Approved for S92 (11.9t) and EC225 (11t)	
Crane range	Port crane: 45T/R10000 indicates that the crane can lift 45 Tonnes at 10 meters with a significant wave height at 0.5 meters	
	Starboard Crane: 70 T/R15000 indicates that the crane can lift 70 Tonnes at a distance of 15 meters with a significant wave height at 0.5 meters	
Registration	Name	Borgland Dolphin
	Flag State	Bermuda (21.08.20)
	Hailing Port/ Port of Registry	Bermuda (21.08.20)
	Gross Tonnage	17111
	Net Tonnage	5133
	Call Sign	ZCEY9
	MMSI Number	310802000
	IMO Number	8758469
Environmental Criteria	DNV ID Number	10222
	Wind speed (max. 1 hour mean):	41.3 m/s at 10m above sea.
	Current by tide	0.8 m/s
	Operating water depth	70m – 450m
	Maximum drilling depth (TD)	8500m
	Water Temperature	0°C - 32°C
Survival conditions	Design Temperature	0°C - 32°C
	Wave height (max.)	30 metres
	100-year return period (Hmax)	31 metres
	Wave period (zero)	11-15 seconds
Airgap	Positive airgap with 2,5 m to main deck	
Dimensions	POB	100
	Total length overall	108.2m
	Total breadth overall	67.36m
	Total breadth including bolster & anchor	77.36 m
	Main deck elevation	36.58m
	Top of helideck	48.17 m
	Air gap while drilling	15.24 m
	Setback (air gap)	9.24m
	Large column top elevation	39.62 m
	Pontoon width with sponson	14.94m
	Pontoon height	6.71m
	Small column diameter	5.79m
	Large column diameter	7.9m

4 Rig Intake Process

4.1 General

The rig intake is a joint project between DNO, INEOS and Wellesley. Wellesley used Borgland Dolphin on their last exploration well Schweinsteiger, and a rig intake was performed prior to this well.

This joint rig intake is based on Wellesley's rig intake performed for Schweinsteiger in addition to risk based and project specific scope.

The scope is covered in the “*Joint rig intake plan*” (ref./6/) and main topics are listed in [Chapter 4.3](#).

4.2 Rig Intake Organisations

The joint rig intake has been performed by a rig intake team, ref. Figure 4-1, Figure 4-2 and Figure 4-3, consisting of members from the DNO, INEOS and Wellesley's well delivery organisations coordinated by the Rig Intake Lead.

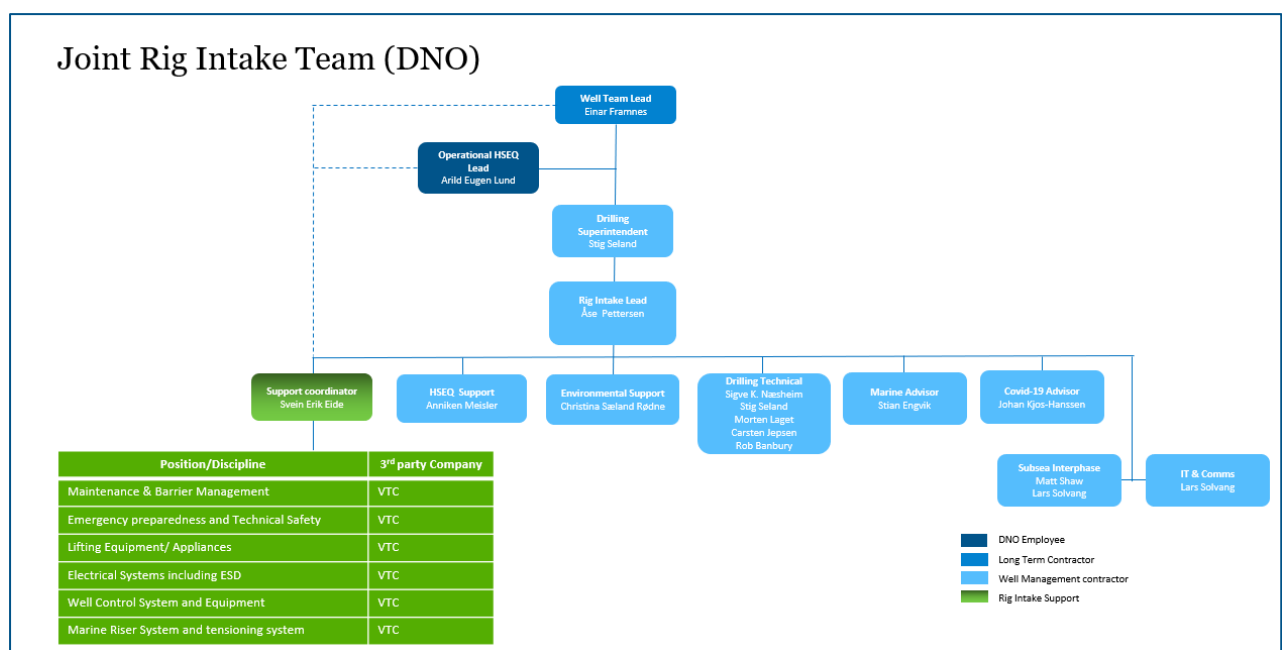


Figure 4-1 DNO Rig Intake Team

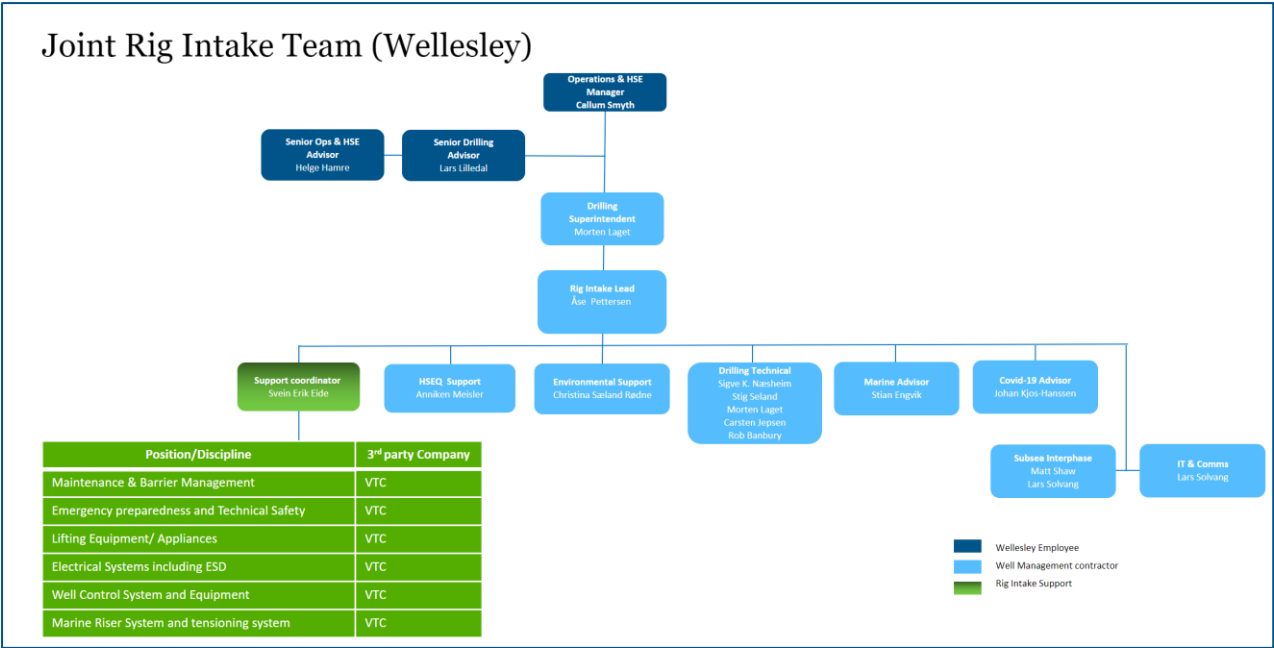


Figure 4-2 Wellesley Rig Intake Team

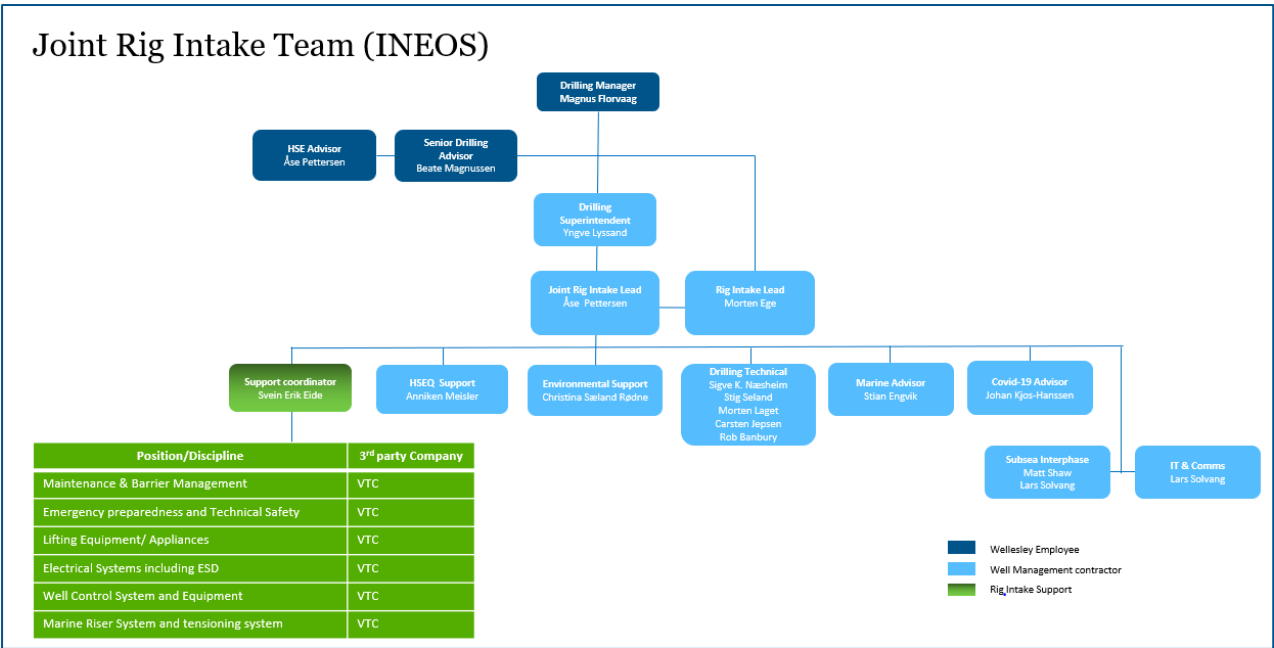


Figure 4-3 INEOS Rig Intake Team

4.3 Verification and Inspection Activities

4.3.1 Risk Based and Project Specific Scope

In order to establish focus areas and selected verification activities, a workshop was held for a systematic review of relevant risks related to the planned operations with Borgland Dolphin. The basis for the risk-based workshop was the following:

- PSA Audit Reports
- Previous experience with Borgland Dolphin
- Findings from previous rig intakes of Borgland Dolphin
- Regulations and standards
- Operator specific requirements
- DDAS Procedures

Specific focus areas where risks were identified during the workshop, included:

- Manning and competence
- Management system
- Lifting equipment, lifting operations and DROPS
- Subsea & completion interphases
- Drilling and Well Control
- Maintenance system
- Technical safety
- Barrier management
- Evacuation means, training and documentation
- Station keeping
- Electro systems, incl. ESD
- Marine riser and tensioning system
- Emergency preparedness/ response
- Work Environment
- Status of previous findings from earlier verifications
- AoC and Class exemptions and measures
- Communication, external, internal

4.3.2 Rig Intake Plan

A “*Joint rig Intake Plan*” (ref./6/) was established to describe planned verifications, inspections and associated process.

4.3.3 3rd Party Verifications

VTC was contracted to perform inspection on Borgland Dolphin with the following scope:

- Electro Instrument and Safety Systems/Technical Safety and ESD for critical scenarios
- Emergency Preparedness and Security

- Notified PSA audit – Emergency Preparedness
- Marine Riser
- Well Control
- Maintenance
- Lifting
- Work Environment
- Operational Readiness Review

Allum performed a verification with regards to Structural Integrity.

4.3.4 DNO Company Doctor

DNO Company doctor performed a Health, Hygiene and Covid 19 rig verification 16th of December 2020.

4.3.5 Verification Reports

The following reports have been issued through the rig intake process:

- SCHW-WLSLY-D-RA-0610 *Dolphin verification meetings report*, ref./7/
- SCHW-WLSLY-D-RA-0611 *Borgland rig visit/verification report*, ref./8/
- OSE-DNO-S-RA-0014 *Borgland Dolphin AoC Exemption Review*, ref./4/
- OSE-DNO-S-RA-0018 *GAP Analysis between DNO and Dolphin Drilling HSE Management Systems*, ref./1/
- SCHW-WLSLY-Q-CA-0606 *GAP Analysis between Wellesley Petroleum and Dolphin Drilling HSE Management Systems*, ref./9/
- OSE-DNO-D-RA-0014 *Rig Inspection Report*, ref./3/
- OSE-DNO-S-RA-0019 *Health, Hygiene and Covid 19 Rig verification*, ref./10/
- OSE-DNO-S- RA-0016 *Review of Rig Owner's Risk and Emergency Preparedness Analysis*, ref./11/
- OSE-DNO-D-TA-0002 *PSW Capping Stack Interface Document*, ref./12/
- MoM - Competence Review 19.03.2021, ref./13/
- Marine report, 14.06.2020, ref./14/
- MWM Waste Management visit 23.06.20, ref./15/
- VTC Work Environment Audit, ref. /16/
- OSE-DNO-S-RA-0031 *Tight rig verification*, ref./17/

Summary and findings from these activities are documented in the rig intake report and the “Rig Intake Follow Up Register” ([Appendix A](#)). VTC Findings are logged in a separate [Action register](#) on the DNO Sharepoint.

4.4 Review of Prior Audits, Verifications and Inspections

The RIT have reviewed the history of relevant technical and HSE audits and verifications carried out by PSA, Shell, and internal audits carried out by Dolphin as part of the Schweinsteiger rig intake performed in 2020.

4.5 Follow-Up of Findings

Progress on the rig intake has been reported in weekly Rig Intake status meetings. Present in the meetings have been representatives from DNO, Dolphin, Wellesley, INEOS and VTC.

An operational readiness review was performed on the rig 15-18 March. The review consisted of VTC physically verifying the findings that was reported closed by Dolphin.

A risk assessment meeting was held 17th of March to review the risk of the remaining findings. Six open findings were reviewed in this meeting and they were considered acceptable for the Oselvar operation.

Remaining findings will be followed up continuously by the DNO drilling Supervisors and in bi-weekly meetings with DDAS.

5 Health Safety and Environment

5.1 HSE Management

Management of HSE has been addressed through reviewing the history of audits/verification reports as described above, review of steering documentation from the Dolphin/Borgland management system and verification meetings with the Borgland onshore and offshore organisation. A gap analysis between *DNO/Wellesley and Dolphin HSE Management* (ref./1/ and ref./9/) has been carried out, no major gaps identified.

5.1.1 Quality Management System

MA-0028 HSE & QA MANUAL (ref./18/) describes the management system utilised by Dolphin Drilling AS (DDAS) for the provision of services to satisfy drilling industry requirements, on the Norwegian Continental Shelf (NCS). The manual is supplemented by Dolphin Drilling Requirement Documents, which provide support as detailed back up information. The content of the manual is valid on all DDAS worksites, both onshore and offshore. The manual has been prepared to comply with Petroleum Regulations, ISO 9001:20; ISO 14001:2015 and the International Safety Management (ISM) Code as far as the requirements affect Dolphin Drilling activities. A ISO 9001:2015 is available and therefore the manual should be updated. DDAS Company Management System (DDMS) is divided in 4 levels (Figure 5-1):

- Level 1: Mission, Vision, Core Values and Policies What DDAS does now, what DDAS aspires to be, and the culture, beliefs and principles that support the Mission and Vision, as defined by the Core Values and Policies.
- Level 2: Requirement documents, manuals and Management Control Procedures are relevant for the overall operation of Dolphin Drilling. Requirement documents give a detailed description on how work processes are to be performed, who participates and personnel responsible for complying with Level 1 requirement documents.
- Level 3: STOPs are specific to a MOU or an activity onshore/offshore. Employees in Dolphin are responsible for ensuring they review any updated/new or revised documents relevant to their remit which are published in DDMS.
- Level 4: Forms and flowcharts which normally are attachments to the procedures.

Level 1	Level 2	Level 3	Level 4
Mission, Vision, Core Values and Policies	Requirements Manuals and Procedures (MCP's)	Work instructions and guidelines/ STOP's	Forms and Flowcharts

Figure 5-1 Company Management System Levels

In addition to the hierarchical structure, the documents in the DDMS are grouped in a regional and local structure.

ProArc is used for storage and control of documents in the company, it is used for all Dolphin Drillings activities globally. All personnel are trained in our DDMS by web-based E-learning.

5.1.2 HSEQ Program

DDAS PR-900-0029 HSEQ Program for 2021 (ref. Figure 5-2) is worked out on the basis of:

- Status of HSEQ objectives for 2019-2021
- Identified risks.
- Master's and Management Review.
- Feedback from clients.
- Results of audits (internal and external).
- Authority focal areas.
- Industry body guidelines.

The HSEQ program for the MODU section defines the 2021 objectives and associated KPIs.

Figure 5-2: HSEQ Program 2020- 2021

The Program includes an action plan, which is available in QlikView and followed up in SharePoint (the HSEQ activity plan is evaluated continuously, and changes may occur).

5.2 Risk Management

DDAS Risk Management Manual describes how DDAS perform risk management. The Risk Management manual is developed in accordance with ISO 31000 – Risk Management.

A review of the QRA (ref. /11/) was carried out as part of the rig intake. The QRA (ref. /19/ was last updated in 2011. A gap assessment (ref. /20/ was prepared by DNV in 2016, due to rig move to UK sector. The aim of the following gap assessment was to provide an overview of how the changes to POB and shift rotation influences the existing PLL and FAR values. The QRA is currently under update and new revision will be issued in March 2021. Assumptions

and risk reducing measures related to the DSHA's are reviewed in the "*Site-Specific Risk Assessment for Oselvar*", ref./21/. The analysis concluded that the risk associated with the operation at Oselvar is below DNO's risk acceptance criteria for loss of main safety functions and personnel risk for all accident scenarios.

Tools for use in daily assessment of risk during operations:

- Operational Risk Assessment (ORA), PR-900-0034, ref./22/.
- Safe Job Analysis, PR-900-0045, ref./23/.
- TaTo Risk Assessment & Conversation, PR-900-0048, ref./24/.

Operational Risk Assessment (ORA)

Used to Manage risk that may compromise Safety, typically from;

- SECE impairment against Performance Standard
- Deviation from Procedure or Operating Parameters
- Deferred Maintenance
- Aimed at effective management of MAH barriers

Safe Job Analysis (SJA)

- An SJA is a systematic, step-by-step review of the potential risk ahead of a work activity or operation. It is carried out to identify and eliminate identified risks or to control these.
- The procedures explain the step-by step method.
- The SJA is used to risk assess scope of the STOPs

TaTo Risk assessment & Conversation

- The purpose is to ensure that risk assessment is part of the planning and execution of all tasks
- To provide an aid and means of documentation for the Toolbox Talk (TBT)/pre-job meeting
- TaTo Risk Assessments shall be performed and recorded for all tasks
- TaTo Risk Conversations shall be performed and recorded by Department Heads daily

5.3 Barrier Management

Dolphin's procedure "*Barrier Management*" (ref./25/) describes how barriers against major accident hazard shall be established, maintained, and controlled (process shown in Figure 5-3). The BowTie methodology is used to identify necessary Barriers to counteract the identified hazards. Identified barriers are composed of Technical, Human and Organizational Barriers.

The identified barriers are then grouped into logical functional sets which become Performance Standards. Due to the commonality in operational scenarios that DDAS MOUs are exposed to and DDAS' experience in such matters, a common set of Performance Standards has been developed to harmonize Barrier Management across the fleet and throughout the onshore organization.

Key Performance Indicators (KPIs) are used to monitor the general operational status of the respective barrier elements and degraded barriers are subject to the Operational Risk Assessment (ORA) process.

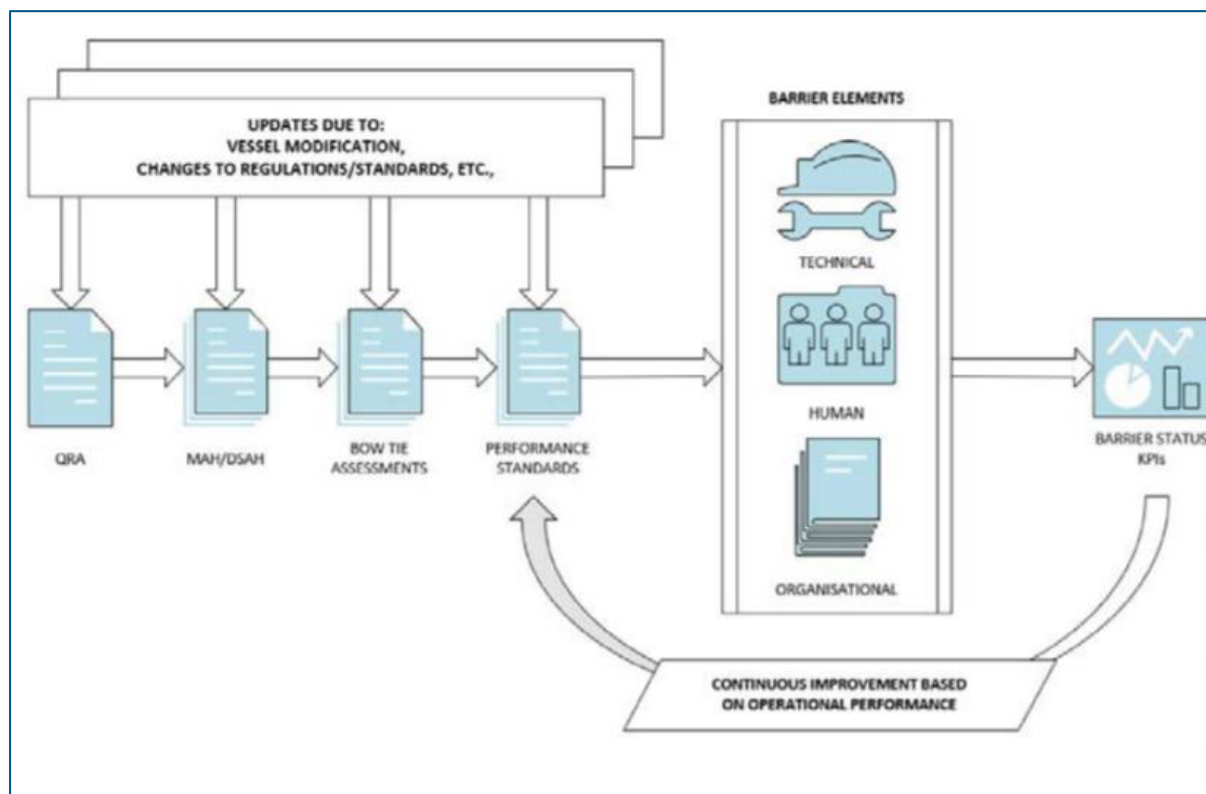


Figure 5-3 - General Overview of Barrier Process

5.4 Work Permit System

DDAS' procedure: "Work Permit" (ref./26/), states that the OIM and Department heads shall participate as a minimum. Planned work for next 24 hours are reviewed by rig the OIM and Department Managers, tasks separated into night/day shift. The WP system is paper based. WP are monitored at a daily basis by the OIM, Safety Officer and Department Managers. Checks are primarily conducted as random inspections focusing on assurance of that the conditions, the equipment and barriers specified on the WP form. An 'on the job' monitoring form is printed on the back of the last page of the WP. This is used to record the inspection. There shall be performed documented control of at least 20 % of all hot permits, cold permits, and entry permits. Post-check of WPs shall also be performed for at least 10 % of the total amount.

5.5 Reporting System

Observation Card System is described in the procedure: “*Observation Card System*”, ref./27/. Dolphin is using a paper-based reporting system. The Safety Officer is responsible for the collection and input of Observation Card information into the Electronic Reporting System; Synergi.

Synergi has launched the Synergi Life Mobile App that makes it possible for personnel to write observation cards with their own mobiles in the accommodation or EX safe tablets placed in the coffee shops, etc. Dolphin are considering using Synergi version 16 that allows the app to be used.

The Observation Card has six classifications available for selection:

- Incident
- Near Miss
- Condition
- Observation
- NCR
- HSEQ Recommendation

A definition of the classifications is available in the procedure; “*Incident Reporting*”, ref./28/.

DDAS procedure: “*Registration and handling of reports in Synergi – Borgland Dolphin*” (ref./29/) describes how the observation cards (Figure 5-4) are handled on the rig. The Observation card system will enable personnel to communicate (anonymously if desired) and safety and environmental improvements, or potentially unsafe acts and conditions.






Observation Cards will be reviewed daily by the OIM, Drilling Supervisor, Safety Delegate and Safety Officer. Where applicable, Observation Cards shall be read out daily at offshore pre-tour meetings to relay information to the crew in a timely manner.

The Safety Officer will distribute the daily observation card report to the DNO distribution list every evening so that they can be reviewed in the well operations morning meeting. Open actions will be reviewed in a weekly meeting offshore where the drilling supervisor also attends.

During the rig inspection, the safety delegate for Sodexo informed that feedback on a HSEQ recommendation was lacking. A HSEQ recommendation regarding a shelf in the laundry was filled out in June 2020 but no feedback has been received. The procedure: “*Observation Card System*” says that feedback of action status shall be given to the person that has prepared the OBS card. The finding has been closed and it has been agreed that the Camp Boss will bring list of relevant synergies into quality meetings to assure feedback can be given in all relevant cases. In addition, the safety officer has started posting daily synergy list in Living Quarter.

Case no.	Location	Date	Title
#1008144	Borgland Dolphin	27.12.2003	450-03-811 (AsC - Long) The ventilation outlets from engine room ends in hazardous area.
#1008178	Borgland Dolphin	27.12.2003	450-03-818 (AsC - Long) Some fixed means of access, ladders and stairs outside the accommodation are below requirements with regards to height, width or inclination.
#1008179	Borgland Dolphin	27.12.2003	450-03-819 (AsC - Long) Some doors, corridors, and passages are below requirements with regards to height, width or inclination.
#1008181	Borgland Dolphin	27.12.2003	450-03-821 (AsC - Long) Clearance above manhole on top of mud pits (for access to pump room) is partly obstructed by pipe crossing.
#1008184	Borgland Dolphin	27.12.2003	450-03-825 (AsC - Long) The unit is considered unfit for use in areas with environmental temperature below -10°C.
#1008188	Borgland Dolphin	27.12.2003	450-03-831 (AsC - Long) Emergency generator is located below the reserve buoyancy line (most unfavourable damage condition).
#1008190	Borgland Dolphin	27.12.2003	450-03-835 (AsC - Long) Capacity of starting air accumulators.
#1073303	Borgland Dolphin	03.12.2010	450-10-7336 (AsC - long) Dynamic brake function
#1113273	Borgland Dolphin	11.12.2012	450-12-8928 (AsC - long) Full-scale Emergency Release test to anchor winch not performed
#1381079	Borgland Dolphin	09.06.2020	(AsC Long term) Equipment in Central Control Room (CCR) are not in Ex-design – no explosion protection.

Table 5-2 Internal No-conformances

Nr.	Risiko	Dato	Saksbeh.enhet/person	Driftssted	Status	Sakstype	Tittel
<u>441382352</u>		18.08.2020	Teknisk avdeling (BGL)	Borgland Dolphin	Under behandling	Avvik - Avvik	ORA-BGL-045 Overdue CWO planned for Rev. Feda 1.
<u>441383845</u>		11.10.2020	Teknisk avdeling (BGL) Borgland Technic	Borgland Dolphin	Under behandling	Avvik - Avvik: Annet	ORA-BGL-052 Overdue SECE maintenance during this yard stay
<u>441385249</u>		21.12.2020	Teknisk avdeling (BGL)	Borgland Dolphin	Godkjent	Avvik - Avvik: Annet	ORA-BGL-053 MX Shunt coils removed
<u>441385250</u>		21.12.2020	Bore avdeling (BGL) Borgland Toolpusher	Borgland Dolphin	Under behandling	Avvik - Avvik	ORA-BGL-049 - Split Buffer Chamber
<u>441386543</u>		19.02.2021	Bore avdeling (BGL) Borgland Toolpusher	Borgland Dolphin	Godkjent	Avvik - Avvik: Annet	ORA-BGL-055 Choke manifold, temporary mod Oselvar.

5.8 Health, Hygiene and Covid-19

DNO Company Doctor carried out a verification of health, hygiene and Covid 19 conditions 16th of December 2020 on the rig, ref./10/. Company doctor's overall impression is that the rig has good systems and practices regarding health, hygiene, medical emergency preparedness, and Covid-19 preventive measures. Nine improvements suggestions were listed in the report, four are still open. None of the findings are considered critical ("showstoppers") for the upcoming operations.

5.9 Experience Transfer

Dolphin's procedure: "*Safety Alerts, Product Alerts and Operations notices*" (ref./30/), describes how Alerts and Experience transfers shall be handled in Dolphin Drilling.

All Alerts and Operations Notices shall be sent to Dolphin Safety notice mailbox (Dolphin.Safetynotice@dolphindrilling.no). The mailbox is monitored on regular basis by the HSEQ Department. The Alerts and Notices are then registered in a record held by the HSEQ Department prior to evaluation of relevance.

Thereafter Safety alerts/Product Notices etc. are sent for review as applicable (affected rigs and systems/equipment). All applicable alerts/notices/bulletins are registered with dedicated actions in Synergi for further follow up.

The RIT were told that the software "Rig Manager" will be used to handle equipment alerts in the future.

5.10 Work Environment

VTC carried out a verification of the Working environment 2nd of February 2021, and two non-conformities were identified. One was regarding outdated Safety Data Sheets and one was related to illumination in lay down areas.

Status on current working environment issues on the rig (WEAC/RUG mapping):

- New oil mist and vapour measurements planned after installation of new shakers
- Noise measurements performed 15.04.2020 (Synergi 441381202)
- Noise and vibration measurements of hand-held tools 13.02.2020 (441381205)
- Ergonomic Survey 11.08.2020 (Synergi 441384817)
- Workforce engagement survey 06.05.2020

Main focus areas going forward in 2021:

- WEAC update
- HAV's
- Chemical Risk assessment update
- Finalizing Material handling plan

5.10.1 The Safety Delegate Service

Safety delegates were elected for all departments (Figure 5-5). There were no specific working environment issues that were brought up with the RIT other than that there is high noise from the Soiltech Cutting Blowers. A Risk assessment for the cutting handling will be carried out before the Gomez operation.

Spot checks showed that the safety delegates had basic safety course in HSE, however familiarisation for the safety delegate position was not yet started during the rig inspection. This finding was closed out 12.03.2021.

Soiltech will represent service companies in the Working Environment Committee meetings and will be act as Safety delegates for 3rd party onboard the rig.

Verneombud Borgland Dolphin- Update 15.12.20

	Crew A	Crew B	Crew C	Crew D	Crew E	Crew F
Drilling	Geir Vik	Sigve Jordal	Kjartan Høyby (HVO)	Frank Brøn Nyheim	N/A	N/A
Marine	Jan Birger Hansen	Roger Eskkedal	Klas Even Reitan	Ivar Tønnesen	N/A	N/A
Teknisk	Sjartmar Nordjordet	Fredrik Lind	Kjell Harald Haugen	Leif M. Løugin	N/A	N/A
Forpleining	Miriam Røstland	Andreas Holmes	Anny Elise Hjelte	Kikki Westmann	Kari Martin Engø	Hanne Simas

Figure 5-5 Safety delegates

5.10.2 Personal Protective Equipment

The procedure: “Personlig verneutstyr” (ref./31/), describes requirements for PPE.

The Rig’s PPE storage was checked and found satisfactory. Several green cabinets with PPE available outside Shaker room, Main deck, and Drilling area.

Dolphin uses blue hardhats, safety delegate uses green hardhats, and the lifting personnel yellow hardhats.

Breathing apparatus and PPE are available in relevant areas. DDAS has a glove guide and a poster for respiratory protection guide posted in the mud control room and several other places on the rig.

One escape mask located in the cupboard (figure 5-6) in the shaker operator room did not have BSS approval sticker on and the PPE for working in an environment with fumes, was dirty and should be better maintained (figure 5-7). Both findings were closed 14.03.2021.



Figure 5-6 Escape masks



Figure 5-7 shaker operator room

5.11 Emergency Preparedness

Borgland Dolphin “*Emergency Preparedness Plan (1st-Line)*” (ref./32/) gives a description of Borgland Dolphin preparedness established, including procedures, to handle situations of hazard or accident that may arise on board Borgland Dolphin. The emergency preparedness plan also gives detailed descriptions of responsibilities for the crew on board in the event of defined situations of hazard/accident having arisen. The Action Plans are listed up in “*Action Plans*” (ref./33) and is used as a guideline for the exercises.

Dolphin’s Procedure for “*Crisis & Emergency Management*” (ref./34/) describes the level 2 and 3 organisation and duties for 3 line. Level 2 is outsourced to ResQ with support from Dolphin operations.

Emergency Preparedness Training is governed by “*Safety Drill & Training Procedure*” (ref./35/), based on Borgland Dolphin “*Action Plans*” (ref./36/) and managed through “*Plan for emergency drills and training matrix*” (ref./37/). All Safety drills and trainings are registered in Rig Manager, 3 party personnel are included and registered. Spot checks during the rig Inspection revealed that some trainings have been logged without any input. The rig is aware of this and training will be provided to relevant personnel using Rig manager. According to the Training and Exercise plan in Rig Manager there were no planned H2S training before the Oselvar operation. The RIT have received updated information that two H2S tabletops have been performed, on 05.12.2020 and one 31.01.2021.

The procedure: “*Well Control drills*” (ref./38/) describes requirement for well control drills and is referring to NORSOK D-010.

The drills shall be logged in Daily Drilling Reports, Drill log form FO-1010009 and logged in Rig Manager. All participants will be recorded in Rig Manager.

Dolphin 1st and Wellesley 2nd and 3rd Line Emergency preparedness organization participated in an Emergency Response Tabletop the 12th of August 2020. Training scope for the tabletop were Covid-19 and Ship on collision course. In addition, an exercise for ship on collision course was carried out 9th of September with OFFB as facilitator.

Dolphin 1st and DNO 2nd and 3rd Line Emergency preparedness organization participated in and emergency response exercise 09.03.2021. Scenario for the exercise was well control.

A review of the Emergency preparedness analysis was carried out, ref./11/. The only finding was that the EPA was prepared in 2013 and should be reviewed every 5th year. The EPA is currently on review by a third-party provider.

VTC carried out a verification of Emergency Preparedness 18th of December 2020. Nine non-conformities were identified and three are still open, two are considered as high risk. Both will be closed as part of the update of the EPA and is not considered as critical for the Oselvar operation.

5.12 External Environment

External Environment was part of the onshore rig intake verification. Focus was Dolphin's follow-up and status of incidents related to external environmental, chemical-, waste-, and energy management.

During previous drilling operation of the Schweinsteiger well the rig had zero spills to sea, however, there were 9 incidents related of Loss of Primary Containment (LOPC). One LOPC was due to wrong line-up when back loading WBM to boat. This caused 20 m³ Glydrill mud being contaminated. 20 m³ of mud went into the shaker pits during transfer to boat. The shaker pits overflowed because the butterfly valve to the sand traps were not fully closed and mud went into the drains and further down to the drain tank. The others were minor leaks from hose and flange connections.

5.12.1 Chemical Management

The Procedure for handling chemicals (ref./39/), describes how chemicals are managed on Borgland Dolphin. Sypol is used to register chemicals on Dolphin rigs. All chemicals used on Dolphin installations shall be evaluated regarding health, safety and environment. Such an evaluation is initiated by sending the chemical application form to the occupational hygienist at the HSE department. The DDAS HSE Advisor will carry out a HSE risk assessment based on received information. Chemicals are then classified with respect to health, safety and environment according to a hazard matrix. Chemicals in hazard category 4 and 5 shall undergo a detailed risk assessment prior to approval. The DDAS HSE Advisor will evaluate the need for a detailed risk assessment for chemicals in hazard category prior to purchase. The "*Checklist for installations at sea*" shall be used when working with chemicals.

A substitution list for 2020 has been presented to the RIT. Three chemicals shall be substituted yearly according to internal KPIs in DDAS. The list does not give a clear overview which chemicals that has priority, or which substitutes that are available. No deadlines are set for the substitutions. The RIT has recommended three products to be evaluated for substitution- RE-HEALING RF1%, MS-200 and Cleanrig CHP/CC Turboclean. The recommended substitute RE-HEALING RF1-AG, RX-9022 and Greencare Synergi. Jet-Lube Alco 73+ should continuously be evaluated for substitution as this is a chemical classified as red and is discharged during operation. Chemicals in closed systems, such as Houghto-Safe NL1 and Castrol Hyspin AWH-M-46 should also be evaluated. All chemicals shall be included in the "Borgland miljøregnskap".

Chemicals onboard Borgland are registered in Sypol and cannot be purchased in SAP without approval in Sypol. Relevant personnel knew how to use Sypol. Borgland is in the transition on replacing hard copy safety data sheets (SDS) with Cosh summaries. The Cosh summaries is a one-pager overview of the most important information about each chemical. Full version the of the SDS will still be available as hard copy in the rig hospital. The operator is responsible for 3rd party SDSs.

Prior to operation in 2020 it was suggested to implement routines for checking chemicals in between operators to ensure that the rig is operating according to the discharge permit. This finding is open but not classified as critical. This routine should be in place before the operation

at 2/5-15 Gomez. An environmental poster will be made for the upcoming operations. The poster gives an overview over chemicals planned used and waste management and is a good tool to ensure adherence to the discharge permit. This should be distributed and put up at relevant places before start-up of operation. During a rig visit between 8th - 12th March all rig chemicals were according to discharge permit. No 3rd party chemicals were on board the rig at that time, but these will be checked by the DSV during the weekly supervisory activity. It is expected that storekeeper, derrick man and other crew also are aware of which chemicals that are on board and that they are according to the environmental poster. Deviations shall be reported to the Environmental Coordinator.

The general impression was that the rig operates in a safe way with focus on best environmental practice.

5.12.2 Waste Management

Maritime Waste Management (MWM) carried out a survey 10.-12-03.2021 to ensure compliance with NOROG 093 (ref./40/) and to guide relevant personnel on waste handling and declaration. Despite good results on quality of waste sorting during the Schweinsteiger operation in 2020, Borgland Dolphin has a potential for improvement regarding degree of sorting.

Borgland Dolphin has systems in place for good waste segregation including three waste compressors. One finding during the survey was that it is common to assume that blue shoes are plastic, but these should be sorted as combustible waste. A separate report will be issued to OIM and Rig Manager with recommended actions, and an information slide will be prepared for the welcome onboard meetings. And project specific waste management plans will be made.

5.12.3 Tight Rig

A tight rig verification was carried out 08.-10.03.2021. In general, Borgland Dolphin appears ready for operation as no critical barrier elements were weakened or missing. Status on drains and pipework is covered by PMs in SAP. The same applies for drip/spill trays. Dolphin informed that there is a strict control of the drain system and that this control is managed by the Control Room Operator. Status of the drip/spill trays and all drains are always checked twice a day - at the beginning of each shift.

Relevant bulk hoses were sent onshore and re-certified prior to the rig handover in 2020. In addition, DDAS replaced hydraulic hoses, and all have an electronic ID tag keeping track of maintenance. The same should be applied to bulk hoses if resources are available.

No (0) non-conformances were identified during the verification, but there were 15 observations - presented in the closure meeting on board the rig. These will be described in a separate report and be sent to rig management. No observations are classified as critical for the upcoming operations.

5.12.4 Energy Management

There are five diesel generators, including one emergency generator on Borgland. Power management is described in Power Management System and flowchart and uncertainty is described in the Measurement Program. During the rig tour the RIT learned that the rig still uses a diesel truck. The operators recommend Dolphin to consider electrical forklift, according to BAT and BEP in NOROG 044. Dolphin will evaluate to change to electrical forklift when its due for replacement.

Dolphin is in the process of being ISO 50001 certified. The goal is to be certified in Q1 2021. This will improve energy related performance. The diesel consumption is low, and many measures have already been implemented to reduce fuel consumption. It is likely that increased human awareness could have substantial positive effect on further reducing emissions to air. Normal operation requires running of one to two engines. Derrick man, assistant driller and engine room operator informed the RIT about the cooperation when running more engines than normal and should be in focus the upcoming operations.

5.13 Dropped Object Prevention

DDAS have introduced several initiatives to prevent dropped objects:

- Handbook for safe securing is implemented on the rig.
- Handbook for safe securing used as requirement in all POs to vendors
- Red Zone on drill floor and cellar deck
- Risk assessments SJA/TaTo
- DROPS focal point tool planner on the rig
- DROPS part of training programme
- PMs in SAP for inspections
- Proactive searches for DROPS registered in synergy
- All equipment for working in height in height lockers on drill floor and cellar deck
- HSE inspections
- HSE meetings on the rig

A third part company carried out a DROPS inspection in August 2020, a total of 18 findings were identified and are now closed.

Sea fastening procedures were checked during the rig visit and spot checks were made on rig and found to be complying.

5.14 Remote Operated Pipe Handling

“Borgland Dolphin’s pipe handling matrix” (ref. /41/) was last updated in January 2020 and according to Norwegian Oil and Gas Association recommended guidelines 081 for remote pipe handling operations. A HAZID was carried out in July 2020. It has been focused on the identified pipe handling operations involving manual handling. The matrix is available on drill floor.

5.15 Housekeeping

Housekeeping in general was good during the rig inspection. However, the area where the mudlogging unit will be installed needed a proper clean up. The low temperatures have made it difficult to clean floors. However, the area was cleaned shortly after the verification.

The BOP accumulator room had a leakage of BOP fluid on the floor; however, the fluid is collected by the new permanent suction pump that have been placed in the corner.

5.16 Competence

A competence review meeting was held 19.03.2021 (ref./13). Dolphin presented the crew plan, status on training and familiarisation. The crew plan was reviewed and excepted, only one postholders (roughneck on crew 2) needs to be confirmed. The current compliance for the Borgland Dolphin overall training were 89%.

6 Technical / Operational

6.1 Maintenance

Maintenance has been a focus area during the rig intake process both when Wellesley used Borgland Dolphin for their Schweinsteiger well as well as during this rig intake process for DNO, INEOS and Wellesley. This was communicated in the initial verification meeting of the Dolphin onshore organisation as well as during the rig visit/verification meetings at Fedra. In addition, maintenance has been reviewed on a weekly basis as part of the weekly rig intake status meetings held between the operators, 3rd party inspectors as well as DDAS.

At the time of finalising the Rig Intake Report, the following maintenance status was provided (rig visit/verification numbers in brackets):

- *Total Open Non-Safety Critical Elements (SCE) Corrective Work Orders (CWO) = 121 (206)*
- *Total Open Planned Non-SCE WO = 191 (78)*
- *Total Open SCE CWO = 40 (6)*
- *Total Open SCE Planned Work Orders (WO) = 33 (3)*
- *Total Overdue SCE CWO = 0 (5)*
- *Total Overdue SCE Planned WO = 0 (2)*

During yard stay, Dolphin has one Operational Risk Assessments (ORA – Borgland Dolphin-052) covering all the above overdue SCE CWO and Planned WO's.

One of the findings (Observation #10) related to maintenance from the rig visit/verification is closed out. The remaining finding (Observation #9) is still open, but this poses no major risk to the operations. Ref Synergi case 441387440.

In December 2020, VTC perform the maintenance part of the rig intake scope. In total 3 findings were made, and these were all followed up during the rig intake process. Current status is that all findings are closed.

DDAS is currently using SAP maintenance system; however, they are planning to move to IFS sometime after startup (May) of the Oselvar operations. Normal practice is that Dolphin shall not have any overdue PM's/CM's work orders or SECE outstanding. If they do have overdue PM's/CM's work orders on SECE this will trigger an operational risk assessment process. After completing the ORA process the impairment/deviation will be registered as a Non-Conformity in Synergi with all attachments. All corrective mitigating measures will be registered as actions in Synergi.

For 3rd party equipment registered in SAP the MOU's planned maintenance system shall generate a monthly work order to capture the checks on the 3rd party equipment and ensure that the equipment is being correctly maintained by the supplier of the equipment. It is 3rd party responsibility to execute and report to Dolphin for close out.

NPT related to Dolphin during the last year is 274,75 hrs. Main contributors are:

- Seawater ingress into booster line: 179 hrs.
- Modification on retractable arms for acoustic transponders on BOP: 56 hrs.

Table 6-1 shows high priority maintenance jobs, requiring more than 6 hours per job.

Table 6-1: High priority maintenance jobs, requiring more than 6 hours per job

S P	Order Type	Main WorkCtr	MAT	Order	Description	Interval	Basic start date	Basic finish date	LADate	System status	Revision	Cumulative
1	PM02	SUBSEA	SCE	500088876	6M Subsea BOP Assembly	6	15.03.2021	21.03.2021	21.03.2021	REL NMAT NTUP PRC SETC	2021WK11	8,0
1	PM02	CRANEOP	SCE	500097777	1W Sbd/Port Deck Crane, Emg. Operation	1W	21.03.2021	21.03.2021	21.03.2021	REL NMAT PRC SETC		8,0
1	PM02	TECH	SCE	500097299	1/12M HVAC, Pressure Switch, FT	1	22.03.2021	28.03.2021	28.03.2021	REL NMAT PRC SETC	2021WK12	8,0
1	PM02	MARINE	SCE	500097344	3/6/12M Rescue, Escape, Em. Hospital Eq.	3	22.03.2021	28.03.2021	30.03.2021	REL NMAT PRC SETC	2021WK12	6,0
1	PM02	ELEC	SCE	500097358	12M-3 HC Gas Detectors, Engine/SB Rocket	12	22.03.2021	28.03.2021	31.03.2021	REL NMAT PRC SETC	2021WK12	9,0
1	PM02	MARINE	SCE	500097373	1/12/24M Liferaft + Davit	1	22.03.2021	28.03.2021	01.04.2021	REL NMAT PRC SETC	2021WK12	7,0
1	PM02	MARINE	SCE	500097373	2/12M Watertight Manual Hatch	2	22.03.2021	28.03.2021	01.04.2021	REL NMAT PRC SETC	2021WK12	6,0
1	PM02	MARINE	SCE	500097536	1/3/6M Ballast System	1	22.03.2021	28.03.2021	01.04.2021	REL NMAT PRC SETC	2021WK12	10,0
1	PM02	SUBSEA	SCE	500097620	12M Riser Joint, 20 ft, S/N MX77420	12	22.03.2021	28.03.2021	28.03.2021	REL NMAT PRC SETC	2021WK12	15,0
1	PM02	SUBSEA	SCE	500097440	1/2W Subsea BOP	2W	29.03.2021	04.04.2021	04.04.2021	REL NMAT PRC SETC	2021WK13	16,0
1	PM02	DRILLING	SCE	500097441	1/2W Drilling Routine	2W	29.03.2021	04.04.2021	04.04.2021	REL NMAT PRC SETC	2021WK13	9,0
1	PM02	SUBSEA	SCE	500097444	2W Choke & Kill Manifold	2W	29.03.2021	04.04.2021	04.04.2021	REL NMAT PRC SETC	2021WK13	10,0
1	PM02	MARINE	SCE	500097790	2W Watertight Hydraulic Doors & Hatches	2W	30.03.2021	30.03.2021	30.03.2021	REL NMAT PRC SETC		8,0
1	PM02	MARINE	SCE	500097522	1W Bilge System	1W	07.04.2021	07.04.2021	07.04.2021	REL NMAT PRC SETC		14,0
												134,0

DDAS has completed the following work during the idle period in Fedafjorden:

- Leak detection in column, Completed
- Sprinkler system in accommodation, Completed
- Service on a radar, Completed
- Ventilation fan requires new engine, waiting on new parts (el-motor)
- Engine heaters on lifeboat #3, Completed
- Fire dampener in emergency generator room, Completed

In addition, various maintenance and upgrades has been performed on drilling related equipment. Please refer to [chapter 6.17](#) for more details.

Status on maintenance will be followed up offshore in bi-weekly meetings between Chief Engineer and DSV. A status report will be written and communicated with the onshore organization. This maintenance meeting will also cover 3rd party service companies that have equipment on the rig for longer periods such as i.e., Oceaneering and Halliburton cement.

6.2 Well Control

VTC performed a rig inspection related to Well Control equipment. In total 26 findings were made, and these were all followed up during the rig intake process. Current status is that all findings are closed.

Findings (Observation #11, #12 and #13) related to well control from the rig visit/verification are all closed out. Ref Synergi case 441387440.

Borgland has an 18 3/4" NOV Shaffer 15 kpsi NXT BOP (5 ram cavity, dual annular) that was installed in 2015. BOP ram configuration has been reviewed and communicated to Dolphin. 3 1/2" – 5 7/8" VBR in the Lower Pipe Ram (LPR), will have to be replaced with a 9 5/8" HT, Sour/H₂S Service fixed ram. A check has been performed confirming that all three BOP panels display the correct BOP configuration. This is confirmed OK.

Shear ability calculations has been performed by NOV for the relevant drill pipes used on Borgland. The results from these calculations confirms that there should be no issues shearing the drill pipe.

It is the blind shear (LFS-5) that cuts wire line and seals. Shear ability will be addressed for all tubular in the relevant detailed operational procedures (DOP's). Dolphin's policy is that all pipe in the string below HWDP is un-shearable.

It was also confirmed by both Halliburton and Dolphin that in an emergency the cement unit could be used as backup for the mud pumps.

Training related to well control exercises are covered in procedure for "*Well Control Drills*", (ref./42/), and this procedure require logging/documentation of participants and that datalogger/ cementer shall participate. Procedure for Well Control Drills (ref. /42/ and "*Drill Log Form*" (ref. /43/) shall ensure 3rd party participation in well control drills.

6.3 Mooring Equipment and Station Keeping

The Marine Advisor with Well Expertise performed a Marine Verification onboard Borgland on the 14th of June 2020. An interview with SSL and OIM was performed and below are the topics that were covered:

- General
- Safety Management System
- Crew Qualification
- Lifesaving Arrangement
- Navigation
- Radio Equipment
- Mooring Equipment
- Propulsion / Thrusters

A verification of the mooring systems to be according to "Ankringsforskriften" and procedures related to competence, procedures and equipment was performed onboard the rig on 14th of June 2020. It was verified that the station keeping procedures were followed and the associated riser angles and tensions from the mooring analysis was applied. The verification discovered 5 findings which were transferred into the Rig Intake Follow Up Register. All findings were closed out by 28.08.2020.

For more details related to this verification please refer to the Rig Marine Verification Report, ref./14/.

6.4 ESD for Critical Well Scenarios

The ESD philosophy on Borgland Dolphin was reviewed and found appropriate for the Oselvar PP&A operations. A full ESD test is performed once a year and the most recent (ESD 1 ,2 &3)

was performed 15.03.21. DNV witnessed the test and found it acceptable (the rig was back up and running after 2-3 hours).

6.5 Lifting Operations / Lifting Appliances (Incl. Drill Floor)

No reported issues with lifting operations. All lifting operations on Borgland are planned. These plans are recorded in a database and maintained by the rig. Blind lifts are not considered a major problem. Dolphin has a procedure in place documenting how communication when lifting shall be performed in addition to who has the responsibility during lifting operations.

In December 2020, VTC performed a verification of the cranes and loose lifting equipment part of the rig intake scope. In total 9 findings were made, and these were all followed up during the rig intake process. Current status is that all findings are closed.

Axess was currently out on the rig performing a yearly inspection of lifting appliances. RIT has asked to have a copy of this report once released and findings from this inspection will be followed up during the Oselvar operation.

All man rider winch wires were replaced during the previous idle period in Fedafjorden in 2020.

Yearly colour for lifting appliances is red (2021).

6.6 Electro Instrument and Safety Systems

VTC was selected to perform a verification of electro instrument and safety systems on Borgland Dolphin. In total 10 findings were made, and these were all followed up during the rig intake process. Current status is that 1 finding are still open. The remaining findings pose no major risk to the planned operations however, they will be followed up in a Bi-weekly meeting during operations.

Main focus has been to follow up the PSA audit. It was confirmed that there were no major issues with the electrical instruments on Borgland Dolphin. Status on the PSA audit follow-up prior to taking over the rig is 98 % complete. Dolphin has a plan in place to close the remaining 2 % within deadline approved by PSA. The remaining findings from the PSA audit pose no major risk to the planned operations; however, they will be followed up during the Gomez operations, as the outstanding verification of harmonic distortion (THD) requires load on full drilling equipment package.

6.7 Communication

A decision was made to use 4G/LTE and link up to Ula. The plan is to have 20 Mbps downloading and 15 Mbps uploading capabilities. There are 4 x 4G/LTE antennas installed on the rig. The system is equipped and supporting of all major broadband vendors like Tamen,

Telenor, Telia and ICE. The backup system will be VSAT with 2 Mbit bandwidth shared with Dolphin. The VSAT can be upgraded to 8-10 Mbps within 12-24 hours if required. The rig is equipped with two independent KU VSAT antenna systems which has been tested and found OK. In addition, Fleet 77 is set up towards VSAT and Inmarsat in case VSAT or Inmarsat goes down so that vendors can log on to any of these systems and try to fix problem remotely.

6.8 Critical Spares and Alignment with Critical Spares List and Philosophy

Evaluation of required spare parts on the rig is performed by gathering OEM recommendation for spare parts (assurance and operation) for one year in operation and evaluated by experienced personnel per discipline and adjusted based on operational mode/area/redundancy and experience as per engineer method. Approx. 25-30 % of the critical spares are stored onboard Borgland. This is equivalent to 80 % of the day-to-day need.

Spare parts are stored in several places such as on the rig (most critical spares), onshore at Dolphin facility in Dusavik and in Aberdeen (both NorSea facilities), and from another rig such as Bideford. In addition, some spare parts are kept at OEM.

6.9 Manual Checks of all Rig Interfaces Including Crossovers, Running Tools etc. Fishing package inspection

Fishing package has arrived on the rig and been checked by the DSV. It is found acceptable and in good condition.

Tubulars have been onshore for re-certification. The plan is to use the following tubulars:

- Drill Pipe - 5 7/8" Range 3 (14m) DS 55,
- HWDP - 5 7/8" Range 2 (9m) XT57 (Planned to be replaced with 5 7/8" Range 2 (9m) DS 55 prior to jumping BOP)
- Cement stinger - 3 1/2" Range2 NC38

Rig interfaces including crossovers and running tools etc. has all been reviewed as part of the Dolphin planner scope onshore as well as part of the DOP's process.

6.10 Capping Stack Interface and Support Systems

"PSW Capping stack interface document", ref./12/, revealed an interface issue with guideposts on the lower BOP stack. In extended position, these guideposts will interfere with a potential capping stack installation. The guidepost on the Borgland Dolphin BOP will therefore have to be cut by the ROV. The specification of the guideposts has been forwarded to Oceaneering and two solutions to cutting equipment has been identified. This equipment will be ready on shelf and mobilized together with the capping stack and associated equipment according to "Oselvar Relief Well and Capping Plan", ref./44/. A similar check will be performed prior to

start-up of the other wells for DNO, INEOS and Wellesley. For INEOS this interface check will be performed by Wild Well Control since they are providing the capping stack service.

6.11 Marine Surveillance

Well Expertise's Marine Surveillance Centre (MSC) will conduct 24/7 AIS and Radar monitoring for the planned locations.

- The rig has 2 ARPA radars and 1 AIS
- SBV has according to G-OMO and IMO COLREG's duty to watch traffic 24/7. The SBVs has 2 ARPA radars, 1 OSD Radar and 1 AIS
- MSC AIS data is received from Norwegian Coastal Administration
- MSC system is setup to log all vessel movements around the rig if a vessel is passing closer than 5 nautical miles.
- MSC system is set up to log and send notification if a vessel has a CPA (Closest Point of Approach) closer than 1 nautical mile and TCPA less than 60 min

6.12 Structural Integrity - Air Gap and Wave Loading

Borgland Dolphin's structural integrity, air gap and wave loading were assessed during the rig intake process. No issues were discovered, and Dolphin also confirmed that there are no issues with these subjects.

Allum was selected to perform a verification of the structural integrity on Borgland Dolphin. In total 5 findings were made, and these were all followed up during the rig intake process. Current status is that all findings are closed.

6.13 Emergency Escape Routes

During the follow-up trip to the rig visit/ verification a spot check of the escape routes outside on the rig was performed and found OK apart from the area on port side where both the Soiltech swarf unit and the Schlumberger bleed-off package are placed. In this area the escape way is slightly blocked, so the rig is currently assessing a need for a potential deviation. It was also checked if there would be any objects falling over escape routes in the event the rig would be tilted. Nothing was alarming.

In January 2021, VTC performed a rig inspection related to emergency preparedness including escape routes. In total 1 finding was made, and this was followed up during the rig intake process. The finding is closed.

6.14 Fire Stations

A spot check on the fire stations revealed no major issues. Inventory lists are in place and correct, and fire equipment are nicely stored. Ample amount of breathing air bottles is available. Findings from the rig visit/verification are all closed.

Fire equipment has been checked and recertified by BSS in June 2020.

In December 2020, VTC performed a rig inspection related to emergency preparedness including fire stations. In total 2 findings were made, and these were all followed up during the rig intake process. Both findings are closed.

6.15 Working at Height

A spot check of the working at height cabinets and logging of tools used at height was performed during the rig visit/verification. The cabinets are kept very tidy, and no unconventional tools were found. The inventory check is being performed regularly, but the logging of equipment in and out could be improved. It is therefore recommended to have focus on this topic during the Oselvar PP&A.

6.16 Markings and Quality of Signs

Sign and labels are changed regularly when needed on Borgland Dolphin. A Planned Maintenance (PM) job in SAP requires the safety officer to check signs on a monthly basis.

6.17 Drilling Related Equipment

Overall impression is that the drilling related equipment are in OK condition. DDAS has completed the following work related to drilling equipment during the idle period in Fedafjorden:

- Shaker upgrade - Installation of 4 new shakers - Completed
- Standpipe manifold - Completed
- Updates on Drillview - Completed

6.18 Lighting

Lighting on Borgland is in general very good, however during a working environment verification performed by VTC in February 2021, some areas were below the required lux level. At that time Dolphin was upgrading the lighting fixtures etc. so a new check will be performed prior to leaving Feda. In total 3 findings were made, and these were all followed up during the rig intake process. Current status is that all three findings are still open. These findings pose no major risk to the planned operations however, they will be followed up in a Bi-weekly meeting during operations

LED lighting is in the process of being implemented on the rig and spot checks were performed to see if second securing were in place. This was confirmed all OK.

6.19 Bulk Storage and Transfer (including cement silos)

There are no known issues on Borgland Dolphin regarding fluids transfer. There are two transfer pumps with a capacity of 70 m³/h that can transfer mud from tanks to a manifold above the pits. Transfer lines are typically 150mm. Transfer procedures are in place.

6.20 Heave Compensation and Tension System

Borgland Dolphin has Ram rig compensation, so no crown mounted compensators. There are no known issues related to compensation and tensioning systems on Borgland.

6.21 Service Companies

Status on 3rd party installations has been followed up by representative from Norse-Technology, and will continue to be followed up, by the DSV that has been stationed on the rig as part of the rig intake process. Below is the current status:

- Schlumberger mudlogging unit installed and currently being calibrated.
- Schlumberger bleed-off installation ongoing. This is planned to be completed prior to leaving Fedra.
- Schlumberger wireline spread rigged up ongoing
- Schlumberger fluid: mud lab is planned to be set up during the sail to Oselvar location.
- Archer wireline and slickline installation ongoing.
- Aker installation planned to be completed prior to start-up of Oselvar operations.
- WOCS and reels are planned to be installed in Fedra and sea fastened before sailing.
- Halliburton cement unit ready for operation. Maintenance job completed 12.03.21
- Halliburton installation for flushing reel on cellar deck was completed 14.03.21
- Halliburton installation of computers etc. currently ongoing and is planned to be completed prior to sailing.
- Frank's casing tong and slips installation completed 12.03.21
 - New foundation for tong pusher arm / telescope welded in place and NDT checked.
 - Tong pusher arm / telescope installed and tested with power tong after installation of new hydraulic fittings / manifold.
 - Slips tested after installation of new hydraulic fittings / manifold.
- Soiltech swarf installation completed
 - All Soiltech units have been sea fastened
- Oceaneering ROV is ready for operation. Test dive performed Tuesday 16.03.21 with no issues.
- Enhanced Drilling performed a rig survey with regards to RMR (Riserless Mud Recovery) operations planned for the Hemisphere well for Wellesley 04.03.21. Since RMR system has been installed on Borgland Dolphin before, the main purpose of the rig survey was to

verify position of RMR units and re-confirm various rig tie-ins. Conclusion is RMR generation 2 can be installed on Borgland Dolphin without any modification to the rig. The LARS and the Hose Reel will be positioned on the Crystal Sea platform on port side of the rig. LARS frame or ISO lock breech bases will need to be welded to Crystal Sea Platform. The Oceaneering unit on the Crystal Sea Platform will have to be moved to a different location. The PCC (Power Control Container) will be positioned on the New Mezzanine deck. The rig has enough main power (440V/400-1000Amp) available so there is no need for a generator. Please refer to "*RMR Site Visit Report*" (ref./45/) for more details.

7 DNO Readiness Verification

As part of the final acceptance for mobilisation of Borgland Dolphin for the Oselvar PP&A project a formal “*Operational Readiness Risk Assessment (RA)*” (ref. /5/) was carried out on Wednesday 17th of March 2021.

The Risk Assessment was assessing the outstanding rig intake findings (Part1) and active open risks in the risk register (Part 2).

Part 1 covered “High (Red) Nonconformity” and “Medium (Yellow) Nonconformity” findings from the “Rig Intake Findings Register” prepared by VTC, see attached link in Appendix 2.

Part 2 of the RA covered the active risks still open in the Oselvar PP&A Risk Register, for details see attached link in Appendix 3.

The Risk Assessment was carried out with involved key personnel attending from DNO, Well Expertise, VTC and Dolphin Drilling.

7.1 Purpose

The Oselvar PP&A Operational Readiness Risk Assessment shall give an overview of the total “Risk Picture” and be the foundation for the final acceptance for the Project Management to accept the Borgland Dolphin ready for mobilisation and start-up of the Oselvar PP&A programme.

7.2 Conclusion

The operational readiness risk assessment conclusion is that **Borgland Dolphin is ready for mobilisation for the Oselvar PP&A.**

The plan is to commence the rig move from Fedafjorden Saturday 20 March 2021, pending weather conditions and ongoing equipment mobilisation.

7.3 VTC Rig Intake Findings Register (Part 1)

The VTC Rig Intake Findings Register was established after rig inspections carried out during December 2020 and February 2021, see link in Appendix 2. In total, 90 registered findings were documented and categorized as:

- High (Red) Nonconformity
- Medium (Yellow) Nonconformity
- Low (Green) Nonconformity
- Observations

The closing of findings has been carried out by Dolphin Drilling under supervision and monitoring of VTC.

A final verification and checking of the findings were performed onboard the rig 15-18 March 2021.

As part of the Operational Readiness assessment DNO have carried out a Risk Assessment of the remaining open 3 “High (Red) Nonconformity” and 3 “Medium (Yellow) Nonconformity” findings, based on the status on 18 March 2021:



Figure 7-1 Risk Plot (DNO) Initial Risk

After the RA based on input for implemented mitigating actions in to DNO Risk Matrix the current risk status has been accepted and agreed with all involved parties:

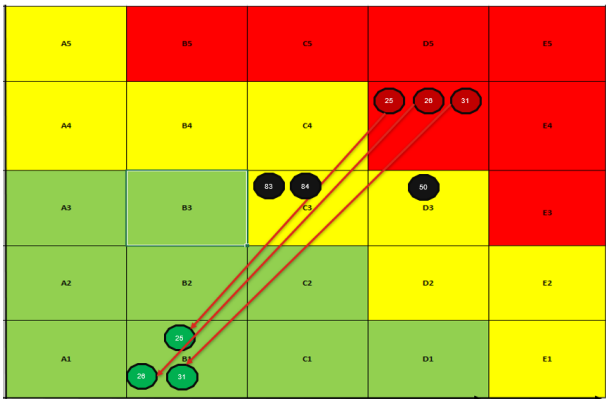


Figure 7-2 Risk Plot (DNO) – Mitigated Risk (Operational Readiness)

The remaining open findings in VTC Rig Intake Register will be followed up and updated during operation of Oselvar PP&A and Gomez Exploration.

Table 7-1 Summary of open findings from VTC Rig Intake Register

Finding ID	Subject	Topic	Description	Type	Status	RISK
25	Emergency Preparedness	Emergency Preparedness Analysis (Improvement suggestions)	The existing revision of the EPA (2016) contains 9 improvement suggestions that are not processed or documented in other systems (Synergi)	Nonconformity	Open	High
26	Emergency Preparedness	Emergency Preparedness Analysis (Performance standards)	Several defined PS targets needs to be evaluated and documented achievable. Examples: a) 8 firefighters to be mobilised in 5 minutes (when 4 of them are off-duty/ sleeping) , b) MOB boat ready for launch in 5 minutes (ref. BD Action Plan). The requirement should be 8 minutes from the accident occurred till the injured person is picked up.	Nonconformity	Open	High
31	Electrical/Technical Safety	Use of portable fan heaters	During the survey there were observed extensive use of portable electrical fan heaters. This type of heaters represent a considerable fire risk and are per regulation not allowed onboard MODU's. The verification team acknowledge that the rig currently is in "laid-up" mode, however, it is important that DDAS ensure that these heaters are brought into operation.	Nonconformity	Open	High
50	Multidiscipline	Knowledge and training for safety systems	The crew members had limited knowledge on navigating in the ESD/F&G systems, e.g. there was some confusion related to specific questions like override and inhibits list, online simulation of effects, engage output override, for test and troubleshooting purposes. HMI for the online C&E was difficult to understand and required opening of several menus and pictures to gain overview of all effects. Relatively large modifications had been performed on the HMI and regarding some functionalities, none of the interviewed personnel had been trained by the vendor Goodtech.	Nonconformity	Open	Medium
83	Working Environment	Outdated MSDS	Chemicals and related datasheets in the different storage areas need to be controlled and updated. Several expired datasheets were observed. <u>Disorder / mixing of chemicals may lead into serious health effects</u>	Nonconformity	Open	Medium
84	Working Environment	Illumination in lay-down areas	Based on visual inspection and some spot checks with the Hagner luxmeter, several areas have been observed with low lux levels. Low illumination levels within deck laydown area / handling areas may contribute to hazards or incidents for involved deck crew during handling of pipes,	Nonconformity	Open	Medium

8 References

No.	Document reference
1.	DNO, 2021. OSE-DNO-S-RA-0018 <i>GAP Analysis between DNO and Dolphin Drilling HSE Management Systems</i> rev. 2. Date:05.03.21
2.	DNO, 2021. OSE-DNO-A-RA-0002 <i>Operational Interface document</i>
3.	DNO, 2021. OSE-DNO-D-RA-0014 <i>Rig Inspection Report</i> rev.2. Date:23.02.21
4.	DNO, 2020. OSE-DNO-S-RA-0014 <i>Borgland Dolphin AoC Exemption Review</i> rev. 2. Date:06.11.20
5.	DNO, 2021, OSE-DNO-S-RA-0032 <i>Oselvar PPA Operational Readiness Risk Assessment Report</i> , rev.1. Date: 19.03.21
6.	DNO, 2020. OSE-DNO-D-TA-0001 <i>Joint Rig Intake Plan</i> . rev. 2. Date: 07.12.20
7.	DNO, 2020. SCHW-WLSLY-D-RA-0610 <i>Dolphin verification meetings report</i> rev. 1. Date: 22.05.20
8.	DNO, 2020. SCHW-WLSLY-D-RA-0611 <i>Borgland rig visit/verification report</i> rev. 0. Date: 24.07.20
9.	DNO, 2020, SCHW-WLSLY-Q-CA-0606 <i>GAP Analysis between Wellesley Petroleum and Dolphin Drilling HSE Management Systems</i> rev. 1. Date:31.08.20
10.	DNO, 2021. OSE-DNO-S-RA-0019 <i>Health, Hygiene and Covid-19 Rig Verification</i> rev. 02. Date:16.02.21
11.	DNO, 2020. OSE-DNO-S-RA-0016 <i>Review of Rig Owner's Risk and Emergency Preparedness Analysis</i> rev. 2. Date:17.12.20
12.	DNO, 2021. OSE-DNO-D-TA-0002 <i>PSW Capping Stack Interface Document</i> rev. 3. Date: 02.03.21
13.	DNO, 2021, <i>MOM - Competence review</i> . Date: 19.03.2021
14.	Wellesley, 2020, SCHW-WLSLY-M-RA-0602 <i>Rig Marine Verification Report</i> . Date:16.06.20
15.	Wellesley. 2020 <i>MWM Waste Management Audit</i> . Date: 23.06.20
16.	DNO, 2021, <i>VTC Working Environment Audit (Doc. Nr: 2020324 Verification Report Borgland WEM.docx)</i> rev. 1. Date: 09.03.21
17.	DNO, 2021. OSE-DNO-S-TA-0031 <i>Tight Rig verification</i>
18.	Dolphin Drilling. MA-0028 <i>HSE & QA MANUAL</i> rev. 7. Date:04.03.2019
19.	Dolphin Drilling. 2011-5416 <i>Borgland Dolphin QRA</i> , rev 0. Date: 07.02.2011
20.	Dolphin Drilling. MEMO. 114EIR53-2/BERNE. Date: 25.04.2017
21.	DNO, 2021, OSE-DNO-S-RA-0015 <i>Site Specific Risk and Emergency Preparedness Analysis</i> rev.2 Date:12.01.21
22.	Dolphin Drilling. PR-900-0034 <i>Operational Risk Assessment (ORA)</i> . rev. 1. Date:17.02.2020
23.	Dolphin Drilling. PR-900-0045, <i>Safe Job Analysis</i> . rev. 2. Date:02.05.2018
24.	Dolphin Drilling. PR-900-0048 <i>TaTo Risk Assessment & Conversation</i> . rev. 2. Date:05.12.2019
25.	Dolphin Drilling. PR-01960099 <i>Barrier Management</i> . rev. 5. Date:20.01.2020

No.	Document reference
26.	Dolphin Drilling. PR-900-0049 <i>Work Permit</i> . rev. 3. Date:01.11.2019
27.	Dolphin Drilling. PR-900-0076 <i>Observation Card System</i> . rev. 1. Date:24.10.2019
28.	Dolphin Drilling. PR-900-0018, <i>Incident Reporting</i> . rev. 3. Date:17.08.2018
29.	Dolphin Drilling. ST-0115 <i>Registration and handling of reports in Synergi – Borgland Dolphin</i>
30.	Dolphin Drilling. PR-900-0001 <i>Safety Alerts, Product Alerts and Operations notices</i>
31.	Dolphin Drilling. PR -0059 <i>Personlig verneutstyr</i> . rev. 6. Date:25.10.2018
32.	Dolphin Drilling.2015, MA-0148 <i>Emergency preparedness plan Borgland Dolphin</i> rev. 3. Date:02.12.2015
33.	Dolphin Drilling, 2020, MA-0147 <i>Borgland Dolphin action plans</i> rev. 3. Date:28.07.2020
34.	Dolphin Drilling, 2020, PR-0088 <i>Crisis & Emergency Management</i> rev. 10. Date:11.02.2020
35.	Dolphin Drilling,2019, PR-0067 <i>Safety Drill & Training Procedure</i> rev. 2. Date:02.01.19
36.	Dolphin Drilling. MA0147 <i>Borgland Dolphin Action Plans</i>
37.	Dolphin Drilling. SPL-10733 <i>Plan for emergency drills and training matrix</i>
38.	Dolphin Drilling. ST-450-0086 <i>Well Control drills</i> .
39.	Dolphin Drilling PR-0202 <i>Procedure handling chemicals</i>
40.	Norwegian oil and gas, 2019. Guideline 093 Recommended guidelines for waste management in the offshore industry. Rev. 03.
41.	Dolphin Drilling. “ <i>Borgland Dolphin Pipe handling Matrix</i> ». Date 01.02.2020
42.	Dolphin Drilling ST-450-0086 <i>Well Control Drills</i> , Rev. 01. Date: 04.11.2019
43.	Dolphin Drilling FO-101-0009 <i>Drill Log Form</i>
44.	DNO, 2021, OSE-DNO-D-TA-0004 <i>Oselvar Relief Well and Capping Plan</i> , rev. 2. Date:08.03.21
45.	Wellesley, 2021, RIG1041-7070 RMR- <i>Site Visit Borgland Dolphin</i> , rev. 1. Date: 16.03.21

9 Appendices

Appendix A – Joint Rig Intake Follow Up Register