

SSP DEVELOPMENT PROJECT - IMPACT ASSESSMENT

SSP Development - Coral risk assessment

Aker BP ASA

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Coral risk assessment for the Skarv Satellite Project (SPP)

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Note. This report is based on the latest field layout (07.03.2023) Report will be revised upon completion/ alteration of route elements.

1 EXECUTIVE SUMMARY

On behalf of Aker BP, DNV have performed a coral risk assessment for the Skarv Satellite Project (SSP) development, connecting the Ørn, Idun Nord and Alve Nord discoveries with the Skarv FPSO.

The SPP area have been rigorously surveyed and more than 1800 potential corals have been delineated from MBES / SSS data and almost 900 of these have been visually surveyed. The condition of the corals in the area is overall poor with the majority of *D.pertusum* reef being dead or poor and coral gardens were mainly found in poor to fair condition. Corals in Good and excellent condition are rare and are found in less than 15% of the mapped coral areas.

To detect and protect corals within in risk of the damage from the project, an impact assessment has been performed for all infrastructure, potentially causing harm to corals. The risk assessment categorizes risk (from minor to severe) based on the degree of impact (coral condition) and probability (distance from infrastructure). Rock infill design is not finalized and not included in the assessment.

No corals are crossed by planned pipelines, umbilical's, rock laying or other infrastructure. The route is designed with "snake lay" to stay furthest away from corals as possible, however given the high presence of corals several corals are identified within risk.

The total footprint on the seafloor from the SSP campaign is calculated to approx. 380 000 m², with about 210 000 m² of permanent damage. For comparison, this is equivalent to approx. 53 respectively 29 football fields. No corals are within the footprint area.

2 INTRODUCTION

Aker BP is together with Subsea7 planning for development and operations for subsea tiebacks in the Skarv area, in the Norwegian Sea. The development project will connect the Ørn, Idun Nord and Alve Nord discoveries with the Skarv FPSO.

The discoveries are in an area with cold water corals and DNV have been aiding in mapping and assessing the sensitive fauna in order to minimize the environmental footprint of the development. Several extensive surveys have been conducted to find optimal pipeline routes. Impact assessments based on the given survey data have been continuously performed throughout the process. Risk assessment for the field layouts leading the final route is included in this report.

2.1 The SSP Campaign

The Skarv Satellite Project is a planned subsea installation campaign, connecting the Ørn, Alve N, Idun, N to the Skarv FPSO. The planned route has been continuously updated and proposed routes have been mapped both acoustic using MBES and SSS, and selected targets have been visually mapped.

Originally the Shrek field, south of Skarv FPS was also planned for tie – in to Skarv, but it has been discontinued and further planning is put on hold. Data gathered from the surveys are however included in this report for general field knowledge.

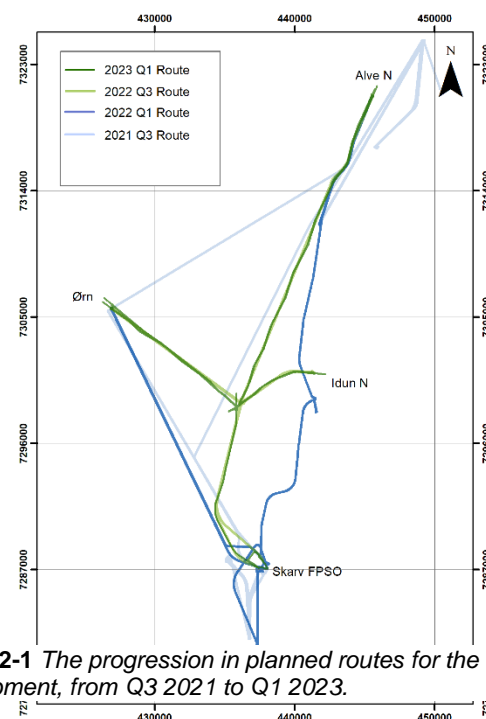


Figure 2-1 The progression in planned routes for the SSP development, from Q3 2021 to Q1 2023.

The latest routes connect the fields (Alve N, Ørn, and Idun N, via a Central Manifold (also described as TIM; Tie In Manifold) to Skarv FPSO Figure 2-1).

The installations are planned to be performed 2023 to 2025 starting with rock laying in Q3 2023. The installation elements are described in **Table 2-1** and an overview of the planned rock laying is shown in Figure 2-2.

2.2 Surveys

In the Skarv area several benthic surveys have been conducted in the last decade and for the SSP development three specific acoustic/visual surveys have been recently performed (summarized in Table 2-1). In total almost 100 km of seafloor have been visually mapped and 767 out of 1833 delineated potential coral targets have been surveyed. Relevant other surveys are summarized in

Table 2-3. From the gathered survey data, a GIS environmental resource map have been created for the SSP project and have been continuously updated following the changes of the pipeline route.

Table 2-1 Installation details with year and elements.

| Infrastructure | Length (m) | Year |
|--|------------|------|
| Rock Pre-Lay | | 2023 |
| Idun Nord Production Pipeline | 6 022 | 2024 |
| Alve Nord Production Pipeline | 24 463 | 2024 |
| Ørn Production Pipeline | 11 281 | 2024 |
| Commingling Static Umbilical Central SDU to URB4 | 2 410 | 2024 |
| Idun Nord Static Umbilical | 6 332 | 2025 |
| Alve Nord Static Umbilical | 24 086 | 2025 |
| Ørn Static Umbilical | 11 765 | 2025 |
| 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET | 12670 | 2025 |
| Rock Post-Lay | | 2025 |

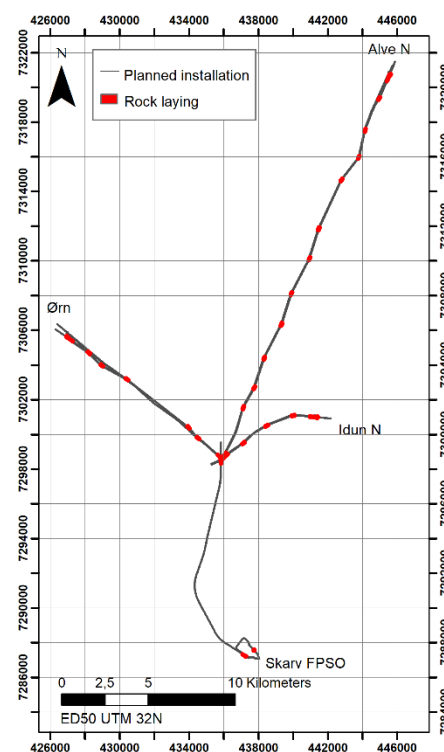


Figure 2-2 Map of the planned rock pre-lay installations, symbology exaggerated to be visible.

Table 2-2 Conducted visual surveys during the Skarv Satellite Project.

| Route | Survey company | Survey Year | Vessel | Potential corals detected | Surveyed corals | Survey length (km) | DNV Report |
|-----------------|----------------|-------------|----------|---------------------------|-----------------|--------------------|--|
| Ørn to Skarv | Deepocean | 2021 | Volantis | 407 | 121 | 19 | Visual survey report – Ørn to Skarv FPSO Report No.: 2021-1338 |
| Alve N to Skarv | Deepocean | 2021 | Volantis | 188 | 74 | 8.8 | Visual survey report – Alve Nord tie-in. Report No.: 2021-1339, |
| Shrek to Skarv | Deepocean | 2021 | Volantis | 162 | 115 | 16 | Visual survey report – Shrek to Skarv FPSO Report No.: 2021-1340 |

| | | | | | | | |
|-----------------------------|-----------|------|----------------|-----|-----|-------|---|
| Ørn to Skarv Route 2 | Deepocean | 2022 | Edda Fauna | 366 | 70 | 13.2 | Report No.: 2021-1338, |
| Ørn to TIM Route 3 | iSurvey | 2022 | Havila Phoenix | 333 | 109 | 8.9 | Visual survey report – SSP Coral Survey 2022. Report No.: 2022-1089 |
| Idun N to TIM | iSurvey | 2022 | Havila Phoenix | 54 | 16 | 1.3 | Visual survey report – SSP Coral Survey 2022. Report No.: 2022-1089 |
| Alve Nord to TIM | iSurvey | 2022 | Havila Phoenix | 54 | 28 | 1.7 | Visual survey report – SSP Coral Survey 2022. Report No.: 2022-1089 |
| TIM to Skarv | iSurvey | 2022 | Havila Phoenix | 269 | 234 | 328.3 | Visual survey report – SSP Coral Survey 2022. Report No.: 2022-1089 |

Table 2-3 A selection of visual and bathymetric surveys conducted in the Skarv area..

| Year | Field | Document | Provider | Description |
|------|-----------------------|---|---------------------|---|
| 2016 | Snadd (Ærfugl) | ENVIRONMENTAL FIELD REPORT NO.E10503.RE.16.089 | DeepOcean, Gardline | Extended site survey |
| 2017 | Snadd (Ærfugl) | Skarv – Visual Survey of Corals along Snadd Pipeline SKASO-P0031-DOG-O-RA-0050 | DeepOcean | Additional survey along new pipeline route |
| 2018 | Ørn | ST18908 - CORAL SURVEY - ØRN | DeepOcean | Site survey |
| 2018 | Ærfugl | VISUAL MAPPING AT ÆRFUGL - Environmental survey report Document No.: 180843 | DeepOcean, DNV GL | Additional survey along umbilical routes and well locations |
| 2018 | Shrek | Site Survey at Shrek, NCS 6507/6 PL838 | Gardline | Site survey, Seabed Investigation Report |
| 2019 | Ærfugl | VISUAL MAPPING AT ÆRFUGL PHASE 2- Environmental survey report | DeepOcean, DNV GL | Pipeline, umbilical and well survey for well 1 and 2. |
| 2019 | Alve NE | Site Survey at Alve NE NCS 6607/12 and 6608/10, PL127C ABP19307 Fugro Report No.: 133392.V01 | Fugro | Site survey |
| 2020 | Ærfugl | Ærfugl Phase II - Umbilical Survey Report No.: 2020-0798 | DNV GL | Additional survey along new umbilical routes |
| 2021 | Storjo E | Site Survey at Newt-Barlindåsen, Environmental Habitat Report, Planned Well Locations Storjo East, Document No.: 194758V01 Vol. 3 | Fugro | Site survey |

3 VISUAL MAPPING METHODOLOGY

3.1.1 Assessment of corals

An assessment of *Desmophyllum pertusum* reef condition for the explored corals was made based on video documentation collected in the survey line. The scoring system/evaluation of condition is based on the DNV GL guideline developed for Norwegian Oil and Gas (Norog, 2019). *D. pertusum* corals are categorized as “dead” “poor”, “fair”, “good” and “excellent” (Table 3-1) and given a value (1-5) as shown in

Table 3-3. Examples of the categories for condition are shown in Figure 3-1 below.

Number of the non-reef building gorgonian corals such as *Paragorgia arborea* was registered in semi-quantitative categories and number of individuals per 25 m² were counted for OSPAR Coral Garden classification. Classification criteria and are shown in Table 3-2

From the bathymetry and video data gathered during the site surveys, polygons delineating the assessed reef structures were created. Potential coral areas not visually surveyed were classified as “Not surveyed”. Each reef polygon was given a value for *Desmophyllum* condition and Coral garden value as shown in Figure 3-2 and

Table 3-3. For the impact assessment the combined coral value for each polygon was classified as described in Table 3-4.

Table 3-1 *Desmophyllum (Lophelia) colony classification (from NOROG,2019)*

| DESMOPHYLLUM | | Density of living polyps on colony front | | | | |
|--|---|--|----------|-----------|-----------|-----------|
| | | < 5% | 5 – 20 % | 20 – 40 % | 40 – 60 % | > 60 % |
| Total area of living <i>Desmophyllum</i> on colony front | < 2.5 m ² Length and height: < 1.6 m or radius < 0.9 m | Dead | Poor | Poor | Fair | Good |
| | 2.5 – 10 m ² Length and height: 1.6 - 3.2 m or radius 0.9-1.8 m | Dead | Poor | Fair | Good | Excellent |
| | 10 – 25 m ² Length and height: 3.2 - 5 m or radius 1.8 - 2.8 m | Poor | Fair | Good | Good | Excellent |
| | > 25 m ² Length and height: > 5 m or radius >2.8 m | Fair | Good | Good | Excellent | Excellent |

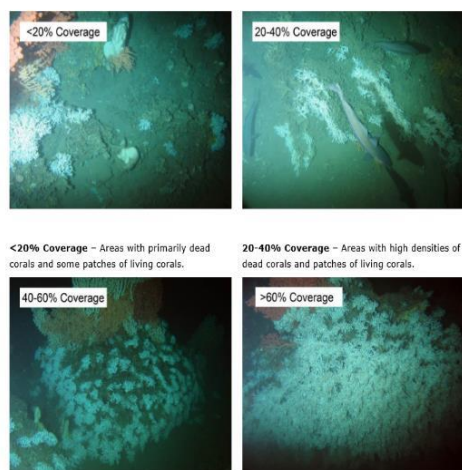


Table 3-2 *Criteria for gorgonian coral garden classification*

| CORAL GARDEN | Specimens per 25m ² |
|-------------------------------|--------------------------------|
| Paragorgia, single on boulder | 1 |
| Poor | <5 |
| Fair | 5-10 |
| Good | 10-15 |
| Excellent | >15 |

Figure 3-1 Classification scheme for coral mapping of *D. pertusum* reefs.

3.1.2 Resource map

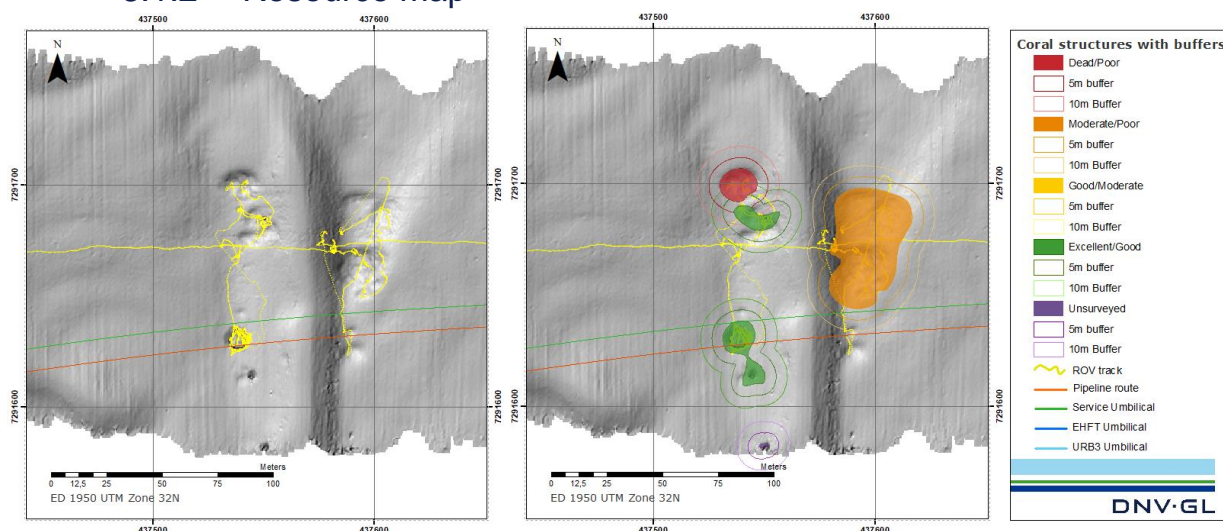


Figure 3-2 Left; visual survey of potential coral targets. Right; Coral polygons with combined coral value.

Table 3-3 Classification value of corals for assessment purposes.

| Value | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------------|------------------------|---------------------------|----------------------------|------------------------------|--------------|--------------|
| <i>Desmophyllum</i> reef | Dead | Poor | Fair | Good | Excellent | Not surveyed |
| Coral garden | Poor ($>5/25m^2$) | Fair ($>5-10/25m^2$) | Good ($>10-15/25m^2$) | Excellent ($<15/25m^2$) | Not surveyed | |

Table 3-4 Classification of combined coral values

| Condition | Dead/Poor | Poor/fair | Fair/good | Good/excellent | NS Not surveyed |
|----------------|-----------|-----------|-----------|----------------|--------------------|
| Combined Value | 1-2 | 3 | 4 | 5-9 | 11 |

3.2 Risk assessment

Corals closer than 50 m to any planned infrastructure (including rock laying) have been delineated and listed with distance and condition and further included in a risk matrix and used in the risk analysis. Generic risk matrixes have been used as shown in Table 3-5 - Table 3-7 below. However, the degree of impact and influence area is varying with the infrastructure, methodology used and mitigating measures and should be regarded as a “baseline”. The results are presented per field and pipeline/umbilical in Chapter 5.2.1 to 5.2.3.

Umbilicals

Table 3-5 Risk matrix used for assessing the risk to corals related to umbilicals

| | Distance | Poor | Fair | Good | Excellent | Not surveyed |
|---------------------|-----------------|--------------|-----------------|----------------|---------------|--------------|
| Negligible | 15-25 | | | | | |
| Low | 5-15 | | | | | |
| Significant | 0-5 | | | | | |
| Considerable | Crossed | | | | | |
| | | | | | | |
| | Risk categories | Minor | Moderate | Serious | Severe | |

Pipelines

Table 3-6 Risk matrix used for assessing the risk to corals related to pipelines

| | Distance | Poor | Fair | Good | Excellent | Not surveyed |
|---------------------|-----------------|--------------|-----------------|----------------|---------------|--------------|
| Negligible | 25-50 | | | | | |
| Low | 15-25 | | | | | |
| Significant | 5-15 | | | | | |
| Considerable | 0-5 | | | | | |
| | | | | | | |
| | Risk categories | Minor | Moderate | Serious | Severe | |

Rock laying

Table 3-7 Risk matrix used for assessing the risk to corals related to rock laying

| | Distance | Poor | Fair | Good | Excellent | Not surveyed |
|---------------------|-----------------|--------------|-----------------|----------------|---------------|--------------|
| Negligible | 25-50 | | | | | |
| Low | 15-25 | | | | | |
| Significant | 10-15 | | | | | |
| Considerable | 0-10 | | | | | |
| | | | | | | |
| | Risk categories | Minor | Moderate | Serious | Severe | |

3.2.1 Footprint area

The total seafloor area impacted from the installation was calculated, based on the field layout, recommendations in the NOROG Handbook (NOROG, 2019) and knowledge from previous “post lay” surveys (Snøhvit (DNV, 2018), Askeladd (DNV, 2023) and Ærflugl (DNV in prep)). The impact and distances used, are shown in Table 3-8.

Table 3-8 Criteria and distance for the different impacting elements.

| Origin | Damage | Impact | Distance | Remarks |
|--------------------|---|--------------|------------------------------------|---|
| Rock dumping | Total coverage. Crushing, | Considerable | As outlined in post lay survey. | Calculated from the rock laying area + 20% increase. |
| | Smothering and damage from rock laying. | Significant | 5 m | Calculated as 5m buffer area around the rock outline. |
| Pipeline/Umbilical | Crushing | Considerable | 0.5 m | Directly under the pipeline |
| | Smothering | Low | 2x 0.5 m | Displacement of sediment |

4 AREA DESCRIPTION - PRESENT FAUNA

4.1 Seafloor characteristics

The SSP development is located Haltenbanken at depth ranging from 298 meters at in north west (Ørn) to 400 meters south (Shrek) and north (Idun N). The seafloor is mostly characterized by jagged terrain, scour marks, ridges and furrows in the shallower areas and flatter homogenous mud/silt basins with occasional boulders and mounds in the deeper areas.

4.2 Sponges

Sponges are present the at SSP area, in scattered to common densities and dominantly hardbottom associated species. Softbottom associated species were found in only single to scattered densities and never in high enough numbers to be classified as “Deep sea sponge aggregations” protected by OSPAR (2010), and thus not included further in the risk assessment.

4.3 Sea pens and burrowing megafauna

In the Skarv area sea pens and burrowing mega fauna are occasionally present, especially in the northern, deeper mud/silt basin, where especially burrows are common. The habitat is considered a threatened and/or declining in OSPAR regions II and III, mainly due to frequent trawling activity (OSPAR, 2010). In region I, were Skarv is located the habitat is not deemed threatened and/or declining and not included further in the risk assessment.

4.4 Corals

Corals have been found along all routes and in total almost 900 potential coral reefs have been surveyed. The corals were most common along iceberg plough marks and in the shallower areas with courser sediment. An overview of the distribution of coral condition is shown in **Table 4-1** and in detail per survey route in Figure 4-1.

4.4.1 *Desmophyllum pertusum* reefs

D. pertusum reefs at SSP is found in mainly poor condition, with mainly dead to <5% living polyps. Several (23%) of the surveyed targets were found to be boulder and pebble mounds and did not have any reef building corals present. The categories, “dead”, “poor” and “not present” constitutes for 93% of the registrations.

4.4.2 Coral gardens

Gorgonian corals, mainly of the species *Paragorgia arborea*, are found mainly associated to the *D. pertusum* reefs, where bigger aggregations could be found, classifying as OSPAR coral gardens. Coral gardens were found on 83 % of the surveyed targets. The majority of the coral gardens were classified as “poor” (45%), with less than 5 colonies/25 m².

Gorgonians corals were also present as single colonies in boulder areas, which is not categorized as coral gardens.

Table 4-1 Condition and distribution of all the logged corals at SSP

| Condition | <i>D. pertusum</i> reef | | Coral garden | |
|-------------|-------------------------|------|--------------|------|
| | Nr | % | Nr | % |
| Dead | 453 | 53 % | | |
| Poor | 141 | 17 % | 385 | 45 % |
| Fair | 31 | 4 % | 225 | 27 % |
| Good | 20 | 2 % | 103 | 12 % |
| Excellent | 11 | 1 % | 23 | 3 % |
| Not present | 193 | 23 % | 113 | 13 % |

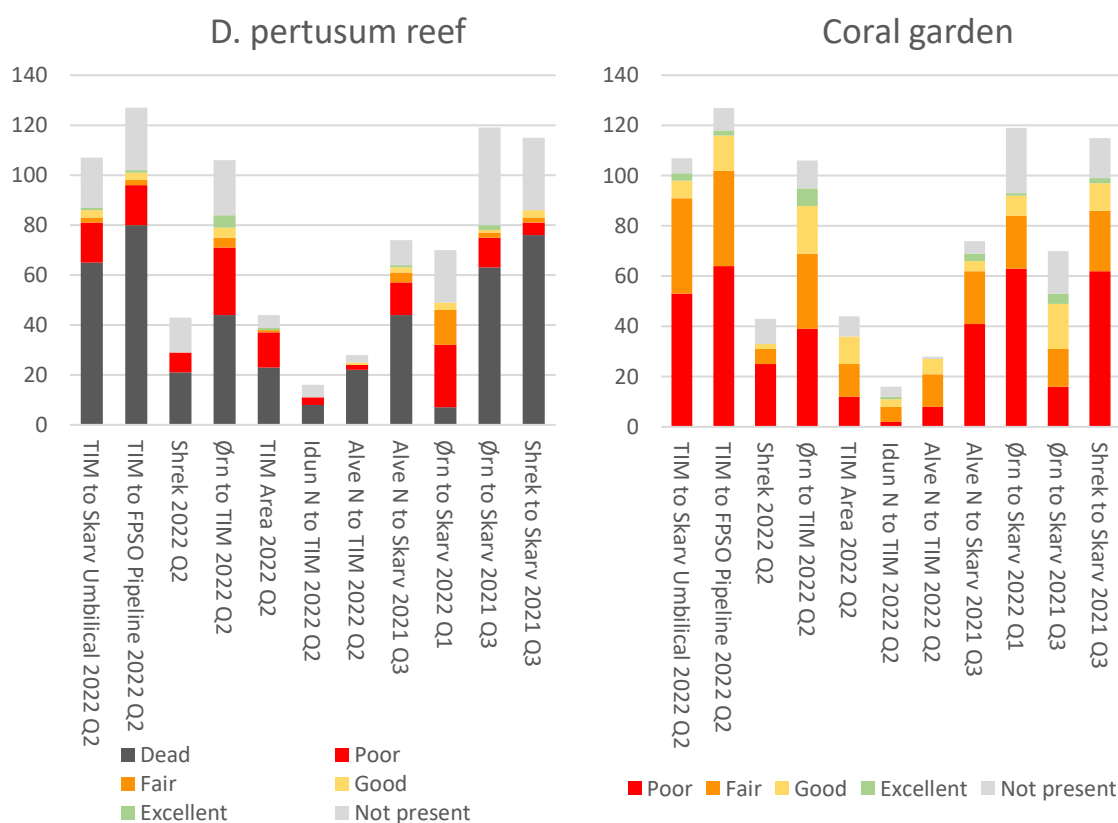


Figure 4-1 Condition distribution and number of logged coral areas. Left: *D. Pertusum* registrations. Right: Coral garden registrations. Classifications according to NOROG (2019).

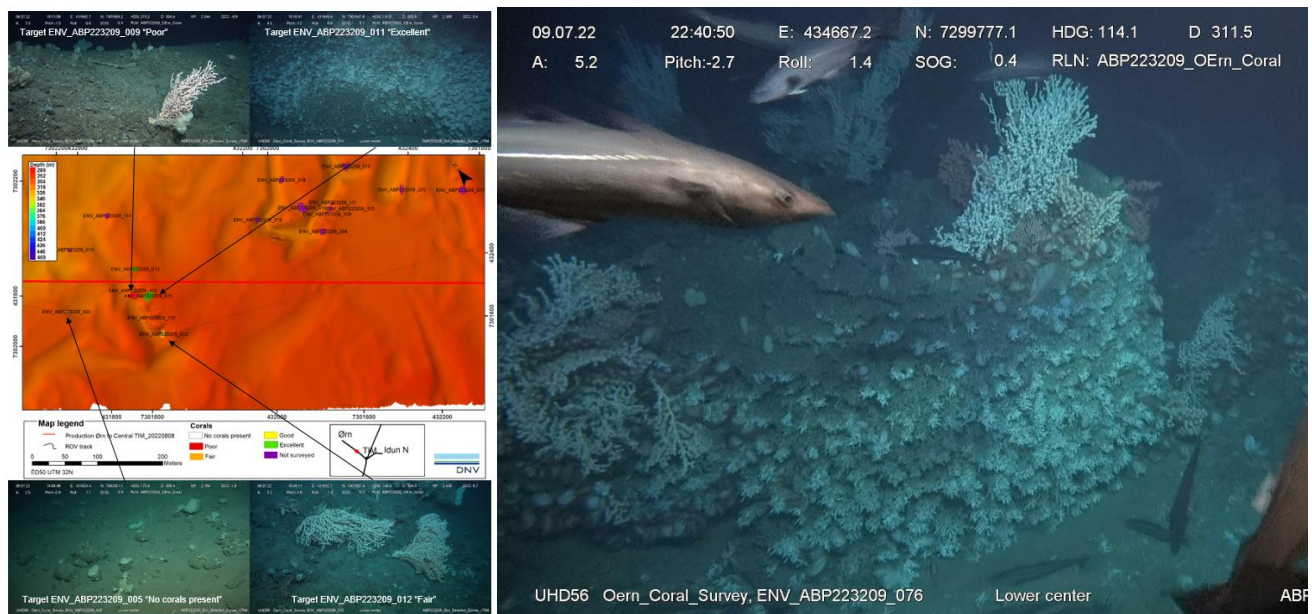


Figure 4-2 Left: Example of assessed coral polygons and findings. Right: Example of coral in *Excellent* condition (ENV_AB223209_076)

5 ENVIRONMENTAL IMPACT ASSESSMENT

At SSP, the environmental focus has been to minimize the effects on the cold-water corals and the main potential risks comes from:

- Pipeline
- Umbilical's
- Rock dumping

This document presents the environmental risk, based on the latest field layout (received 07.03.2023) and a summary of the risk assessments performed for the previous field layouts showing the reduced risk throughout the planning process. As the pipeline routes are not completely finalized, smaller changes in design are expected and additional analyses will be performed upon completion. A summary of corals within risk from the old field layouts and the current layout are presented below.

5.1 Previous routes

The impact assessments have been updated and adjusted, along with the planning process. Documenting corals within impact from the SSP route alternatives and providing feedback on where to plan for new routes/ conduct further surveys. A "near analysis" of the 2022 Q3 route was provided in a memo (DNV, 2022) and summarized in Table 5-2

5.1.1 November 2021

Table 5-1 Routes per Q1 2022 (rock laying is not included)

| Route | Minor | Moderate | Serious | Severe |
|--|------------|-----------|-----------|------------|
| Design S7_Line_Flexible Jumper PLET to TIM Template_20220207 | 19 | | 5 | 8 |
| Design S7_Line_Alve Nord Umbilical alt.1_20220207 | | | 1 | |
| Design S7_Line_Idun Nord Umbilical(Alternative Route)_20220126 | 46 | 1 | 21 | 55 |
| Design S7_Line_SHREK Gas Line_20220207 | 6 | | 1 | 7 |
| Design S7_Line_SHREK Static Umbilical_20220207 | 3 | | 2 | 5 |
| Design S7_Line_Ørn Static Umbilical_20220207 | 85 | 1 | 21 | 44 |
| Design_S7_Line_Shrek Prod 24.01.2022 | 11 | | 5 | 2 |
| Design_S7_Line_Ørn Production 24.01.2022 | 64 | 8 | 17 | 25 |
| Grand Total | 234 | 10 | 73 | 146 |

5.1.2 September 2022

Table 5-2 Routes per Q3 2022 (rock laying and most umbilical's is not included)

| Route | Minor | Moderate | Serious | Severe |
|---|-----------|-----------|-----------|----------|
| Design S7_Line Comingling Static Umbilical Central SDU to URB4_20220825 | 15 | 7 | 6 | 2 |
| Design S7_Line Gas Line Skarv to Shrek Alternative 1_20220823 | 2 | | | |
| Design S7_Line Gas Line Skarv to Shrek_20220812 | 5 | | | |
| Design S7_Line Production Alve Nord to Central TIM_20220823 | 9 | | | |
| Design S7_Line Production Central TIM to Skarv_20220812 | 15 | 4 | 1 | |
| Design S7_Line Production Idun Nord to Central TIM_20220812 | 4 | | 1 | |
| Design S7_Line Production Shrek to Skarv Alternative 1_20220823 | 3 | | 1 | |
| Design S7_Line Production Shrek to Skarv_20220812 | 6 | | 1 | |
| Design S7_Line Production Ørn to Central TIM_20220824 | 40 | 12 | 1 | 1 |
| Grand Total | 99 | 23 | 11 | 3 |

5.2 The latest planned routes (March, 2023)

5.2.1 Ørn to Central manifold

From Ørn to the Central manifold, impact assessment has been performed for the rock laying (pre- and post), the pipeline route (Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301) and the planned umbilical route (Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 Results presented in text below, in Table 5-3 and further in detail in appendix 1

Pipeline

The longest pipeline route connecting Ørn with the Central manifold have the most corals close to the pipeline, however none are being crossed. Closest corals are 10m away from the pipeline. 3 corals are in serious risk, as they are housing coral gardens in good to excellent condition. One coral, ENV_AB223209_011 (Figure 5-2) is in severe risk, due to its excellent condition, it is almost 25 meters away from the pipeline but should be given attention during the laying operations. 13 corals are in moderate risk.

Umbilical

Eight coral targets are within severe to moderate risk of the umbilical. Closest coral is 3 meters away. In total two corals are in severe risk: ENV_ABP223209_168, not visually surveyed and ENV_ABP223209_119, 6m from the umbilical.

Rock laying

A small (4.7 m²) potential coral (ENV_ABP223209_168), not visually surveyed is within 15 m of a rock pile close to the central manifold area (Figure 5-1). Calculated seafloor footprint area is 42 537 m² with considerable impact and 20 874 m² with significant impact.

Table 5-3 Coral within risk of the Ørn route (* Unsurveyed coral, risk assessment could change if surveyed) .

| Coral structure | X_ED50UTM32N | Y_ED50UTM32N | D. pertusum | Coral garden | D. pertusum Value | Coral garden Value | Combined Value | Area (m ²) | Distance to Umbilical (m) | Pipeline (m) | Rock laying (m) | Risk |
|-------------------|--------------|--------------|--------------|--------------|-------------------|--------------------|----------------|------------------------|---------------------------|--------------|-----------------|----------|
| ENV_ABP223209_259 | 435499,7 | 7298903 | Dead | Fair | 1 | 2 | 3 | 97,0 | 3,2 | 38,2 | | Moderate |
| ENV_ABP223209_316 | 430597,7 | 7302970 | Dead | Fair | 1 | 2 | 3 | 4,6 | 4,0 | | | Moderate |
| ENV_ABP223209_168 | 434462,7 | 7299796 | Not Surveyed | Not Surveyed | 6 | 5 | 11 | 4,7 | 4,3 | 28,8 | 14,7 | Severe* |
| ENV_ABP223209_120 | 430928,9 | 7302734 | Poor | Fair | 2 | 2 | 4 | 40,7 | 5,8 | 28,0 | | Serious |
| ENV_ABP223209_119 | 430910,7 | 7302705 | Poor | Good | 2 | 3 | 5 | 325,9 | 7,1 | | | Severe |
| ENV_ABP223209_107 | 433156,2 | 7300939 | Poor | Fair | 2 | 2 | 4 | 138,9 | 7,9 | | | Serious |
| ENV_ABP223209_314 | 430612,5 | 7302983 | Poor | Poor | 2 | 1 | 3 | 44,9 | 11,7 | 30,3 | | Moderate |
| ENV_ABP223209_260 | 435088,6 | 7299308 | Poor | Fair | 2 | 2 | 4 | 24,9 | 13,4 | 16,7 | | Serious |
| ENV_ABP223209_323 | 433391,4 | 7300856 | Dead | Fair | 1 | 2 | 3 | 26,4 | | 11,2 | | Moderate |
| ENV_ABP223209_011 | 431952,8 | 7301942 | Excellent | Good | 5 | 3 | 8 | 152,4 | | 14,5 | | Severe |
| ENV_ABP223209_139 | 433602,7 | 7300650 | Poor | Fair | 2 | 2 | 4 | 18,8 | | 15,3 | | Moderate |
| ENV_ABP223209_013 | 431961,9 | 7301987 | Poor | Good | 2 | 3 | 5 | 42,4 | | 15,5 | | Serious |
| ENV_ABP223209_007 | 431728,3 | 7302119 | Poor | Good | 2 | 3 | 5 | 73,0 | | 15,8 | | Serious |
| ENV_ABP223209_029 | 432998,2 | 7301121 | Poor | Fair | 2 | 2 | 4 | 34,3 | | 16,4 | | Moderate |
| ENV_ABP223209_025 | 432824 | 7301310 | Poor | Fair | 2 | 2 | 4 | 14,7 | | 17,5 | | Moderate |
| ENV_ABP223209_019 | 432458,8 | 7301598 | Poor | Excellent | 2 | 4 | 6 | 5,4 | | 19,6 | | Serious |
| ENV_ABP223209_028 | 432819 | 7301262 | Fair | Poor | 3 | 1 | 4 | 19,1 | | 19,7 | | Moderate |

| | | | | | | | | | | |
|-------------------|----------|---------|------|------|---|---|---|-------|------|----------|
| ENV_ABP223209_018 | 432463,8 | 7301606 | Dead | Good | 1 | 3 | 4 | 118,4 | 22,6 | Moderate |
| ENV_ABP223209_261 | 434893,8 | 7299541 | Poor | Poor | 2 | 1 | 3 | 16,5 | 24,1 | Moderate |

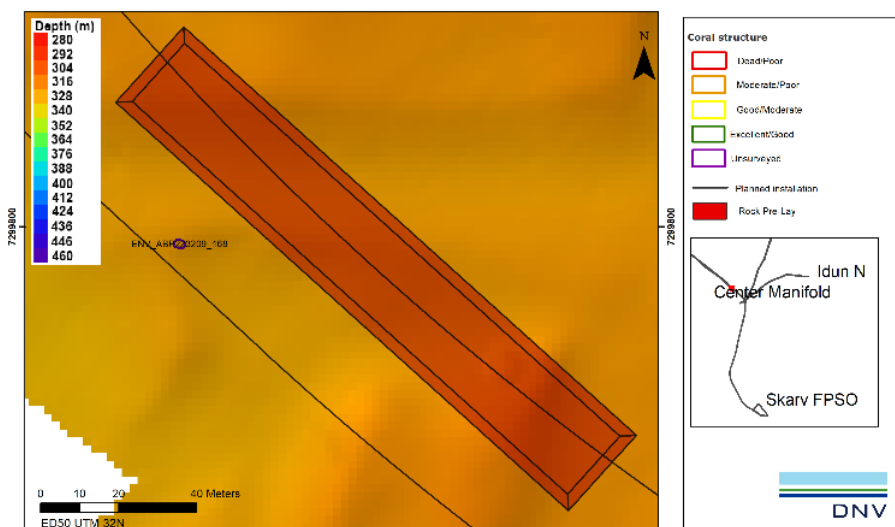


Figure 5-1 Rock laying along the Ørn route with an un-surveyed potential coral target: ENV_ABP223209_168 in “Severe” risk.

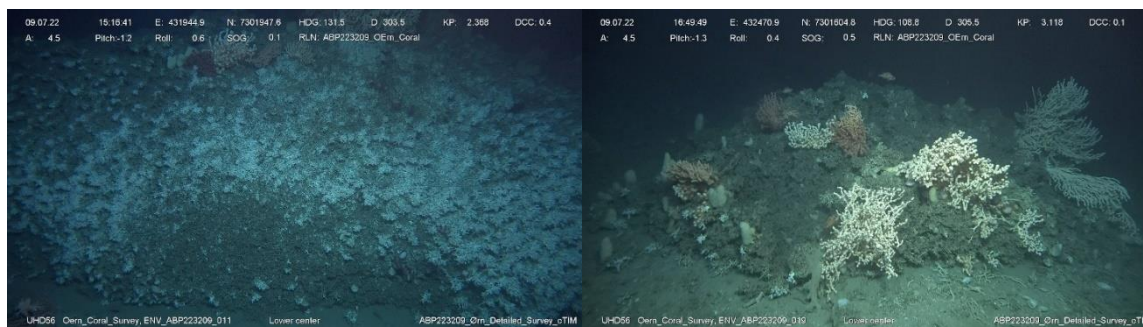


Figure 5-2 Examples of logged corals at Ørn. Left; ENV_ABP223209_011 a *D. pertusum* reef in excellent condition and “Severe” risk. Right; ENV_ABP223209_019, a Poor *D. Pertusum* reef with a excellent coral garden in “Serious” risk.

5.2.1 Alve Nord to Central manifold

From Alve Nord to the Central manifold, impact assessment has been performed for the rock laying (pre- and post), the pipeline route (Design S7_Line 10in 16in Alve Nord Production Pipeline Alve Nord LTS to Central TIM_20230301) and the planned umbilical route (Design S7_Line Alve Nord Static Umbilical Alve Nord LTS to Central SDU Overlength Route_20230301). Results presented in text below, in Table 5-4 and further in appendix

Pipelines

Along the Alve N to Central manifold route 8 corals are between 25 and 50 meters from the pipeline. No coral targets are closer than 25 meters from the pipeline, thus the planned route is in minor risk. All corals are in the south part, closer to the Central manifold. Calculated seafloor footprint area from the 24 087 m long pipeline route is 12 043 m² with considerable impact and 24 087 m² (2x0.5 m) with low impact.

Umbilical

Three coral areas are in moderate risk and one in serious risk (ENV_ABP223210_010). Calculated seafloor footprint area for the 24 463 m long umbilical route is 12 232 m² with considerable impact and 24 463 m² (2x0.5 m) with low impact.

Rock laying

No corals are within risk from the rock laying operations at Idun N. Calculated seafloor footprint area is 76 919m² with considerable impact and 33 506 m² with significant impact.

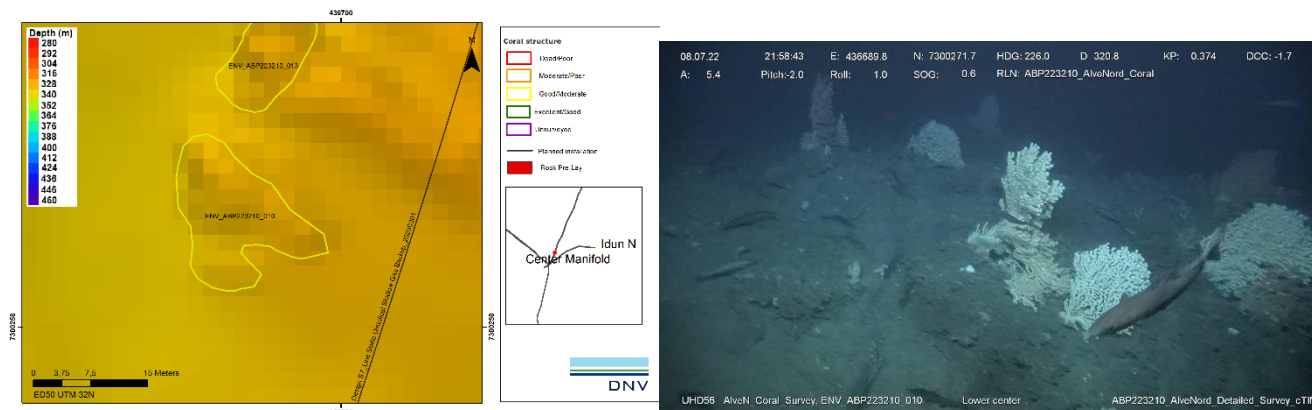


Figure 5-3 Left location of area ENV_ABP223210_010 in serious risk, Right: Part of the Coral garden in good condition at the area.

Table 5-4 Coral within risk of the Alve Nord route.

| Coral structure | X_ED50UTM32N | Y_ED50UTM32N | D. pertusum | Coral garden | D. pertusum Value | Coral garden Value | Combined Value | Area (m ²) | Distance to Umbilical (m) | Pipeline (m) | Rock laying (m) | Risk |
|-------------------|--------------|--------------|-------------|--------------|-------------------|--------------------|----------------|------------------------|---------------------------|--------------|-----------------|----------|
| ENV_ABP223210_015 | 436716,8 | 7300307,0 | Dead | Fair | 1 | 2 | 3 | 21,8 | 3,2 | 25,7 | | Moderate |
| ENV_ABP223210_029 | 436848,2 | 7300720,6 | Dead | Fair | 1 | 2 | 3 | 17,6 | 4,0 | | | Moderate |
| ENV_ABP223210_010 | 436687,3 | 7300264,7 | Dead | Good | 1 | 3 | 4 | 221,0 | 9,8 | 44,8 | | Serious |
| ENV_ABP223210_014 | 436700,7 | 7300295,8 | Poor | Poor | 2 | 1 | 3 | 22,0 | 14,9 | 49,9 | | Moderate |

5.2.2 Idun Nord to Central Manifold

From Idun Nord to the Central manifold, impact assessment has been performed for the rock laying (pre- and post), the pipeline route (Design S7_Line 10in 16in Idun Nord Production Pipeline Idun Nord LTS to Central TIM_20230301) and the

planned umbilical route (Design S7_Line Idun Nord Static Umbilical Idun Nord LTS to Central SDU Overlength Route_20230301). Results presented in text below, in Table 5-5 and further in appendix

Pipelines

Along the Idun N to Central manifold route 5 corals are between 25 and 50 meters from the pipeline. No coral targets are closer than 25 meters from the pipeline, thus the planned route is in minor risk. Calculated seafloor footprint area for the 6022 m long pipeline route is calculated to 3011 m² with considerable and 6022 m² (2x0.5 m) with low impact.

Umbilical

Two corals targets are 5 respectively 10 meters from the umbilical and one of these, target ENV_AB223211_048 have not been visually surveyed, thus in severe risk (Figure 5-4). Calculated seafloor footprint area for the 6332 m long umbilical route is 3166 m² with considerable impact and 6022 m² (2x0.5 m) with low impact.

Rock laying

No corals are within risk from the rock laying operations at Idun N. Calculated seafloor footprint area is 31 327 m² with considerable impact and 15 496 m² with significant impact.

Table 5-5 Coral within risk of the Idun Nord route (* Unsurveyed coral, risk assessment could change if surveyed) .

| Coral structure | X ED50UTM32N | Y ED50UTM32N | D. pertusum reef | Coral garden | D. pertusum Value | Coral garden Value | Combined Value | Area (m2) | Distance to Umbilical (m) | Rock laying (m) | Risk |
|------------------|--------------|--------------|------------------|--------------|-------------------|--------------------|----------------|-----------|---------------------------|-----------------|----------|
| ENV_AB223211_048 | 437276,7 | 7299699,8 | Not surveyed | Not surveyed | 6 | 5 | 11 | 12,6 | 5,5 | 40,5 | Severe* |
| ENV_AB223211_005 | 436935,4 | 7299428,9 | Dead | Fair | 1 | 2 | 3 | 97,2 | 10,5 | 45,5 | Moderate |

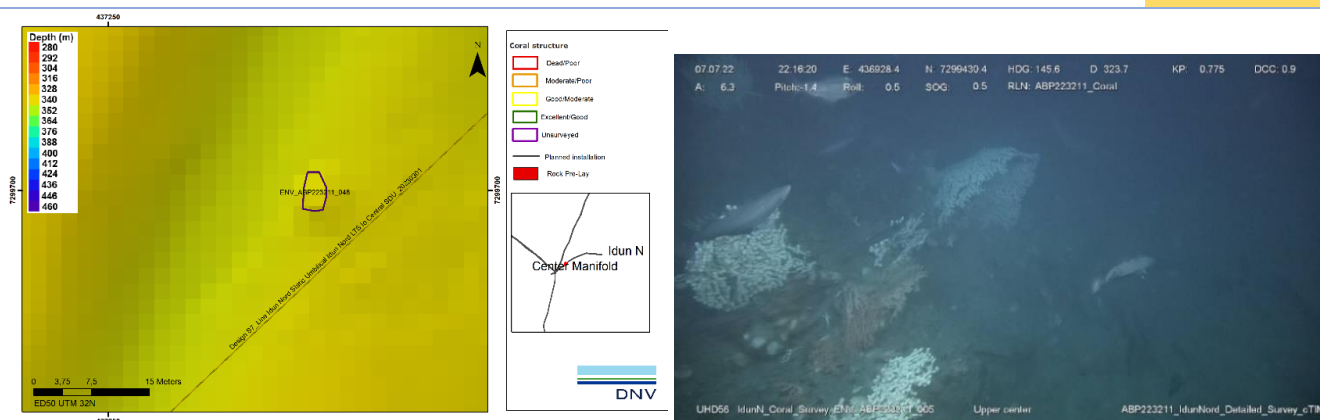


Figure 5-4 Left: Location of the un-surveyed coral 5.5 m north of the umbilical. Left: Coral garden in fair condition on dead reef at ENV_AB223211_005.

5.2.3 Central manifold to Skarv FPSO

From the Central manifold to Skarv FPSO tie in, including the manifold area, impact assessment has been performed for the rock laying, the pipeline route (Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207) and the planned umbilical route (Design S7_Line Commingling PLET and SSIV Static Umbilical URB4 to SSIV and PLET_20221207). Results presented in text below, in Table 5-3 and further in appendix

Pipeline

Along the pipeline route two corals are within serious risk (ENV_ABP223212_110 and ENV_ABP223212_139) of the pipelines and five are within moderate risk. 26 coral areas are within minor risk.

Umbilical

Along the umbilical route two coral areas are within moderate risk and 6 coral targets are within minor risk.

Rock laying

No corals are closer than 25 meters of any rock laying. 4 corals are in minor risk at the center manifold location (Figure 5-5)

Table 5-6 Coral within risk of the Central Manifold to Skarv FPSO route.

| Coral structure | X_ED50UTM32N | Y_ED50UTM32N | D. pertusum | Coral garden | D. pertusum Value | Coral garden Value | Combined Value | Area (m2) | Distance to Umbilical (m) | Pipeline (m) | Rock laying (m) | Risk |
|-------------------|--------------|--------------|-------------|--------------|-------------------|--------------------|----------------|-----------|---------------------------|--------------|-----------------|----------|
| ENV_ØRN_355 | 437485,5 | 7287875,1 | Dead | Fair | 1 | 2 | 3 | 663,0 | 5,1 | | | Moderate |
| ENV_ØRN_378 | 436999,2 | 7287489,3 | Poor | Poor | 2 | 1 | 3 | 633,5 | 6,6 | | | Moderate |
| ENV_ABP223212_110 | 434346,2 | 7291126,1 | Dead | Good | 1 | 3 | 4 | 67,2 | | 11,6 | | Serious |
| ENV_ABP223212_223 | 435136,3 | 7294386,1 | Dead | Fair | 1 | 2 | 3 | 122,9 | | 13,9 | | Moderate |
| ENV_ABP223212_071 | 435472,4 | 7295982,6 | Dead | Fair | 1 | 2 | 3 | 33,2 | | 15,6 | | Moderate |
| ENV_ABP223212_181 | 434302,0 | 7291196,3 | Dead | Fair | 1 | 2 | 3 | 42,2 | | 17,6 | | Moderate |
| ENV_ABP223212_212 | 434935,4 | 7293398,7 | Dead | Good | 1 | 3 | 4 | 37,4 | | 18,8 | | Moderate |
| ENV_ABP223212_249 | 435855,5 | 7288192,9 | Dead | Fair | 1 | 2 | 3 | 131,8 | | 19,7 | | Moderate |
| ENV_ABP223212_139 | 434873,5 | 7293345,2 | Poor | Excellent | 2 | 4 | 6 | 97,8 | | 21,6 | | Serious |

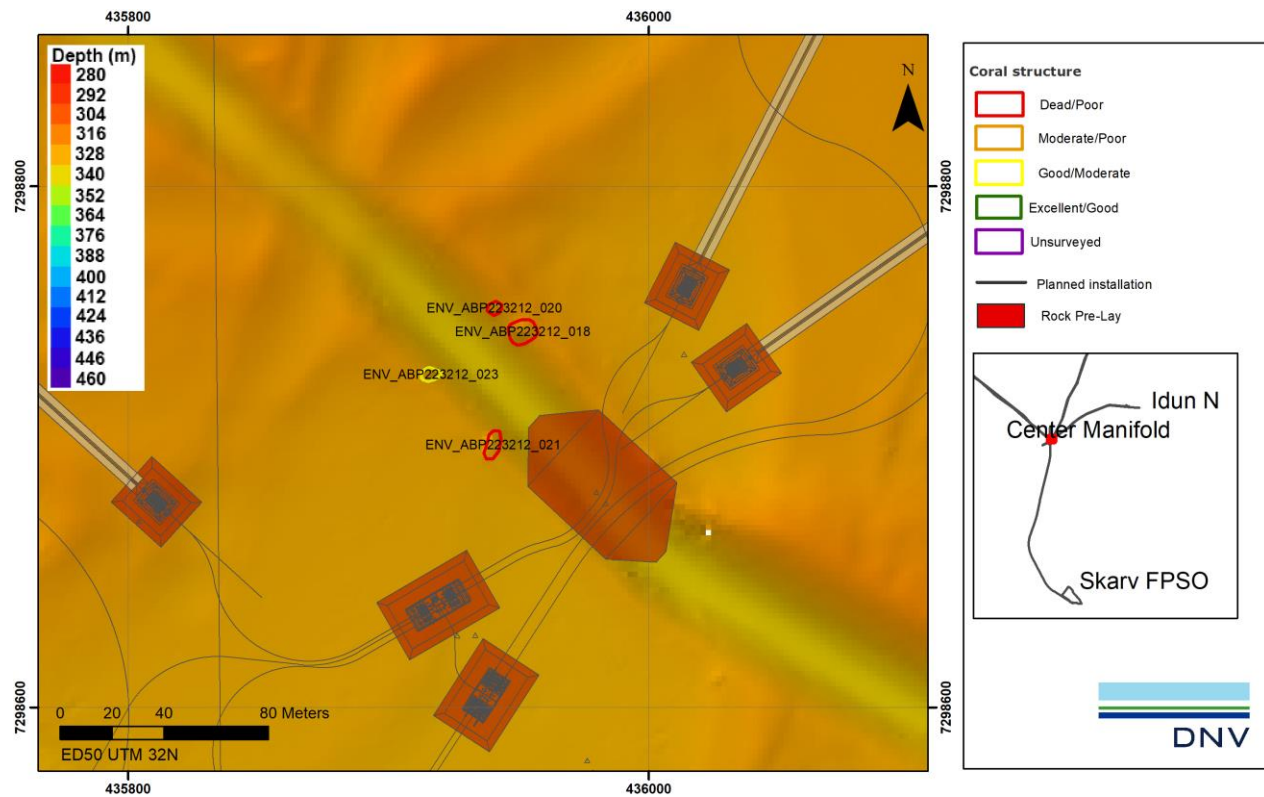


Figure 5-5 Corals close to the Central Manifold (all in minor risk from the rock laying).



Figure 5-6 Left: ENV_ABP223212_110 a Coral garden in good condition and “Serious” risk from the pipeline. Right: ENV_ABP223212_139 a Coral garden in excellent condition and “Serious” risk from the pipeline.

6 MITIGATING MEASURES AND MONITORING

6.1 Mitigating measures

The route has been planned with focus on minimal environmental impact, thus the most important mitigating measures have already been performed. However, several actions can be taken to further reduce the risk of damaging close by corals:

Visual survey

- Perform visual survey of the un-surveyed corals within risk. In total 9 structures, with 7 in minor risk, thus low importance and two in severe risk (see table in appendix 2).

Planning

- To increase awareness of the presence of corals, all operations with possible impact should be initiated with a toolbox risk assessment with all involved personnel, assessing and addressing the importance of the corals within risk.

Pipeline route

- Accuracy when laying is of high importance. Visually observing the operation with ROV may reduce risk and can document potential impact.
- Planning the pipeline buckling areas to reduce the risks from temperature induced lateral movements.

Rock dumping

- Again, accuracy when laying is crucial. Rock operators to be informed and aware of the coral targets.
- Minimising the resuspension of sediments by dumping the rocks as close to the seafloor as possible using e.g. a fall pipe vessel.
- Visual and /or acoustic aids when laying.

Umbilicals

- As the umbilicals is more flexible than the pipeline it is possible to route the cables avoiding the coral structures, hence when laying this should be communicated and performed.
- To further reduce the risk of damaging corals, the umbilicals should be laid with ROV supervision.

6.2 Monitoring

Visual documentation of potential damages caused by the pipeline laying operation should be performed after laying, this could suitably be conducted during e.g., a post laying survey or during pipe inspection. Follow up surveys, studying long term effects could also be performed to gain long term knowledge about effects on corals from pipeline operations.

7 CONCLUSIONS

- The SPP area have been rigorously surveyed and more than 1800 potential corals have been delineated from MBES / SSS data and almost 900 of these have been visually surveyed. The condition of the corals in the area is overall poor with the majority of *Desmophyllum.pertusum* reefs being dead or poor and coral gardens were mainly found in poor to fair condition. Corals in Good and excellent condition are rare and are found in less than 15% of the mapped coral areas.
- To identify and protect corals within in risk of the damage from the project, an impact assessment has been performed for all infrastructure, potentially causing harm to corals. The risk assessment categorizes risk (from minor to severe) based on the degree of impact (coral condition) and probability (distance from infrastructure). Rock infill design is not finalized and not included in the assessment.
- In the latest field layout, no corals are crossed by planned pipelines, umbilical's, rock laying or other infrastructure. The route is designed with "snake lay" (laying the pipe with bends to stay clear of corals, minimum bend radius is 2 km) to stay furthest away from corals as possible, however given the high presence of corals, several corals are identified within risk (Table 7-1).
- 5 corals are identified as being in "Severe" risk, 3 of these have not been surveyed yet and can most likely be reduced. 9 corals are within serious risk, all have been surveyed.
- The total footprint on the seafloor from the SSP campaign have been calculated with degree of impact based on knowledge from previous surveys (i.e., Ærfugl, Askeladd and Snøhvit) The total impact is calculated to approx. 380 000 m², with about 210 000 m² of permanent damage. For comparison, this is equivalent to approx. 53 and 29 respectively football fields (Table 7-2). No corals are within the footprint area.
- The risk is highly dependent on laying accuracy. Thus, implementing mitigating measures that increase laying accuracy will reduce the risk significantly.

Table 7-1 All corals within risk at the SSP field development.

| Route | Minor | Moderate | Serious | Severe |
|-----------------------------------|------------|-----------|----------|----------|
| Ørn to Central Manifold | 54 | 11 | 6 | 4 |
| Pipeline | 36 | 8 | 3 | 1 |
| Umbilical | 18 | 3 | 3 | 2 |
| Rock laying | | | | 1 |
| Alve N to Central Manifold | 11 | 4 | 1 | |
| Pipeline | 8 | | | |
| Umbilical | 3 | 3 | 1 | |
| Rock laying | | | | |
| Idun N to Central Manifold | 6 | 1 | | 1 |
| Pipeline | 5 | | | |
| Umbilical | 1 | 1 | | 1 |
| Rock laying | | | | |
| Central Manifold to FPSO | 36 | 7 | 2 | |
| Pipeline | 26 | 5 | 2 | |
| Umbilical | 6 | 2 | | |
| Rock laying | 4 | | | |
| Grand Total | 107 | 23 | 9 | 5 |

Table 7-2 Total calculated footprint from the SSP development

| Route | Length | Area | Considerable (m ²) | Significant (m ²) | Low (m ²) | Total (m ²) |
|-----------------------------------|--------|------|--------------------------------|-------------------------------|-----------------------|-------------------------|
| Ørn to Central Manifold | | | | | | |
| Pipeline | 11281 | | 5641 | | 11281 | 16922 |
| Umbilical | 11766 | | 5883 | | 11766 | 17649 |
| Rock laying | | | 42537 | 20874 | | 0 |
| Alve N to Central Manifold | | | | | | |
| Pipeline | 24087 | | 12043 | | 24087 | 36130 |
| Umbilical | 24463 | | 12232 | | 24463 | 36695 |
| Rock laying | | | 76919 | 33506 | | 0 |
| Idun N to Central Manifold | | | | | | |
| Pipeline | 6022 | | 3011 | | 6022 | 9033 |
| Umbilical | 6332 | | 3166 | | 6332 | 9499 |
| Rock laying | | | 31327 | 15496 | | 0 |
| Central Manifold to FPSO | | | | | | |
| Pipeline | 12670 | | 6335 | | 12670 | 19005 |
| Umbilical | 2411 | | 1205 | | 2411 | 3616 |
| Rock laying | | | 6968 | 5870 | | |
| | | | 207 267 | 75 746 | 99 032 | 382 045 |

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APPENDIX A

All Risk assessed corals (within 50m of any planned infrastructure)

| ImpactType | Field | Installation Year | Risk assessment | NEAR DIST | Pipe Umb name | Max condition | Coral Garden Condition | Desmophyllum Condition | Fauna combined | Coral garden | Desmophyllum | Y ED50UTM32N | X ED50UTM32N | Area | Coral structure |
|------------|------------------|-------------------|-----------------|-----------|--|---------------|------------------------|------------------------|----------------|--------------|--------------|--------------|--------------|-------|--------------------|
| Rock | Central manifold | 2023 | Minor | 28,2 | Design S7_Area Rock Pre-Lay_20221208 | Poor | Poor | Dead | 2 | 1 | 1 | 7298744,1 | 435951,6 | 82,4 | ENV_ABP22 3212_018 |
| Rock | Central manifold | 2023 | Minor | 36,0 | Design S7_Area Rock Pre-Lay_20221122 | Dead | Poor | Dead | 2 | 1 | 1 | 7298700,8 | 435940,1 | 49,5 | ENV_ABP22 3212_021 |
| Rock | Central manifold | 2023 | Minor | 39,3 | Design S7_Area Rock Pre-Lay_20221208 | Good | Good | Dead | 4 | 3 | 1 | 7298727,7 | 435916,3 | 28,6 | ENV_ABP22 3212_023 |
| Rock | Central manifold | 2023 | Minor | 42,3 | Design S7_Area Rock Pre-Lay_20221208 | Dead | Not present | Dead | 1 | 0 | 1 | 7298753,2 | 435940,8 | 20,8 | ENV_ABP22 3212_020 |
| Rock | Ørn | 2023 | Severe | 14,7 | Design S7_Area Rock Pre-Lay_20230306 | Not surveyed | Not surveyed | Not surveyed | 1 | 5 | 6 | 7299795,5 | 434462,7 | 4,7 | ENV_ABP22 3209_168 |
| Pipeline | Alve Nord | 2024 | Minor | 25,7 | Design S7_Line 10in 16in Alve Nord Production Pipeline Alve Nord LTS to Central TIM_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7300720,6 | 436848,2 | 17,6 | ENV_ABP22 3210_029 |
| Pipeline | Alve Nord | 2024 | Minor | 26,1 | Design S7_Line 10in 16in Idun Nord Production Pipeline Idun Nord LTS to Central TIM_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7299572,4 | 436673,5 | 30,7 | ENV_ABP22 3211_052 |
| Pipeline | Alve Nord | 2024 | Minor | 30,1 | Design S7_Line 10in 16in Idun Nord Production Pipeline Idun Nord LTS to Central TIM_20230301 | Good | Good | Poor | 5 | 3 | 2 | 7299328,8 | 436941,9 | 34,5 | ENV_ABP22 3211_004 |
| Pipeline | Alve Nord | 2024 | Minor | 38,2 | Design S7_Line 10in 16in Alve Nord Production Pipeline Alve Nord LTS to Central TIM_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7300307,0 | 436716,8 | 21,8 | ENV_ABP22 3210_015 |
| Pipeline | Alve Nord | 2024 | Minor | 39,0 | Design S7_Line 10in 16in Alve Nord Production Pipeline Alve Nord LTS to Central TIM_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7300482,2 | 436855,1 | 44,5 | ENV_ABP22 3210_018 |
| Pipeline | Alve Nord | 2024 | Minor | 39,5 | Design S7_Line 10in 16in Alve Nord Production Pipeline Alve Nord LTS to Central TIM_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7300837,7 | 436959,5 | 281,4 | ENV_ABP22 3210_031 |
| Pipeline | Alve Nord | 2024 | Minor | 40,0 | Design S7_Line 10in 16in Alve Nord Production Pipeline Alve Nord LTS to Central TIM_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7300494,6 | 436858,8 | 25,4 | ENV_ABP22 3210_020 |
| Pipeline | Alve Nord | 2024 | Minor | 40,5 | Design S7_Line 10in 16in Idun Nord Production Pipeline Idun Nord LTS to Central TIM_20230301 | Not surveyed | Not surveyed | Not surveyed | 1 | 5 | 6 | 7299699,8 | 437276,7 | 12,6 | ENV_ABP22 3211_048 |
| Pipeline | Alve Nord | 2024 | Minor | 41,6 | Design S7_Line 10in 16in Alve Nord Production Pipeline Alve Nord LTS to Central TIM_20230301 | Poor | Poor | Not present | 1 | 1 | 0 | 7300878,9 | 436878,5 | 2,7 | ENV_ABP22 3210_035 |
| Pipeline | Alve Nord | 2024 | Minor | 44,8 | Design S7_Line 10in 16in Alve Nord Production Pipeline Alve Nord LTS to Central TIM_20230301 | Good | Good | Dead | 4 | 3 | 1 | 7300264,7 | 436687,3 | 221,0 | ENV_ABP22 3210_010 |
| Pipeline | Alve Nord | 2024 | Minor | 45,5 | Design S7_Line 10in 16in Idun Nord Production Pipeline Idun Nord LTS to Central TIM_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7299428,9 | 436935,4 | 97,2 | ENV_ABP22 3211_005 |

| ImpactType | Field | Installation Year | Risk assessment | NEAR DIST | Pipe Umb name | Max condition | Coral Garden Condition | Desmophyllum Condition | Fauna combined | Coral garden | Desmophyllum | Y ED50UTM32N | X ED50UTM32N | Area | Coral structure |
|------------|-----------|-------------------|-----------------|-----------|--|---------------|------------------------|------------------------|----------------|--------------|--------------|--------------|--------------|-------|--------------------|
| Pipeline | Alve Nord | 2024 | Minor | 49,8 | Design S7_Line 10in 16in Idun Nord Production Pipeline Idun Nord LTS to Central TIM_20230301 | Excellent | Excellent | Dead | 5 | 4 | 1 | 7299615,2 | 437331,1 | 123,8 | ENV_ABP22 3211_009 |
| Pipeline | Alve Nord | 2024 | Minor | 49,9 | Design S7_Line 10in 16in Alve Nord Production Pipeline Alve Nord LTS to Central TIM_20230301 | Poor | Poor | Poor | 3 | 1 | 2 | 7300295,8 | 436700,7 | 22,0 | ENV_ABP22 3210_014 |
| Pipeline | Ørn | 2024 | Minor | 9,5 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7300520,3 | 433777,8 | 12,0 | ENV_ABP22 3209_290 |
| Pipeline | Ørn | 2024 | Minor | 10,6 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7302387,5 | 431401,8 | 7,6 | ENV_ABP22 3209_310 |
| Pipeline | Ørn | 2024 | Moderate | 11,2 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7300856,2 | 433391,4 | 26,4 | ENV_ABP22 3209_323 |
| Pipeline | Ørn | 2024 | Minor | 12,5 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7301584,7 | 432464,0 | 3,3 | ENV_ABP22 3209_138 |
| Pipeline | Ørn | 2024 | Severe | 14,5 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Excellent | Good | Excellent | 8 | 3 | 5 | 7301941,9 | 431952,8 | 152,4 | ENV_ABP22 3209_011 |
| Pipeline | Ørn | 2024 | Moderate | 15,3 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7300650,4 | 433602,7 | 18,8 | ENV_ABP22 3209_139 |
| Pipeline | Ørn | 2024 | Serious | 15,5 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Good | Good | Poor | 5 | 3 | 2 | 7301987,0 | 431961,9 | 42,4 | ENV_ABP22 3209_013 |
| Pipeline | Ørn | 2024 | Serious | 15,8 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Good | Good | Poor | 5 | 3 | 2 | 7302118,7 | 431728,3 | 73,0 | ENV_ABP22 3209_007 |
| Pipeline | Ørn | 2024 | Minor | 16,4 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Not present | 1 | 1 | 0 | 7301956,6 | 431934,2 | 88,5 | ENV_ABP22 3209_135 |
| Pipeline | Ørn | 2024 | Moderate | 16,4 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7301121,0 | 432998,2 | 34,3 | ENV_ABP22 3209_029 |
| Pipeline | Ørn | 2024 | Moderate | 16,7 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7299308,1 | 435088,6 | 24,9 | ENV_ABP22 3209_260 |
| Pipeline | Ørn | 2024 | Moderate | 17,5 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7301309,6 | 432824,0 | 14,7 | ENV_ABP22 3209_025 |
| Pipeline | Ørn | 2024 | Minor | 19,2 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7299354,8 | 435033,0 | 25,3 | ENV_ABP22 3209_166 |
| Pipeline | Ørn | 2024 | Serious | 19,6 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Excellent | Excellent | Poor | 6 | 4 | 2 | 7301598,1 | 432458,8 | 5,4 | ENV_ABP22 3209_019 |
| Pipeline | Ørn | 2024 | Moderate | 19,7 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Fair | 4 | 1 | 3 | 7301261,6 | 432819,0 | 19,1 | ENV_ABP22 3209_028 |
| Pipeline | Ørn | 2024 | Moderate | 22,6 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Good | Good | Dead | 4 | 3 | 1 | 7301605,7 | 432463,8 | 118,4 | ENV_ABP22 3209_018 |
| Pipeline | Ørn | 2024 | Moderate | 24,1 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Poor | 3 | 1 | 2 | 7299540,9 | 434893,8 | 16,5 | ENV_ABP22 3209_261 |
| Pipeline | Ørn | 2024 | Minor | 24,9 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Not present | 1 | 1 | 0 | 7300763,7 | 433530,5 | 7,5 | ENV_ABP22 3209_106 |
| Pipeline | Ørn | 2024 | Minor | 25,5 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Not present | 1 | 1 | 0 | 7300735,2 | 433478,9 | 6,7 | ENV_ABP22 3209_291 |

| ImpactType | Field | Installation Year | Risk assessment | NEAR DIST | Pipe Umb name | Max condition | Coral Garden Condition | Desmophyllum Condition | Fauna combined | Coral garden | Desmophyllum | Y ED50UTM32N | X ED50UTM32N | Area | Coral structure |
|------------|-------|-------------------|-----------------|-----------|--|---------------|------------------------|------------------------|----------------|--------------|--------------|--------------|--------------|-------|--------------------|
| Pipeline | Ørn | 2024 | Minor | 25,7 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7299554,0 | 434893,1 | 108,3 | ENV_ABP22_3209_263 |
| Pipeline | Ørn | 2024 | Minor | 25,8 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Good | Good | Poor | 5 | 3 | 2 | 7300771,3 | 433523,5 | 26,2 | ENV_ABP22_3209_105 |
| Pipeline | Ørn | 2024 | Minor | 27,9 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Dead | Not present | Dead | 1 | 0 | 1 | 7300613,9 | 433627,4 | 21,9 | ENV_ABP22_3209_162 |
| Pipeline | Ørn | 2024 | Minor | 28,0 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7302734,1 | 430928,9 | 40,7 | ENV_ABP22_3209_120 |
| Pipeline | Ørn | 2024 | Minor | 28,8 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Not surveyed | Not surveyed | Not surveyed | 1 | 5 | 6 | 7299795,5 | 434462,7 | 4,7 | ENV_ABP22_3209_168 |
| Pipeline | Ørn | 2024 | Minor | 29,6 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7299555,2 | 434885,2 | 14,7 | ENV_ABP22_3209_262 |
| Pipeline | Ørn | 2024 | Minor | 30,3 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Poor | 3 | 1 | 2 | 7302983,0 | 430612,5 | 44,9 | ENV_ABP22_3209_314 |
| Pipeline | Ørn | 2024 | Minor | 32,7 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Good | Good | Poor | 5 | 3 | 2 | 7301602,8 | 432476,3 | 19,2 | ENV_ABP22_3209_020 |
| Pipeline | Ørn | 2024 | Minor | 32,7 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7301210,0 | 432860,1 | 22,6 | ENV_ABP22_3209_296 |
| Pipeline | Ørn | 2024 | Minor | 32,9 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Not present | 1 | 1 | 0 | 7301097,5 | 433006,4 | 5,7 | ENV_ABP22_3209_030 |
| Pipeline | Ørn | 2024 | Minor | 32,9 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7300056,4 | 434326,1 | 151,5 | ENV_ABP22_3209_146 |
| Pipeline | Ørn | 2024 | Minor | 34,8 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Excellent | Excellent | Excellent | 9 | 4 | 5 | 7301914,2 | 431936,1 | 847,3 | ENV_ABP22_3209_113 |
| Pipeline | Ørn | 2024 | Minor | 35,3 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Excellent | Good | Excellent | 8 | 3 | 5 | 7300766,4 | 433561,0 | 305,5 | ENV_ABP22_3209_045 |
| Pipeline | Ørn | 2024 | Minor | 35,8 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Not present | 1 | 1 | 0 | 7299182,0 | 435197,1 | 97,9 | ENV_ABP22_3209_328 |
| Pipeline | Ørn | 2024 | Minor | 37,4 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7302076,4 | 431753,9 | 6,7 | ENV_ABP22_3209_302 |
| Pipeline | Ørn | 2024 | Minor | 37,6 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Excellent | Fair | Excellent | 7 | 2 | 5 | 7301615,6 | 432470,1 | 32,3 | ENV_ABP22_3209_021 |
| Pipeline | Ørn | 2024 | Minor | 38,2 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7298903,0 | 435499,7 | 97,0 | ENV_ABP22_3209_259 |
| Pipeline | Ørn | 2024 | Minor | 38,4 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7302805,6 | 430971,8 | 115,2 | ENV_ABP22_3209_121 |
| Pipeline | Ørn | 2024 | Minor | 38,9 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7302081,1 | 431744,7 | 18,0 | ENV_ABP22_3209_301 |
| Pipeline | Ørn | 2024 | Minor | 39,0 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7300447,5 | 433819,4 | 27,1 | ENV_ABP22_3209_325 |

| ImpactType | Field | Installation Year | Risk assessment | NEAR DIST | Pipe Umb name | Max condition | Coral Garden Condition | Desmophyllum Condition | Fauna combined | Coral garden | Desmophyllum | Y ED50UTM32N | X ED50UTM32N | Area | Coral structure |
|------------|------------------|-------------------|-----------------|-----------|--|---------------|------------------------|------------------------|----------------|--------------|--------------|--------------|--------------|-------|--------------------|
| Pipeline | Ørn | 2024 | Minor | 39,7 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Good | Good | Dead | 4 | 3 | 1 | 7300793,8 | 433521,2 | 51,8 | ENV_ABP22_3209_043 |
| Pipeline | Ørn | 2024 | Minor | 40,3 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7302978,6 | 430602,7 | 9,7 | ENV_ABP22_3209_315 |
| Pipeline | Ørn | 2024 | Minor | 41,2 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Good | Good | Poor | 5 | 3 | 2 | 7301098,2 | 433132,1 | 19,4 | ENV_ABP22_3209_031 |
| Pipeline | Ørn | 2024 | Minor | 41,8 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Not present | 2 | 2 | 0 | 7300991,2 | 433122,1 | 42,8 | ENV_ABP22_3209_295 |
| Pipeline | Ørn | 2024 | Minor | 46,1 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Not surveyed | Not surveyed | Not surveyed | 1 | 5 | 6 | 7302073,0 | 431900,3 | 20,7 | ENV_ABP22_3209_010 |
| Pipeline | Ørn | 2024 | Minor | 46,4 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Good | Good | Poor | 5 | 3 | 2 | 7301623,2 | 432475,2 | 45,3 | ENV_ABP22_3209_022 |
| Pipeline | Ørn | 2024 | Minor | 48,3 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7298896,2 | 435648,7 | 31,9 | ENV_ABP22_3209_329 |
| Pipeline | Ørn | 2024 | Minor | 48,3 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7298896,2 | 435648,7 | 31,9 | ENV_ABP22_3209_329 |
| Pipeline | Ørn | 2024 | Minor | 49,2 | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | Good | Good | Fair | 6 | 3 | 3 | 7302058,8 | 431742,2 | 186,9 | ENV_ABP22_3209_004 |
| Pipeline | Central manifold | 2025 | Minor | 6,1 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Dead | 2 | 1 | 1 | 7287383,7 | 436984,6 | 72,8 | ENV_ØRN_380 |
| Pipeline | Central manifold | 2025 | Minor | 9,9 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Dead | 2 | 1 | 1 | 7288927,7 | 435304,6 | 15,2 | ENV_ABP22_3212_159 |
| Pipeline | Central manifold | 2025 | Serious | 11,6 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Good | Good | Dead | 4 | 3 | 1 | 7291126,1 | 434346,2 | 67,2 | ENV_ABP22_3212_110 |
| Pipeline | Central manifold | 2025 | Moderate | 13,9 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Fair | Fair | Dead | 3 | 2 | 1 | 7294386,1 | 435136,3 | 122,9 | ENV_ABP22_3212_223 |
| Pipeline | Central manifold | 2025 | Minor | 13,9 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Not present | 1 | 1 | 0 | 7291339,8 | 434302,2 | 55,1 | ENV_ABP22_3212_188 |
| Pipeline | Central manifold | 2025 | Moderate | 15,6 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Fair | Fair | Dead | 3 | 2 | 1 | 7295982,6 | 435472,4 | 33,2 | ENV_ABP22_3212_071 |
| Pipeline | Central manifold | 2025 | Moderate | 17,6 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Fair | Fair | Dead | 3 | 2 | 1 | 7291196,3 | 434302,0 | 42,2 | ENV_ABP22_3212_181 |
| Pipeline | Central manifold | 2025 | Minor | 18,0 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and | Fair | Fair | Not present | 2 | 2 | 0 | 7287432,7 | 436998,0 | 467,3 | ENV_ØRN_379 |

| ImpactType | Field | Installation Year | Risk assessment | NEAR DIST | Pipe Umb name | Max condition | Coral Garden Condition | Desmophyllum Condition | Fauna combined | Coral garden | Desmophyllum | Y ED50UTM32N | X ED50UTM32N | Area | Coral structure |
|------------|------------------|-------------------|-----------------|-----------|--|---------------|------------------------|------------------------|----------------|--------------|--------------|--------------|--------------|-------|--------------------|
| | | | | | PLET_20230207 | | | | | | | | | | |
| Pipeline | Central manifold | 2025 | Moderate | 18,8 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Good | Good | Dead | 4 | 3 | 1 | 7293398,7 | 434935,4 | 37,4 | ENV_ABP22 3212_212 |
| Pipeline | Central manifold | 2025 | Moderate | 19,7 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Fair | Fair | Dead | 3 | 2 | 1 | 7288192,9 | 435855,5 | 131,8 | ENV_ABP22 3212_249 |
| Pipeline | Central manifold | 2025 | Minor | 20,4 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Dead | 2 | 1 | 1 | 7294731,0 | 435168,6 | 63,0 | ENV_ABP22 3212_085 |
| Pipeline | Central manifold | 2025 | Serious | 21,6 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Excellent | Excellent | Poor | 6 | 4 | 2 | 7293345,2 | 434873,5 | 97,8 | ENV_ABP22 3212_139 |
| Pipeline | Central manifold | 2025 | Minor | 23,6 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Dead | 2 | 1 | 1 | 7290668,3 | 434395,3 | 56,7 | ENV_ABP22 3212_172 |
| Pipeline | Central manifold | 2025 | Minor | 25,8 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Not present | 1 | 1 | 0 | 7288559,9 | 435556,7 | 72,4 | ENV_ØRN2_172 |
| Pipeline | Central manifold | 2025 | Minor | 27,2 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Fair | Fair | Dead | 3 | 2 | 1 | 7292081,3 | 434509,9 | 65,8 | ENV_ØRN_134 |
| Pipeline | Central manifold | 2025 | Minor | 27,3 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Not surveyed | Not surveyed | Not surveyed | 1 | 5 | 6 | 7296489,1 | 435645,3 | 57,5 | ENV_ABP22 3212_237 |
| Pipeline | Central manifold | 2025 | Minor | 28,0 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Good | Good | Dead | 4 | 3 | 1 | 7291116,8 | 434366,4 | 107,4 | ENV_ABP22 3212_111 |
| Pipeline | Central manifold | 2025 | Minor | 29,3 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Poor | 3 | 1 | 2 | 7292143,6 | 434537,2 | 246,5 | ENV_ABP22 3212_198 |
| Pipeline | Central manifold | 2025 | Minor | 32,0 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Not present | 1 | 1 | 0 | 7287748,6 | 436506,0 | 73,2 | ENV_SHREK_121 |
| Pipeline | Central manifold | 2025 | Minor | 32,8 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Fair | Fair | Dead | 3 | 2 | 1 | 7289499,9 | 435057,8 | 126,6 | ENV_ABP22 3212_113 |
| Pipeline | Central manifold | 2025 | Minor | 35,3 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Fair | Fair | Poor | 4 | 2 | 2 | 7292587,7 | 434706,5 | 372,5 | ENV_ABP22 3212_142 |

| ImpactType | Field | Installation Year | Risk assessment | NEAR DIST | Pipe Umb name | Max condition | Coral Garden Condition | Desmophyllum Condition | Fauna combined | Coral garden | Desmophyllum | Y ED50UTM32N | X ED50UTM32N | Area | Coral structure |
|------------|------------------|-------------------|-----------------|-----------|--|---------------|------------------------|------------------------|----------------|--------------|--------------|--------------|--------------|-------|--------------------|
| Pipeline | Central manifold | 2025 | Minor | 36,0 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Not present | 1 | 1 | 0 | 7290801,1 | 434424,8 | 19,4 | ENV_ABP22 3212_112 |
| Pipeline | Central manifold | 2025 | Minor | 36,3 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Fair | Fair | Dead | 3 | 2 | 1 | 7291991,4 | 434485,7 | 44,3 | ENV_ABP22 3212_200 |
| Pipeline | Central manifold | 2025 | Minor | 39,6 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Dead | 2 | 1 | 1 | 7289059,0 | 435298,1 | 83,9 | ENV_ABP22 3212_114 |
| Pipeline | Central manifold | 2025 | Minor | 40,8 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Not surveyed | Not surveyed | Not surveyed | 1 | 5 | 6 | 7293419,1 | 434960,7 | 20,7 | ENV_ABP22 3212_213 |
| Pipeline | Central manifold | 2025 | Minor | 41,4 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Not present | 1 | 1 | 0 | 7287335,9 | 436975,9 | 326,4 | ENV_ØRN_3 81 |
| Pipeline | Central manifold | 2025 | Minor | 41,8 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Dead | 2 | 1 | 1 | 7294704,5 | 435141,3 | 48,7 | ENV_ABP22 3212_082 |
| Pipeline | Central manifold | 2025 | Minor | 42,0 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Dead | 2 | 1 | 1 | 7297418,0 | 435779,8 | 28,0 | ENV_ABP22 3212_064 |
| Pipeline | Central manifold | 2025 | Minor | 42,4 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Dead | 2 | 1 | 1 | 7288966,0 | 435246,7 | 30,0 | ENV_ABP22 3212_160 |
| Pipeline | Central manifold | 2025 | Minor | 45,3 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Dead | 2 | 1 | 1 | 7290645,4 | 434380,8 | 37,0 | ENV_ABP22 3212_171 |
| Pipeline | Central manifold | 2025 | Minor | 45,9 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Fair | Fair | Dead | 3 | 2 | 1 | 7289441,3 | 434984,6 | 266,5 | ENV_ABP22 3212_162 |
| Pipeline | Central manifold | 2025 | Minor | 46,7 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Not surveyed | Not surveyed | Not surveyed | 1 | 5 | 6 | 7292922,0 | 434828,5 | 11,5 | ENV_ABP22 3212_208 |
| Pipeline | Central manifold | 2025 | Minor | 49,6 | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | Poor | Poor | Dead | 2 | 1 | 1 | 7294765,1 | 435149,4 | 16,6 | ENV_ABP22 3212_081 |
| Umbilical | Alve Nord | 2025 | Moderate | 3,2 | Design S7_Line Alve Nord Static Umbilical Alve Nord LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7300307,0 | 436716,8 | 21,8 | ENV_ABP22 3210_015 |
| Umbilical | Alve Nord | 2025 | Moderate | 4,0 | Design S7_Line Alve Nord Static Umbilical Alve Nord LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7300720,6 | 436848,2 | 17,6 | ENV_ABP22 3210_029 |

| ImpactType | Field | Installation Year | Risk assessment | NEAR DIST | Pipe Umb name | Max condition | Coral Garden Condition | Desmophyllum Condition | Fauna combined | Coral garden | Desmophyllum | Y ED50UTM32N | X ED50UTM32N | Area | Coral structure |
|------------|-----------|-------------------|-----------------|-----------|--|---------------|------------------------|------------------------|----------------|--------------|--------------|--------------|--------------|-------|--------------------|
| Umbilical | Alve Nord | 2025 | Minor | 6,6 | Design S7_Line Alve Nord Static Umbilical Alve Nord LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Not present | 1 | 1 | 0 | 7300878,9 | 436878,5 | 2,7 | ENV_ABP22 3210_035 |
| Umbilical | Alve Nord | 2025 | Serious | 9,8 | Design S7_Line Alve Nord Static Umbilical Alve Nord LTS to Central SDU Overlength Route_20230301 | Good | Good | Dead | 4 | 3 | 1 | 7300264,7 | 436687,3 | 221,0 | ENV_ABP22 3210_010 |
| Umbilical | Alve Nord | 2025 | Moderate | 14,9 | Design S7_Line Alve Nord Static Umbilical Alve Nord LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Poor | 3 | 1 | 2 | 7300295,8 | 436700,7 | 22,0 | ENV_ABP22 3210_014 |
| Umbilical | Alve Nord | 2025 | Minor | 19,8 | Design S7_Line Alve Nord Static Umbilical Alve Nord LTS to Central SDU Overlength Route_20230301 | Good | Good | Dead | 4 | 3 | 1 | 7300285,6 | 436690,4 | 119,1 | ENV_ABP22 3210_013 |
| Umbilical | Alve Nord | 2025 | Minor | 23,5 | Design S7_Line Alve Nord Static Umbilical Alve Nord LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7300519,5 | 436752,5 | 103,9 | ENV_ABP22 3210_022 |
| Umbilical | Idun Nord | 2025 | Minor | 1,4 | Design S7_Line Idun Nord Static Umbilical Idun Nord LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7299572,4 | 436673,5 | 30,7 | ENV_ABP22 3211_052 |
| Umbilical | Idun Nord | 2025 | Severe | 5,5 | Design S7_Line Idun Nord Static Umbilical Idun Nord LTS to Central SDU Overlength Route_20230301 | Not surveyed | Not surveyed | Not surveyed | 1 | 5 | 6 | 7299699,8 | 437276,7 | 12,6 | ENV_ABP22 3211_048 |
| Umbilical | Idun Nord | 2025 | Moderate | 10,5 | Design S7_Line Idun Nord Static Umbilical Idun Nord LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7299428,9 | 436935,4 | 97,2 | ENV_ABP22 3211_005 |
| Umbilical | Ørn | 2025 | Minor | 0,8 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Not present | 1 | 1 | 0 | 7299182,0 | 435197,1 | 97,9 | ENV_ABP22 3209_328 |
| Umbilical | Ørn | 2025 | Minor | 2,8 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7302978,6 | 430602,7 | 9,7 | ENV_ABP22 3209_315 |
| Umbilical | Ørn | 2025 | Moderate | 3,2 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7298903,0 | 435499,7 | 97,0 | ENV_ABP22 3209_259 |
| Umbilical | Ørn | 2025 | Minor | 3,9 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Not present | 2 | 2 | 0 | 7300991,2 | 433122,1 | 42,8 | ENV_ABP22 3209_295 |
| Umbilical | Ørn | 2025 | Moderate | 4,0 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7302970,3 | 430597,7 | 4,6 | ENV_ABP22 3209_316 |
| Umbilical | Ørn | 2025 | Severe | 4,3 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Not surveyed | Not surveyed | Not surveyed | 1 | 5 | 6 | 7299795,5 | 434462,7 | 4,7 | ENV_ABP22 3209_168 |
| Umbilical | Ørn | 2025 | Minor | 4,4 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7300733,9 | 433421,2 | 49,8 | ENV_ABP22 3209_140 |
| Umbilical | Ørn | 2025 | Serious | 5,8 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7302734,1 | 430928,9 | 40,7 | ENV_ABP22 3209_120 |

| ImpactType | Field | Installation Year | Risk assessment | NEAR DIST | Pipe Umb name | Max condition | Coral Garden Condition | Desmophyllum Condition | Fauna combined | Coral garden | Desmophyllum | Y ED50UTM32N | X ED50UTM32N | Area | Coral structure |
|------------|-------|-------------------|-----------------|-----------|--|---------------|------------------------|------------------------|----------------|--------------|--------------|--------------|--------------|-------|--------------------|
| Umbilical | Ørn | 2025 | Minor | 6,3 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7300515,1 | 433658,1 | 22,3 | ENV_ABP22 3209_158 |
| Umbilical | Ørn | 2025 | Minor | 6,9 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7300624,5 | 433536,6 | 23,6 | ENV_ABP22 3209_157 |
| Umbilical | Ørn | 2025 | Severe | 7,1 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Good | Good | Poor | 5 | 3 | 2 | 7302705,1 | 430910,7 | 325,9 | ENV_ABP22 3209_119 |
| Umbilical | Ørn | 2025 | Minor | 7,2 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7300704,4 | 433449,4 | 28,3 | ENV_ABP22 3209_155 |
| Umbilical | Ørn | 2025 | Serious | 7,9 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7300938,7 | 433156,2 | 138,9 | ENV_ABP22 3209_107 |
| Umbilical | Ørn | 2025 | Minor | 9,4 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Not present | 1 | 1 | 0 | 7300542,4 | 433660,5 | 28,8 | ENV_ABP22 3209_159 |
| Umbilical | Ørn | 2025 | Minor | 9,4 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7299354,8 | 435033,0 | 25,3 | ENV_ABP22 3209_166 |
| Umbilical | Ørn | 2025 | Moderate | 11,7 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Poor | 3 | 1 | 2 | 7302983,0 | 430612,5 | 44,9 | ENV_ABP22 3209_314 |
| Umbilical | Ørn | 2025 | Minor | 12,1 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Poor | Poor | Dead | 2 | 1 | 1 | 7300547,3 | 433656,9 | 5,8 | ENV_ABP22 3209_161 |
| Umbilical | Ørn | 2025 | Serious | 13,4 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7299308,1 | 435088,6 | 24,9 | ENV_ABP22 3209_260 |
| Umbilical | Ørn | 2025 | Minor | 15,7 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7302963,6 | 430581,0 | 131,1 | ENV_ABP22 3209_129 |
| Umbilical | Ørn | 2025 | Minor | 17,0 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Good | Good | Good | 7 | 3 | 4 | 7302016,7 | 431745,3 | 136,9 | ENV_ABP22 3209_002 |
| Umbilical | Ørn | 2025 | Minor | 18,6 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Good | Good | Dead | 4 | 3 | 1 | 7299351,5 | 434982,6 | 61,9 | ENV_ABP22 3209_165 |
| Umbilical | Ørn | 2025 | Minor | 20,5 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7300600,9 | 433541,6 | 37,3 | ENV_ABP22 3209_156 |
| Umbilical | Ørn | 2025 | Minor | 22,3 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7302191,5 | 431478,3 | 12,0 | ENV_ABP22 3209_307 |
| Umbilical | Ørn | 2025 | Minor | 22,9 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Dead | 3 | 2 | 1 | 7300559,0 | 433661,3 | 13,4 | ENV_ABP22 3209_160 |
| Umbilical | Ørn | 2025 | Minor | 24,4 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Fair | Fair | Poor | 4 | 2 | 2 | 7299339,8 | 434987,8 | 81,6 | ENV_ABP22 3209_164 |
| Umbilical | Ørn | 2025 | Minor | 24,9 | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | Excellent | Excellent | Poor | 6 | 4 | 2 | 7302039,5 | 431732,9 | 154,6 | ENV_ABP22 3209_003 |

APPENDIX B

Un-surveyed corals within risk

| Coral_structure | Area | Field | X_ED50UTM32N | Y_ED50UTM32N | Desmophyllum_Condition | Coral_Garden_Condition | Pipe_Umb_name | NEAR_DIST | ImpactType | Risk assessment | Installation Year |
|-------------------|------|------------------|--------------|--------------|------------------------|------------------------|--|-----------|------------|-----------------|-------------------|
| ENV_ABP223209_168 | 4.7 | Ørn | 434462.7 | 7299795.5 | Not surveyed | Not surveyed | Design S7_Area Rock Pre-Lay_20230306 | 14.74745 | Rock | Severe | 2023 |
| ENV_ABP223211_048 | 12.6 | Alve Nord | 437276.7 | 7299699.8 | Not surveyed | Not surveyed | Design S7_Line 10in 16in Idun Nord Production Pipeline Idun Nord LTS to Central TIM_20230301 | 40.49495 | Pipeline | Minor | 2024 |
| ENV_ABP223209_168 | 4.7 | Ørn | 434462.7 | 7299795.5 | Not surveyed | Not surveyed | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | 28.79347 | Pipeline | Minor | 2024 |
| ENV_ABP223209_010 | 20.7 | Ørn | 431900.3 | 7302073.0 | Not surveyed | Not surveyed | Design S7_Line 10in 16in Ørn Production Pipeline Ørn LTS to Central TIM_20230301 | 46.08416 | Pipeline | Minor | 2024 |
| ENV_ABP223212_237 | 57.5 | Central manifold | 435645.3 | 7296489.1 | Not surveyed | Not surveyed | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | 27.28895 | Pipeline | Minor | 2025 |
| ENV_ABP223212_213 | 20.7 | Central manifold | 434960.7 | 7293419.1 | Not surveyed | Not surveyed | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | 40.75623 | Pipeline | Minor | 2025 |
| ENV_ABP223212_208 | 11.5 | Central manifold | 434828.5 | 7292922.0 | Not surveyed | Not surveyed | Design S7_Line 12in 18in Commingling Production Pipeline Central TIM to SSIV and PLET_20230207 | 46.68097 | Pipeline | Minor | 2025 |
| ENV_ABP223211_048 | 12.6 | Idun Nord | 437276.7 | 7299699.8 | Not surveyed | Not surveyed | Design S7_Line Idun Nord Static Umbilical Idun Nord LTS to Central SDU Overlength Route_20230301 | 5.494949 | Umbilical | Severe | 2025 |
| ENV_ABP223209_168 | 4.7 | Ørn | 434462.7 | 7299795.5 | Not surveyed | Not surveyed | Design S7_Line Ørn Static Umbilical Ørn LTS to Central SDU Overlength Route_20230301 | 4.339225 | Umbilical | Severe | 2025 |



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