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14 November 2023

Attention: Director: Appeals and Legal Review
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Copied to:
Attention: Director: Legal Services
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Attention: The Chief Executive Officer
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Attention: Appeals Coordinator
TotalEnergies EP South Africa B.V.
E-mail: ep-appealsDWOB-TEEPSA@totalenergies.com

Notification: All Interested & Affected Parties (as supplied by SLR)

RE: STATEMENT OF GROUNDS OF APPEAL ON THE ENVIRONMENTAL AUTHORISATION GRANTED TO TEEPSA TO DRILL 10 WELLS IN BLOCK DWOB (DEEP WATER ORANGE BASIN) OFF THE WEST COAST OF SOUTH AFRICA (DMRE REF: TEEPSA 12/3/343).

This document serves as an appeal on the Final Environmental and Social Impact Assessment (ESIA; 10 July 2023) and the Environmental Authorisation (23 October 2023; DMRE REF: TEEPSA 12/3/343) granted to TEEPSA to drill 10 wells in Block Deep Water Orange Basin (DWOB), in an offshore location extending from between Port Nolloth and Hondeklip Bay, 188 km from the coast at its closest point and 340 km at its furthest, in water depths between 750 m and 3 100 m.

These comments were prepared by WILDTRUST marine scientists, namely Dr J. Harris, Dr J. Olbers and Dr K. Wright, as requested by Natural Justice, and relates to their Appeal on the Environmental Authorisation granted in terms of Regulation 24 of the National Environmental Management Act (act 107 of 1998): Environmental Impact Assessment Regulations (2014). This document provides an analysis and comments

The initial comments to the draft ESIA (8 June 2023) are attached (Appendix A) for reference. Despite the responses to the comments in the final ESIA Report, and the relevant changes made, the WILDTRUST remains extremely concerned about the proposed exploration activities that pose a serious risk and threat to marine biodiversity and livelihoods of coastal communities along the coast of South Africa, which have not been fully articulated, rated and evaluated, and does not have effective mitigation measures in place for either a major blow-out, minor spills and operational spills. It is recommended that this Environmental Authorisation be set aside in the interests of nature and people. Furthermore, this authorisation flaunts the principles of the

Global Biodiversity Framework adopted at the United Nationals Conference of parties in Montreal in December 2023, as well as the Paris Climate Agreement, both of which South Africa is a signatory to.

IMPACT OF MAJOR OIL SPILLS

The impacts of crude oil on marine fauna and various marine ecosystems are well documented globally, including its toxicity, impacts through ingestion, waterproofing of birds, suffocation, restriction of locomotion, poisoning and death. All these impacts are explained but actual consciousness of consequence in the event of a spill does not come across in the ESIA report and was absent in the Environmental Authorisation.

The Environmental Authorisation noted that "*Most of the potential impacts associated with normal drilling operations range from negligible to low significance with mitigation. The impact of unplanned events such as well blowout range from high to very high, however the occurrence of such events is very unlikely, and the holder has strategies in place to safeguard against the occurrence of such an event. TEEPSA will also have a Blowout Prevention Plan in place that sets out its detailed response plan and intervention strategy to be implemented should an unplanned well blowout event occurs".*

This is of major concern to us, as it does not appear that the Minister is taking sufficient cognizance of the serious consequences of an activity which is high risk to both the biodiversity and coastal communities and we do not agree that the probability is low. It is more appropriate to rate it as moderate given the number of wells to be drilled (cumulative risk) and the challenging environment they are to be executed in. It is our opinion the significance of the negative impact that would result on the livelihoods of coastal communities and the small-scale and commercial fisheries in the area, even if the probability is low (we suggest moderate) means that the risk does not outweigh the reward sought.

The ESIA notes that the greatest environmental threat from offshore drilling operations is a major spill of crude oil and/or natural gas occurring either from a blowout or loss of well control. Although the probability of a blowout occurring is highly unlikely, the impacts of a well blowout, should it occur, range from HIGH to VERY HIGH significance.

We would like to draw your attention to a team of local and international scientists who recently developed an independent oil spill model for South African waters (Fearon et al., 2023), which presents results for a hypothetical 15-day blowout spill of light crude oil at the same location as Livas (2023). This study provides an independent and objective assessment of a similar spill scenario, based on a different oil spill model, using different environmental forcing inputs, and different ecological thresholds. The relevant results of this study are provided here, for reference.

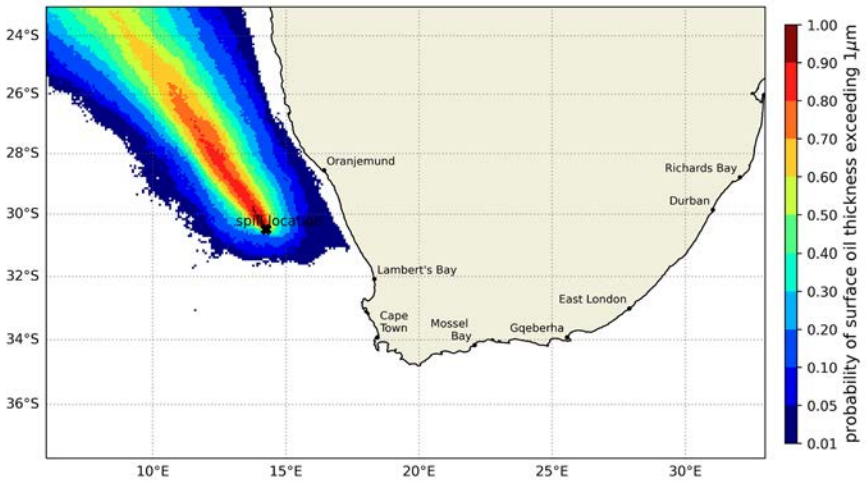

Figure 4.19 of Fearon et al. (2023): Probability of surface oil thickness exceeding 1 μm. The results are analogous to those presented in Figure 47 of Livas (2023).

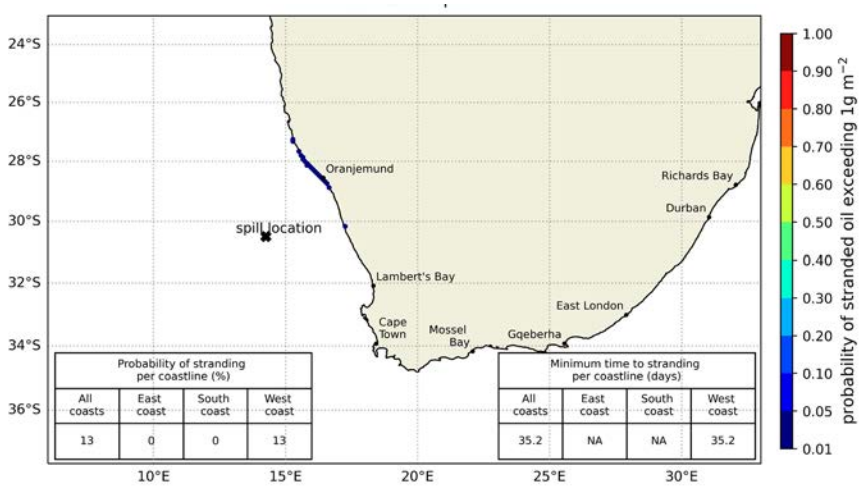

Figure 4.20 of Fearon et al. (2023): Probability of stranded oil concentration exceeding 1 g m^{-2}. The results are analogous to those presented in Figure 47 and 55 of Livas (2023).

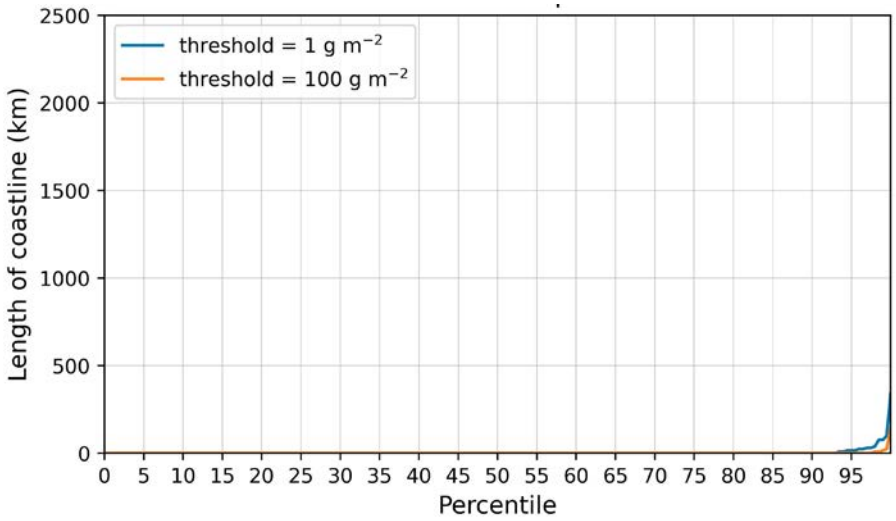

Figure 4.21 of Fearon et al. (2023): Exceedance curves for length of shoreline oiled over different thresholds.

Despite the many differences in the assumptions made between Feron et al (2023) and Livas (2023), the overall picture of likelihood of ecological impact in the event of a blowout spill is common to both. Another notable difference is that Fearon et al. (2023) estimates much larger surface area to be impacted, which is likely due to the use of different ecological thresholds (1 µm vs 10 µm), and an extremely high biodegradation rate applied in the HES model, making their modeled oil far less persistent and less sensitive. Biodegradation is typically a much smaller component of the mass balance in blowout spill models and was conservatively ignored in Fearon et al. (2023).

We further note that the Livas (2023) study considers spill scenarios in which dispersants are applied to help mitigate the impact of the spill. They assume that a Subsea Dispersant Injection Kit (SSDI) will be deployed after the 15th day, as well as surface dispersion with 2 aircraft for chemical dispersion operations, 10 vessels for chemical dispersion operations and 5 pairs of vessels for containment and recovery operations. While we agree that these scenarios should be modelled to inform the oil spill response plan, the potential ecological impact should be measured on the presented scenarios which exclude these mitigation measures. Furthermore, it is doubtful that these measures (2 aircraft and 20 vessels) will be able to be deployed in time to prevent the oil from reaching sensitive biodiversity, MPAs and important fishery areas.

IMPACT FROM OPERATIONAL AND MORE MINOR SPILLS

It is our opinion that the significance and impacts of daily/weekly/monthly operational spills caused by routine activities such as pipe couplings and un-couplings, have been discounted. This under-estimation of the quantity of oil released operationally (i.e., not just during a major event) is exacerbated by the frequent occurrence of more “minor spills” (which have been inadequately quantified despite records available about this at other sites around the world).

Minor spills and their frequency are significant in terms of assessing impact of biodiversity within areas of significance such Marine Protected Areas (MPA’s), Ecologically and Biologically Sensitive Areas (EBSA’s), and Critical Biodiversity Areas (CBA’s) where marine fauna and flora are concentrated and extremely vulnerable to soiling. Literature that provides evidence about the impact of small spills has not been adequately considered in the specialist reports. For example, Brussard et al (2016) recorded immediate ecotoxicological effects of short-lived oil spills on marine biota including a decline in certain plankton species and concluded that recurrent small spills are likely to affect marine ecosystem functioning. This is of particular concern for the threatened and endangered species, and within an area which supports high concentrations of both plankton and other fauna (fish, birds, cetaceans) up the food chain which are a key feature within this area, not to mention the high risk of oiling at a probability (Livas 2023, Feron 2023) on adjacent CBAs, MPAs and EBSAs.

SIGNIFICANT AREA CONCERNS

Various Marine Protected Areas, Ecologically and Biologically Sensitive Areas, and Critical Biodiversity Areas lie within and adjacent to the proposed area.

The **Marine Protected Areas (MPAS)**, around the mainland of South Africa form a Network which covers 5.4% of the EEZ. These areas are recognised as important biodiversity areas, have documented special features (including representative, unique and sensitive ecosystems) and for their importance for providing sanctuaries for threatened species and their essential habitats, and their role in supporting rebuilding populations of over-exploited fish species.

MPAs have multiple functions, including protection of biodiversity, fisheries support and rebuilding, and promotion of tourism. The designation of these MPAs is in terms of the National Environmental Management Protected Areas Act 2004 but they also support the provisions of the Integrated Coastal Management Act 2008, which establishes coastal public property to include “*to protect sensitive coastal ecosystems*” (section 7A(1)(b)). This also intends to ensure that coastal and marine environments are afforded a high degree of protection in the interests of the whole community and for the benefit of future generations. MPAs provide benefits not only for biodiversity, but for people both at the local scale (fishers and coastal communities) and at the national scale by acting as agents of climate mitigation. In addition, it should be noted that these MPAs also overlap with **Critical Biodiversity Areas (CBAs)** identified through systematic conservation planning processes based on scientific information as key areas requiring special consideration and protection.

Further to this, **Ecologically and Biologically Sensitive Areas (EBSAs)** also lie within the proposed area. The principal objective of the Ecologically or Biologically Significant Areas (EBSAs) is the identification of features of higher ecological value that may require enhanced conservation and management measures, and contain sensitive ecosystems and areas important for coastal fisheries. Even though EBSAs currently carry no legal status, DWOB overlaps or is adjacent to four EBSAs (namely the Cape Canyon and Associated Islands, Childs Bank and Shelf Edge, Namaqua Fossil Forest and Namaqua Coastal EBSAs).

Although an evaluation of these MPA’s, CBA’s & EBSA’s was undertaken in the ESIA, with their sensitivities and critical ecosystem functions being identified, there was no real acknowledgement of the risks in the Environmental Authorisation to the biodiversity and ecosystems within these and adjacent areas, in which 18 commercial fisheries, small-scale fishers, coastal communities and the tourism sector are entirely dependent upon.

Moreover, there remains a stark void of an existing full economic and social impact analysis on scenarios from catastrophic spills to minor operational spills, and their associated risks to South Africans. It is especially important to consider the social and economic impacts on coastal communities, due to loss of livelihoods that are based on fishing and tourism. Consequently, it is not reasonable to conclude that the risk to MPAs, CBAs, EBSA's and the South African people who rely on these areas is not substantial.

SPECIES CONCERNS

The various species lists within the ESIA, naming over 200 species, are evidence of the massive number of species that both large, unplanned, minor and operational spills can severely affect and impact. Further to this, South Africa has over 30% species endemism, while many of our species are under severe threat of extinction and are protected from exploitation due to their vulnerability. The magnitude, responsibility and costs involved in managing these protected species and habitats by the DFFE are not being accounted for in this Environmental Authorisation.

Cetaceans

The cumulative impacts of noise, operational spills and other disturbances on cetaceans remain unknown. A major concern is with the increased offshore anthropogenic activities, including offshore mining, which is likely to generate additional energy costs for migrating humpback whale populations (Braithwaite et al 2025) and southern right whales. Therefore, energy related to reproduction would be jeopardized because the demand for energy would be funnelled into other related survival activities such as having to travel greater distances to avoid an area and changing swimming speeds. While local disturbances to behaviour may be minor, the costs of repeated disruptions may accumulate over a long journey (such as migration) and thus collectively have a major impact on the energy stores of the whales. Given the historical anthropogenic pressure (whaling) on the Humpback whale population and its recent population comeback, it is a concern that exploration will be occurring in their direct migration channels, thus disturbing and changing the behaviour of the population, at an unknown cost.

The ESIA acknowledges that "*the individual and population level consequences of other exploration activities or multiple smaller and more localised stressors are difficult to assess*". They also note that "d*espite the density of seismic survey coverage off the southern African West Coast over the past 17 years (noise emissions), the southern right whale population is reported to be increasing by 6.5% per year (Brandaõ et al. 2017), and the humpback whale by at least 5% per annum (IWC 2012;) over a time when seismic surveying frequency has increased, suggesting that, for these population at least, there is no evidence of long-term negative change to population size as a direct result of exploration activities".* Although the C1 humpback population (east coast) has recently been documented to be making a 'comeback' (Wilkinson 2023), the same cannot be said for the southern right whale population, where Vermeulen et al (2020) reported that there are strong changes in the prevalence of southern right whales on the South African breeding ground, including a marked decline of unaccompanied adults since 2010, and extreme fluctuations in the number of cow-calf pairs since 2015. The cause/s and implications of this to the population going forward are unknown and should be of concern.

Turtles

"*Three species of turtle occur along the West Coast, with the Leatherback being the most likely to be encountered in the offshore waters of west South Africa. Their abundance in the study area is unknown but expected to be low, based on MMO observations and satellite tagging*." Although we would agree with this based on the available data, there is very little published satellite tag data, while Marine Mammal Observer sightings would only occur on a "good" sighting day (Beaufort 0-1), which are seldom within this region. The ESIA notes that "*A sighting of a Loggerhead turtle in the DWOB Block has, however, been reported by an MMO. Loggerhead and Green turtles are expected to occur only as occasional visitors*." In our opinion, evidence of a single loggerhead and a green turtle is not necessarily an indication of low numbers because

visually recording turtles by an MMO is extremely difficult. Observations of turtles at the surface are unreliable in sea states above Beaufort 1 and detection rates decrease with increased distance from the vessel. Additionally, it is currently not possible to detect turtles below the surface where they might be most vulnerable to both noise emissions and other infrastructure (Weir, 2007). Detection of turtles relies on human effort (diligence, skills and concentration), which is subjective and inevitably varies among MMOs, many of whom have little previous experience of detecting and identifying turtles at sea (Nelms, et al., 2016). Furthermore, there is no way of detecting turtles at night or in poor weather conditions. Turtle dives times can also be long, further limiting sightings, especially in the case of leatherbacks. It is our opinion that MMO's are not an appropriate mitigation method to reduce risk to turtles.

"The Benguela ecosystem, especially the northern Benguela where jellyfish numbers are high, is increasingly being recognized as a potentially important feeding area for leatherback turtles from several globally significant nesting populations in the south Atlantic (Gabon, Brazil) and southeast Indian Ocean (South Africa) (Lambardi et al. 2008, Elwen & Leeney 2011).

Both green turtles and loggerhead turtles are known to be found feeding on inshore reefs on the south and east coasts, and are expected to only occur as occasional visitors along the west coast. In the open sea their diet includes jellyfish, flying fish, and squid (www.oceansafrica.com/turtles.htm), while satellite tagging of loggerheads suggests that they seldom occur west of Cape Agulhas (Harris et al. 2018; Robinson et al. 2019). However, more recent data suggests otherwise. Satellite-tracked turtle data of captive turtles (various species) released from Two Oceans and uShaka aquariums shows the St Helena Bay to approximately Groen River mouth area are popular turtle areas, both inshore and offshore (to ~200 km), suggesting this as a refuge or preferred feeding area. In addition to the presence of loggerhead and green turtles, evidence suggests that olive ridley and hawksbill species have migrated to these areas as well, sometimes taking temporary residence, before moving up or down the coast. New technology is showing us that we know so little about our marine species and the marine environment, especially in these areas where little / no sampling has been undertaken. This should be kept top of mind when the implications for noise disturbance and oil spill threats in this environment are considered.

Given that many of our marine species, including all cetaceans and turtles are protected and/or regarded as threatened (critically endangered, endangered, or vulnerable), while also being a signatory of the Convention on Migratory Species (CMS) and the resolution passed at the 67th International Whaling Commission (IWC) to conserve these species at an international level, it is unclear how South Africa can continue to fulfil their duties and obligations when this TEEPSA application will create significant disturbance for an extended period for these protected and threatened species.

PURPOSES, INTENTIONS AND ASSOCIATED ENVIRONMENTAL CONSEQUENCES

Furthermore, a concern which continues to be glossed over by the Minister are the purpose, intention and associated environmental consequences of finding oil and gas offshore of South Africa. TOTALEnergies, Sasol and PETROSA have continued to invest large sums into finding deposits with the intention to exploit them. Each phase (reconnaissance, exploration, production and demobilisation) is being treated as stand-alone, with only its own environmental impacts being considered. Up to now, there has been no effort to report on the cumulative impacts on the environment for the duration of the full life cycle of oil and gas development. Interested and Affected Parties (I&AP's) continue to be told that their concerns and issues cannot be taken into account because of the 'phase' which they are commenting on at the time not being relevant to the phase/s beyond it. To illustrate this:

i) when one argues the consequences of the intended final goal, which is extraction and production, the responses remain standard, i.e. '*this EMPr is for reconnaissance only, the impacts of oil and gas exploration and production is beyond the scope of this application;*

ii) in this case for exploration, "*…a decision on the current EA application does not in any way guarantee the holder future approvals that would be required to undertake future production activities. The issues raised relating to production will need to be considered as part of the Production Right application should the project move onto production…"* (p288, TEEPSA Block 11B/12B, Appendix 5.8, ESIA)'; and

iii) "*Any potential future production activities would need to be subject to the required environmental assessment and authorisation process under the NEMA, during which, the impacts related to these activities would need to be assessed as part of this separate ESIA process* (p12, Appendix 5.8, ESIA; TEEPSA Block 11B/12B).

It cannot be overemphasised that to obtain an accurate understanding of the cumulative impacts of oil and gas development in South Africa, all phases and components of the lifecycle need to be assessed collectively, rather than in isolation of one another.

CONCLUSION

Oil and gas development activities represent significant risk for other sectors that require and benefit from functional marine ecosystems. These other sectors (fisheries, tourism etc) simply cannot function without a healthy environment, while oil and gas can continue to profit from their activities regardless of the health of the marine environment. Of particular concern, is that the offshore oil and gas sector has *already* leased >90% of the EEZ for exploration.

For the reasons outlined above, it is our opinion is that the proposed oil and gas exploration poses an unacceptable pollution, ecological and socio-economic risk to South Africans. A major spill cannot be discounted as a low risk (in exploration or production), and smaller and operational spills carry a high probability, with no effective mitigation mechanisms identified given the location and the rate of movement of the oil slicks. Therefore, it is our view that the Environmental Authorisation should be set aside.

Yours sincerely,

Dr Jean Harris
Executive Director WILDOCEANS
WILDTRUST

References

All Literature available for download at :
https://www.dropbox.com/scl/fo/u1q98or5xvlvstwwg7a5h/h?rlkey=tt3cz8cmgs689k77jb9id8m70&dl=0

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APPENDIX A

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8 June 2023

REVIEW AND COMMENT ON DRAFT ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR EXPLORATION WELL DRILLING IN BLOCK DEEP WATER ORANGE BASIN OFF THE WEST COAST OF SOUTH AFRICA BY TEEPSA, SLR PROJECT REFERENCE 720.20047.00008.

This document provides expert comments and scientific opinion on the Draft Environmental and Social Impact Assessment (ESIA) Report and associated specialist reports for the application to undertake exploration well drilling in Block Deep Water Orange Basin off the West Coast of South Africa by TotalEnergies EP South Africa Block B.V. (TEEPSA), as the operator for the Deep Water Orange Basin (DWOB) Licence Block (12/3/343 ER).

TEEPSA proposes to drill one exploration well, and success dependent, up to nine additional wells in total within an Area of Interest within the Block (i.e., up to ten wells in total). The Area of Interest (AOI) for exploration drilling is ~9 711km^2 in extent and is located offshore roughly between Port Nolloth and Hondeklip Bay, approximately 188 km from the coast at its closest point and 340 km at its furthest, in water depths between 750 m and 3 100 m (SLR, 2023). SLR Consulting (South Africa) (Pty) Ltd (SLR) were appointed as the independent Environmental Assessment Practitioner to undertake a full Scoping and EIA process for the proposed exploration activities. This document provides an analysis and comments by WILDTRUST marine scientists, namely Dr J. Harris, Dr J. Olbers, L. Guastella and Dr K. Wright, as requested by Natural Justice.

Having reviewed the Draft Environmental and Social Impact Assessment Report and associated information, it is our opinion that this proposal has fatal flaws, in that the survey area is directly adjacent to the Orange Shelf MPA and in close proximity to the Namaqua Fossil MPA, Childs Bank MPA, Benguela Mud MPA, and Cape Canyon MPA. Furthermore, there is overlap with large pelagic longlining areas and hake trawling grounds, whilst also putting migrating turtles, resident and migrating cetaceans, and seabird populations at risk.

In our opinion as detailed below, the proposed mitigation measures, do not adequately mitigate risk to, and likely impacts on, the nearby marine protected areas, and the marine ecosystems and species in the area (including highly endangered species and ecosystems), from accidental, operational and unplanned oil spills and the associated seismic survey activity that is done prior to drilling.

For the reasons outlined below, we believe that the proposed oil and gas exploration poses an unacceptable risk, from oil spills and seismic survey activities, to the nearby MPAs in the area, to threatened ecosystems and species, and to livelihoods of coastal communities. WILDTRUST is of the view that the Environmental Authorisation should not be issued.

Furthermore, we provide detail of our concerns below:

MARINE PROTECTED AREAS (MPA'S), ECOLOGICALLY AND BIOLOGICALLY SENSITIVE AREAS (EBSA'S), CRITICAL BIODIVERSITY AREAS (CBA'S) AND BUFFER ZONES

The MPAs in South African form a Network which covers 5.4% of the EEZ around South Africa. These areas are recognised and have documented special features, including representative, unique and sensitive ecosystems, their importance for providing sanctuaries for threatened species and their essential habitats, and their role in supporting rebuilding populations of over-exploited fish species.

There are five MPAs which are at risk of impact from the exploratory drilling. There is significant risk of pollution from minor operational leakages and spills, and although less likely there is risk of a major oil spill if there is a blow-out that would cause catastrophic harm. The Orange Shelf MPA which is adjacent to the AOI, while the Namaqua Fossil MPA, Childs Bank MPA, Benguela Mud MPA, and Cape Canyon MPAs are in close proximity to the AOI.

There are also five Ecologically and Biologically Sensitive Areas (EBSAs) in the vicinity to the AOI, namely: the Orange Cone EBSA, the Orange Seamount and Canyon Complex EBSA, Namaqua Fossil Forest EBSA, the Childs Bank and Shelf Edge EBSA and the Namaqua Coastal EBSA. The principal objective of EBSAs is the identification of features of higher ecological value that may require enhanced conservation and management measures. Even though EBSAs currently carry no legal status, it is our opinion that drilling activities could have a detrimental impact on these areas.

An evaluation of each of these MPA's & EBSA's has been completed in the ESIA, and their sensitivities and critical ecosystem functions have been identified, however, there is no concern acknowledged, that these areas could be devastated by a blow-out, minor or operational spills.

Buffer areas surrounding the above areas have been noted, but it remains unclear if these will actually be implemented as part of the operational plan. In addition, while buffer areas may assist in mitigating operational impacts, they provide little to no protection against noise emissions, spills and the depositional footprints and smothering which are expected to spread up to 19 km from the drill sites. Thus, no adequate mitigation of the risks to these areas, which are critical in preserving South Africa's marine biodiversity, have been provided.

COMMENTS ON OIL SPILL MODELLING REPORT (HES MODEL, LIVAS, 2023)

The greatest environmental threat from offshore drilling operations is a major spill of crude oil and/or natural gas occurring either from a loss of well control or blow-out. A blow-out is the uncontrolled release of crude oil and/or natural gas from a well after pressure control systems have failed. The impacts of crude oil on marine fauna and various marine ecosystems are well documented globally, including its toxicity, impacts through ingestion, compromising waterproofing of birds, suffocation, restriction of locomotion, poisoning and death. All these impacts are explained, but actual consciousness of consequence in the event of a spill does not come across in the ESIA report.

The HES oil spill model, Livas (2023) predicts that the only period with oil reaching the shore is during Season 3 (June - Aug; Season) for Release Point 2, with only 5 out of 90 simulations with a coastal impact. The drift towards the coast is due to north-eastward current events in June 2021, associated with unusually northward propagating circumpolar low-pressure systems. For the rest of the year, west to north-westerly currents and south to south-easterly winds dominate, keeping the spill away from the coast for both Release Points. The coastal area potentially

impacted by oil (with a maximum of 5% probability) is located in the Northern Cape Province of South Africa, 30 km south of the Groen River to 165 km South of the South African-Namibian border, with a maximum of 836 tons of oil reaching the shore considering a simulation with capping only.

Feron et al (2023) presents oil spill modeling to predict the trajectory and fate of oil released into the marine environment from potential blowout spill scenarios from proposed offshore oil exploration wells within South Africa's Exclusive Economic Zone (EEZ), including the DWOB Release Point 1.

Despite the many differences in the assumptions made between Feron et al (2023) and Livas (2023), the overall picture of likelihood of ecological impact in the event of a blowout spill is common to both. Another notable difference is that Fearon et al. (2023) estimates much larger surface area to be impacted, which is likely due to the use of different ecological thresholds (1 µm vs 10 µm), and an extremely high biodegradation rate applied in the HES model, making their modeled oil far less persistent and less sensitive. Biodegradation is typically a much smaller component of the mass balance in blowout spill models and was conservatively ignored in Fearon et al. (2023). This however has a minor impact on results in the vicinity of the west coast as discussed above.

In terms of the wind data / models used in the oil spill modeling report, there is little detail of where the SAT-OCEAN data is modeled from (presumably from release points 1 & 2). However, it is our opinion that comparison (or use) of winds to Cape Town Airport or Cape Agulhas as a validation check (Livas, 2023, Appendix 2), is not appropriate to the DWOB area because the regional and local variability in winds, and conditions, are somewhat different on the west coast. The wind rose for Port Nolloth (see Appendix 1), based on 7 years of SAWS data, indicates a higher frequency of NW-WNW winds than the SAT-OCEAN data used as model input (e.g. Livas 2023, Figs 11, 12, 19 & 20). Moreover, the wind direction comparison (Livas, 2023, Fig. 74 scatterplots,) shows a fair amount of variability between the SAT-OCEAN and Cape Town Airport datasets, despite the wind speed being comparable. The variation in wind direction is quite critical because it ultimately determines the oil slick dispersion direction (especially considering that Benguela currents are generally slack, making wind a greater force than current). The higher frequency of measured NW-WNW winds at Port Nolloth in comparison to the model input, means there is an increased probability of southward to Southeast-ward oil dispersion.

The use of the Luiperd and the Block 5/6/7 for model validation is questionable. These are different current regimes and for different areas entirely. The area dominated by the dynamic Agulhas Current on the edge of the Agulhas bank, and although the Model:Radar agreement is good, it is unclear whether this can be applicable to the broad, sluggish, Benguela Current applicable to this model area, where wind exerts a much stronger influence on dispersion than the currents themselves. In our opinion, while the model agreement/validation may have been good for the Luiperd and Block 5/6/7, the model in the Benguela Current off the west coast hasn't been suitably validated.

OSCAR – There is no information presented on the effect of stratification or mixing in the water column. For example, meteorological and oceanographic conditions associated with a cold front will cause mixing and more turbulence in the water column; thereafter as the weather conditions settle again there will be stratification with surface heating and a thermocline. The water column information is lacking, with only near-bottom and near-surface currents having been detailed. The properties of the water column are important for dispersion, as it determines the rise height

of pollutants, i.e. whether they break the surface or get “trapped” by stable layers, as stable, stratified conditions are quite different to mixed conditions.

“*WATER COLUMN CONTAMINATION: The layer with high probability of Water Column contamination is 2 m to 42 or 62 m below the surface depending on the season due to surface oil getting dispersed…*” What does this mean? That contamination can occur between 2-62 m?

“*The deep layer contaminated by oil released from the well is between 1082 m to 1162 m below the surface for Release Point 1 and between 762 m to 842 m for Release Point 2*.” “*Regarding the water column contamination probability, the layer contaminated with oil dispersed from surface (low probabilities below this layer until the Deep contaminated layer) is between 42 m and 62 m with a maximum lateral extension of 560 km*”. Although there is some consideration of the water column, most of the plume trajectory scenarios focus on the near-bottom and near-surface, therefore it would be useful to have more information on the mid-layer contamination. In other words, for strong stratification i.e. strong thermocline and weak currents, effluent may rise and may reach a height where its density equals that of ambient seawater. Pollutants get trapped in a layer below the surface. While during low current speeds and low stratification, effluent may tend to reach the surface.

The seabed current directions at Release Point 1 (Fig. 6 indicating WNW and ESE currents) are quite different to those at Release Point 2 (Fig. 14 indicating only NW-NE currents), given that they are only 100 km apart, have similar depths and the bathymetry contours are relatively parallel. It is unclear in the report why there is this bottom current variability between the two release points, even though current speeds are low. The current frequency rose for the “layer before seabed” is presented in Appendix 2 of Livas (2023), but the actual depth of these comparisons of seabed currents is unknown. The “layer before seabed” shows predominant NNW currents at both locations, so although there is an agreement in the release point locations, context is lost due to no further depth information. Furthermore, the influence of mid-layer currents are unclear.

The effect of waves and swell on plume movement does not appear to be considered. Swells are predominantly from the south-west (PISCES, 2023, Fig. 11) and combined with breaking wave action, will act to “push” surface oil towards the coast – this factor does not appear to have been included in the modeling. Wave action is only addressed in the context of breaking up, or dispersing, the oil on the sea surface, but not in the context of swells, combined with wind-waves assisting in “pushing” surface oil. “*The increase of the Wind Speed induces higher waves on the surface, entraining more oil from the surface slick into the water column, and so moving here from the category “Surface” to “Dispersed” oil. When the wind speed decreases, the surface oil quantity increases again due to the resurfacing phenomenon*.” Therefore, we interpret this as the effects of wind on the oil quantity and/or concentration have been addressed, but the impact on plume movement is not.

It is of concern that the model is run for broad-scale seasons and is based on average conditions. The shorter-term variability (real-case) is lacking. It is known that there are alternating low and high-pressure synoptic systems that pass from west to east, usually over a period of 2-11 days, although 3-7 day cycles are most common (original work of Preston-Whyte & Tyson). Even though SE winds predominate overall, under the influence of the South Atlantic Anticyclone, cold fronts have an impact, especially from around April through to approximately the end of September for a period of ~6 months. Furthermore, these do not only occur in one season of three months. This year, 2023, was considered an anomalous year, characterized by an increased occurrence of these systems (particularly during May), taking a more northward

trajectory than “normal”, resulting in a higher frequency of winds from the NW-SW. An example of winds associated with the passage of a cold front is provided in Appendix 2. In addition, the NW winds are more common than the oil spill model input winds (Livas, 2023 Figs 11, 12, 19 & 20) would suggest, as seen in our Appendix 1. This has important implications for where the plume would disperse, as NW winds are likely to cause plume movement towards the St Helena Bay area. Although the S-SE winds predominate overall, the NW wind component requires more consideration.

We further note that the HES model considers spill scenarios in which dispersants are applied to help mitigate the impact of the spill. They assume that a Subsea Dispersant Injection Kit (SSDI) will be deployed after the 15th day, as well as surface dispersion with 2 aircraft for chemical dispersion operations, 10 vessels for chemical dispersion operations and 5 pairs of vessels for containment and recovery operations. While we agree that these scenarios should be modeled to inform the oil spill response plan, the potential ecological impact should be measured on the presented scenarios which exclude these mitigation measures. Furthermore, it is doubtful that these measures (2 aircraft and 20 vessels) will be able to be deployed in time to prevent the oil from reaching sensitive biodiversity, MPAs and important fishery areas.

In Season 3 (for Release Point 2) - there is a 5.5% chance of shoreline oiling along 155 km of coastline north of the Groen River mouth assuming the capping-only response scenario. This is primarily as a result of westerly winds driving the oil onshore. With the implementation of additional surface response and Subsea Dispersant Injection Kit SSDI, the probability is reduced to 4.5% along 130 km of coastline” (Livas, 2023). Grouping into “seasons” might give a general, time-averaged idea of dispersion, but there are occasions when north-westerly winds (pre-frontal and frontal) will force Southeast-wards drift in the direction of St Helena Bay, Saldanha Bay and Cape Town. Given the potential fate and associated implications of oil reaching the coastline, these scenarios don’t appear to have been considered.

Fearon et al. (2023), using the Release point 1 only, predicts a 13% probability of shoreline impact, which the model estimates to occur in the region of Oranjemund, near the border between Namibia and South Africa. Here, the spill location is largely under the influence of a sluggish equatorward mean flow, and highly persistent equatorward winds (Figure 2.9). The perennial upwelling cell off Luderitz (~27°E) would further tend to drive net offshore surface flow in this region. These environmental forcings tend to advect the spilled oil offshore north of Oranjemund and into the Atlantic Ocean.

It cannot be discounted that if the NW winds are considered, the St Helena Bay coastal area and possibly also Cape Columbine and Saldanha Bay, could potentially be oil-receiving areas. Wind-forcing predominates over current in this area and the direction is important for plume dispersal and landfall.

IMPACT FROM OPERATIONAL AND MORE MINOR SPILLS

It is our opinion that the significance and impacts of daily/weekly/monthly operational spills caused by routine activities such as pipe couplings and un-couplings, have been discounted and inadequately quantified despite records available about this at other sites around the world.

Minor spills and their frequency are significant in terms of assessing impact of biodiversity within areas of significance such as Marine Protected Areas (MPA’s), Ecologically and Biologically Sensitive Areas (EBSA’s), and Critical Biodiversity Areas (CBA’s) where marine fauna and flora

are concentrated and extremely vulnerable to soiling. Literature that provides evidence about the impact of small spills has not been adequately considered in the specialist reports. For example, Brussard et al (2016) recorded immediate ecotoxicological effects of short-lived oil spills on marine biota including decline in certain plankton species and concluded that recurrent small spills are likely to affect marine ecosystem functioning. This is of particular concern for the threatened and endangered species, and within an area which supports concentrations of both plankton and other fauna (fish, birds, cetaceans) up the food chain which are a key feature within this area.

Since operational and other minor spills will not invoke deployment of vessels or aircraft to attempt to mitigate impacts there is a high probability of sporadic but frequent oil occurrences in the coastal areas indicated at highest risk in both oil spill reports.

The ecological consequences and risks to biodiversity of both a major oil spill and these likely smaller operational spills are of great concern in this regard, given that the coastal areas which will be affected (in differing measure in different seasons for different species and ecosystems) include, and are not limited to:

- critically endangered leatherback turtles and their hatchlings, and
- critically endangered sharks and rays
- various threatened coastal and seabirds.

SPECIES CONCERNS

The various species lists within the ESIA, naming over 200 species is evidence of the massive number of species that noise emissions, large unplanned spills, minor spills and operational spills can severely effect and impact. Further to this South Africa has over 30% species endemism, while many of our species are under severe threat of extinction, and are protected from exploitation due to their vulnerability. The magnitude, responsibility and costs involved in managing these protected species and habitats by the DFFE are not being accounted for.

Cetaceans

The ESIA highlights cetacean occurrences and likely encounters of various species, all of which are protected in South African waters, within the AOI. Cetacean species from both continental shelf and deep oceanic environments may be found on the continental slope between 200 – 2 000 m, making this a species-rich area for cetaceans and also high in density. The most common species within the project area, i.e. likely encounter rate and not total population size, are likely to be the long-finned pilot whale, common dolphin, sperm whale and humpback whale, while Southern right whales may also be encountered passing through the Block on their way to their coastal breeding grounds. The cumulative impacts of noise, operational spills and other disturbances on cetaceans will likely have implications for this group. A major concern is with the increased offshore anthropogenic activities, including offshore mining, which is likely to generate additional energy costs for migrating humpback whale populations (Braithwaite et al 2025) and southern right whales. Therefore, energy related to reproduction would be jeopardized because the demand for energy would be funnelled into other related survival activities such as having to travel greater distances to avoid an area and changing swimming speeds. While local disturbances to behaviour may be minor, the costs of repeated disruptions may accumulate over a long journey (such as migration) and thus collectively have a major impact on the energy stores of the whales.

Given the historical anthropogenic pressure (whaling) on the Humpback and Southern right whale populations, it is a concern that exploration will be occurring in their migration channels, thus disturbing and changing the behaviour of the population, at an unknown cost.

The ESIA acknowledges that "*the individual and population level consequences of other exploration activities or multiple smaller and more localised stressors are difficult to assess*". They also note that "d*espite the density of seismic survey coverage off the southern African West Coast over the past 17 years (noise emissions), the southern right whale population is reported to be increasing by 6.5% per year (Brandaõ et al. 2017), and the humpback whale by at least 5% per annum (IWC 2012;) over a time when seismic surveying frequency has increased, suggesting that, for these population at least, there is no evidence of long-term negative change to population size as a direct result of exploration activities".* Although the C1 humpback population (east coast) has recently been documented to be making a 'comeback' (Wilkinson 2023), the same cannot be said for the southern right whale population, where Vermeulen et al (2020) reported that there are strong changes in the prevalence of southern right whales on the South African breeding ground, including a marked decline of unaccompanied adults since 2010, and extreme fluctuations in the number of cow-calf pairs since 2015. The cause/s and implications of this to the population going forward are unknown and should be of concern.

Turtles

"*Three species of turtle occur along the West Coast, with the Leatherback being the most likely to be encountered in the offshore waters of west South Africa. Their abundance in the study area is unknown but expected to be low, based on MMO observations and satellite tagging*." Although we would agree with this based on the available data, there is very little published satellite tag data, while Marine Mammal Observer sightings would only occur on a "good" sighting day (Beaufort 0-1), which are seldom within this region. The ESIA notes that "*A sighting of a Loggerhead turtle in the DWOB Block has, however, been reported by an MMO. Loggerhead and Green turtles are expected to occur only as occasional visitors*." In our opinion, evidence of a single loggerhead and a green turtle is not necessarily an indication of low numbers because visually recording turtles by an MMO is extremely difficult. Observations of turtles at the surface are unreliable in sea states above Beaufort 1 and detection rates decrease with increased distance from the vessel. Additionally, it is currently not possible to detect turtles below the surface where they might be most vulnerable to both noise emissions and other infrastructure (Weir, 2007). Detection of turtles relies on human effort (diligence, skills and concentration), which is subjective and inevitably varies among MMOs, many of whom have little previous experience of detecting and identifying turtles at sea (Nelms, et al., 2016). Furthermore, there is no way of detecting turtles at night or in poor weather conditions. Turtle dives times can also be long, further limiting sightings, especially in the case of leatherbacks. It is our opinion that MMO's are not an appropriate mitigation method to reduce risk to turtles.

"The Benguela ecosystem, especially the northern Benguela where jellyfish numbers are high, is increasingly being recognized as a potentially important feeding area for leatherback turtles from several globally significant nesting populations in the south Atlantic (Gabon, Brazil) and southeast Indian Ocean (South Africa) (Lambardi et al. 2008, Elwen & Leeney 2011; SASTN 2011).

Both green turtles and loggerhead turtles are known to be found feeding on inshore reefs on the south and east coasts, and are expected to only occur as occasional visitors along the west coast. In the open sea their diet includes jellyfish, flying fish, and squid (www.oceansafrica.com/turtles.htm), while satellite tagging of loggerheads suggests that they seldom occur west of Cape Agulhas (Harris et al. 2018; Robinson et al. 2019). However, more recent data suggests otherwise. Satellite-tracked turtle data of captive turtles (various species)

released from Two Oceans and uShaka aquariums shows the St Helena Bay to approximately Groen River mouth area are popular turtle areas, both inshore and offshore (to ~200 km), suggesting this as a refuge or preferred feeding area. In addition to the presence of loggerhead and green turtles, evidence suggests that olive ridley and hawksbill species have migrated to these areas as well, sometimes taking temporary residence, before moving up or down the coast. New technology is showing us that we know so little about our marine species and the marine environment, especially in these areas where little / no sampling has been undertaken. This should be kept top of mind when the implications for noise disturbance and oil spill threats in this environment are considered.

Given that many of our marine species, including all cetaceans and turtles are protected and/or regarded as threatened (critically endangered, endangered, or vulnerable), while also being a signatory of the Convention on Migratory Species (CMS) and the resolution passed at the 67th International Whaling Commission (IWC) to conserve these species at an international level, it is unclear how South Africa can continue to fulfil their duties and obligations when this TEEPSA application will create significant disturbance for an extended period for these protected and threatened species.

We also set out in the table below further details of issues of concern from the Draft Environmental and Social Impact Assessment Report and associated specialist reports with WILDTRUST's queries and/or responses to these.

The below table refers to the Draft Environmental and Social Impact Assessment Report and specialist reports compiled for TEEPSA by SLR Consulting and outlines concerns by the WILDTRUST:

	Issues from the ESIA & specialist reports	**Concerns from the WILDTRUST**
1.	**Noise:** If animals only pass through the site near the noise sources in a very short period of time, their noise exposure is not expected to exceed PTS-onset thresholds.	The ESIA notes that at least 24 cetacean species are resident year-round in the area and thus it is not reasonable to assume that they will only be there for a very short period of time. It is unclear what would the impact or result be on these animals if they are present in these areas for more than a "very short period of time".
2.	**Noise:** TTS may occur at close range for sea turtles and fish species lacking swim bladders…but generally the non-impulsive drilling noise is predicted to have low physiological impacts (both mortality and recovery injury) on fish and sea turtle species and no cumulative impacts were predicted for fish, with PTS onset for turtles over 24 hours predicted to occur within 30 m of the drilling location.	The onset of both TTS and PTS places significant risks to turtles which are threatened species.
3.	**Noise:** The zone of impact for zooplankton to suffer physiological injury is in relatively close proximity to the operating sound source (within	Mitigation of likely impact lacking.

	245 m of sound source). As this faunal group cannot move away from the approaching sound source, it is likely to suffer mortality and/or physiological injury. Ichthyoplankton drifts in the current and cannot move out of the way. The modeled cumulative zone of impact for potential mortal injury for fish eggs and larvae is 45 m. Potential impacts on ichthyoplankton and pelagic invertebrates would thus be of high intensity at close range, but highly localised and transient due to the localised and short-term nature of the VSP operations.	
5.	**Noise:** Relatively high to moderate behavioural risks are expected for fish species at near to intermediate distances (tens to hundreds of meters) from the source location. The major spawning areas, as well as egg and larval drift pathways of commercially important species, such as hake, pilchards, horse mackerel and anchovy lie inshore of the Area of Interest for drilling and are unlikely to be impacted by the behavioural disturbance zone.	The risks and associated mitigation for other pelagic fish and sharks are lacking.
6.	**Noise:** Whales potentially associated with Tripp Seamount located 25 km north of the Area of Interest, may be affected by the vessel and drilling noise.	The ESIA does not mention any agreements with Namibia, i.e. potentially significant neighbor relations are lacking. This is of significant concern, especially given that cetacean populations are a shared responsibility and resources.
7.	**Noise:** Vertical Seismic Profiling (VSP) is an evaluation tool that is used to generate a high-resolution seismic image of the geology in the well's immediate vicinity. VSP uses a small airgun array, which is operated from the drilling unit. During VSP operations, receivers are positioned in a section of the borehole and the airgun array is discharged at intervals. This process is repeated for different stations in the well and may take up to nine hours to complete.	The frequency of the VSP is unknown.
8.	This area is far removed from coastal MPAs and any sensitive coastal	Although the AOI doesn't overlap directly with the Orange Shelf Edge MPA, it is most definitely

	receptors (e.g., key faunal breeding/feeding areas, bird or seal colonies and nursery areas for commercial fish stocks). There is also no overlap of the Area of Interest with proposed EBSAs and ESAs. The Orange Shelf Edge MPA is located some 12 km north of the Area of Interest, whereas the Orange Seamount and Canyon Complex EBSA borders on the northern edge of the Area of Interest. The area of interest does not overlap with offshore MPAs and EBSAs and any identified CBA1 and CBA2 areas.	impacted by noise emissions. Furthermore, plumes of suspended material and oil dispersion during a blow-out or operational spills would disperse northward. See ESIA comment above – *"spreading up to 19km"*. It is problematic to suggest that the AOI does not overlap with the CBA areas given that the DWOB Block was 'locked out' during the marine spatial planning process.
9.	Cape fur seal colonies all fall well inshore and to the east of the DWOB Licence Block.	The ESIA does not take into account the foraging areas of seals, in which these animals have been recorded up to 120 nautical miles offshore (Shaughnessy 1979). It is not unusual to see these animals far offshore as they are particularly curious (Guastella, pers. comm)
10.	Most of the pelagic (bird) species in the region reach highest densities offshore of the shelf break (200 – 500 m depth), and are therefore likely to occur in the proposed Area of Interest, with highest population levels during their non-breeding season (winter).	This risk of oiling to these animals is elevated when considering minor and operational spills, which have not been addressed in the ESIA. Furthermore, this places significant risks to many bird species which are protected and/or threatened species.
11.	Fifteen species of seabirds breed in southern Africa, including Cape Gannet, African Penguin, African Black Oystercatcher, four species of Cormorant, White Pelican, three Gull and four Tern species. The breeding areas are distributed around the coast with islands being especially important. The closest breeding islands to the DWOB Licence Block are Bird Island in Lambert's Bay, the Saldanha Bay islands, Dassen Island.	These colonies are all to the south of the AOI, and therefore not impacted by the "main" oil spill scenario (SE winds), however, should a spill occur during north-west winds, these populations could get affected. Please add wind-driven scenarios into the oil spill modeling report.
12.	The DWOB Block lies on the western extent of Cape Gannet foraging and distribution areas, but overlaps with the foraging ranges of various pelagic bird species, particularly Wandering Albatross and Atlantic Yellow-nosed Albatross.	This risk of oiling to these birds within their foraging areas is elevated considering the minor and operational spills, which have not been addressed in the ESIA. While "*highest sensitivities to unplanned events*" are acknowledged for these species in ESIA, there is a risk to these pelagic bird populations in

	Due to their extensive distributions their numbers are expected to be low, but overall sensitivity of receptors to a spill incident is considered to be HIGH and impacts would be VERY HIGH.	the event of an accidental spill or blow-out, despite standard mitigations. Various species are listed as threatened and notably the Tristan Albatross is listed as critically endangered.
	Mitigation measures	
13.	Oil spilled in the marine environment would, nevertheless, have an immediate detrimental effect on water quality, with the toxic effects potentially resulting in mortality (e.g., suffocation and poisoning) of marine fauna or affecting faunal health (e.g., respiratory damage). The presence of a large oil slick would influence commercial and small-scale fishing operations and oil onshore would affect coastal ecology and coastal communities. In the event of a large oil spill, assuming the worst-case scenario of coastal oiling, the residual impact on marine and coastal ecology and nearshore users will be of VERY HIGH significance. The residual impact on offshore fishing would be of HIGH significance. As mitigation: it is recommended that all efforts to be made by TEEPSA to avoid scheduling drilling operations during the periods when the likelihood of shoreline oiling for a blow-out is highest (namely the Austral Winter).	This is a good recommendation. However, for two reasons this is not plausible: 1) the 'austral winter' may be longer than anticipated, as cold fronts can pass (and have recently been increasing) through the area at anytime from late March / early April until September. 2) if drilling is delayed, then it may continue into summer. Suggesting that they should only drill in the austral winter is not strictly mitigation as it is out of TEEPSA's control, not to mention the timeline for drilling 1 well is 3-4 months, with multiple (up to 10) wells being anticipated.
14.	In order to mitigate the impact on demersal trawling, it is recommended that TEEPSA avoid drilling within the boundaries of the current demersal trawl "ring fenced" area. However, if this is not possible, then wellhead structures located within this area must be removed during decommissioning.	What are the implications of this to TEEPSA? What are over-trawl capping stacks used for if not to resolve user conflict with fisheries?
15.	Depositional footprints overlap with and within the Orange Seamount and Canyon Complex EBSA. The cuttings footprints do, however, extend into areas zoned as CBA2: Restore (Discharge Point 1) and CBA1: Natural and CBA2: Natural	If depositional footprints and smothering spread for a distance of 19km from the drill site, it is of concern that the 'avoidance distance' is only 1000m.

	(Discharge Point 2). In no case are the depositional footprints extensive enough to influence the Orange Shelf Edge or Child's Bank MPAs. Mitigation: avoidance of any sensitive and potentially vulnerable habitats within 1 000 m of a drill site, identified during pre-drilling ROV surveys, and treatment of NADF cuttings prior to discharge will reduce the chemical impact related to smothering on sensitive and potentially vulnerable hardground communities to MEDIUM significance.	
16.	As sampling beyond 1 000 m depth has not taken place (Atkinson & Sink 2018) it is not known whether similar communities may be expected in the Licence Block. Some sites need more research to determine their status. The location of the Deep Water Orange Basin area is well offshore of these known and potential VMEs emphasising the gaps in our knowledge specific to the vulnerability of marine communities of abyssal habitats.	Vulnerable Marine Ecosystems in South African national waters are defined under FAO 2009 criteria, and where relevant to the South African sub-Antarctic territory within the CCAMLR region, are referred to as VMEs in the SA National Biodiversity Assessment (Sink et al., 2019). Potential VME indicator organisms were defined with reference to the FAO Guidelines, and identified by a VME Task Team established to consider the science, mapping and management of VMEs (Andrews et al., 2021). They include: Scleractinia (stony corals), Alcyonacea (soft corals), Gorgonacea (sea fans), Pennatulacea (sea pens), Porifera (sponges), Anthoathecata (including hydrocorals) and Bryozoa (moss animals, seamats). Although it is widely understood that the west coast remains severely under-explored, and while the trawl industry has implemented move-on rules and protocols, via their Marine Stewardship Council certification, it is of concern that distance and reconsideration of the drill sites will not be significant enough to prevent smothering and impact to these ecosystems.

	Procedural items – quotes from ESIA	
17.	During autumn and winter, **catabatic**, or easterly 'berg' winds can also occur.	Note **Katabatic**.
18.	As would be expected, the risk is not centralised around the discharge point, but is orientated towards the direction of the prevailing current, illustrating the strong influence of surface currents on drill cuttings dispersion and redeposition on the seabed.	Should this not be referring to **bottom** currents?

19.	Once the oil reaches the surface it is distributed by prevailing winds and **currents surface** with the highest concentrations of rising oil being transported in a WNW to NW direction.	Should read “surface currents”
20.	The ESIA report does not provide any information on the other historic wells (Fig. 13 of exec summary, 7-81 of main ESIA). To what depth below the sea bottom did these wellpoints extend?	Historic Information to be supplied.
	Knowledge gaps	
21.	All of the seabed information is lacking, i.e. seabed types.	This is of concern. How will ROV and other sample data secured during the pre-drill surveys be supplied back into the South African data repository for future biological and benthic scientific studies (without a moratorium).
22.	Due to the lack of information on benthic macrofaunal communities beyond the shelf break, no description can be provided for the offshore portions of the Licence Area.	This is of concern. How will ROV and other sample data secured during the pre-drill surveys be supplied back into the South African data repository for future biological and benthic scientific studies (without a moratorium).

CUMULATIVE IMPACTS

In Environmental Assessments such as these, it is required that cumulative impacts, from all sound sources are adequately dealt with and investigated, including the additional impact that the proposed drilling surveys will add to the ‘already noisy soundscape’.

PRECAUTIONARY APPROACH

Furthermore, it is our opinion that a precautionary approach should be applied, i.e. not to issue an Environmental Authorisation based on the ESIA given the risk of oil pollution, need for further biological studies and the lack of effective mitigation measures, especially for noise emissions, that properly prevent harm to species and ecosystems, including many threatened and protected species.

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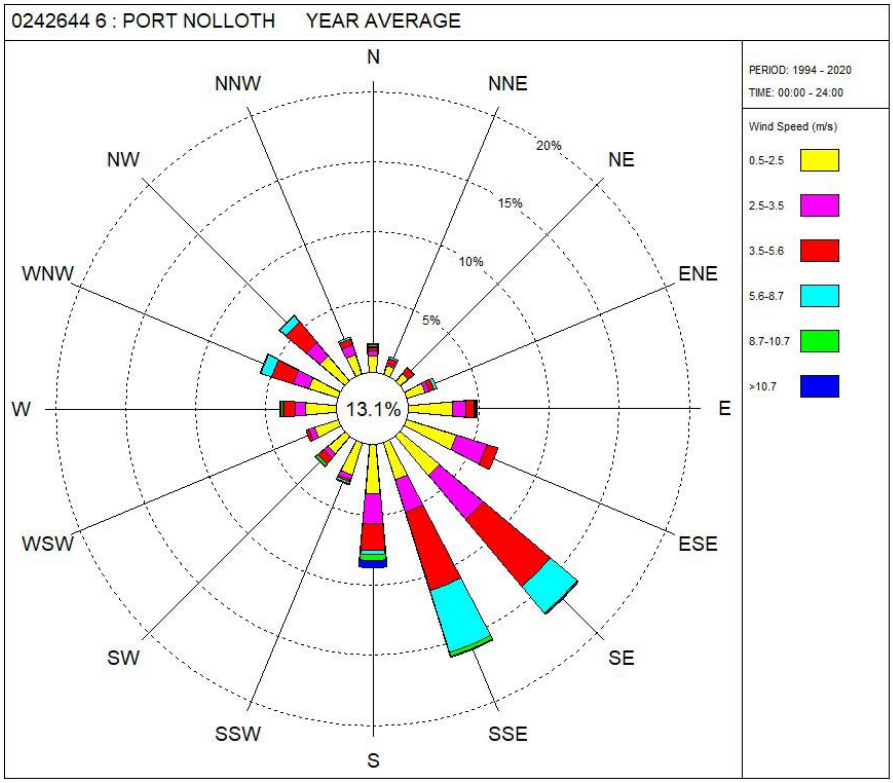
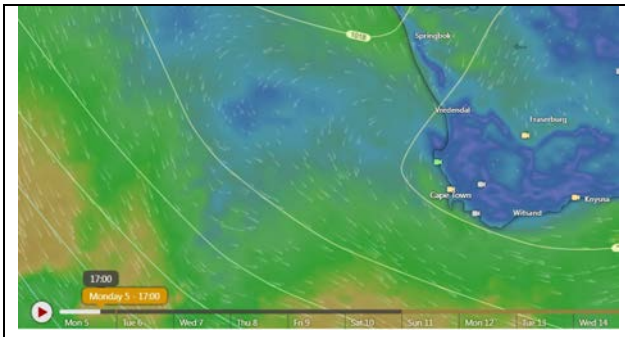
APPENDIX 1: PORT NOLLOTH YEAR-AVERAGE WINDS (1994-2000, SAWS)



APPENDIX 2: EXAMPLE OF WINDS ASSOCIATED WITH THE PASSAGE OF A COLD FRONT, JUNE 2023

Windy.com



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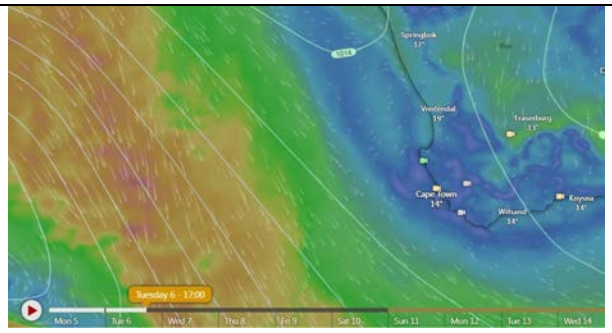

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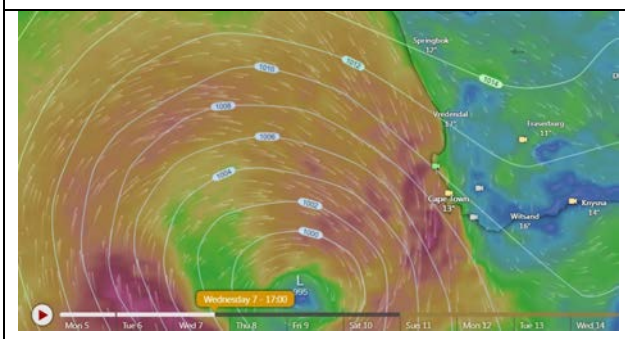

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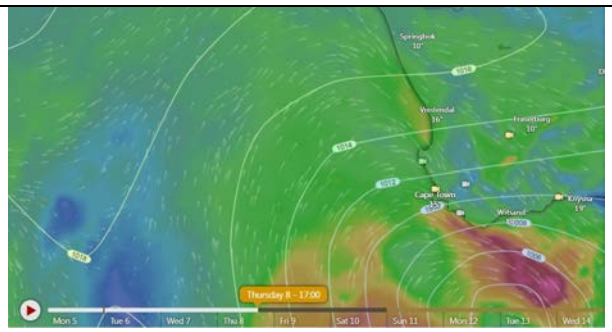

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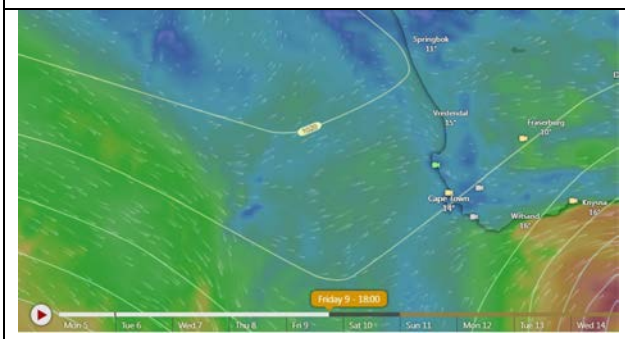

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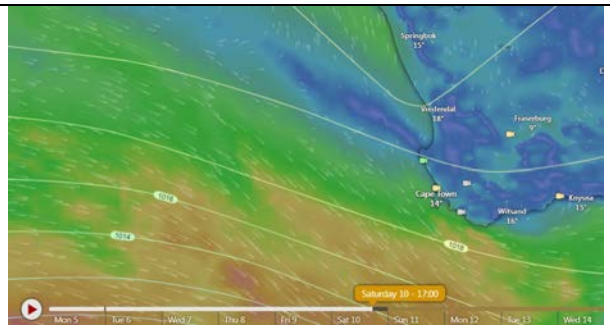

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Windguru