

## **Acute Strategy Oil Spill (ASO) Response plans on tactical level for protection of prioritized areas**

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### **ABSTRACT**

When the oil industry activities approach coastal areas, a need for preparedness presents itself. Oil spill preparedness should be established in cooperation with local authorities and other relevant stakeholders. The Acute Strategy Oil spill (ASO) concept has in this context, proven to be a useful tool to establish contact and good working relationship between operators and the communities along the Norwegian coast. In addition, the process provides development of ASO response plans for prioritized areas along the coastline.

ASO is a generic plan format on tactical and operational level to be used for protection of prioritized areas along the coastline. The ASO plan concept outlines recommended strategies for protection of preselected areas and can be timesaving during the critical first hours of an oil spill response operation. The plans are produced in a GIS format and made available through Norwegian Coastal Administration's online map application "Kystinfo" and Norwegian Clean Seas Association for Operating Companies' (NOFO) website. The plans can be used as an attachment to the action plan in the acute phase.

The development process of ASO's can be used as a means to ensure involvement of local stakeholders and authorities (i.e. County Governor's Environmental Protection Department) in oil spill preparedness. The ASO concept contributes to standardization of symbols and terminologies and at the same time developing useful action plans for oil spill response regardless of source of the oil.

### **INTRODUCTION**

Focus on protecting of environmental resources has been growing rapidly in the latest decades. Exploration and production for oil and gas will always involve a risk of accidental oil spills in the surrounding environment. When the petroleum industry is established in coastal areas, the industry will be responsible for strengthening preparedness for oil spills in these areas. It is important that efficient oil spill preparedness which reduces the consequences of a potential accident is in place.

Many oil companies wish to establish contact with local authorities/stakeholders and obtain good cooperation and dialogue in order to reinforce their response capacities and strengthening their reputation as an environmentally responsible company. The ASO concept can also be useful in terms of supplying improved generic preparedness plans at a tactical and operational level. The plans are made publicly available online and can be used for any oil spill.

ASOs may be a supplement in the Environmental Risk Assessment process which is required by the Norwegian authorities. The operator can thus ensure a structured approach towards an early

identification of potential environmental impacts and selection of the most appropriate response strategies. This can be important information for the internal decision making process as well as a part of the stakeholder involvement. This may also be important documentation supporting the Application for Discharge to the Norwegian Environment Agency.

## **THE ASO CONCEPT**

The ASO concept consists of straightforward plans on tactical and operational level especially designed to be used in the acute phase of an oil spill response operation. The ASO outlines recommended strategies for oil spill response for preselected areas. The selection of these areas is risk based using quantitative and/or qualitative environmental assessments. However, the selection of areas may also be based on other criteria such as socio-economic value or local use. The ASO plan is generic and relevant across municipal, state and private organization level and ensures local ownership of oil spill preparedness plans on tactical level. The plans are structured on the basis of municipalities. The ASOs are comparable with plans commonly used by Norwegian firefighters; this ensures a unified plan format that is known to emergency responders. The ASOs can be laminated with plastic coating for operational use and are readily available in GIS-based systems on tablet computers used by responders.

An example of an ASO plan is shown in figure 1 below.

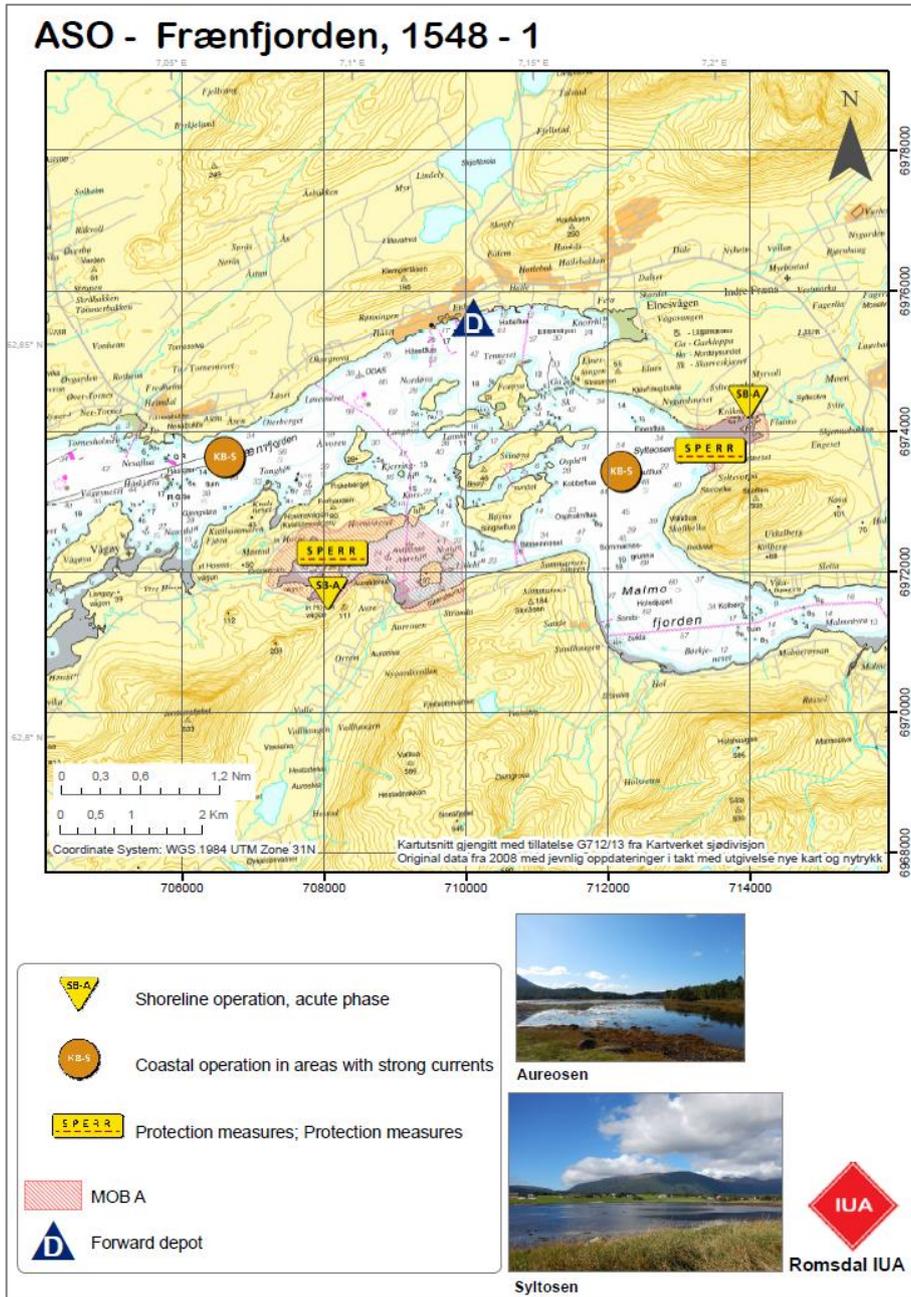


Figure 1: ASO plan, front page

ASO - 1548 - 1									
Acute Strategy Oil Spill Response									
ASO no.	Area	Position (WGS84)	What should be protected	Primary response	Execution	Response resources	Access	Forward depot	Special conditions
1548-1-1	Indre Frænfjorden	62,829N 7,167E	Sylteosen preserved nature area	Maximizing recovery of oil near the coast and protect prioritized areas against pollution	Coastal operation in areas with strong currents	Coast system: Vessels, high speed booms/medium size boom, skimmer, storage capacity	From sea	Elnesvågen	Practiced: <date>
1548-1-2	Ytre Frænfjorden	62,834N 7,058E	Aureosen and Sylteosen preserved wildlife area	Maximizing recovery of oil near the coast and protect prioritized areas against pollution	Coastal operation in areas with strong currents	Coast system: Vessels, high speed booms/medium size boom, skimmer, storage capacity	From sea	Elnesvågen	Practiced: <date>
1548-1-3	Aureosen preserved wildlife area	62,821N 7,086E	Resting- and wintering- areas for birds. Swans, mallards and various sea ducks. River delta, large dry tide areas, botanical values	Exclusion booming. Shielding of wetland area	Protection measures	Shielding/exclusion: Small booms anchoring equipment	From sea and land	Elnesvågen	Practiced: <date>
1548-1-4	Aureosen wetlands	62,816N 7,084E	Resting- and wintering- areas for birds. Nature reserve	Maximizing uptake of oil along the shoreline and prevent oil remobilization	Shoreline operation, acute phase	Close to the shore: Small boats, small booms, skimmers, pumping equipment, flushing equipment, storage capacity	From sea and land	Elnesvågen	Practiced: <date>
1548-1-5	Sylteosen wildlife reserve, river delta	62,831N 7,192E	Resting- and wintering- areas for birds. Nature reserve	Exclusion booming. Shielding of wetland area	Protection measures	Shielding/exclusion: Small booms anchoring equipment	From sea and land	Elnesvågen	Practiced: <date>
1548-1-6	Sylteosen wetlands	7,20336N 62,836E	Resting- and wintering- areas for birds. Nature reserve	Maximizing uptake of oil along the shoreline and prevent oil remobilization	Shoreline operation, acute phase	Close to the shore: Small boats, small booms, skimmers, pumping equipment, flushing equipment, storage capacity	From sea and land	Elnesvågen	Practiced: <date>

Regulations: [Sylteosen:http://www.lovdatab.no/for/lf/mv/xv-19880527-0407.html](http://www.lovdatab.no/for/lf/mv/xv-19880527-0407.html) og [Aureosen: http://www.lovdatab.no/for/lf/mv/xv-19880527-0406.html](http://www.lovdatab.no/for/lf/mv/xv-19880527-0406.html)

Note: Coordinates are in decimal degrees

Figure 2: ASO plan, back page

## METHODOLOGY

The ASO concept has been developed by DNV GL and is established by combining internal datasets (beach substrate/shoreline type), with data collected from meetings, field surveys and GIS functionality in a web solution. The GIS tool gives the users an easy and orderly access to the plans and allows for efficient updating.

### Work process:

- Phase 1: Define and select area of interest, identify existing information relevant for the area by performing a web based study and define environmental sensitivity (e.g. MOB data) for the area. It is important to qualify that datasets describing environmental sensitivity is updated by the County Governor.
- Phase 2: Establish contact with the local stakeholders and prepare a meeting and field survey.
- Phase 3: Assembling information and select the preferred response strategies, prepare ASO data in GIS and finalize ASO. → publication online (NCA)

When the ASOs are prepared in a GIS system, they are at the same time ready to be implemented in Norwegian Coastal Administration map solution "Kystinfo". "Kystinfo" is open to the public and can be used to make good maps of marine areas in Norway.

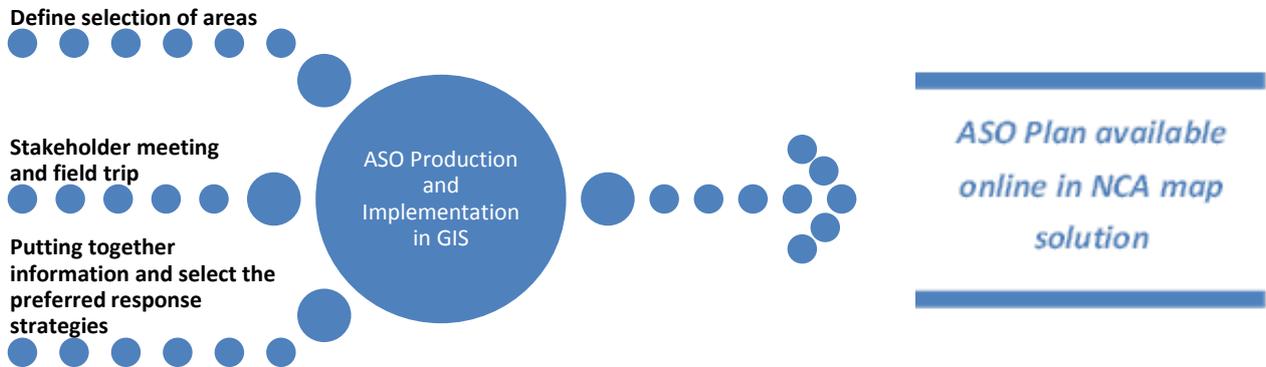


Figure 3: ASO concept methodology approach

## SUMMARY

The ASO is a simple planning tool that provides the basis for a good dialogue between operators and local stakeholders/ authorities. The plans can also reduce the environmental impact through improved efficiency in the acute phase of an oil spill. The ASO concept is a cost effective measure based on establishment of generic oil spill plans to be used in the acute phase any oil spill operation in the area. ASO's are also well suited for use in drills and exercises.

## REFERENCES

- IPIECA/IMO/OGP (2011). Sensitivity mapping for oil spill response.