



Oil Spill Modelling

Royal HaskoningDHV has developed an Arabian Sea Regional Oil Spill Model using the MIKE21/3 Oil Spill (OS) Model. Our Oil Spill Model covers the coastlines of six countries – Yemen, Oman, UAE, Iran, Pakistan and India. The model considers major weathering (decomposition) processes such as spreading, evaporation, emulsification, biodegradation, photo-oxidation, vertical dispersion and dissolution. The model can be used to simulate movement and decomposition of oil spilled accidentally anywhere within the Arabian Sea Region.

Our model

Our oil spill model has been set up in such a way that with a finer local mesh and more detailed bathymetry and land boundary data within a specified area, the localised oil movement can be accurately modelled at a point of interest without the need to introduce nested models. The unstructured flexible mesh used in the model makes it easy to refine the mesh in an area of interest.

Our capability

This regional model demonstrates our capability in modelling the oil accidentally spilled in lakes, estuaries

and coastal areas or to open sea. The principle could be applied to simulate oil spill anywhere in the world to predict movement of oil and its weathering (decomposition) over time.

Model results

Oil spill modelling simulates the fate of oil spilled accidentally. The model predicts the extent of areas affected by oil and provides maps of oil concentration. The model also predicts oil tracks.

Application of model results

Oil spill model results are used by industry and government to assist in planning and emergency decision-making. The model results are also used for Environmental Impact Assessment (EIA) and emergency planning for construction and operation of sea ports, oil terminals, offshore exploratory drilling rigs, offshore oil extraction rigs and oil tankers that transport oils.

The model results are also used for risk analysis to estimate potential loss of life, damage to properties, ecosystems and marine facilities and to develop clean up and mitigation measures.



Oil spill modelling for exploratory drilling works in Oman

Royal HaskoningDHV was commissioned to support the EIA for the Oil Exploratory Drilling Works for Offshore Block No. 50 in Oman.

We carried out modelling of dispersion of accidental oil spillage during the drill process using the MIKE21 Software. The model predicted the conservative geographical spread of the spilled oil by movement of carrying water.

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