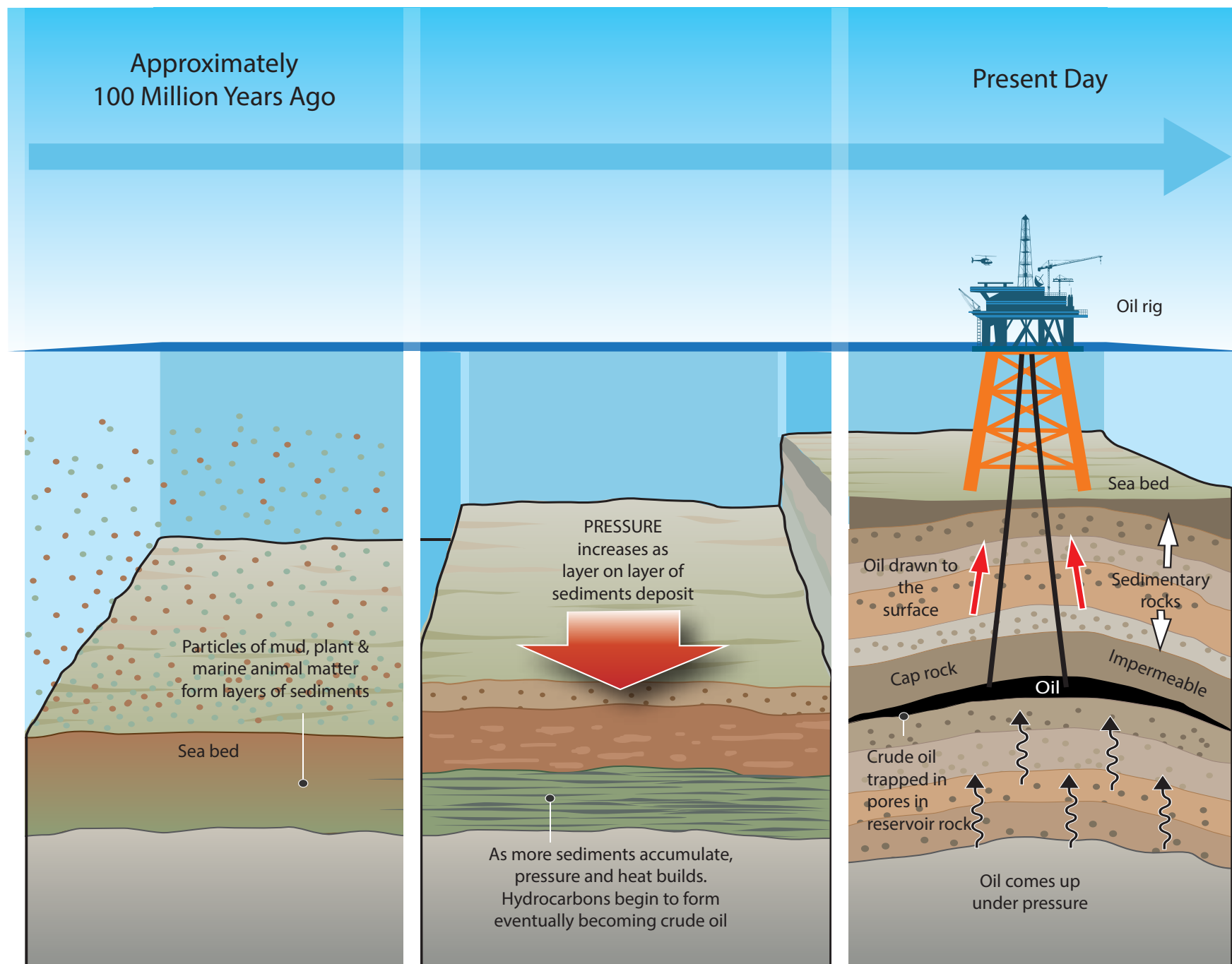


Oil - Formation to Production

What is oil?

- ▶ Crude oil is a mixture of hydrocarbons that formed from plants and animals that lived millions of years ago.
- ▶ Over the years, the remains were covered by layers of sediment.
- ▶ Heat and pressure from these layers helped the remains turn into crude oil.
- ▶ Crude oil exists in liquid form in underground pools or reservoirs, in tiny pore spaces with sedimentary rocks.

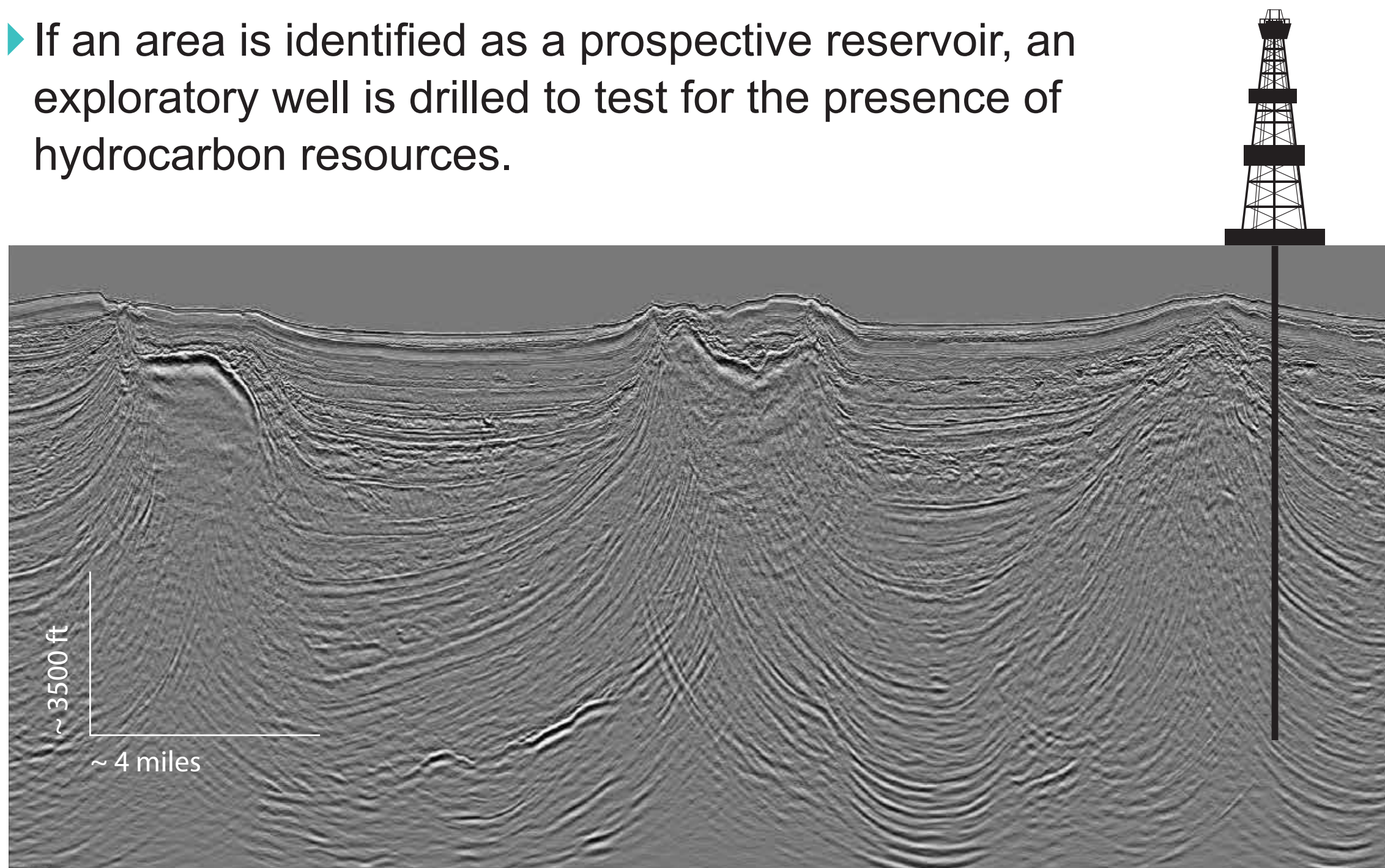


How is it formed?

- ▶ After the oil forms, it rises from a source rock through fractures in the subsurface due to the relatively low density of oil.
- ▶ The rising oil then migrates to a reservoir rock, which contains tiny spaces called pores.
- ▶ The oil remains in a reservoir rock when there is an overlying cap rock through which oil cannot pass.

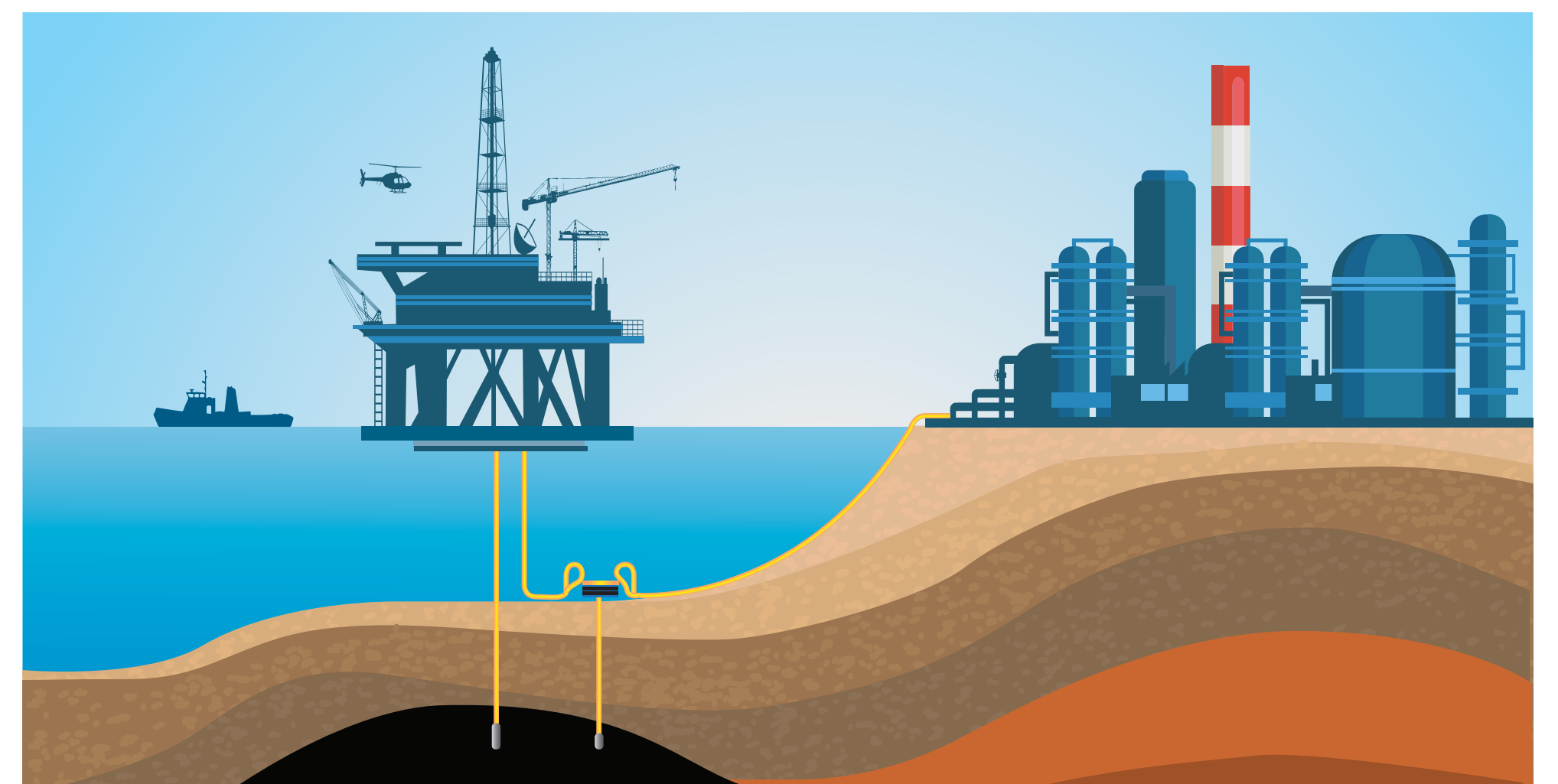
How is oil found?

- ▶ Hydrocarbon resources are found using exploration techniques such as seismic imaging.
- ▶ Seismic imaging assists in identifying the potential areas that could contain oil and gas.
- ▶ If an area is identified as a prospective reservoir, an exploratory well is drilled to test for the presence of hydrocarbon resources.



How is oil produced?

- ▶ Once an oil pool is discovered, delineation wells are drilled to characterize the size of the accumulation.
- ▶ Production facilities are then fabricated and installed to extract oil.
- ▶ Different types of facilities exist, based on water depths, to safely produce and transport the oil to shore.



Example of Activities and Timeline for a Deepwater Offshore Project

- ▶ The life cycle of OCS oil and gas activities is a lengthy process consisting of various phases.
- ▶ Once production begins, it could continue for several decades.

- ▶ The timing of the activities varies by region.
- ▶ Activity timelines in mature areas like the Gulf of America take relatively shorter time; frontier areas could take a longer time.

