



Polymer Flooding for **Enhanced Oil Recovery**

Polymer Flooding for Enhanced Oil Recovery

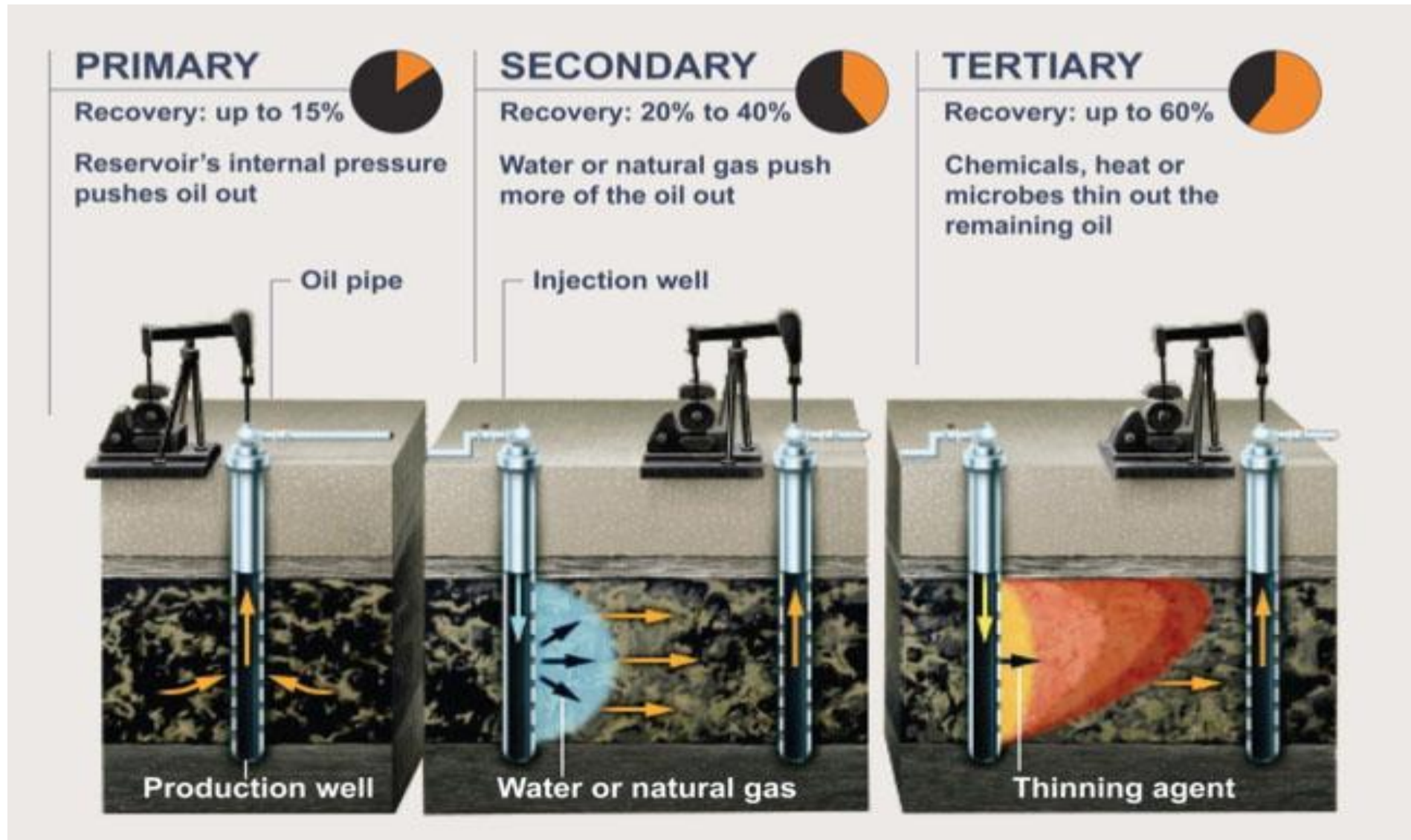
1. Steps of oil field developing

2. Classification of EOR methods

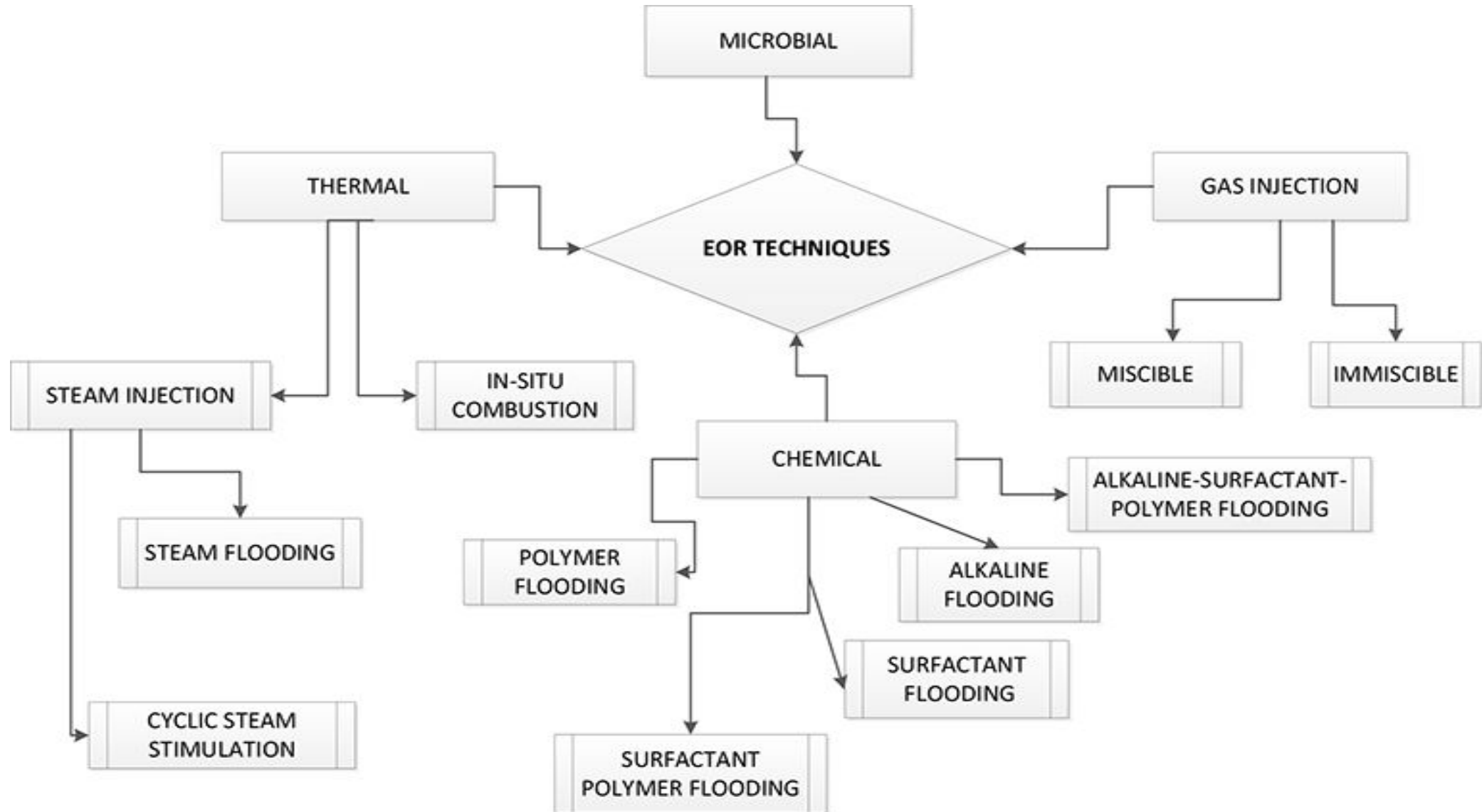
3. Polymers

4. The process of polymer flooding

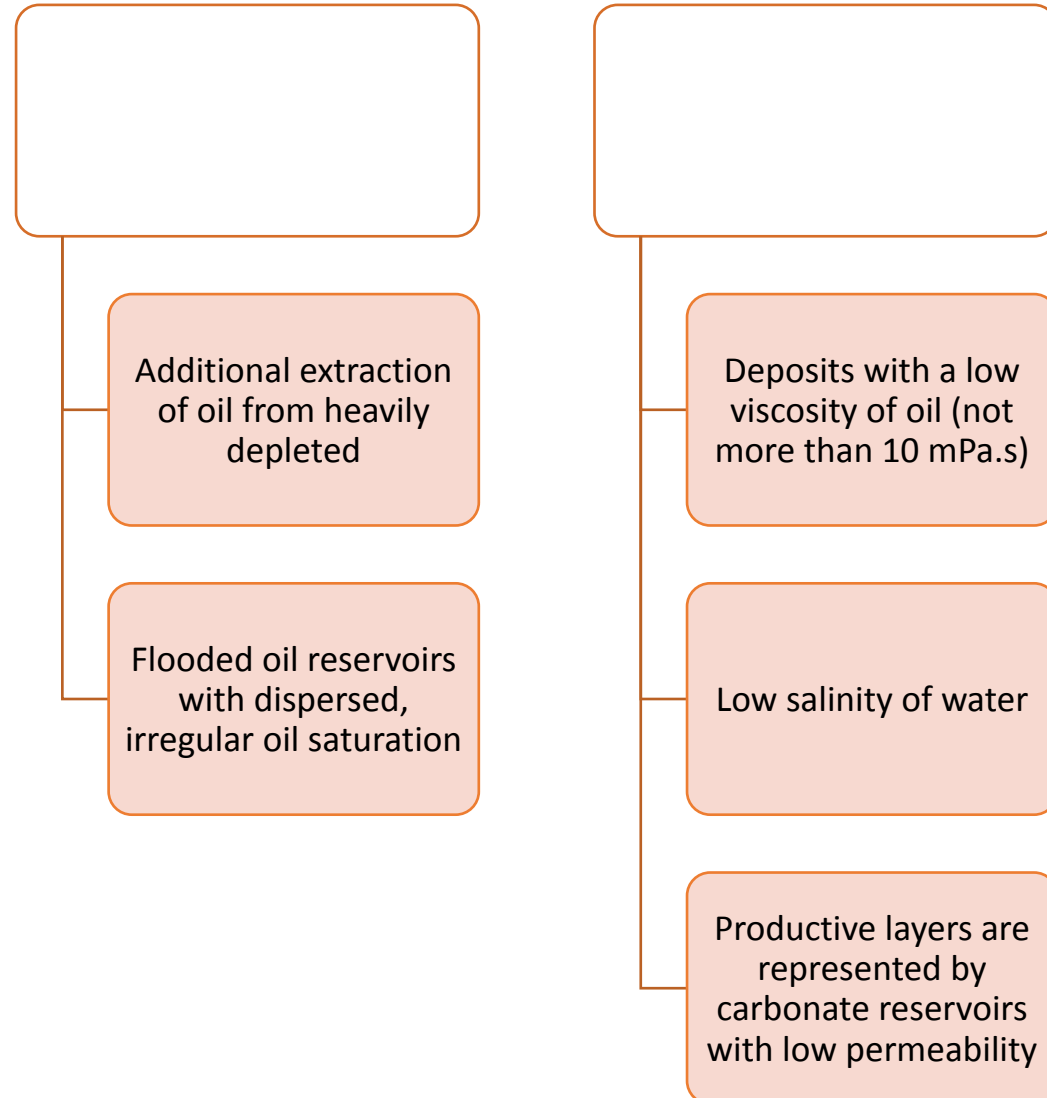
Steps of oil field developing



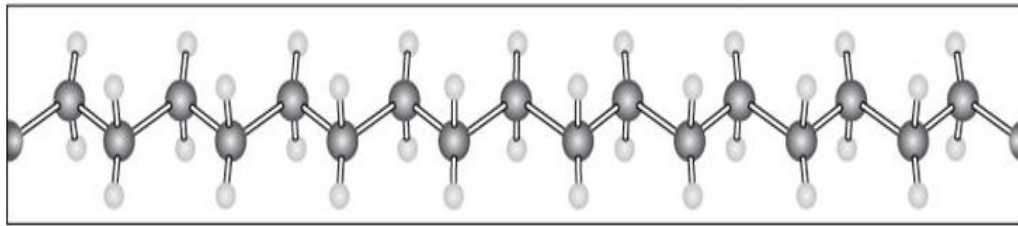
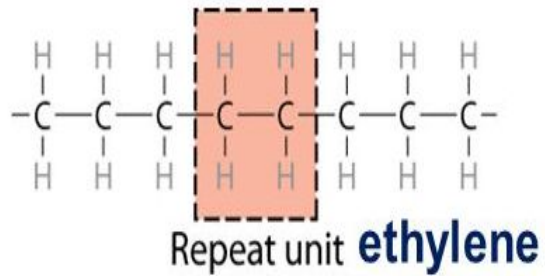
Classification of EOR methods



When are chemical EOR methods used?



What is polymer



● C ● H

polyethylene

- A compound consisting of *long-chain molecules*, each molecule made up of *1000-10000 repeating units* connected together.
- Most polymers are based on *carbon* and are therefore considered *organic* compounds.

Mobility Ratio

$$M = \frac{\lambda_{water}}{\lambda_{oil}} = \frac{\frac{k_{water}}{\mu_{water}}}{\frac{k_{oil}}{\mu_{oil}}}$$

λ - mobility,

k - permeability,

μ - viscosity.

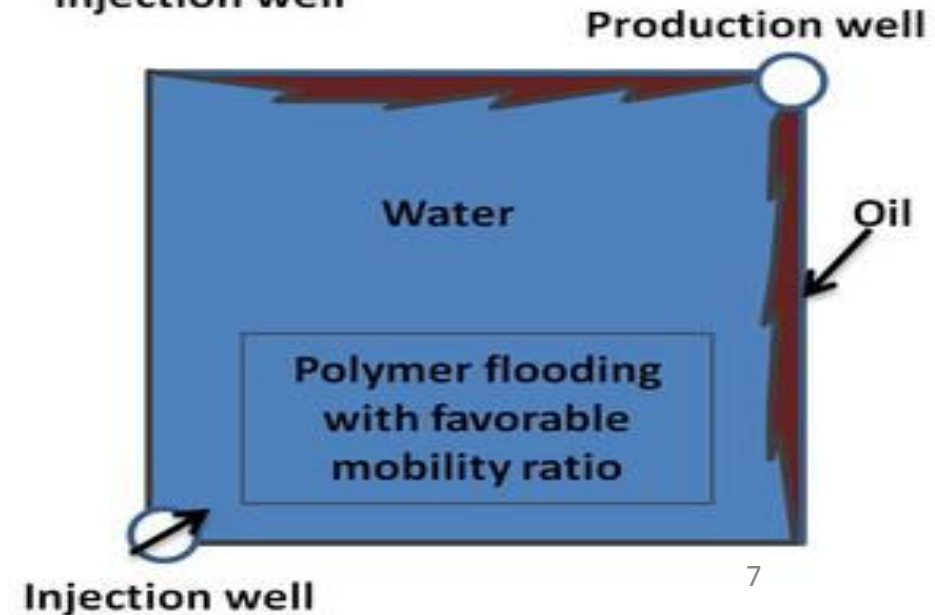
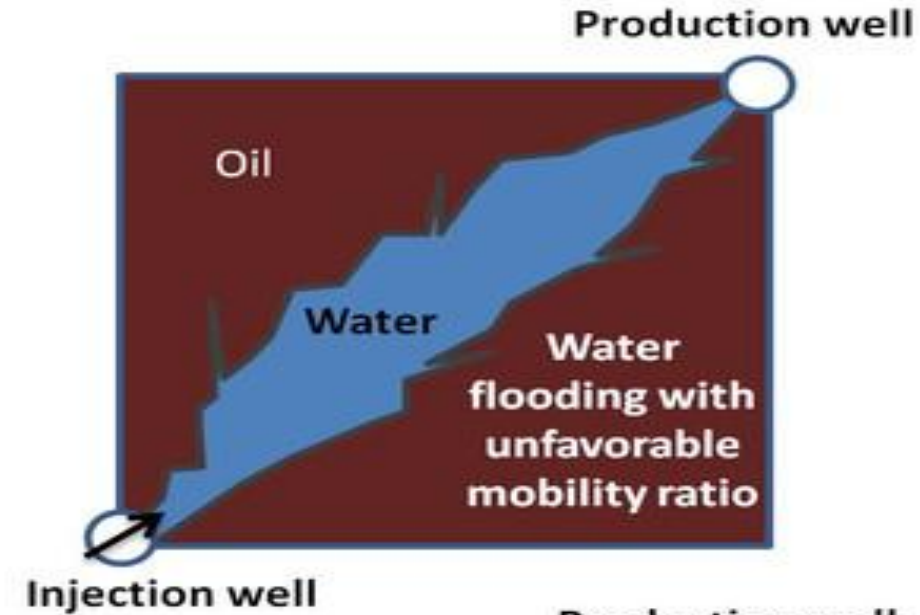
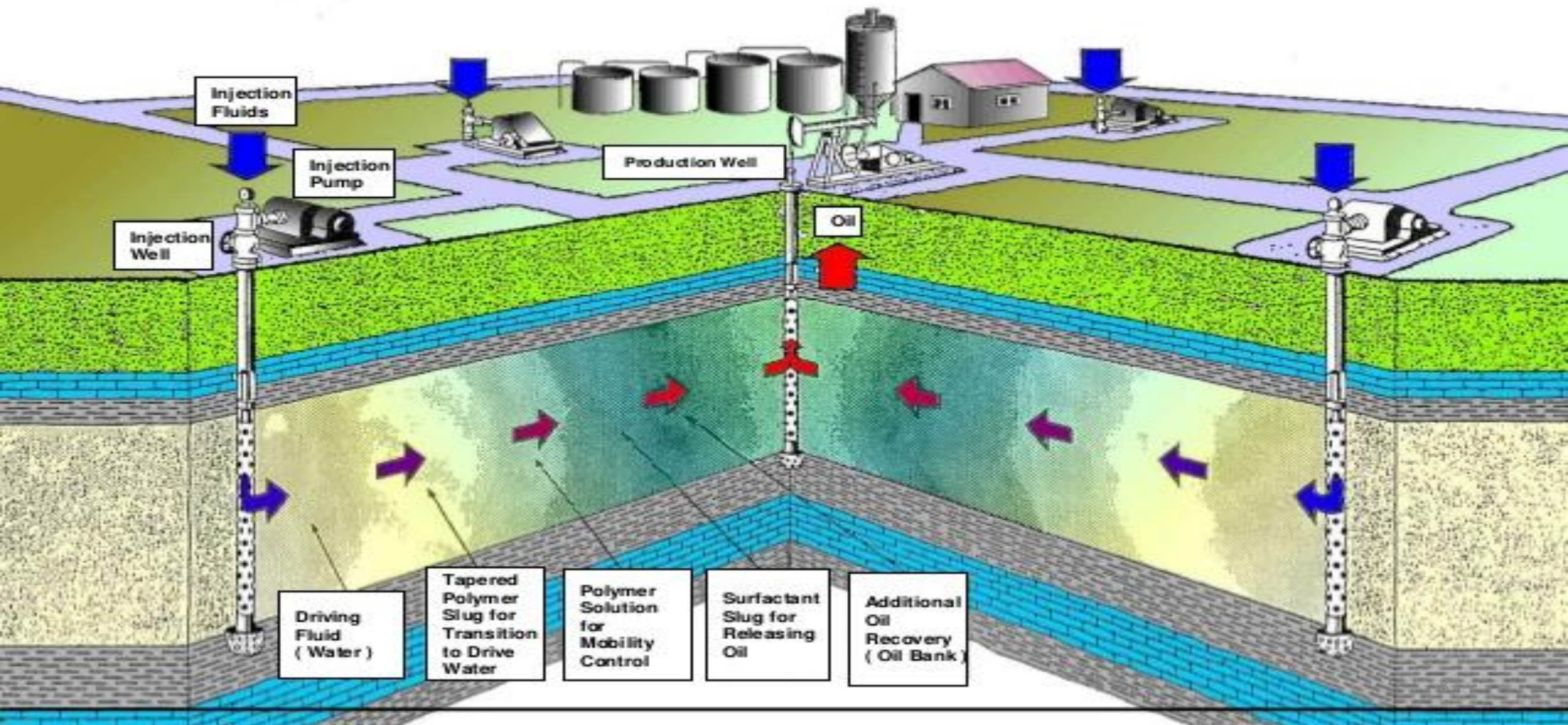
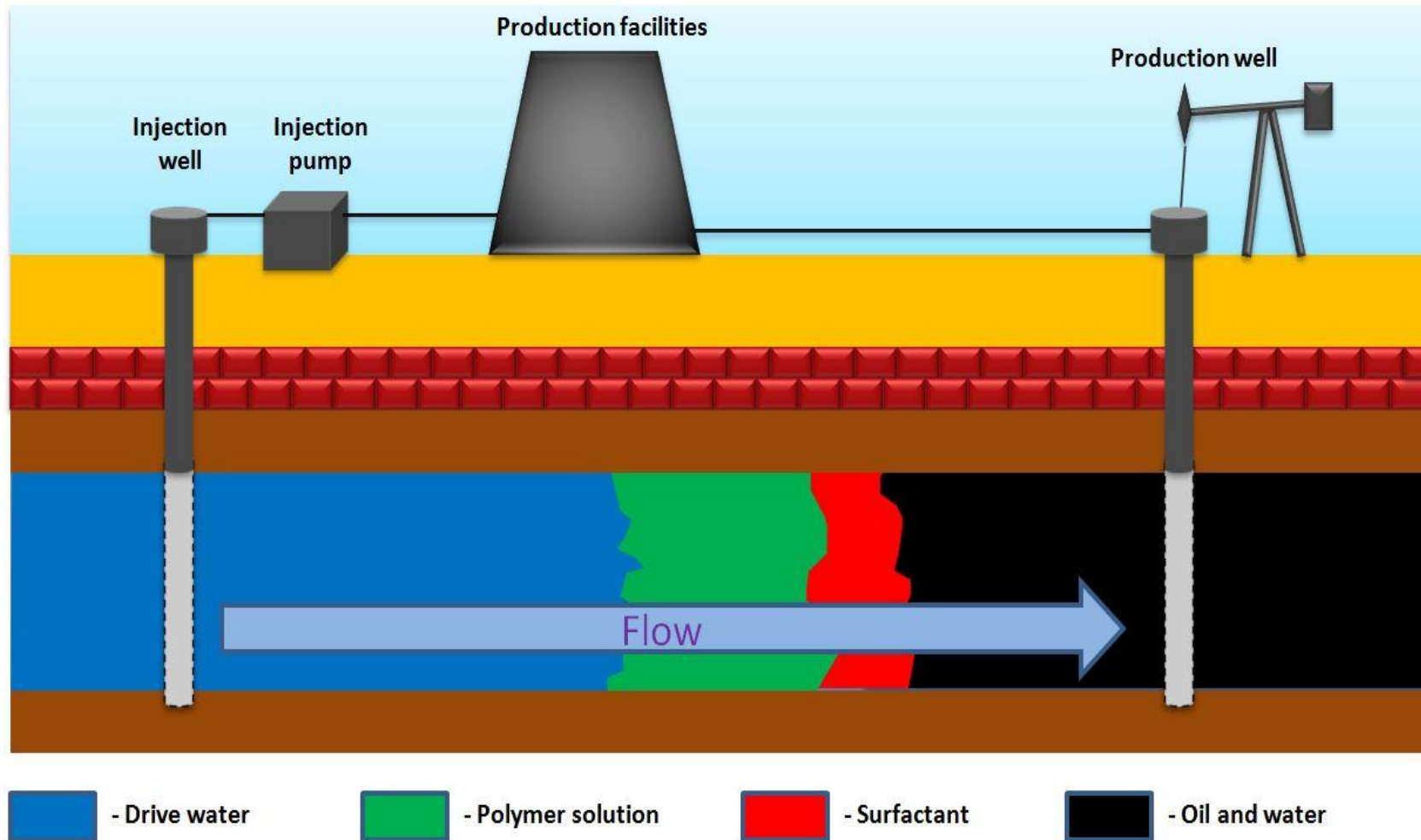


Illustration of a typical chemical flood



Polymer Flooding



Polymers:

- Added to water to increase its viscosity
- Reduce water permeability due to mechanical entrapment
- Decrease water mobility.

Polymer Flooding for Enhanced Oil Recovery

1. *help to extract up to 30% of the original oil in place*
2. *help to increase the viscosity of the displacing liquid (water) to drive the displaced liquid (oil) to the production well*



Thanks for your attention !