



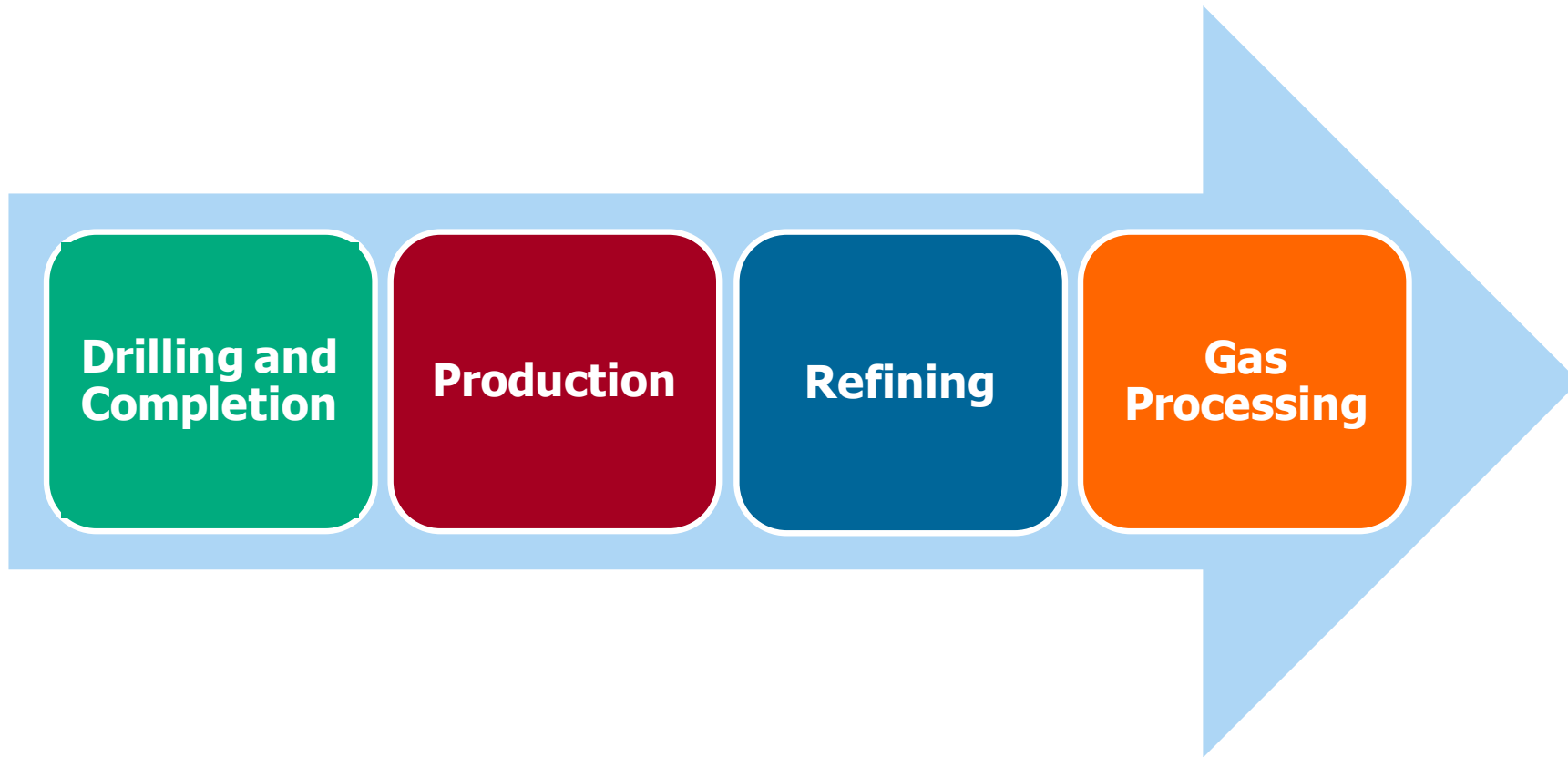
OLI technology in the Energy Sector

OLI Systems, Inc.

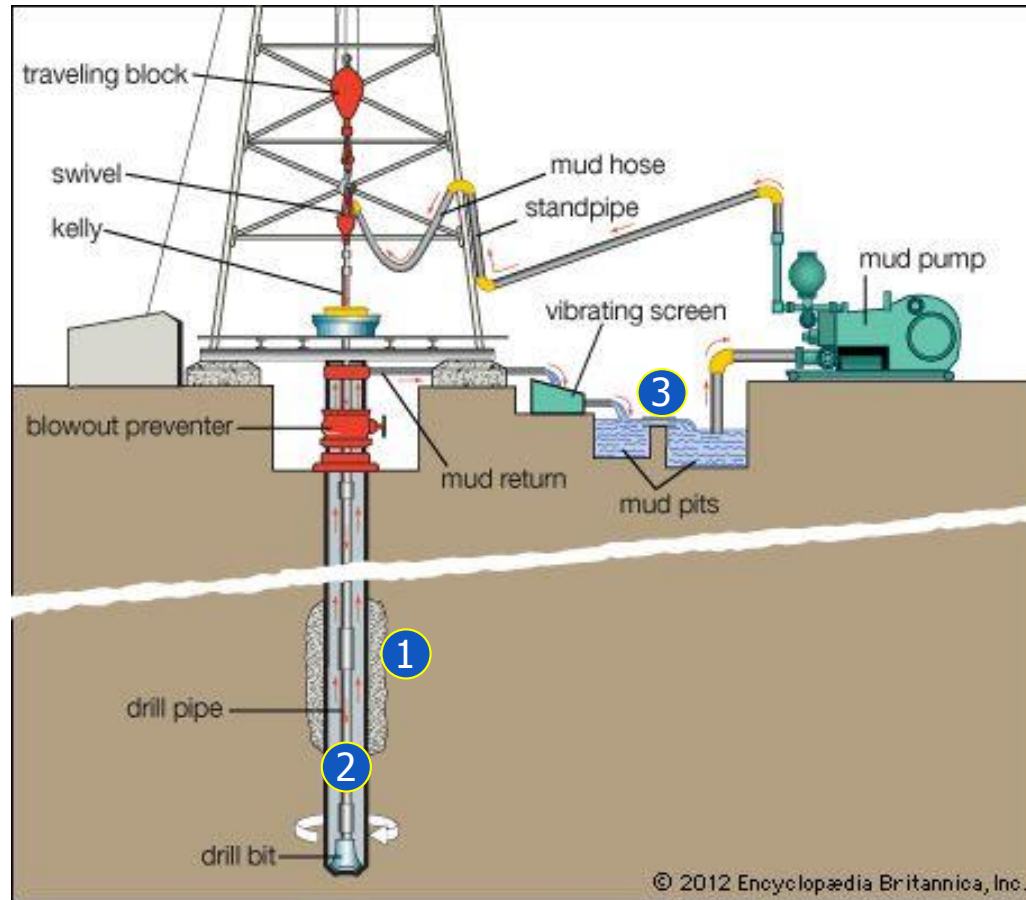
July 2018

think simulation | getting the chemistry right

OLI Purview



Drilling and completion



1. Mud-Rock reactions

- Ion exchange and adsorption
- Clay reactivity
- Dissolving Minerals

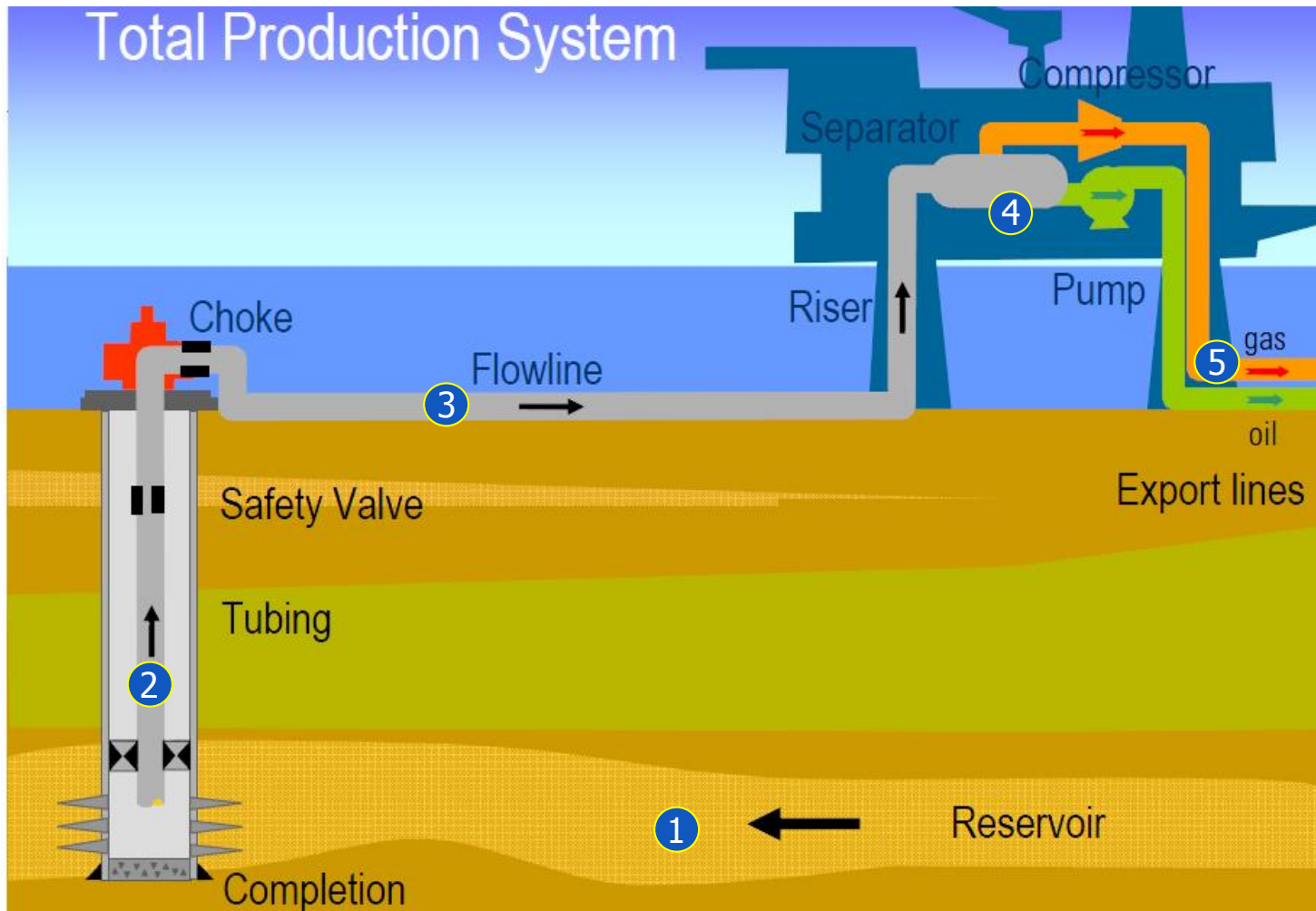
2. Completion Fluids

- Crystallization pressures
- corrosivity
- Density and viscosity
- Water activity (reactivity with rock)

3. Disposal water treatment (overall)

- Solids separation
- Chemical treatment
- Metals removal

Oil and Gas Production



1. Reservoir interactions

- Injection water – reservoir water
- Frack fluid - Shales
- Steam - Rock
- Supercritical CO₂ – reservoir fluid
- Scale Inhibitor – Rock

2. Fluid Production

- Mineral Scaling
- Corrosion

3. Flowline Transmission

- Phase formation: Bubble Point, Condensed Water

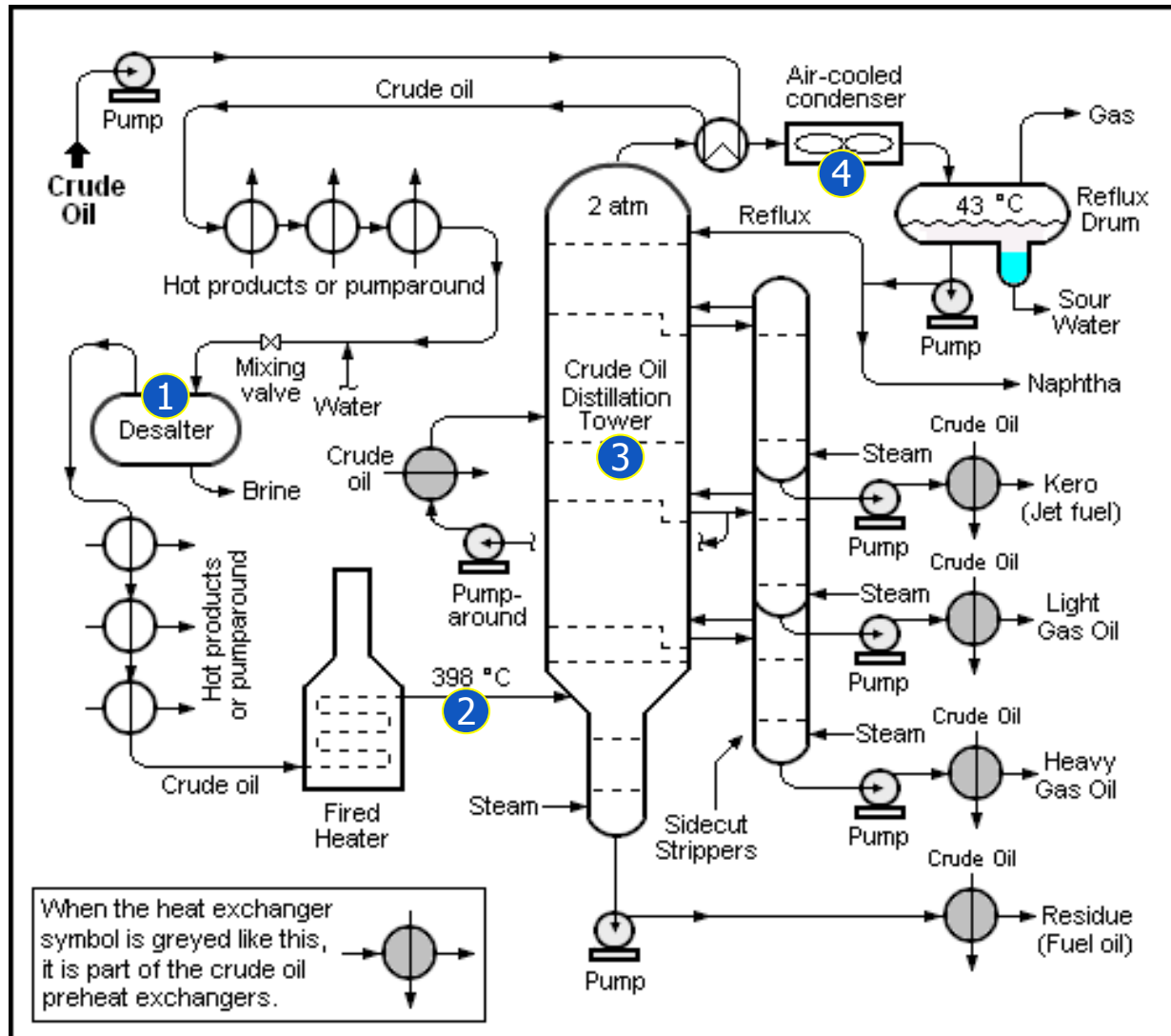
4. Separation

- Phase composition: P_{CO_2} , P_{H_2S}
- Brine pH, Alkalinity

5. Gas Transmission

- Dew Point corrosion, pH

Refining: Crude Distillation



1. Desalter

- Mineral Scaling, pH control

2. Heating

- Hydrolysis and HCl formation

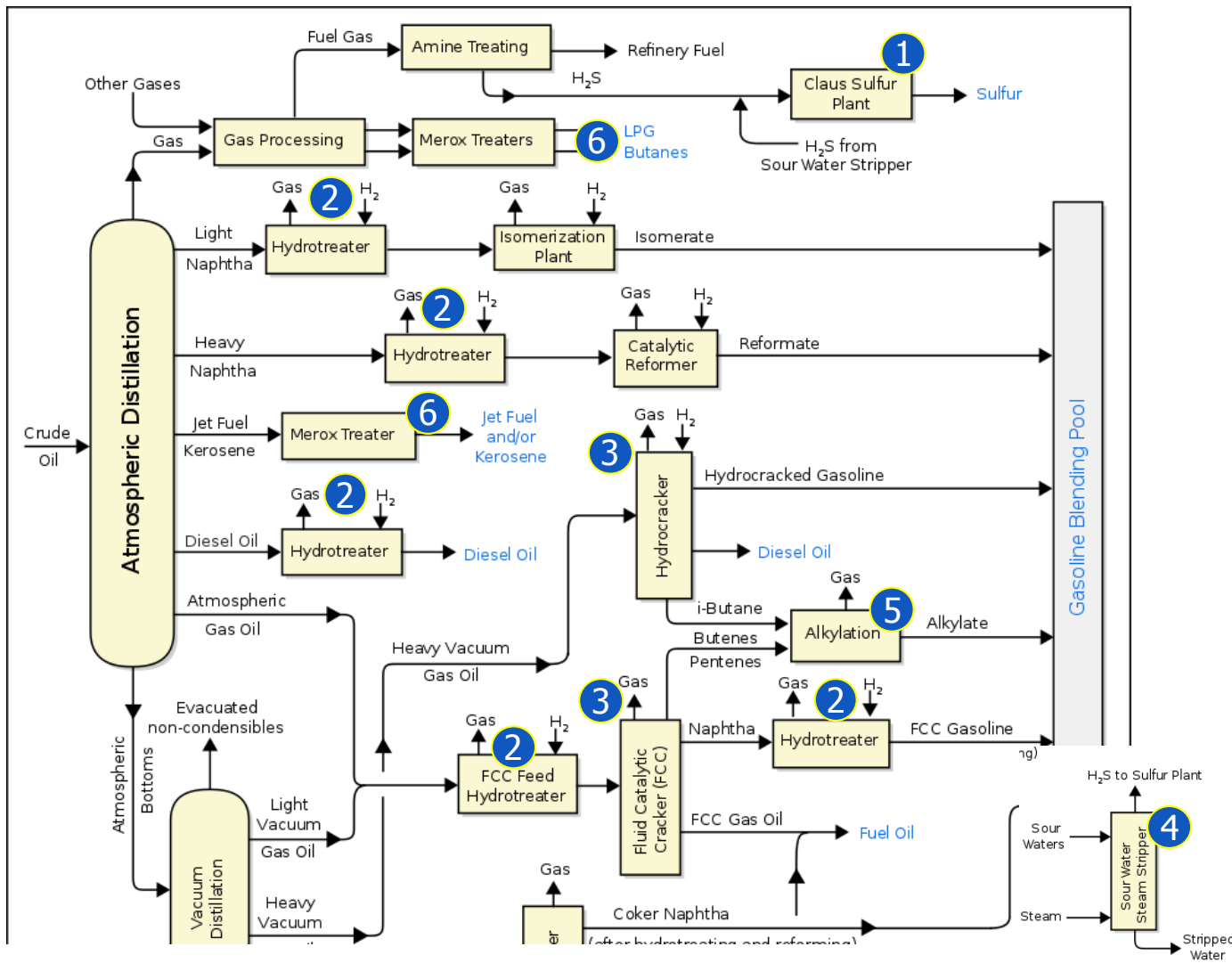
3. Distillation

- Organic Acid condensation

4. Condensation

- Amine Hydrochloride corrosion

Refining: H₂O, H₂S, HCl, NH₃ processing



1. Sulfur recovery

- SCOT sulfur corrosion
- Sulfur phase formation

2. NH₃ and H₂S emission

- NH₄-HS corrosion

3. NH₃ and CO₂ emissions

- Carbonate corrosion

4. Sour Water strippers

- Alkaline carbonate corrosion

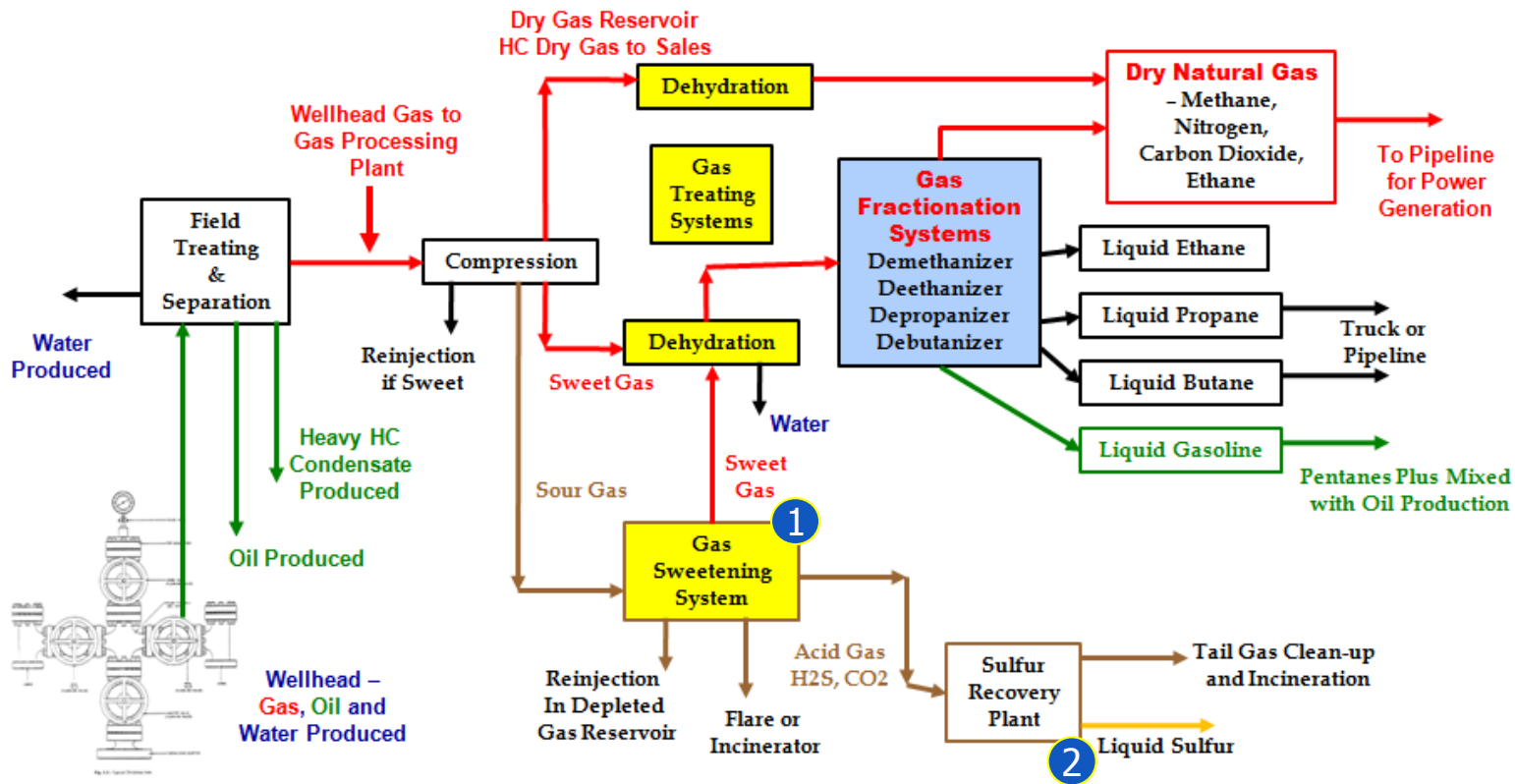
• Alkylation

- HF or H₂SO₄ regeneration and corrosion
- metal recovery

• MEROX

- Mercaptan conversion to disulfides

Gas Processing



1. Gas Sweetening

- Amine degradation
- Chemical efficiency

2. Sulfur recovery

- Sulfur phase formation
- Corrosion

3. Dehydration

- Condensate formation

Questions?

Onto your application!

