

**Department of Energy Public Listening Session**  
**August 4, 2010**

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**Craft and Hawkins Department of Petroleum Engineering**  
**Louisiana State University**

**LSU Concepts on a Deepwater Oil Spill Containment  
System**



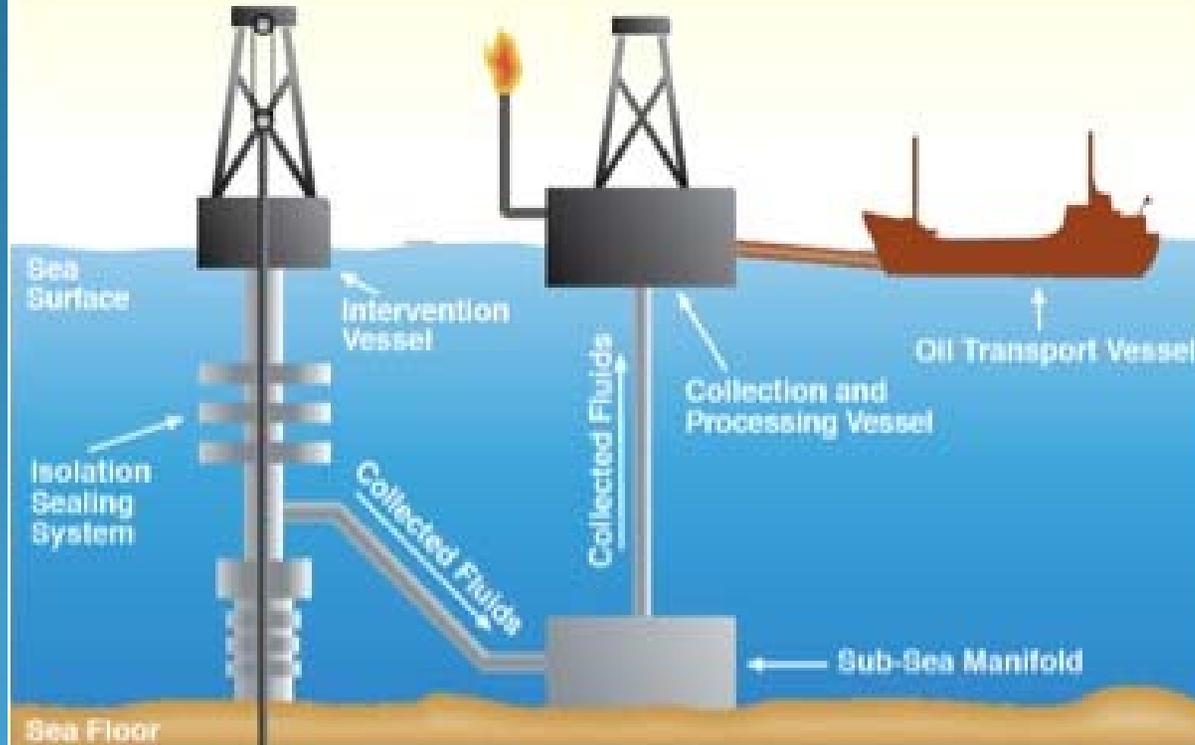
# Areas of Concern including Macondo Experience

- Volume of the flow
- Adequate Capacity
  - Hydrate Control / Flow Assurance
- Multiple sources of flow & equipment configurations
  - Breaks in Riser
  - Wellhead
  - Seafloor
  - Changes over time
- Possibility of debris (rig) on top of flow source
- Remote Monitoring Capability
- Tropical Storm/Hurricane Capability
- Intervention vs. Collection Capability



# Components of LSU Concept

## Sub-sea Collection and Intervention



## Potential Sources of hydrocarbon flow

- Riser (drilling or production) leaking or parted
- Leak in/at subsea BOP, tree or wellhead
- Leak from parted wellhead or well tubulars below seafloor
- Leak from pipeline or flowline
- Leak from crater/fracture/fault at sea floor



# LSU Petroleum Engineering Concepts

- Off the shelf components where feasible
- Allow safe intervention capability
- Flexibility to capture new leaks in different locations
- Connection compatibility with subsea systems
- Ability to capture seafloor leaks
- Capability to determine flow volumes precisely enough for engineering design
- Robust hydrate control
- Rehearsals to ensure compatibility and efficient operation
- Remote surveillance and operating capacity
- Able to stay on location through at least a tropical storm



## Component Status

- ✓ Intervention Vessel – DP/Moored Semi, etc
- ✓ Riser/Pipeline System
- ✓ Processing /Transport Vessels – FPSO, etc
- ✓ Mooring and DP Systems
- ✓ Remote Surveillance and Operation
- ? Containment System
- ? Well control intervention systems



## Next Steps

### 1. Framing /Conceptual Design

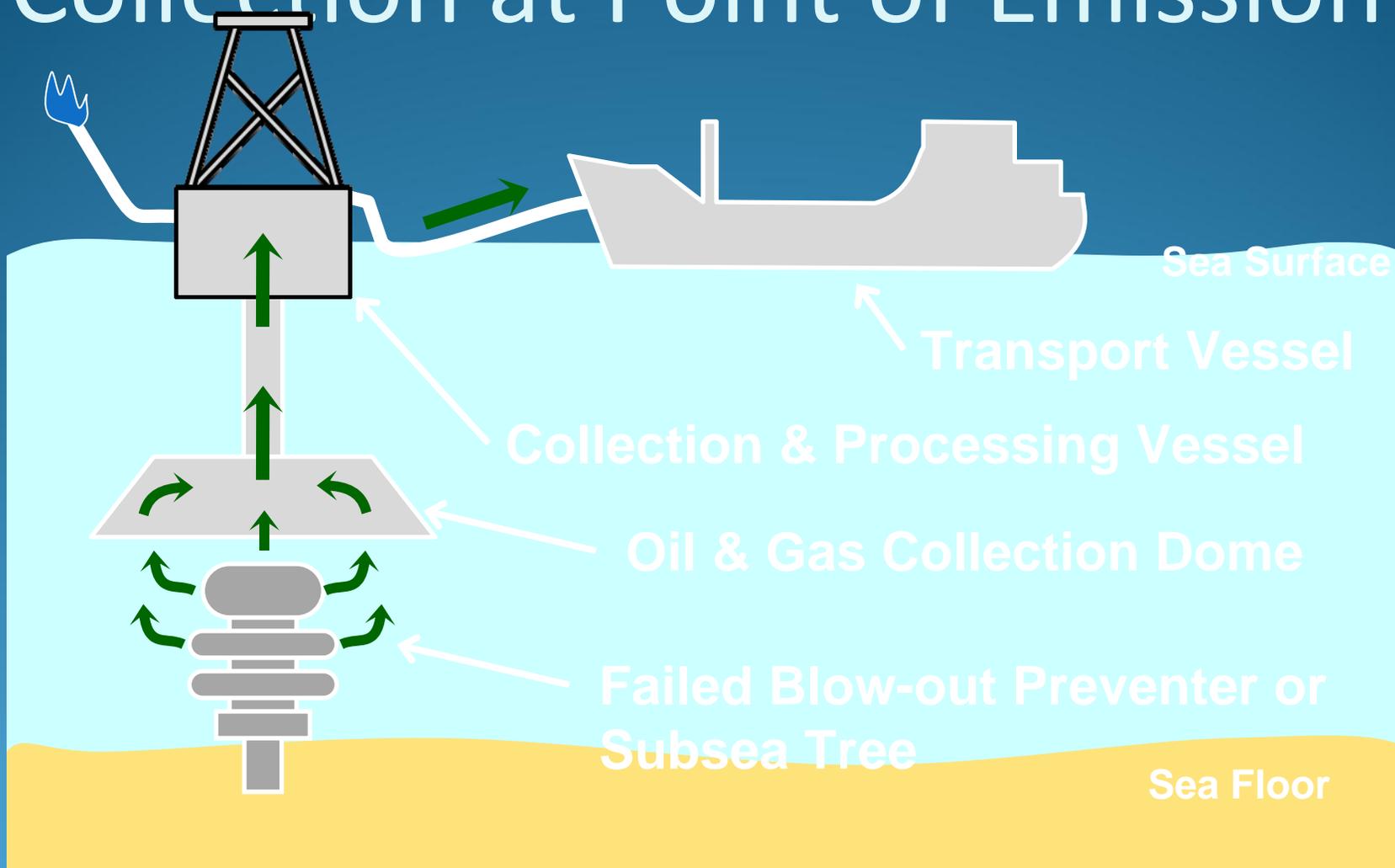
- Macondo Experience – very limited technical information released
- This system – Open vs. IP ownership
- Our perspective – include public expertise in framing/design phase

### 2. Detailed design – Compatibility issues

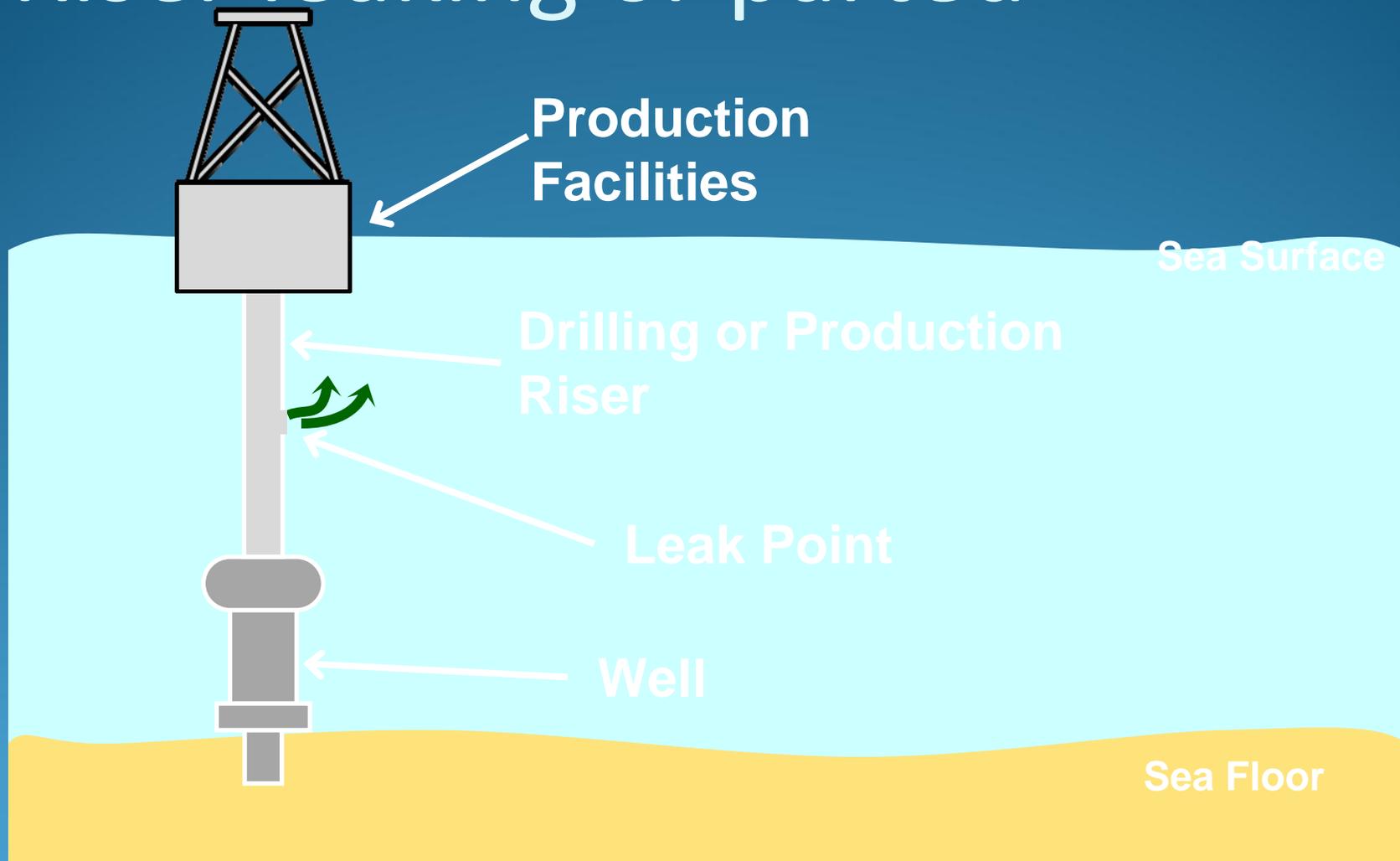
- Our perspective – utilize best available expertise



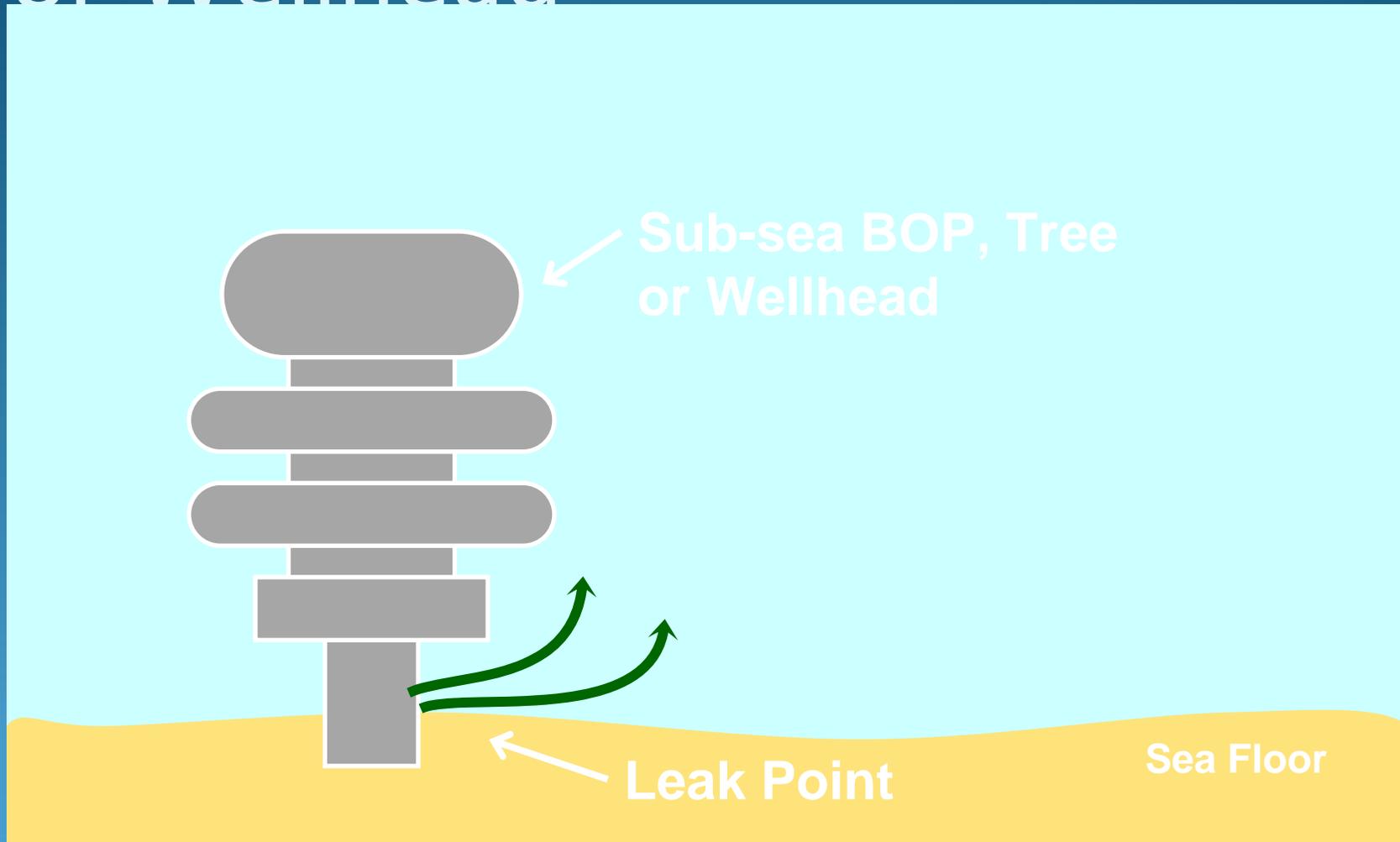
# Collection at Point of Emission



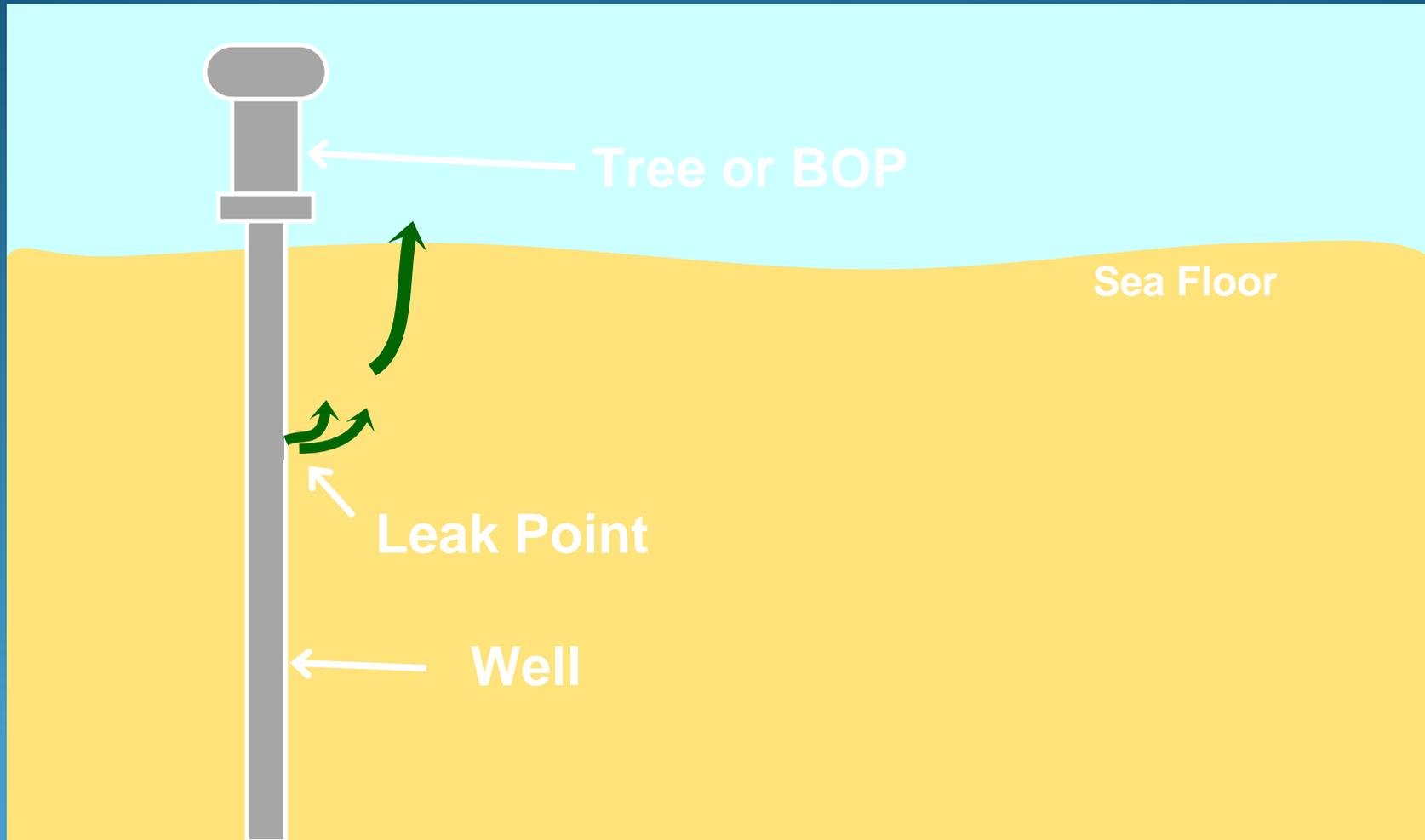
# Drilling or Production Riser leaking or parted



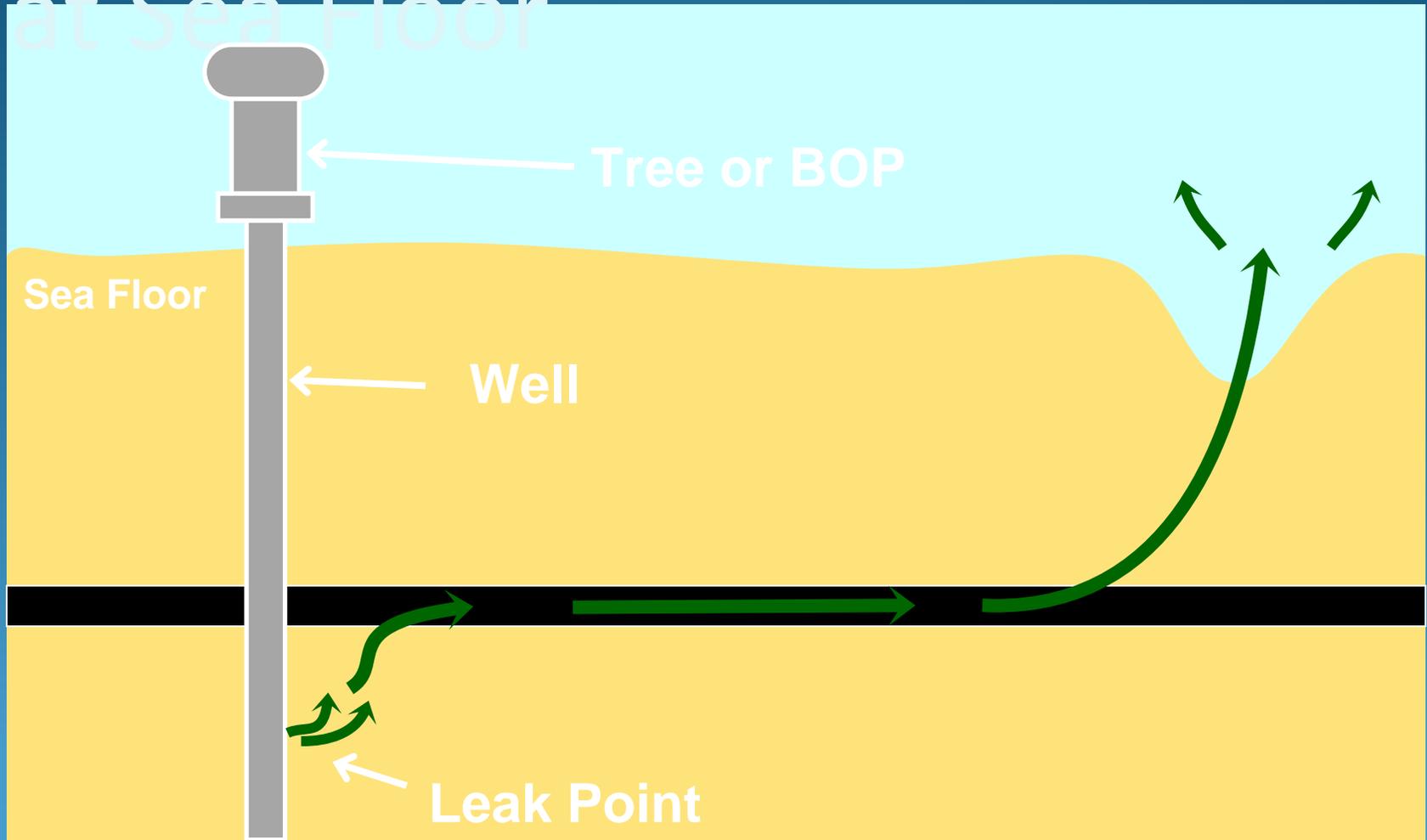
# Leak in/at Subsea BOP, Tree or Wellhead



# Leak from Well Tubulars Below Seafloor



# Leak from Crater/Fracture/Fault at Sea Floor



# Leak from Pipeline or Flowline

