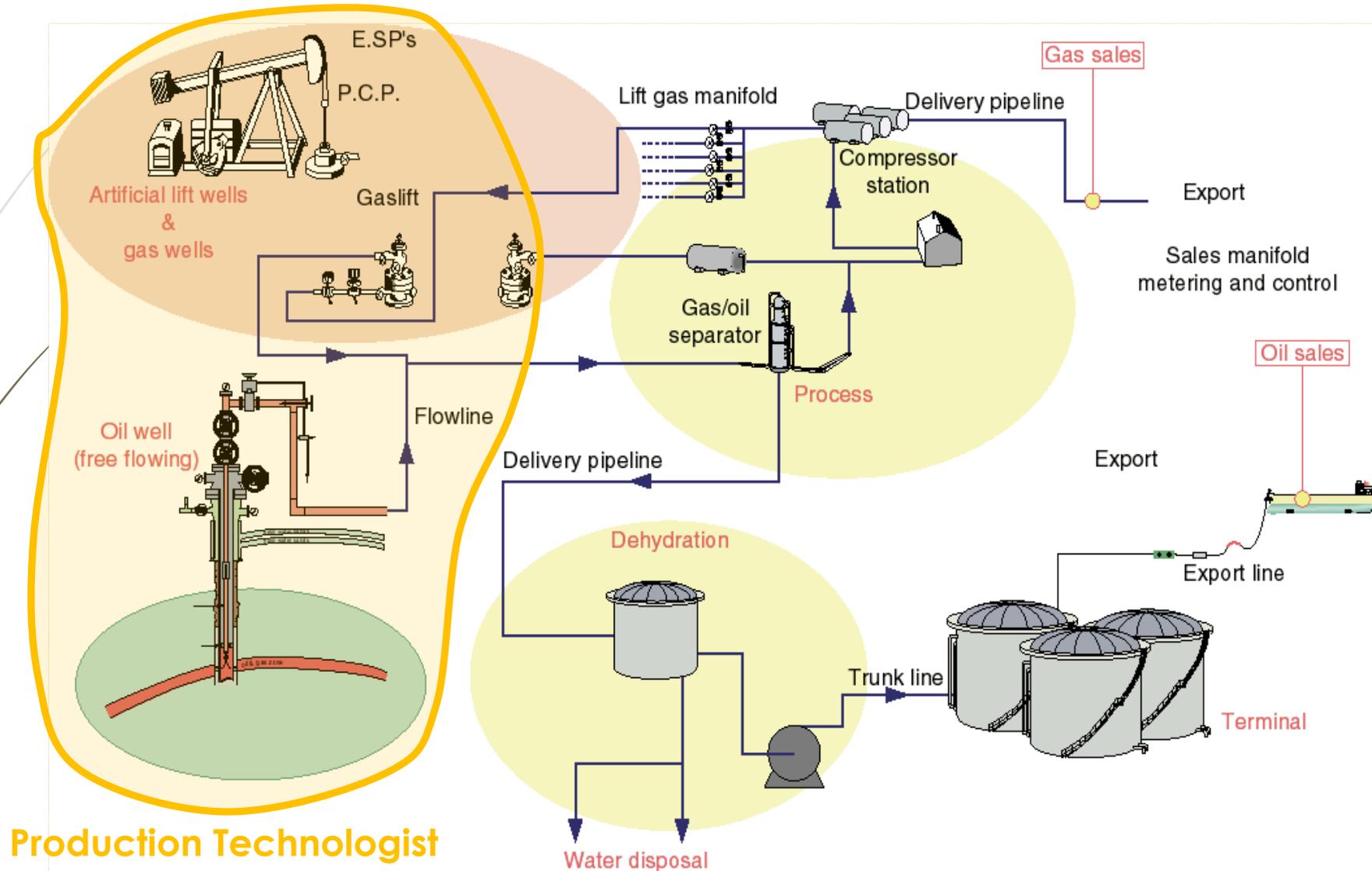




What is the Role of a Production Technologist?

Integrated Production System - PT Scope





Role of the Production Technologist

The PT is the Technical Authority for all decisions regarding the well that may affect its production potential or technical integrity.

(except for emergency operations and routine operations within pre-defined, technical bounds).

This includes the phases of conceptual design, drilling, completion, start-up production (injection) and shut-in, and abandonment of the well.



So what does a PT really do

- ▶ Well performance modeling and optimisation,
- ▶ Integrated Production System Modeling
- ▶ Well Perforating, Stimulation, etc.
- ▶ Production system optimisation
- ▶ Well & Reservoir Management
- ▶ Design & optimise artificial lift
- ▶ Field Development Planning
- ▶ Well Integrity Management
- ▶ Implement well operations
- ▶ Well completion design
- ▶ Production Forecasting
- ▶ Economic evaluation
- ▶ Manage Data
- ▶ Well Testing



Role of a Production Technologist

- ▶ Primary responsibility:
 - ▶ Well design, performance & well integrity over the entire lifecycle
- ▶ Plays a key role in:
 - ▶ Well Design, Construction and Operation
 - ▶ Production System Optimisation
 - ▶ Field Development Planning
- ▶ Typically:
 - ▶ is the key link between Subsurface and Surface
 - ▶ works with Well Engineering, Completion and Well Intervention, Production Engineering, Petroleum Engineering and Process Engineering
 - ▶ works in a multidisciplinary environment
 - ▶ has a broad understanding of the E&P business



What can an experienced PT do?

- ▶ Primary responsibility:

- ▶ Maintain Key Technical Competencies and Skills as an individual.
- ▶ Optimise Production.
- ▶ Manage Well integrity.
- ▶ Coach and Develop Less Experienced Staff

- ▶ Key roles:

- ▶ Be able to work in or lead multidisciplinary Teams
- ▶ Have a broad understanding of the E&P business
- ▶ Good grasp of Well & Reservoir Management
- ▶ Implement relevant PT-related standards,
- ▶ Provide Technical assurance
- ▶ Can lead regional or global improvement or change initiative projects

Experienced PT should : Optimise Production

The Natural Asset
(The Reservoir)

The Physical Asset
(Wells & Facilities)

$$\Delta\text{Production} = \Delta\text{Inflow Potential} + \Delta\text{Outflow Potential} + \Delta\text{Deferment}$$

Availability of the Assets

Optimise Production - Activities that could be carried out:

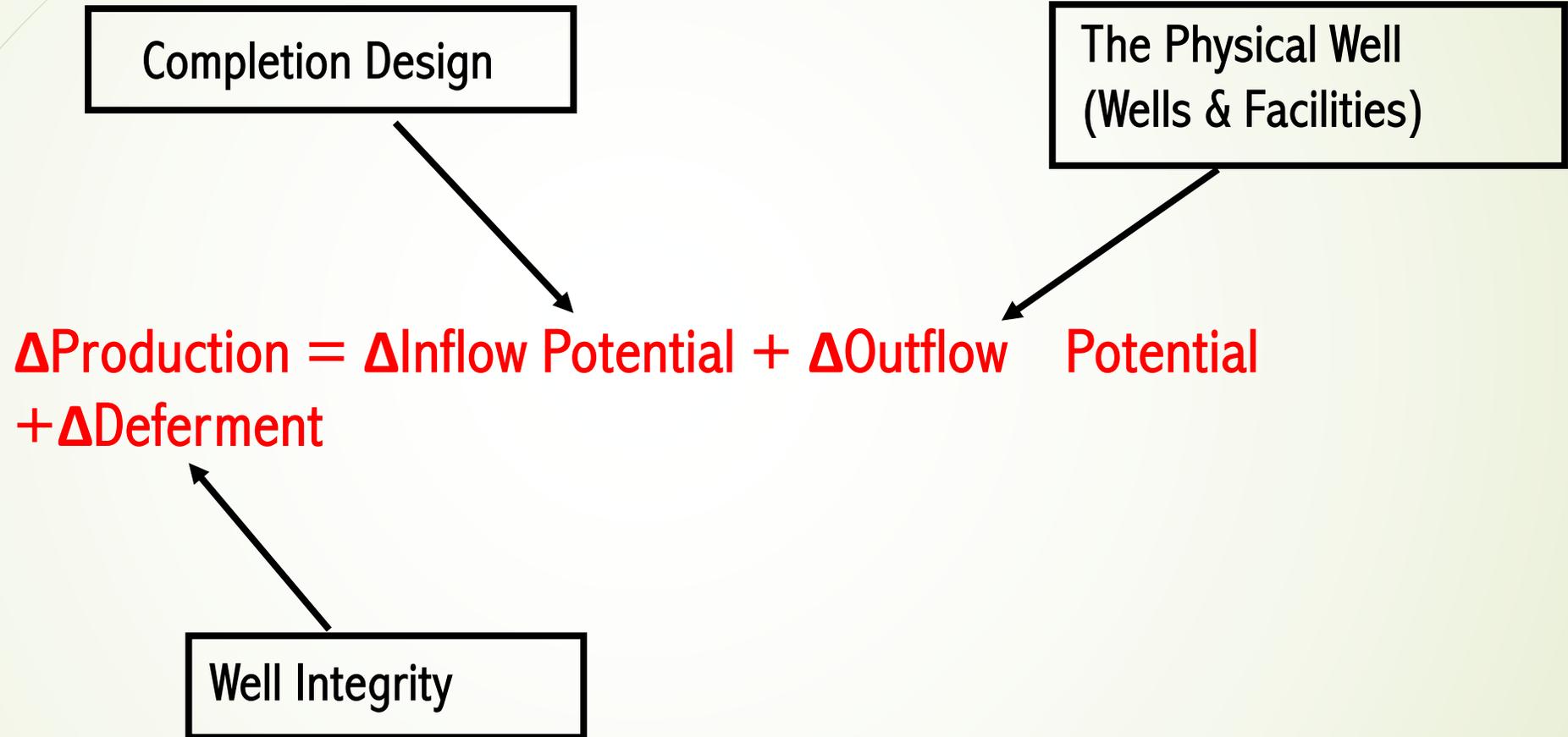
Development drilling
Recompletions
Stimulations
Additional Perforations
Re-perforations
Zone Changes
Commingling/de-commingling

Bean ups
Artificial Lift Optimisation
Alternate A/L system
Change conduit size
Removal of conduit restrictions
Debottlenecking
Adjust fluid streams

$$\Delta\text{Production} = \Delta\text{Inflow Potential} + \Delta\text{Outflow Potential} + \Delta\text{Deferment}$$

Safeguarding
Scheduled shutdowns
Unscheduled Facility Shutdowns
Low and Off from Wells

Experienced PT should : Manage Well Integrity



Well Integrity - Activities that could be carried out:

- Design Completion for well life
- Determine operating envelope
- Design reservoir/well interface.
- Requirements for sand control.

- Monitor Well trends, performance.
- Define operating boundaries.
- Compliance with operating guidelines.
- Well & Reservoir Management

$$\Delta\text{Production} = \Delta\text{Inflow Potential} + \Delta\text{Outflow Potential} + \Delta\text{Deferment}$$

- Regular well maintenance, surveillance.
- Develop a well failure model .
- Establish remedial actions
- Technical Authority for well integrity.
- Provide expertise for problems, waivers.



Role Of the Production Technologist

Because of the broad range of roles undertaken by the discipline, the Production Technologists typically find themselves dispersed across the E&P functions throughout an organisation.

This is one of the attractions of being a Production Technologist (but it may present a challenge in terms of retaining a distinct identity and hence the scope should be clearly defined and acknowledged).