

OBJECTIVES

To provide technical knowledge of Oil & Gas field processing operations.

On completion of the course, participants know the:

- main characteristics of Oil & Gas well effluents, and the main characterization parameters
- different problems posed by the undesirable components, and the required treatments
- Oil & Gas field processing operations, and their main operating conditions
- required treatments for injection and production waters

COURSE CONTENT

PRODUCTION WELL EFFLUENTS 0.5 day

Fundamentals of Oil & Gas production: hydrocarbon genesis, exploration, drilling, completion and workover

Constituents of production well effluents: hydrocarbons, impurities, water, sediments...

Different **types of effluents** (black oil, light oil, volatile oil, wet gas, retrograde gas, dry gas)

Main **characterization parameters** (GOR, CGR, BSW, WOR, Water Cut, Bo, Bg, B'g...)

Examples of crude oil and natural gas effluent compositions

EFFLUENT BEHAVIOR - NEED FOR EFFLUENT FIELD PROCESSING 0.5 day

Liquid vapor equilibrium of pure substances - Vapor pressure curves - Volatility

Liquid vapor equilibrium of mixtures - **Phase envelopes**

Well effluent behavior from pay zone to surface processing facilities

Constituents that pose problems for storage, transport, or commercialization/utilization

Different **specifications to be respected**

Required treatments to conform to these specifications

Examples of compositions of commercialized crude oils and natural gases

CRUDE OIL TREATMENT 1 day

Crude **stabilization** (gas removal) by Multi Stage Separation (MSS)- Foaming problems and main available solutions

Crude **dehydration** (water removal) and desalting - Emulsion problems and main available treatments

Associated gas flaring limitations and need for recompression (reinjection or export)

Typical associated gas recompression schemes

Examples process schemes for oil treatment and associated gas recompression

PRODUCTION AND INJECTION WATER TREATMENT 1 day

Quality requirements for reject water - **Environment** related constraints

Main necessary treatments: oil skimmers (API tanks, plate separators), floating oil separators, hydrocyclones...

Reasons for water injection

Quality requirements and necessary treatments: chlorination, filtration, oxygen removal, sterilization

Examples process schemes for production and injection water treatment

GAS CONDITIONING AND PROCESSING 2 days

Gas **dehydration** (drying) and Hydrate formation inhibition

Gas **sweetening**: Acid components (H₂S and CO₂) removal

Natural Gas Liquids (NGL) extraction (heavy components removal)

Fundamentals of Liquefied Natural Gas (LNG) chain.

▲ Who should attend?

Engineers and technicians not directly involved in day-to-day oil and gas field processing operations, but concerned with it: reservoir engineers, drilling and completion personnel, platform designers, economists, architects, equipment suppliers, etc.)

▲ Duration

5 days

▲ Dates & Location

June 02 to 06, 2008
Rueil-Malmaison (Paris)

▲ Tuition Fees

€ 1,940

▲ Course Coordinator

Franck BEIJER

Ref. **PROD / OGFP**