# Amine Treating & Sour Water Stripping Process

Standard Hours: 16

## COURSE SUMMARY & OBJECTIVES

- To further improve knowledge and experience with Amine Treating & Sour Water Stripping Process applications in general.
- To become more familiar with specific challenges and how to effectively deal with these challenges in practice.
- The transfer and sharing of knowledge and best practices in the area of Amine processes.

## COURSE OUTLINE

1. Introduction
2. Process Principles Amine Chemistry – Amine Selection
3. Amine Equipment Review
4. Typical Plant Operating Conditions
5. Liquid/liquid Treatment
6. Detailed Amine Analysis
7. Typical Process Control
8. Corrosion Basics
9. Heat Stable Salts and Degradation
10. Sour Water Stripping – Basics/Design
11. Sour Water Stripping – Performance
12. Calculations and Troubleshooting
13. FeS Friend or Foe
14. Filtration Selection and Application

## WHO SHOULD ATTEND

This program is ideal for personnel involved in refinery process engineering, unit operations, amine sales, and refinery technical service. Engineers from design and construction companies as well as those who provide products and services to the petroleum refining industry should also find the program very useful and informative. Managers who have not had previous Amine experience would also find this class to be very valuable.

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## COURSE SUBJECT MATTER EXPERTS

**Gordon Finnie** is a highly respected Process Engineering Consultant with 30 years of expertise in technical, operational, and process safety leadership. He has a strong track record of improving performance and resolving issues in the oil and gas industry. With extensive experience in sour gas treatment, technical management, reliability assessment, safety integrity study, risk evaluation, QA audits, safety assessments, failure mode, and effects analysis, fault and event trees, HAZOP, fault identification/analysis, and team leadership. He has successfully led refinery modernization projects and addressed plant and equipment failure. Gordon is known for his strategic thinking, analytical skills, and ability to work in diverse environments. He possesses strong leadership, interpersonal, and networking skills, and can communicate complex ideas effectively. His core competencies include project management, budget management, and health and safety. As a consultant, he provides expert technical guidance and support to construction teams, conducts regular risk assessments, and audits, and ensures compliance with safety procedures. He has successfully Improved client's Sulphur Recovery Unit availability from 86% to 95%, reduced environmental emissions excursions by 80%, and eliminated personnel H2S exposure events. Mr. Finnie holds a BSc degree (Hons) in Chemical Engineering from the University of Strathclyde, Glasgow, Scotland

**Alfred E. (Al) Keller** retired from Conoco/ConocoPhillips/Phillips 66 as director of Treating and Sulfur Processing in 2017. Over a 35-year career, he was involved in implementation of the first high level oxygen enriched SRUs, and led the development of the first commercial ion exchange based amine HSS removal (HSSX™) and regenerable particle (SSX™) and oil removal systems (HCX™) for amine solutions. He also led development of SPOC™ technology for replacing SRU burners/thermal reactors with a catalytic reaction system. Al led the development of pre-sulfur pit sulfur degassing technology (ICOn™). He earned 32 US patents for these processes as well as processes for syngas production and HF acid recovery. He developed the training modules for ConocoPhillips/Phillips 66 for amine, sour water, SRU, TGU and caustic treating, and developed/delivered an amine and sour water training course for Brimstone STS. Al currently provides consulting services via Becht in treating and sulfur processing for refineries.