

TRAINING COURSE

APPLIED CHEMICAL ENHANCED OIL RECOVERY

3 Day Course

Day 1: Mechanistics of CEOR

Day 2: Project Design

Day 3: Field Application

Dates: TBD

Place: TBD

Who Should Attend?

- Managers
- Engineers
- Geologists
- Technicians

Fees + Registration

\$2,500 registration fee includes:

Course material (text, presentation, digital data)

Breakfast, and refreshments

10% discount when registering 2 participants, 20% when >2

Register online at www.surtek.com

or send in a registration form to surtek@surtek.com

Course Description

This course not only describes the mechanisms involved in the chemical enhanced oil recovery (CEOR) process but details the planning/design stages of implementation and the benefits/challenges thereof.

Participants will learn:

- Oil recovery equation efficiencies
- Alkali, surfactant and polymer properties
- CEOR reservoir screening
- Laboratory process for formulation design
- CEOR numerical simulation and economics
- Pilot planning/design
- Facility design and requirements
- QC/QA for field implementation
- CEOR key challenges and ways to avoid/mitigate
- Case studies (successes and failures)

Since 1978 Surtek has been assisting companies understand the CEOR process through consulting, training and project design. Our course is based on more than 30 years of experience and more than 70 field applications. Surtek is the principal developer of the ASP process and invites you to come learn from the source.

Course Instructors

Malcolm Pitts is the President of Surtek and an SPE IOR Pioneer Award recipient. He has been involved in the design and implementation of CEOR technologies in many capacities since joining Surtek in 1980. He holds a B.Sc. From University of Colorado, a M.Sc. From Purdue University and a Ph.D. from Georgetown University all in Chemistry.

Kon Wyatt has worked for Surtek in various capacities since 1980 as Chemist, Laboratory Manager, Project Engineer, and as Vice-President of Engineering. He holds a B.Sc. in Chemistry from Lewis and Clark College and a M.Sc. in Applied Mechanics from the Colorado School of Mines.

Elio Dean has been with Surtek since 2011 as a reservoir engineer focused on field development design. Prior to Surtek Elio worked with ExxonMobil Development Company as a senior reservoir engineer. Elio holds a B.Sc. in Petroleum Engineering and a M.Sc. In Energy Economics both from Colorado School of Mines.

SURTEK

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TRAINING COURSE AGENDA

APPLIED CHEMICAL ENHANCED OIL RECOVERY

Day 1: Mechanistic of CEOR

Introduction

- Surtek: Who we are
- CEOR History and Potential

Oil Recovery Basics

- IOR/EOR Techniques
- Oil Recovery Equation
- Chemical Flood Steps

Pore Displacement Efficiency

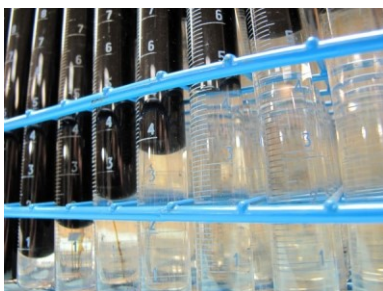
- Capillarity & Wettability
- Capillary Number Correlation
- Alkaline Agents
- Surfactants
- IFT + Relative Permeability

Volumetric Sweep Efficiency

- Mobility Ratio + Fractional Flow
- Polymer Basics
- Polymer Characteristics
 - Molecular Weight
 - Charge
 - Water Solubility
- Polymer Stability
 - Chemical Degradation
 - Thermal Degradation
 - Mechanical Degradation
- Inaccessible pore volume
- Adsorption / retention
- Polymer Gels

Total Recovery Efficiency

- ASP



Day 2: Project Design

Reservoir Screening

- Screening Parameters
- Process and Objectives

Laboratory Studies

- Fluid Analysis
- Fluid-Fluid Evaluation
 - IFT and Phase Behavior
 - Produced Water Dilution
 - Apparent Viscosity and
- Screen Factor
 - Hydrodynamic Volume
- Fluid-Rock Design
 - Static Adsorption
 - Linear Corefloods
 - Oil Recovery Corefloods
 - Radial Corefloods
- Other Laboratory Considerations

Numerical Simulation

- Simulator Options
- Reservoir Characterization
- Model Calibration
 - History Matching
 - Laboratory/Corefloods
- CEOR Forecast Studies
- Effective Pore Volume

Economics

- CEOR Costs
- Project Economics
- Timing

Pilots

- Objectives
- Pilot Planning
- Pilot Pattern Consideration

Day 3: Chemical Flood Application Facilities

- Water Treatment Methods
- Water Softening Methods
- Chemical Storage and Mixing
- Facility Photo Tour

QC/QA & Monitoring

- Sampling Points and Methods
- Filter Ratio and Sample Tests
- Trouble Shooting

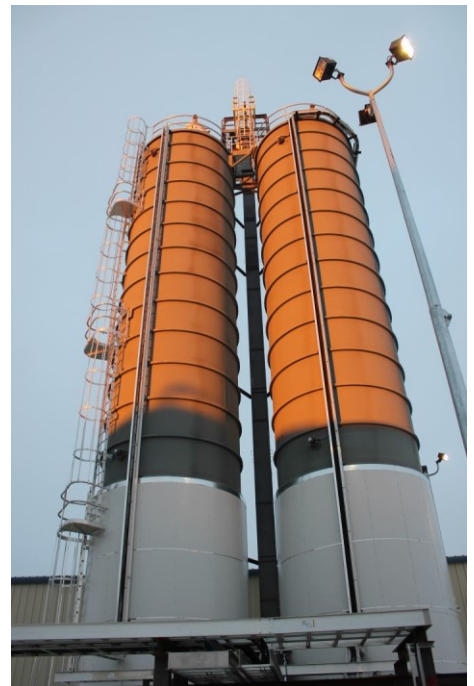
CEOR Concerns

- Scales
- Produced Fluid Emulsions
- Polymer Degradations
- Corrosion

Case Studies

- 3-4 Failed Projects
- 10-15 Successful Projects

Optional laboratory tour will be offered at the end of the 3rd day



TRAINING COURSE REGISTRATION FORM

APPLIED CHEMICAL ENHANCED OIL RECOVERY

PERSONAL DETAILS

Surname:		First Name:	
Suffix:		Gender:	Male <input type="checkbox"/> Female <input type="checkbox"/>
Address:			
City:	Country:	Postal Code:	
Telephone:		Email:	

BUSINESS DETAILS

Job Title/Profession:			
Employer:			
Address:			
City:	Country:	Postal Code:	
Telephone:		Email:	

How did you hear about this training course?	Website <input type="checkbox"/>	Word of Mouth <input type="checkbox"/>	Other <input type="checkbox"/>
What do you hope to gain from attending this training course?			
Do you have any special dietary requirements? Please specify:			
Do you have any disabilities that we should be aware of, so that reasonable adjustments may be made?			