Sand Control Completion Practices
Learn to maximize productivity with reliable equipment
27 July 2015 - 29 July 2015 at Kuala Lumpur, Malaysia

PetroSync Distinguished Instructor:
MICHAEL ETUHOKO, P.Eng., PMP
President & Founder, Protekz Inc Canada

- Over 22 years of engineering, operations, and management experience in Completion, Workover & Well Services, and Drilling
- Highly sought after Consultant, President & Founder of Protekz Inc Canada, an independent well and production engineering consultancy
- Leads major completion and workover projects with companies such as Shell Canada, KNOC, KPO etc in North America, Europe, Africa, Central Asia, & Far East Asia
- Authored and presented SPE Papers at the SPE Asia Pacific Oil & Gas Conference (Australia, 2004) & SPE Annual Technical Conference & Exhibition (Texas USA, 2004)

Course Objectives

- Determine the causes of sand production
- Determine the need for sand control
- Select the best sand control method
- Prepare the well for sand control installations
- Apply “Best Practices” to ensure successful sand control completions
- Conduct successful “frac packs”
- Evaluate sand control performance

Specially designed for

The course is designed for, but not limited to Completion Engineers, Workover Engineers, Production Engineers, and those who are involved with well completions, workovers, well interventions, and production.

- Completion Engineer
- Workover Engineer
- Well Services / Intervention Engineer
- Production Engineer
- Drilling Engineer
- Well Site Engineer

Supported by
One of the objectives of well completion is to maximize productivity with reliable equipment. These objectives are difficult to attain in unconsolidated sand formations due to sand production as a result of stress concentration. When sanding occurs, there is a lost or deferred production leading to a lost of revenue. In this course, the causes and consequences of sand production will be discussed, followed by the prediction measures to decide or delay sand control in oil and gas project development.

All the types of sandface completions and the emerging techniques to prevent sand production and to boost well productivity results will be discussed. This course will be crowned with integrated approach to sandface completion solutions in the field. Both success/failure case histories of different types of sand control installations in different operating environment (land, offshore including deepwater) should be expected.

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**Course Overview**

One of the objectives of well completion is to maximize productivity with reliable equipment. These objectives are difficult to attain in unconsolidated sand formations due to sand production as a result of stress concentration. When sanding occurs, there is a lost or deferred production leading to a lost of revenue. In this course, the causes and consequences of sand production will be discussed, followed by the prediction measures to decide or delay sand control in oil and gas project development.

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**Course Content**

**Day One**

**Introduction**

Sand Control completion overview:
- How much of a problem is sand production?
- What are the consequences of sand production?
- Sand management
- Sand detection:
  - Sand monitoring
  - Measuring Sand production
  - Sand detection

Sand prediction
- What causes sand production?
- Types of sand failure
- Sand production / failure prediction

Conventional Sand Control techniques

Sand Control Design and installation types
- Stand Alone screen
- Cased hole gravel pack
- High Rate Water Pack
- Frack pack
- Openhole Gravel pack Etc

Introduction to Sand Control practical project

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**IN-HOUSE SOLUTIONS**

SAVE COST • IMPROVE PERFORMANCE • REDUCE RISK

PetroSync understands that in current economic climate, getting an excellent return on your training investment is critical. This training can be conducted exclusively for your organization. The training can be tailored to meet your specific needs at your preferred location and time. We will meet you anywhere around the globe.

If you like to know more about this program, please contact Jerry Tay (Conference Director) on +65 6415 4502 or email jerry.t@petrosync.com
Day Two: Stimulation of Sandstone Reservoir

**Sand Control completion equipment:**
- Gravel pack tools
- Hardware challenges
- Screens selection considerations
- Screen parameters
Perforating strategies for Sand Control

**Sand Control operations:**
Best perforating practices / guidelines for sand control
Gravel pack operating steps
Pumping equipment
Surface equipment and layout
Stimulation vessels layout
Gravel pack evaluation
Operational challenges / mitigations

**In-situ Sand consolidation techniques:**
Conditions favoring consolidation
Precautions
Design requirements
Advantages / Disadvantages of resins
Applications
Merits and limitations of sand consolidation methods

**Sand Control case histories including success and failures cases**
**Sand Control practical project continues…**

Day Three: Fracturing Technology

**Sand Control practical project continues…**

**Sand Control Emerging techniques:**
- Alternate Path Technologies (CAPS, Shunt tubes)
- Expandable Liner Completions
- Expandable Sand Screens
- Single Trip Perf and Pack
- Screenless Completion
- Through Tubing Solution with Coiled Tubing
- Annular Barrier tools (Swell packer, etc)
- HPHT Sand control

**Group presentation / General Review of the Sand Control Practical Project**
Sand control in HPHT environments
Sand Control Heavy oil applications

**Conclusion/Feedback**
Mike operates his own consultancy firm, which provides well and production engineering services to various international oil & gas companies in Europe, North America, Africa, Central Asia, and Far East Asia. He specializes and consults for Well Completion, Workover and Well Services, Sand Control, and Formation Damage Prevention and Treatments. Before becoming a consultant, he trained and worked in Shell and Total E&P.

His Current and Recent Assignments Include the Following:

- **Lead Completions & Intervention for Karachaganak Field, Kazakhstan**
  Completion & Intervention for Field with Characteristics: Deep wells (± 6200m TVD on the average), light oil/condensate and gas, High GOR, H2S > 7%, CO2 > 6%, low porosity, low permeability and HPHT reservoir environment

- **Subsea Intervention/Workover/Completion for Korean National Oil Company**
  Diagnose and restore Donghae 1-4P Sub-sea well back to production

- **Completions, Sand Control, & Well Testing (Deepwater Exploration Asset) for BG Nigeria**
  Responsible for “Well Completion and Testing” operations in deepwater exploration campaign

- **Well Productivity for Total E&P**
  Scales Squeeze treatment for Dunbar, Alwyn, Otter and Elgin/Franklin fields; Fracturing design and operations in HPHT wells; Sand Control in HPHT wells, Water shut-off in HPHT wells

Mike has presented for several international conferences including Offshore Technology Conference, SPE Asia Pacific Oil & Gas Conference, and SPE Annual Technical Conference Exhibition. He has also authored SPE papers on “Monobore Completion Using Interventionless Technology” and “Open Hole Multistage Fracturing Completion in Carbonate Reservoir.”

In the recent years, Mike has provided intensive trainings in well completion and workovers with different oil and gas companies. Some of these training are “Well Completion & Intervention Training (Level 1&2)” for KPO, “Sub-Sea Workover Operations Training” for KNOC, and “Deep Water Sand Control” for Total E&P International.

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President & Founder, Protekz Inc Canada

**MIKE’S PARTIAL CLIENT LIST**

- Shell
- Total E&P International
- Chevron
- BG Nigeria
- Karachaganak Petroleum Operation (KPO) (Kazakhstan)
- Korean National Oil Company
- ENI-AGIP
- Luke Oil (Indiana, US)
- JVGas (Algeria)
- & Many Others
**Course Details**

**Title**: Sand Control Completion Practices  
**Date**: 27-29 July 2015  
**Location**: Kuala Lumpur, Malaysia

**INVESTMENT PACKAGES**

<table>
<thead>
<tr>
<th>Investment Package</th>
<th>Deadline</th>
<th>Standard Price</th>
<th>Early Bird Offer</th>
<th>Group Discount (3 or more Delegates)</th>
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<td></td>
<td>24 JUL 2015</td>
<td>26 JUNE 2015</td>
<td>24 JUL 2015</td>
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<td></td>
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<td>SGD $ 3,995</td>
<td>SGD $ 3,795</td>
<td>10% discount for groups of 3 registering from the same organization at the same time</td>
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* Group Discount is based on Standard Price  
* To enjoy the promotion & discount offer, payment must be made before deadline  
* For 7 or more delegates, please inquire for more attractive package.  
* Prices include lunches, refreshments and materials. Promotion & discount cannot be combined with other promotional offers.  
* Important: Please note that registration without payment will incur a SGD 200 administration fee.

**DELEGATES DETAILS**

1st Delegate Name: ______________________________________________________________________________  
Job Title: ______________________________  
Department: ______________________________  
Direct Line Number: ______________________________  
Email: ______________________________________________________________________________

2nd Delegate Name: ______________________________________________________________________________  
Job Title: ______________________________  
Department: ______________________________  
Direct Line Number: ______________________________  
Email: ______________________________________________________________________________

3rd Delegate Name: ______________________________________________________________________________  
Job Title: ______________________________  
Department: ______________________________  
Direct Line Number: ______________________________  
Email: ______________________________________________________________________________

**INVOICE DETAILS**

Attention Invoice to: ______________________________________________________________________________  
Direct Line Number: ______________________________  
Fax: ______________________________________________________________________________

Company: ______________________________________________________________________________  
Industry: __________________________________________  
Address: ______________________________________________________________________________  
Country: ____________________________  
Postcode: ______________________________________________________________________________

* If you have not received an acknowledgement before the training, please call us to confirm your booking.

**PAYMENT METHODS**

- By Credit Card:  
  - Please debit my credit card:  
  - Card Number: ______________________________  
  - Security Code: ______________________________  
  - Expiry Date: ______________________________

- By Direct Transfer:  
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70% attendance is required for PetroSync’s Certificate Details

Please accept our apologies for mail or email that is incorrectly addressed. Please email us at registration@petrosync.com and inform us of any incorrect details. We will amend them accordingly.

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**Bank Swift Code**: DBSSSGSGXXX  
**Branch code**: 2889002682016

**Account No.**: 2889018980  
**SGD**: 2889018980  
**USD**: 0288002682016

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