

Content updated!

ADVANCED OPERATIONS GEOLOGY

16 – 20 April 2012, Kuala Lumpur
28 May – 1 June 2012, Perth, Australia



Michael Bunter

Former Chief Petroleum Geologist of Fugro Robertson, UK.

Over 40 years of international experience in exploration and development programmes in Libya, Malta, Indonesia, Malaysia, Brunei, the USA, Egypt, the Sudan, Kuwait and Oman.



In collaboration with
Fugro Petroleum Training Centre

What previous participants said about this course in 2010/11?

- ❖ "Great course – a lot learnt & a lot to contribute to my organization with further training in specific topics covered in this course", Talisman Energy/Foreland Oil Ltd
- ❖ "Increase my knowledge and experience", Kangean Energy Indonesia Ltd
- ❖ "Great training and very useful for my knowledge enhancement. Exactly what I need" PT Medco Fep Indonesia
- ❖ "Great course & tutor, all petroleum engineers should attend it.", Eureka Energy Australia
- ❖ "Terrifically well rounded operations geology course.", Pangaea Resources
- ❖ "A great insight into the world of ops geology and log interpretation.", Pangaea Resources
- ❖ "Excellent Contents. Very useful.", Pangaea Resources
- ❖ "It's a good course!" INPEX, Technical division, Technical Resources Unit Australia

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Course Description

A large amount of geological data is acquired (at substantial cost) during a drilling operation. These include:

Mud logs, Measurements While Drilling/Wire-line logging, Drill cuttings, Cores and side-wall cores, Micro-palaeontology data, Geochemistry data, Formation pressure data, Drilling and well engineering information

Ensuring optimal quality of this information and effective reporting plays a key role during well design (geological hazards and potential drilling problems), drilling operations as well as at the later use of the data in field studies.

A key requirement for success is close co-operation between geological, drilling and well engineering departments. Teams must not only understand each other in technical matters, but should also contribute to each other's efforts in these aspects: a driller should know why it is important to cut a core or log at a particular interval despite potential drilling problems and geoscientists should understand drilling operations and their inherent hazards and problems.

This course follows on the teaching of the basic-intermediate Operations Geology course. It will focus on key themes such as modern formation evaluation: a summary of today's requirements and expectations, techniques, coring, well testing. The programme will explore the new challenges that the Operations Geologist faces when exploring in deepwater wells and look at how these challenges can be met. The programme will be delivered by using a comprehensive set of PowerPoint slides supported by practical exercises.

The programme will focus on educating the attendees on the following key themes:

- Modern Formation Evaluation: a summary of today's requirements and expectations
- New developments in the modern oilfields
- The drilling of ultra-deep and ultra-deep-water wells
- Modern techniques in Formation Evaluation
- Modern techniques in Formation Evaluation: the petro-physical logs (E-logs) and their analysis (the techniques of petrophysics)
- Modern coring and formation evaluation
- Testing the well (putting the well temporarily on production)

Who Should Attend:

Experienced well-site geologists, drilling, petroleum engineers and operations engineers and other staff involved in the acquisition and use of well-site (geological) data. The course is designed for personnel familiar with the basics of hydrocarbon exploration and the fundamentals of operations geology. Attendees should have attended a basic operations geology programme previously so that they are familiar with the terminology that will be used.

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Course Outline in Detail

Introduction

- **Modern Formation Evaluation: a summary of today's requirements and expectations**
 - Well-site geology
 - Mud logging and its new techniques
 - MWD/LWD (Measurement while drilling/logging while drilling)
 - Pressure detection: the theory and practice
 - Coring
 - Testing the well: wire-line and conventional
 - The information flow

- **New developments in the modern oilfields**
 - Demand and oil price trends and their impact on the modern upstream Petroleum sector
 - Ultra-deep water (water depths greater than 1000 feet) drilling and completions: the methods and the difficulties
 - Ultra-deep wells: 35,000 feet and greater
 - Ultra- high temperature/pressure wells and the consequences for formation evaluation: Pressure Whilst Drilling techniques
 - The environment and its protection
 - The PTEEP Montara, the BP Macondo and the Chevron Brazil blow-outs and spills:
 - The lessons of BP Macondo, the well plan
 - The kicks and the blow-out.
 - The crew failures
 - The regulatory failures
 - Good Oilfield Practice then and now and its re- imposition for today'world.
 - Were there Operations Geological techniques that if applied correctly could have effected a less catastrophic outcome to BP Macondo?
 - What can we expect to gain from the new techniques of Advanced Formation Evaluation? Shall we drill, safer? With less impact on the environment and the other "stakeholders"? Faster? In a more informed way? More cheaply?

- **The drilling of ultra-deep and ultra-deep-water wells**
 - The hazards in drilling today's ultra- deep water wells and ultra-deep wells.
 - The pressures, temperatures, fluid types including the noxious sulphides, loss of circulation, fracture gradient monitoring...the safe balance between the pore pressure gradient, the mud gradient and the fracture gradient
 - The high pressures and well-site techniques to evaluate, mitigate and control them
 - The sixth generation MODUs, Mobile Offshore Drilling Units, their construction, their characteristics, the drilling of exploratory and appraisal wells, the rig crews, their operation
 - Who is involved in drilling the modern wells: the ship's crew, the dynamic positioners, the drilling crew, the service companies
 - Development well drilling in today's new environment and the consequences for Formation Evaluation
 - Constructing the Well and Formation Evaluation Plan for the new era

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- **Modern techniques in Formation Evaluation**
 - Advanced Mud Logging, AML
 - "Archie's Dream"
 - Rig sensors and computing systems
 - New measurements on the drill (ditch) cuttings
 - The High Resolution Digital Microscope
 - Measurements of Rock matrix density and Porosity
 - NMR (nuclear magnetic resonance)
 - X-ray diffraction
 - X-ray fluorescence
 - Complete Mud Gas Analysis
 - The integration of AML techniques with the new drilling technologies
 - fine tuning of drilling parameters to eliminate vibrations and to extend bit life
 - modern ultra-deviated well technologies
 - bio-steering and geo-steering in the modern high-angle wells
 - J-wells
- **Modern techniques in Formation Evaluation: the petro-physical logs (E-logs) and their analysis (the techniques of petrophysics)**
 - The electric logs
 - The acoustic (sonic) logs
 - The nuclear logs
 - The log response to different lithologies and reservoir fluids
 - Modern open hole and cased hole logging techniques
 - MWD, the developments and the latest technologies
 - LWD, the developments and the latest technologies
 - The integration of the mud-log with the
 - The log analysis of complex lithologies: limestone/dolomite and shaley sands....two examples of quick-look well-site analyses (to ensure that the principles are properly understood and to gain well-site information on phi and Sw)
- **Modern coring and formation evaluation**
- **Testing the well (putting the well temporarily on production)**
 - Wire-line testing
 - Open hole drill stem testing
 - Cased hole testing

Course materials: Each participant will be provided with a hardcopy of the course materials which will include presentations and exercises covered during the course.

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Your Expert Trainer: Michael Bunter



Michael Bunter is a Petroleum Geologist with 40 years of experience working in the international oil field sector.

He has lived and worked on petroleum upstream projects including exploration and development programmes in Libya, Malta, Indonesia, Malaysia, Brunei, the USA, Egypt, the Sudan, Kuwait and Oman. Michael has extensive experience in Indonesia, the Middle East the USA and North Africa which includes operations geology, geological and geophysical interpretation leading to prospect generation and basin evolution, management recommendations for the acquisition of new acreage, recommendations and plans for drilling of E&P wells and supervision of geological operations.

Michael's career started in Garmac in Libya where he worked as a petroleum geologist, he moved to Conoco in the 1970's where he worked as a geologist in operations and a supervisory role he then moved to Fugro Robertson to work as their chief Petroleum Geologist focussing his skills on consultancy to governments & oil companies. Throughout his career Michael has been extensively involved in delivering training programmes and workshops during which he imparts his extensive knowledge and experience.

What previous participants said about his 2010/11 course in Kuala Lumpur:

- *Great course – a lot learnt & a lot to contribute to my organization with further training in specific topics covered in this course (Talisman Energy/Foreland Oil Ltd)*
- *Increase my knowledge and experience (Kangean Energy Indonesia Ltd)*
- *Great training and very useful for my knowledge enhancement. Exactly what I need. PT Medco E&P Indonesia*
- *It's really fascinating! (Talisman Malaysia Limited)*

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Advanced Operations Geology Training in 2 venues!	Early Bird Price	✓	Normal Price	✓	TEAM DISCOUNTS
5day – Adv Ops Geology 16 - 20 April, Kuala Lumpur	SGD 5099		SGD 5299		PetroEdge recognises the value of learning in teams. Group bookings at the same time from the same company receive the following: 3 or more at 5% off 5 or more at 7% off 8 or more at 10% off
5day – Adv Ops Geology 28 May – 1 June, Perth	AUD 4199		AUD 4399		
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Mr Mrs Ms Dr Other
Delegate 1:

Telephone: -----

Job Title: -----

Department: -----

Email: -----

Mr Mrs Ms Dr Other

Delegate 2:

Telephone: -----

Email: -----

Job Title: -----

Department: -----

Head of Department: -----

Company: -----

Address: -----

Country: -----

Postcode: -----

Attention Invoice to: -----

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Please note:

- indicate if you have already registered by Phone Fax Email Web
- if you have not received an acknowledgement before the training course, please call us to confirm your booking.
- photocopy this form to register multiple delegates.

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