



PGK

Petroleum Geologische Kring

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Venue:	PGK's monthly meetings are held at the KIVI building, Prinsessegracht 23, Den Haag. Drinks are served from 17:00 hrs; the lecture starts at 18:00hrs.		www.pgknet.nl twitter @PGKring
Membership:	Apply for membership through the PGK website. The annual fee is €15.-		
Accounts:	ABN/AMRO Bank: NL14ABNA0886582733 (PGK, Den Haag)		

APRIL 2014 NEWSLETTER

MEMBERSHIP DUES

Please remember to pay your 2014 membership dues of €15 to the following bank account: NL14ABNA0886582733, PGK, Den Haag. Please make sure to mention your "name" and "PGK fee 2014" in the subject.

At this moment 62% of the members have paid their membership fee for 2014

APRIL 11TH, 2014: PGK DAY TRIP

Theme: "Peat in the Netherlands: geology, production and energy".

Lecturers: Kim Cohen (UU), Kay Koster (TNO), Sophie Visser (UU), Aafke Beumer (Natuurmonumenten), Charles Cornelisse (retired Shell)

This PGK Day Trip will be organized on Friday 11 April 2014. The aim of this trip is to get informed about the history of peat in the lowlands in the west of the Netherlands. Why is there so much peat? What does fresh peat look like? How was it produced and how did that affect the landscape as we know it today? How did the energy produced with peat affect the economy of the Netherlands?

Registration is closed now and participants have already received the final information.

APRIL 16TH, 2014: PGK MEETING

The monthly PGK meeting will be on Wednesday, April 16th at the KIVI building, Prinsessegracht 23, Den Haag.

Lecture by *Ewan Campbell*: "Cool Winnings-Developing the AB Glacial Sand Gas Play".

As usual the agenda will be:

17:00-18:00 social hour

18:00-19:00 lecture



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EXCURSIONS 2014

Mark your calendars now for the following events:

- PGK Spring Field Trip: Boulonnais area, France **8-11 May 2014**, guide Olivier Averbuch

Objective: "Dynamics of Cenozoic inversion of Upper Jurassic deposits in terms of structural geology, source rocks, syn-rift fluids, sedimentology and sequence stratigraphy"

Registration is now open

Please find more information at the end of this newsletter

- PGK September Field Trip: South England, **25-28 September 2014**, guide Harry Doust.

NEW MEMBERS

Applications for membership have been received from Sandro Boschetti (Amsterdam Petroleum Geoscience), Len Paalvast (TNO), Valerie van den Bos (VU Amsterdam), Roderick van der Kroef, Mischa Saes (Xodus), Stefan Kobstaendt. If no objections are received prior to or during the next meeting, they will be admitted as member of our society.

Also, we encourage our members to become members of our umbrella organisation, **KNGMG**. You can check more info here: <http://www.kngmg.nl>

WEBSITE

The link to our website is www.pgknet.nl. Check there for the latest news on meetings, events, excursions, jobs, membership. If you come across interesting websites that may be of use to other members of the PGK, please send the URL to the web master (gijs.straathof@sgs.com), who will share them on the PGK website.

TWITTER

We are now on Twitter @PGKring. The account shall be used to announce events, send reminders for events and occasionally to re-tweet interesting items. So follow us on twitter!

LINKED-IN

We also have a group on linked-in (called PGK), that our members may join. Any member of the group is free to list subjects there. Requests to the secretary for linked-in contacts will be ignored, as the secretary function does not have a linked-in account.

**PROGRAM PGK MEETING WEDNESDAY APRIL 16TH , 2014****Address:** KIVI building, Prinsessegracht 23, Den Haag.

17:00-18:00 drinks

18:00-19:00 lecture

Ewan Campbell

"Cool Winnings-Developing the AB Glacial Sand Gas Play"

Shallow Gas in the AB blocks of the Netherlands offshore was first encountered in NAM and BP exploration wells, targeting deeper structures, in the 1970s. NAM, Clyde and Wintershall drilled successful exploration wells in the 1980s which proved significant static volumes of Hi-Cal gas in stacked shallow reservoirs. Appraisal and evaluation was completed in the 1990s. However, the shallow depth and low relief of the structures, the unconsolidated nature of the reservoir sands, together with difficulties modelling reservoir architecture and predicting water breakthrough, prevented successful commercial development of the discoveries.

The project comprises three main gas fields with a total GIIP of about 650 BCF and three smaller satellite structures that are currently under evaluation. All fields have similar reservoir parameters and the same geological setting.

The shallow gas fields are located at water depth around 40m. The reservoirs are Pliocene to Pleistocene in age and have been deposited in a shallow marine clastic environment. Studies indicate that reservoir sand deposition and stacking is triggered and controlled by base-level change as a result of glaciation. Sands were deposited during periods of glaciation when coarser sediment entered the basin. The reservoirs are vertically stacked, forming low-relief anticlinal structures at depths ranging from 350-700m TVDSS. Doming resulted from Early Holocene movement of the underlying Zechstein diapirs. Maximum flank dips are in the order of 0.5 - 1.5°. With high porosities and good permeabilities, these glacial marine sands are considered to be attractive reservoirs. The lower, deep-marine, T-sand amplitudes were tested by the A15-04 well and shown to be dry.

Several challenges with 2D seismic interpretation, petrophysics and drilling/completion prevented previous operators from developing these fields. Structural uncertainty, arising from seismic attenuation and draw down effects of overlying gas layers and shallow glacial scours, have been addressed by unconventional mapping methods and optimum azimuthal orientation of the wells.

The reservoir sands are unconsolidated, very fine-grained and have a "shaly" log response affecting petrophysical evaluation. Using directional drilling and Logging While Drilling (LWD) it is possible to position wells into modelled reservoir targets.

The gas sands are not yet properly consolidated and need to be completed with expandable sand screens to control sand production from horizontal sections. Up to now, expandable sand screen completion has enabled economic production from the horizontal sections.

UNOCAL, now Chevron, acquired the AB shallow gas assets from NAM in 2005. Using lessons learned from shallow reservoir development in Asia, the A12 Field development, employing highly-deviated wells completed with expandable sand screens, delivered first gas in 2007. The B13 field came on line in 2011. Further understanding of sequence stratigraphic and



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glacial controls on sand quality and deposition was worked into the A18 field development static model with first gas scheduled for 2015. Placing detailed field models in a regional context has helped better define uncertainties and develop mitigation plans for future shallow gas developments in the AB blocks of the Dutch sector such as A15, B10 B16 and B17.

Chevron had to develop new ideas and understanding to overcome the technical challenges and successfully develop these fields showing that shallow gas is no longer a drilling hazard but an economic gas play.

PGK SPRING FIELDTRIP 2014, 8-11 MAY 2014 (BOULONNAIS AREA, FRANCE)

Objective: Dynamics of Cenozoic inversion of Upper Jurassic deposits in terms of structural geology, source rocks, syn-rift fluids, sedimentology and sequence stratigraphy. This will all be combined with the better side of regional French gastronomy.

GUIDE: Olivier Averbuch and colleagues (Université de Lille 1)

Where: Boulonnais region, near the coastal town of Wimereux

Travel: touring car from Netherlands

Price: €340 including travel, accommodation, food and drinks

REGISTRATION THROUGH THIS [FORM](#)

The following companies are warmly thanked for sponsoring the PGK:

Argo Geological Consultants - Baker Hughes Reservoir Software

Chevron Exploration and Production Netherlands

CGG Services - Centrica Energy - Dana Petroleum Netherlands B.V. - dGB Earth Sciences

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Global Pacific & Partners - Hansa Hydrocarbons - NAM - Oranje Nassau Energie

Shell Exploration & Production - Terra Incognita Geoconsultancy and Geobooks

PanTerra Geoconsultants - PGS Geophysical - SGS Horizon

TNO - Total E&P Nederland - Vermilion Energy - Wintershall Noordzee - Xodus Group