

PETROLEUM GEOLOGISCHE KRING



KONINKLIJK NEDERLANDS GEOLOGISCH MIJNBOUWKUNDIG GENOOTSCHAP **PGK**

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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 18:00 hrs.	www.pgknet.nl	
Membership:	Apply for membership by contacting the secretariat. The annual fee is €15.-		
Accounts:	Fortis Bank: 88.65.82.733 (PGK, Den Haag)		

APRIL 2005 NEWSLETTER

20 APRIL: MONTHLY MEETING

The next PGK meeting will be on **Wednesday, April 20th, 2005**. As usual, social hour (free drinks) will be from 17:00 to 18:00 hrs. The lecture will be given by **Rob van Eijs** (TNO-NITG) on:

“Barradeel, a mega geomechanical laboratory on Zechstein salt mechanics”

Please see other side of this newsletter for the lecture abstract.

MAY MEETING:

On May 18, 2005 **Bill Zempolich** (Agip-KCO) will give a lecture. Please check the PGK website and upcoming newsletter for more details soon.

NEW MEMBERS:

Applications for memberships have been received from Geert Strik (ARGO Geological Consultants). If no objections are received prior to or during the next meeting, he is automatically admitted as member of our society.

PGK SPRING FIELDTRIP:

The PGK Spring Fieldtrip is scheduled *for 20-22 May, 2005* and will be lead by Evert van de Graaff. *See page 3 of this newsletter for more details.*



Monthly meeting: Wednesday 20 April 2005
Address: KIVI building, Prinsessegracht 23, Den Haag
Social hour: (free drinks) between 17:00 and 18:00 hrs
Lecture: at 18:00 hrs

“Barradeel, a mega geomechanical laboratory on Zechstein salt mechanics”

Rob van Eijs (TNO-NITG)

ABSTRACT – Since 1995, solution mining of halite is carried out by Frisia Zout B.V. from the deepest salt caverns in the world in the Barradeel concession in the Netherlands.

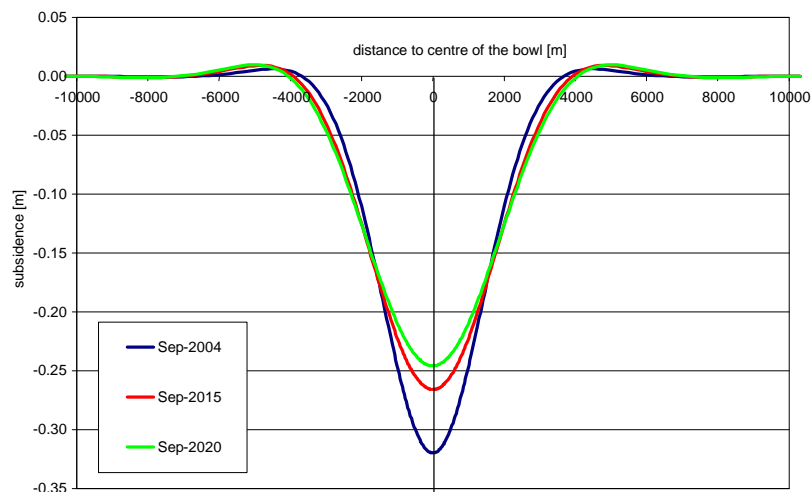
Barradeel is situated near the west coast of the province of Friesland near the Wadden Sea.

An upper limit of 35 cm has been set to the subsidence in the centre of the bowl. This limit stems from the delicate water management in the area, mostly lying beneath sea level and protected from the sea by dikes and a system of pumped polders. The operational solution mining plan has to be devised accordingly. At this moment, after almost 10 years of production, subsidence at the bowl centre has increased to around 32.5 cm and is nearing the limit.

The Barradeel caverns can be regarded as a well constrained mega experiment on salt mechanics because of the numerous available data. A strongly data-driven numerical model has been developed in combination with mass-balance modelling to calculate future subsidence. Calibration of this model on field data indicates that apart from cavern convergence through power law dislocation creep another salt transport mechanism is active. This mechanism is interpreted in terms of pressure solution creep, having a wider spatial range than the power law creep. The potential benefit for Frisia from this second creep mechanism is a prognosed (and measured by GPS?) rebound of the bowl in its deepest point on a relative short timescale (~ 1 cm/year) after shut-in of the caverns.

It is the first time that a quantitative estimate of the strength of pressure solution creep is given for a real salt body at great depth (3km). This has also some implications for the oil and gas industry:

- Better understanding of casing damage in saltbodies during production time
- Better understanding of salt mechanics in basin modelling (e.g. salt diapers)
- Better understanding of overburden response to compaction of produced hydrocarbon reservoirs



Forecasted subsidence bowls after shut-in of the two caverns

PGK SPRING FIELDTRIP - FRIDAY 20TH - SUNDAY 22ND MAY

(excursion leader: Evert van de Graaff)

This year the PGK's spring fieldtrip will visit Belgium. The trip will focus on examining outcrops in terms of their relevance as analogues for oil and gas fields. The trip will start with a visit to a couple of sand quarries in the Louvain area. Following that we examine the southern edge of the London-Brabant Massif in terms of it forming a potential analogue for fractured reservoirs. At the same location we will also discuss some project planning issues that the EP industry has to face on a regular basis, using the example of the Ronquieres shiplift which was being built when Groningen gas came on the market. On the second day we will examine Devonian carbonates and some key issues to consider when characterising carbonate reservoirs as well as fractured reservoirs. On the third day we return to clastics with a visit to the Upper Devonian Psammite du Condroz which is an excellent analogue for the Brent reservoirs in the northern North Sea. At each fieldtrip stop the geology will be discussed in the context of how the observed features such as layering, mineralogy and fractures are likely to effect wireline logs, fluid flow in the reservoir and, last but not least, reservoir development issues such as well trajectories and completion practices.

The approximate costs for participations are estimated €25,- per person, based on a double hotel room.

Please register a.s.a.p. with Neil Frewin (PGK-excursion coordinator): ☎ 070-447 3725 or Neil.Frewin@shell.com.

DOORGESTUURD BERICHT KNGMG AAN PGK LEDEN:

Geachte leden van de Kringen,

Hierbij willen wij u uitnodigen om deel te nemen aan de jaarlijkse algemene ledenvergadering en de buitendag van het Koninklijk Nederlands Geologisch Mijnbouwkundig Genootschap op 23 april 2005 op de Neeltje Jans in de Oosterschelde. Zoals u weet is er in het afgelopen jaar veel in gang gezet om te komen tot een substantiële koerswijziging binnen het KNGMG waardoor zowel de beroepsgroep, de wetenschappers en –meest belangrijk van al- de studenten en promovendi zich aangetrokken voelen tot het KNGMG en de Kringen. Zo zijn wij bezig geweest met het aanhalen van de internationale banden, het helpen op de kaart zetten van Aardkundige Waarden, een reorganisatie van de website, het bureau en de Commissie Beroepsbelangen, het benadrukken van de publieke rol van het KNGMG en de Aardwetenschappen, de samenwerking met de KNAG en met het opzetten van een post-doctorale cursus voor Aardrijkskunde docenten. Maar meest essentieel van alles is wel dat wij als Kringen en KNGMG samen duidelijk laten zien dat wij een waardevol netwerk zijn voor onze leden en student-leden. Dit willen wij nader vorm geven bij zoveel mogelijk van onze activiteiten.

Daarom willen wij u bij dezen van harte uitnodigen voor de jaarvergadering en de buitendag!

Met vriendelijke groet

Albert P. Oost
Voorzitter KNGMG

Recently Mark Geluk (NAM) has completed his PhD thesis "*Stratigraphy and tectonics of Permo-Triassic basins in the Netherlands and surrounding areas*". The thesis was defended on February 24 2005 at Utrecht University. This thesis is available online for download:

<http://igitur-archive.library.uu.nl/dissertations/2005-0228-003022/index.htm>

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