Exploration and Development of Siliciclastic and Carbonate Reservoirs in the Eastern Mediterranean

26-27 February 2019
Tel Aviv, Israel

Abstract Submission Deadline: 15 November 2018

You are invited to submit an abstract for this event using these guidelines to: Terri Duncan

Please note:

- **Abstracts received by AAPG are deemed to already have corporate approval and the affirmation that the Presenter will register and participate in the Conference.** This is to ensure that the finalization of the program is not held up due to late approvals.
- AAPG is not able to provide financial aid for travel. All presenters must register and pay for their attendance per AAPG guidelines.
- The committee reserves the right to release short or extended abstracts (or both) to Delegates, either in print or digital format. Extended abstracts are not mandatory however, presenters are encouraged to submit an extended abstract as delegates to the GTW appreciate the information. Should you not wish to submit an extended abstract, please advise Terri Duncan.
- In view of corporate regulations, full power point presentations will not be released to delegates; hence the requirement for extended abstracts. Delegates may approach the presenters directly to obtain a copy of the presentation slides, or await their permissioned upload to AAPG's Search and Discovery portal. AAPG will contact all presenters after the event to seek their permission to digitally upload slides or posters.

Instructions for Short Abstract Submission: (See sample abstract below)

- Attached is the template for the short abstract
- Title: – Arial 14 Bold: Title is in sentence case: First letter of each word capitalized except for words three letters or less.
- Please indicate the following:
    - Submitted for Oral presentation or submitted for Poster presentation (or both). The committee will make the final decision on which abstracts will best fit the Oral sessions and which abstracts will be invited as Static Posters.
    - Name, email/telephone number, with country code, of Presenter(s) only
    - Indicate if this paper has been presented at another technical meeting; with details.

- Author names should appear as Name, Company, Country. Do not list departments. If all authors are from a single company, there is no need to indicate a number.

- Author names and affiliations (Arial 12 point), aligned left. The presenting author is designated with * (an asterisk) placed after the speaker's last name. Affiliation numbers are denoted the with a superscript number.

  Example: Jane Newman* [1], Rowena Newman [1], Andy Gize [2], Janel Edman [3]

- Author affiliations (Arial 12 point), aligned left

  Example: (1) Newman Energy Research Ltd, New Zealand; (2) Lucid Microscopy, United Kingdom; (3) Edman Geochemical Consulting, LLC, USA

- *AAPG will liaise solely with the presenting author unless advised otherwise. The onus is on authors to advise* Terri Duncan *if presenting author changes. Same applies if there are changes to abstract title or author line-up. Original short abstracts will be compiled as a Handout, either printed or digital. If there are changes to the original short abstract, a revised one needs to be sent.*

- Body of abstract – Between 500-600 words. Arial font, 11-point, justified text, single-line spacing. No charts, pictures, or tables. These can be added to extended abstracts should abstract be accepted for event.

- CV of presenting author below body of abstract, with heading "CV of presenting author"; around 60 words, in single paragraph. Avoid use of personal pronouns. No photos will be necessary.

- Footer – No footers/page numbers required as short abstracts, if accepted, may be compiled into a master document.

- Abstracts will be reviewed by the Technical Committee and notification will be sent to all presenting authors in due course. Abstracts not accepted for oral presentation may be accepted for static poster presentation.

- If abstract is accepted, information from original short abstract will be featured in the onsite program. *The onus is on authors to advise* Terri Duncan *of any changes in paper title, or author line-up. There will be no reference made to extended abstract for any changes.*

- Filename: Word-format document to carry file name: Presenting Author (Company) Title up to 5 words. *Example: Brown_John (Chevron) Influence of Volcanism*.

- **Note: all abstracts must be submitted directly to: Terri Duncan.**

Please see below for sample abstract

SAMPLE (Permission obtained by Author)

AAPG Geosciences Technology Workshops 2019

A Petrography-Based Model of Igneous and Hydrothermal Activity in Diverse Petroleum Basins

Jane Newman1*, Rowena Newman[1], Andy Gize2, Janel Edman3,
(1) Newman Energy Research Ltd, New Zealand; (2) Lucid Microscopy, United Kingdom (3) Edman Geochemical Consulting LLC, USA

Please answer:

Submitted for Oral Presentation

Jane Newman (email xxxx@xxxx.com) phone: +64-xxxxxx

This paper has not been presented before

Abstract

Organic and inorganic petrography of rock samples from exploration wells worldwide shows that convective heat flow resulting from movement of hydrothermal fluids is an important process in many petroleum basins. Pyrolytic carbon and coked organic matter provide evidence that this hydrothermal activity is often associated with igneous intrusion. VIRF (vitrinite-inertinite reflectance and fluorescence) analysis sensitively reveals complex maturity profiles in sedimentary basins affected by hydrothermal activity. Accurate characterisation and interpretation of these hydrothermal signatures requires petrographic analysis of the entire stratigraphic succession.

Initial models of burial history and hydrocarbon generation for Clipper-1 assumed a steady state geotherm controlled by basal heat flow and predicted maximum hydrocarbon generation from coaly source rocks during the Pliocene. At Parshall Field in the Williston Basin the Devonian Bakken Formation source was thought to be only marginally mature, and much of the reservoired oil was consequently assumed to have migrated from higher maturity areas further west. Although vitrinite reflectance (VR) for both successions was broadly compatible with these models, VIRF analysis shows that VR substantially underestimated maturity. This is partly because standard VR relies on visual identification of vitrinite based on morphology, which is notoriously ambiguous in the dispersed organic matter (DOM) assemblages of many sedimentary rocks. The maturity of DOM in black shales, which are important source rocks in many hydrocarbon plays, is routinely underestimated due to measurement of vitrinite-like populations that have lower reflectance than true vitrinite. Also, the maturity of DOM in some paleo-aquifer units has been “write-protected” by brief exposure to igneous-associated volatiles at the onset of intrusion. Failure to recognise these paleo-maturity signatures results in under-estimation of burial temperatures. Correct identification of complex maturity profiles is critical for accurate burial history modelling.

To summarize, petrography is a cost effective and uniquely visual technique that allows direct and detailed observation of key igneous and hydrothermal characteristics. However, it is typically undervalued and under-resourced resulting in an inferior product that fails to show the true potential of the technique. When

petrographic analysis integrates mineralogy, microstructure, and maturity, as in the Clipper-1 and Long 1-01H examples, it provides powerful new information regarding geological controls on maturation and hydrocarbon generation. For example, Long 1-01H petrography shows that Bakken source rocks in the Parshall Field have higher maturity than previously thought, which obviates the need for substantial migration to explain full saturation of the middle Bakken with petroleum. Furthermore, the petrography of Clipper-1 shows that the coaly source rocks are over-mature and reveals a remarkable suite of previously unrecognised melt rocks and mineral assemblages that are now being used as markers for igneous intrusion and associated hydrothermal activity in petroleum basins worldwide.

CV

Jane Newman obtained BSc (Hons) Geology (1st) and PhD from the University of Canterbury, Christchurch, New Zealand, where she led a multidisciplinary group of graduate students and Post-Doctoral Fellows researching the paleofloral and paleoenvironmental controls on New Zealand's coal resources. During the 1990's Jane developed VIRF, a new petrographic method for maturity assessment of dispersed organic matter in petroleum well samples. Since 1998 Jane has operated as Newman Energy Research Ltd, providing services to the coal and petroleum industries. She has expanded VIRF to encompass mineralogy, microstructure and hydrocarbon occurrence, and provides pro bono advice and assistance to graduate students.