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Energy Geosciences Research & Development

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New Developments & Opportunities From Anomaly to IOR

MENA2001 Oil & Gas Conference

(MENA01) The 2nd International Middle East and North Africa Oil and Gas Conference

18 & 19 September 2001

The Imperial College

180 Queen's Gate, London SW7

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MENA 2001 Oil & Gas Conference

Day One Tuesday 18 September 2001

NEW DEVELOPMENTS & OPPORTUNITIES: FROM ANOMALY TO IOR

8.30-Registration and Coffee

8.55-Chairmen Opening Remarks

Chairmen Dr. Walter H Pierce, Director, WHPierce Exploration, Houston, Texas, USA, and
Co-Chairman Dr. Thamir Uqaili, Managing Director, Petroconsult Canada, Mississauga, Canada

9.00 Why the Middle East is Abnormally Rich in Oil? The Role of Synchronous Folds.

- ❑ Ground rules for oil occurrence.
- ❑ Structural analysis of Synchronous Folds.
- ❑ Evidence of synchronous structural growth.
- ❑ Role of synchronous Folds in the formation of oil pools.
- ❑ Middle East oil fields associated with Synchronous Folds.
- ❑ The role of the Middle East Synchronous Folds in explaining the Abnormal abundance of oil in this region.

Dr. Mohammed Warrak, The Open University, Milton Keynes, UK

9.30 East Baghdad: Reservoirs and Development Plan of a Super Giant Field

- ❑ Bbackground
- ❑ Geology
- ❑ Pilot testing
- ❑ Scenarios for reservoir development

Dr. Thamir Uqaili, Managing Director, Petroconsult Canada, Mississauga, Canada

10.00 High Frequency, High Resolution Sequence Stratigraphy of the Devonian Jauf Gas Reservoir: A Shore face and Tidal Succession, Ghawar Area, Eastern Saudi Arabia

- ❑ Outcrop section in Sakaka-Jauf Area
- ❑ Surface and subsurface stratigraphic séquences
- ❑ Stratigraphic corrélation
- ❑ Depositional environments

Riyadh Rahmani, Ronald Steel and Abdulaziz A. Al-Duaiji, Saudi ARAMCO, Dhahran, Saudi Arabia

10.30 The Risha Gas Field, Eastern Jordanian Desert

- ❑ Introduction
- ❑ Stratigraphy
- ❑ Structural Development
- ❑ Geological Model
- ❑ Reservoir properties
- ❑ Development Potential of the Risha Field

Mr K. Muammar, Consultant Geologist, London, UK and Amman, Jordan

11.00 Morning Coffee

11.30 Sequence Stratigraphy and Depositional Environments of the Gas-Bearing Devonian Succession of the Ghawar Field and its Correlation to the Devonian Outcrops of North-western Saudi Arabia

- ❑ Stratigraphic sequences
- ❑ Stacking patterns
- ❑ Sequence array and tract trends
- ❑ Exploration implication of stratigraphic stacking pattern

Riyadh Rahmani and Dag Nummedal, Saudi Aramco, Dhahran, Saudi Arabia

12.00 Chemeh Khosh (CK) Oil Field, SW Iran: Reservoir Characteristics

- ❑ Typical NW-SE Zagros structure
- ❑ Discovery and drilling history
- ❑ Reservoir Facies
- ❑ Facies controlled porosity, permeability and water saturations
- ❑ Reservoir parameters, performance, and reserves of the reservoir facies

Dr M. Ala, Senior Academic and Director MSc Programme in Petroleum Geosciences, Imperial College, London. Director of Hydrocarbon Venture Ltd, London.

12.30 An Integrated Subsurface Geological and Engineering Study of Meyal Field, Pakistan

- ❑ Geology
- ❑ Surface and Subsurface Structural Configuration

- ❑ Production History
- ❑ Oil and Gas Recovery Programme

Seyed Tariq Hasany and U. Saleem, Pakistan Oilfields Ltd., Rawalpindi, Pakistan

13.00 Lunch and Posters

14.00 Unexplored Petroleum Systems and Plays of Iraq

- ❑ Introduction
- ❑ Tectonic and Structural Framework
- ❑ Geologic History
- ❑ Petroleum Systems
- ❑ Play Distribution
- ❑ Areas of Prospectiveness
- ❑ Conclusions

Dr. Hashim Al Khersan, Manager Middle East New Ventures, Pioneer Natural Resources USA, INC. Irving, Houston, USA

14.30 A New View of the Petroleum Potential of Egypt

- ❑ Overview of new basement terrain model for Egypt
- ❑ Upper Egypt Mesozoic failed continental rifts
- ❑ Western Desert Rift basins
- ❑ Tethyan margin rift extensions into offshore Mediterranean
- ❑ Implications for exploration

T. Loutit, SRK Consulting, **D. Allard**, Apache Egypt; **J. Dolson**, BP Egypt, **J. Schreurs**, Shell Egypt, & **S. Laura**, IEOC (AGIP) Egypt

15.00 Tea Break

15.30 Hydrodynamic Entrapment of Petroleum, Case Studies from Illizi Basin, Algeria

- ❑ Principles
- ❑ Hydrostatic and hydrodynamic environments
- ❑ The influencing factors
- ❑ The prospecting method
- ❑ A schematic practical example
- ❑ Worldwide occurrence of hydrodynamic traps
- ❑ Rospo Mare oilfield, Italy
- ❑ The Illizi basin, Algeria (maps, cross-section, details)

R. Bencini, Director, G.A.I.A. Srl, Rome, Italy

16.00 Iraq Now Offers a Unique Opportunity for Oil Independents

- ❑ A commercial view of Iraq's relationship with the West
- ❑ What is the West's strategic interest in the Gulf?
- ❑ Do we need Iraqi oil and gas?
- ❑ Is current policy likely to facilitate secure supplies?
- ❑ Scenario for evolution of the embargo
- ❑ Opportunities for trading, exploration and oil fields development
- ❑ How to do business in Iraq

David Horgan, Managing Director, Petrel Resources, Dublin, Ireland

16.30 Project Kuwait: Oil and Politics Collide

- ❑ The Government's Justification of the Project
- ❑ The National Assembly: Rich Mix of Political Agendas
- ❑ The Impact of the Power Vacuum in Kuwait
- ❑ The Shadow of Iraq Over the Northern Oilfields

G. Butt, Gulf Editor, Middle East Economic Survey

17.00-17.30 Panel Discussions and Chairmen Closing Remarks.

Poster Presentations

The Rotation Sleeve System: I

- ❑ Introduction
- ❑ NESCOS EOR-Valve
- ❑ The Value of Smart Wells
- ❑ The Future of Smart Wells

Bengt Gunnarsson, Triangle Equipment AS, Stavanger, Norway

Utilising Artificial Neural Networks in Cross-Equalisation for 3D time-lapse Seismic

- ❑ 4D seismic and the shift toward reservoir optimisation.
- ❑ The need for Cross-Equalisation to tackle the main problem within 4D seismic.
- ❑ Large parallel arrays of artificial neural networks (ANN) are employed as a possible mean of statistical cross-equalisation.

Ibrahim Ismaili, Geophysics Department, Imperial College, London, UK

Standby Presentations

The Rotation Sleeve System

- ❑ Introduction
- ❑ NESPOS EOR-Valve
- ❑ The Value of Smart Wells
- ❑ The Future of Smart Wells

Bengt Gunnarsson, Triangle Equipment AS, Stavanger, Norway

Geology and Reservoirs of a Sleeping Giant: Hamrin Field, Iraq

- ❑ Introduction
- ❑ Tectonics and surface geology
- ❑ Hamrin area: a triple junction of IPC, MPC, BPC and INOC-OEC stratigraphic nomenclatures
- ❑ Drilling History

- ❑ Proven Reservoirs
- ❑ Prospective Reservoirs
- ❑ Trapping Mechanism
- ❑ Reservoir conditions
- ❑ Reserves
- ❑ Upsides and risks

Dr Muhammad W. Ibrahim, Geologist (MENA), Target Exploration, London

Geo-history, Paleo-temperatures and Thermal Histories of the Mishrif and Zubair Formations in Some Oil Fields, Southern Iraq

- ❑ Introduction
- ❑ TOC and thermal histories
- ❑ Thermal source rocks maturation
- ❑ Times of oil expulsion
- ❑ Times of traps formation

Dr Maha Saleh, Department of Geology, Faculty of Sciences, Baghdad University, Baghdad, Iraq

Geological and Geochemical Models in Oil Exploration; Principles and Practical Example: East Baghdad Basin

- ❑ Introduction
- ❑ Backstripping models
- ❑ Heat flow models
- ❑ Kinetic models

- ❑ Hydrocarbon expulsion and migration models
- ❑ Practical Example: Eastern Baghdad Basin

Dr Maha Saleh, Department of Geology, Faculty of Sciences, Baghdad University, Baghdad, Iraq

Value-added palynology: high-resolution biozone, mudstone baffle correlation and deglaciation model for Early Permian oil-bearing sequences in Oman.

- ❑ Introduction
- ❑ High resolution biozone scheme
- ❑ Baffle correlation and predictions about lateral persistence of baffles
- ❑ Deglaciation Model

M. H. Stephenson, BGS, Nottingham, UK and P.L. Osterloff, PDO, PO Box 81, Muscat 113, Sultanate of Oman.

Geology, Fields and Prospects of Iraq's Western Desert, New Outlook

- ❑ 1-Introduction
- ❑ 2-Stratigraphy and geology
 - 2.1- The Iraqi Western Desert
 - 2.2- Syria
 - 2.3- Jordan
 - 2.4- Well records
 - 2.5- Regional correlation
- ❑ 3-Reservoir behaviour
 - 3.1- Risha field

3.2- Syrian fields

- ❑ 4-Regional assessment of prospects (within and outside the new E&P Blocks)
- ❑ 5-Conclusions

Dr. Thamir Uqaili, Managing Director, Petroconsult Canada, Mississauga, Canada

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Day Two Wednesday 19 September 2001

NEW DEVELOPMENTS & OPPORTUNITIES: FROM ANOMALY TO IOR

8.30 Registration and Coffee

8.55 Chairmen Opening Remarks

Chairman Dr. Walter H Pierce, Director, WHPierce Exploration, Houston, Texas, USA, and
Co-Chairman Dr. Thamir Uqaili, Managing Director, Petroconsult Canada, Mississauga, Canada

9.00 Arabian Plate Source Rocks: Exploration Review

- ❑ Introduction
- ❑ Comparison and contrast
- ❑ Factors to Consider
- ❑ Known Effective Source Rocks: Precambrian-Cambrian-Upper Cretaceous
- ❑ Contrasting Distribution Models
- ❑ Potential Effective Source Rocks: Ordovician-Upper Cretaceous
- ❑ Where are the yet-to-be-discovered source rocks
- ❑ Review of Products: API gravity, Gas VS Oil, Rock Composition, Kerogen Composition, Regional and Local Inversions?

- ❑ Extension of know effective source rocks
- ❑ Known but less effective source rocks
- ❑ Future Trends: API depth analysis and API Sulfur analysis
- ❑ Conclusion
- ❑ Controls on distribution
- ❑ Critical factors and what is predictive

W. Pierce, Director, WHPierce Exploration, Houston, Texas, USA

9.30 Hydrocarbon Source Rocks of Jordan

- ❑ Introduction
- ❑ Geochemical Signatures
- ❑ Organic Rich Events
- ❑ Optical Source Rocks Analysis
- ❑ Paleozoic Source Rocks
- ❑ Triassic Source Rocks
- ❑ Jurassic Source Rocks
- ❑ Cretaceous Source Rocks
- ❑ Paleocene Source Rocks

H. Ramini and F. Alawneh, National Energy Research Center, Amman, Jordan

10.00 Hydrocarbon Source Rock Quality, Distribution and Migration in Northwest Onshore & Offshore Sirt Basin, Libya

- ❑ Exploration History and Discoveries
- ❑ Identified Source Rock
- ❑ Geochemical Source Rock Facies
- ❑ Oil to Source Correlation
- ❑ Thermal Maturity
- ❑ Onshore and Offshore Extents of the Hagfa Trough
- ❑ Offshore Extent of Hydrocarbon System

M.Y. Baair, I. Rabti and P. H. Swire, Veba Oil Operations, Tripoli, Libya,

10.30 Hydrocarbon Habitat in the Palaeozoic Petroleum Systems of the Ghadames and Murzuk Basins (Algeria Tunisia and Libya)

- ❑ Regional Geological Setting
- ❑ Ghadames / Murzuk Basins
- ❑ Exploration Activities Evolution
- ❑ Reservoirs & Petroleum results
- ❑ Trapping Mechanism
- ❑ Source rocks potential
- ❑ HC Generation and Migration pathways
- ❑ Factors controlling HC Habitat
- ❑ Play concepts, Future HC potential

Dr K Echikh, Consultant Geologist, Tripoli, Libya

11.00 Morning Coffee

11.30 The Palaeozoic Play of Southern Cyrenaica, Libya

- ❑ Regional depositional trends
- ❑ Silurian source rock
- ❑ Devonian source rock
- ❑ T.O.C. data from logs
- ❑ North Africa source rock maturation patterns
- ❑ The coastal "kitchen"
- ❑ Prospectivity of Southern Cyrenaica
- ❑ Structural examples

R. Bencini, Director, GA.I.A. Srl, Rome, Italy

12.00 The Geology and Hydrocarbon Habitat of the Sarir Sandstone, SE Sirt Basin, Libya; Rationalisation of the Nubian

- ❑ The Stratigraphy of the Sarir Sandstone (i.e. Nubian) Rationalised in the SE Sirt Basin
- ❑ Hydrocarbon Habitat of the Sarir Sandstone
- ❑ Implications for Exploration and Field Appraisal
- ❑ New Ideas and Strategies

G. Ambrose, Northern Territory Geological Survey, Darwin, Australia, and **R. Gras**, Schlumberger GeoQuest, Gatwick, UK

12. 30 Exploration for Conventional and Subtle Fractured Reservoirs in the Middle East and North Africa

- ❑ Conventional tectonic fractured reservoirs in MENA
- ❑ Regional Fractures
- ❑ Regional Fractures in the Arabian Plate and adjoining Foreland
- ❑ Exploration for fractured reservoirs in subtle folds.
- ❑ Exploration for fractured reservoirs in intra-structural areas

Ron Nelson, BP-Amoco, Houston, Now Nelson Consulting, Houston, Texas

13.00 Lunch and Posters

14.00 Fractured Cambro-Ordovician Quartzite Oil Traps in Southern Tunisia

- ❑ Structural overview
- ❑ Principal oil "kitchens"
- ❑ Horizontal drilling
- ❑ Drain hole productivity
- ❑ Prospectivity of Southern Tunisia
- ❑ Structural examples

R. Bencini, Director, GA.I.A. Srl, Rome, Italy

14.30 Secondary Recovery Design Consideration in Fractured Reservoirs, with Emphasis on Giant Fields of the Middle East and North Africa

- ❑ Design of water floods and miscible floods in naturally fractured reservoirs

- ❑ Reservoirs with high matrix quality
- ❑ Ignoring natural fractures can lead to failure of secondary recovery projects.
- ❑ Available techniques for effective secondary recovery of fractured reservoirs.

Ron Nelson, BP-Amoco, Houston, Now Nelson Consulting, Houston, Texas

15.00 Tea Break

15.20 Environmental Contamination in Iraq

- ❑ Chemical contaminants
- ❑ Biological contaminants
- ❑ Radiological contaminants
- ❑ Depleted uranium contamination
- ❑ The southern marshland

Dr. H Shahrستاني, Research Fellow, Surrey University, Surrey, **and Dr. Goran Talabani**, Consultant & Senior Lecturer at West London Regional Neuroscience Centre at Charing Cross Hospital and Imperial College School of Medicine, Univ. of London

16.00 E&P Opportunities and Development in Sudan

- ❑ Background
- ❑ Geology
- ❑ Geophysics
- ❑ Hydrocarbon Discoverers

- ❑ Long range scenario
- ❑ Investment opportunities

Thamir Uqaili, Managing Director, Petroconsult Canada, Mississauga, Canada

16.30 Upstream Arrangements In MENA: A Range of Options

- ❑ Saudi Arabia: Upstream/Downstream Gas Projects
- ❑ Iran: Modifications to Buyback Deals
- ❑ Libya: Promising and Frontier Prospects
- ❑ Algeria: Hydrocarbon Law Reform Debate Continues, Integrated Gas Projects Get Started

G. Butt, Gulf Editor, Middle East Economic Survey

17.00-17.30 Panel Discussions Chairmen Closing Remarks

Early Giant Oil Fields of MENA: Giant IOR Projects for the NOCs and IOCs.

Poster Presentations

The Rotation Sleeve System: II

- ❑ Introduction
- ❑ NESCOS EOR-Valve
- ❑ The Value of Smart Wells

- The Future of Smart Wells

Bengt Gunnarsson, Triangle Equipment AS, Stavanger, Norway

New E&P Blocks of Onshore and Offshore Libya: Rank, Potential, Undeveloped Fields, Discoveries and Dry-holes

- The Variegated E&P Background of Libya
- The Non-uniform Nature of the E&P Data and Inputs
- Database as a Ranking Method
- Wells, Undeveloped Fields and Discoveries in the New E&P Blocks of Libya
- Ranks, Relative E&P Potentials, and Undeveloped Oil and Gas Fields and Discoveries in the New E&P Blocks of Libya
- Example; Block S25, Sirte Basin
- The Upsides and Downsides of Database Ranking
- Conclusions: Interactive and Updateable Laptop Ranking on the Negotiation Table

Muhammad W. Ibrahim, Target Exploration, London, UK

Standby Presentations

Petroleum Potential of the Lower Odjaghagheshlagh Formation (Upper Eocene) in the Moghan Basin, Located in the Azerbaijan Province, NW of IIRAN

- Introduction
- Stratigraphy and Sedimentation

- ❑ Oil Samples
- ❑ Rock Samples
- ❑ Source Rock Correlation
- ❑ Oil to Source Rock Correlation
- ❑ Conclusions

H. Alimi, Global Petroleum and Environmental Geochemistry, Woodland Hills, California, USA.

Missed, By-Passed, and Under-Estimated Hydrocarbon Traps: Analysis of Basic Exploration Records Reveals “Un-Discovery Wells” in Iraq.

- ❑ Introduction
- ❑ Data and methodology
- ❑ Definition Reasons for “undiscovered wells”
- ❑ Examples of hidden “undiscovery wells” in the exploration records of Iraq
- ❑ Examples of “undiscovery wells” in other MENA Countries
- ❑ Conclusions and applications

Muhammad W. Ibrahim, Geologist (MENA), Target Exploration, London

Hydrocarbon Potential of the New and Old Western Desert Blocks of Iraq

- ❑ Locations
- ❑ Exploration History
- ❑ Stratigraphy
- ❑ Tectonics
- ❑ Petroleum Systems

- ❑ Exploration Plays
- ❑ Remaining Undrilled Anomalies
- ❑ Size Factor of Remaining Undrilled Anomalies
- ❑ Ranking the E&P Potential of the Old and New Blocks

Muhammad W. Ibrahim, Geologist (MENA), Target Exploration, London

A New Approach to Calculating Thermal Maturation of Source Rocks and Generated Hydrocarbon During the Lower Cretaceous in Southern Iraq

- ❑ Introduction
- ❑ Geodynamic model
- ❑ Heat flow, thermal conductivity, geothermal gradients
- ❑ Abnormal pressures
- ❑ Hydrocarbon generation zones in South Iraq

Dr Maha Saleh, Department of Geology, Faculty of Sciences, Baghdad University, Baghdad, Iraq

Cancelled Presentations

Seismic Quality, Sirt Basin, Libya

H. AlDabagh, Sirt Oil Co, M.Brega, Libya, Now with Western-Geco UK

Risha Gas Field; Big Surprise in the Eastern Jordanian Desert

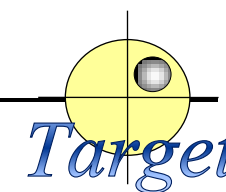
M. Nabulsi, Director, The Nabulsi Group, Amman, Jordan

Petroleum Potential and Correlation of Paleozoic Rocks in Jordan and Iraq

Y. Shahin, NRA, Amman, Jordan

Integration of New Well Technology and Core Define the Critical but Poorly Understood Characteristics of the Major Reservoir Formations of the Middle East and Egypt

Roy Nurmi, Consultant on Borehole Geology and Technology, Houston, Texas, USA.



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