

CCOP – Norway Program Program for Enhancing Public Petroleum Management of the CCOP Member Countries (EPPM)

Project 1 (P1), Petroleum Resource Management with focus on Natural Gas

P1W3: North Sumatra – Mergui Basin Case Study: Basin Modeling, Map Integration and Fractured Basement - 2-5 August 2010, Langkawi, Malaysia

Summary Report:

P1W3 is the third workshop under *Project 1 (P1), Petroleum Resource Management with focus on Natural Gas* of the EPPM Program and organized by the CCOP Technical Secretariat with the cooperation of PETRONAS (PMU), and Norwegian Petroleum Directorate (NPD). The objective is conduct the basin modeling of North Sumatra – Mergui basin (cross-border case study) in order to have a better understanding of the big geologic picture of the basin to enhance geological interpretations and predictions - translating into a higher drilling success rates. A technical fieldwork in Langkawi was added in the agenda with focus in fractured basement. These activities will be enabled by the knowledge of experts from the case study host countries (Indonesia, Malaysia, and Thailand), resource persons from Norway, and other CCOP Member Countries.



The Workshop was officially opened by DATO' YUNUS ABDUL RAZAK, Director-General of the Minerals and Geosciences Department and also currently the Chairperson of the CCOP Steering Committee with Mr. Knut Henrik Jakobsson (Principal Engineer,NPD), Mr. Robert

Wong Hin Fatt (General Manager, PETRONAS-PMU), and Mr. Simplicio P. Caluyong (EPPM Program Coordinator, CCOP Technical Secretariat)

A total of 42 participants represented the Member Countries- Cambodia (1), China (3), Indonesia (5), Korea (1), Malaysia (20), Philippines (2), Thailand (4), and Vietnam (2). Also participating are representatives from ASCOPE (2) and CCOP Technical Secretariat (2). The technical sessions covered hands-on *basin modeling* training/workshop led by PETRONAS experts Dr. Jamaal Hoesni and Dr. Azlina BT Anuar with focused on all geologic elements and the processes involved for hydrocarbon accumulation. The *PetroMod 1D (express freeware)* of IES was used as the basin modeling tool for the workshop that was supported by *case studies from Malaysia's basins and other basins of the world* through the presentations of Mr. Arne Forsberg (STATOIL-Norway) and Dr. In Gul Hwang (KIGAM-Korea). In addition, a topic on *Fractured Basement: a case study* by Dr. Trinh Xuan Cuong of PETROVIETNAM as well as presentations from the case study countries (Indonesia, Malaysia, Thailand) on the updated & integrated data of the North Sumatra-Mergui Basin study.

Outcomes & Way Forward

1. The case study teams of Indonesia, Malaysia and Thailand have agreed on the following work assignments for the study:
 - a. Indonesia Team
 - i. Convert the time structure map to depth
 - ii. To make a 2D basin modeling, with the 2 other countries to provide their data
 - iii. Heat flow map, geothermal gradient & maturity map - inputs to basin modeling
 - b. Malaysia
 - i. Seismic facies map – Thailand to provide their data to Malaysia
 - ii. Chronostratigraphic map
 - c. Thailand
 - i. Structural cross-section (using at least 3 lines)
2. Gravity map from all case study countries has been integrated
3. Before finalization of the outputs (above), the teams agreed to send the drafts to the other case study countries for review.
4. A meeting among case study countries (P1M2) will be conducted at the CCOP TS on 27-28 Jan 2011 to further discuss & review the case study outputs & assigned tasks prior to P1W4.
5. The next workshop, P1W4 will be conducted in Changmai, Thailand on 22-25 February 2011. The main topic is Seismic Stratigraphy and Play concepts. PETRONAS team will led the training/workshop on seismic stratigraphy with the aim of creating a common risk segment map for the case study basin. The team also requested for experts on petroleum play concepts and analysis from Norway or other networks of CCOP.
6. A 1-day geological fieldwork is also planned in Changmai & vicinities.

7. USB memory flash was distributed to all participants containing all documents and pictures of the workshop. The EPPM website <http://www2.ccop.or.th/eppm/> is also updated with materials from P1W3 that can be downloaded for free.



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P1W3 in pictures:

1. Opening address of Dato' Yunus Abdul Razak
2. Dr Jamaal Hoesni of PETRONAS on basin modeling
3. Basin modeling exercise - Robert & Azlina of PETRONAS helping some of the participants
4. Basin modeling exercise – Ung Phany of Cambodia assisted by Affendi of PETRONAS
5. Dr Phumeem presenting the updated maps from Thailand side of the basin
6. Checking the updated data – Dr Hermes (Indonesia) and Affendi (PETRONAS)
7. Mr. Arne Forsberg (STATOIL-Norway) – basin modeling case studies in Norway & other basins
8. (to- 10)Geological fieldwork in Langkawi led by Prof. Lee Chai Peng of University of Malaya