

STATUS OF CBM DEVELOPMENT IN MEXICO

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Tuscaloosa, AL, USA
May, 22-23, 2006.

I. CBM RESOURCES OF MEXICO

HISTORY OF COAL MINING IN MEXICO

- **The modern history of coal mining in Mexico dates back to the second half of the XIX century. It was first mined in 1850 for the use in the vapor railroad locomotives.**
- **From the late 70's to early 90's two coal-powered electrical plants were built, José Lopez-Portillo and Carbon II that supply 1,200 MW and 1,400 MW respectively to the national net. Both plants were designed to consume the local coal present in the Fuentes-Rio Escondido basin of the North of Coahuila State . A parallel government owned thermal coal mining company (MICARE) was developed to feed the power plants, that later was sold to a private enterprise.**

GEOLOGY, CHARACTERISTICS AND COAL PRODUCTION

- **The coals of the basins known as Sabinas and Fuentes-Rio Escondido in Coahuila belong to the Cretaceous epoch.**
- **Economic production at present is from the state of Coahuila with a coal out-of-the-mine production of approximately 6 Mt of thermal coal and 6 Mt of metallurgical coal.**
- **Calculated resources of 12.2 billion t of coal**
- **Coal is bituminous and the design specs are 36% ash, 5,521 kcal/kg, 1.6 % S.**

CBM POTENTIAL OF MEXICO

- **Contents in situ of gas in coals of the Sabinas basin in the range of 343 to 480 scf/t, and of 411 to 618 scf/t in the coals of Saltillo basin**
- **Permeability of the seams at 180 m depth is 33 md; however values decrease an order of magnitude at 300 m**
- **The total calculated emissions of methane from coal mining to the atmosphere in Mexico in 2005 are 5.3 billion cf per year**
- **Resource potential of CBM for the Coahuila basins coals of 8.8 Tcf.**

II. MEXICAN LEGISLATION REGARDING CBM

PRESENT LEGISLATION



Article 27 of the **Constitution of Mexico** and its **Ruling Law on the Subject of Hydrocarbons**, states that all hydrocarbons belong to the Nation, and its exploration, recovery, processing and sales can only be managed by **PEMEX**. Since **CBM** is a hydrocarbon, although not related with oil as such, the methane can not be used by the coal miners and has to be vented to the atmosphere.

OBSTACLES FOR THE RECOVERY AND SALE OF CBM



- **PEMEX has no economic interest for the CBM in Mexico due to the small size of the business and the lack of gas ducts in the Coahuila coal region.**
- **Production of natural gas by PEMEX amounts to 4.5 Bcf/day, while CBM potential production is 3 orders of magnitude smaller.**
- **CBM potential resources of Coahuila are less than 13% of the natural gas resources calculated by PEMEX.**

ACTIVITIES DONE BY EXECUTIVE BRANCH AND CONGRESSMEN OF THE MEXICAN GOVERNMENT

- **A Senator from the Green Party presented an amendment to the Mining Law in June 18th of 2003 that would have allowed the coal mining concessionaries the right to recover, use, store or sale the methane gas to PEMEX . Approved by the Senate, the amendment was sent to Congress for their ratification.**
- **Congress discussed the amendment and modified in such a way that became economically not feasible the commercial extraction of methane; additionally it forbade the use of the gas by the coal miners. Congress sent back the modified initiative to the Senate on December, 28, 2003, where although not rejected was not considered any further and was filed.**

ACTIVITIES DONE BY EXECUTIVE BRANCH AND CONGRESSMEN OF THE MEXICAN GOVERNMENT

- **Several other unsuccessful attempts were made during 2004 and 2005 by the Executive Branch of the Government to introduce changes in the Mining Law that would allow the use of CBM by the coal miners, under the premise that methane is a byproduct of the coal mining operations.**
- **On late February 2006 there was a catastrophic explosion at the Pasta de Conchos coal Mine in Coahuila, that killed 65 miners and brought the attention of country persons and the media to the dangers of CBM in coal mining and the venting of it to the atmosphere.**

ACTIVITIES DONE BY EXECUTIVE BRANCH AND CONGRESSMEN OF THE MEXICAN GOVERNMENT

- On March 9, 2006 an Amendment to the Mining Law was approved by Congress and sent to the Senate for their review and approval. Because of the importance of the degassing process to the security of the coal miners, Senate acted immediately on it, and on April, 20, 2006 the amendment was approved by the Senate without any modifications.**

PRESENT STATUS OF CBM RELATED AMENDMENT TO THE MINING LAW

- **The amendment to the Mining Law allows the coal miners to recover and use the CBM, CMM, AMM and VAM from their coal mining operations for any purpose chosen, and if the business is feasible allows the concessionaries to sell the gas to PEMEX through a contract.**
- **At present the Ministries of Economy and Energy are working together on the proper ruling of the amendment and it is expected that will become available by the third quarter of this year.**
- **The basis for the use of methane by the miners, or sale of it to PEMEX, will be through a permit that will be issued by the Ministry of Energy, after the previous approval of the plan for development and degassing of the mine by the Under-Secretariat of Mines of the Ministry of Economy.**