Instructions for abstract typing setup

OAPEC- NOGA

Joint Conference: Upgrading Oil Refineries to Produce Clean Fuel

25-27 October, 2010
Kingdom of Bahrain-Manama

1 to 3 pages maximum in English

Title of Paper (Times New Roman- Font Size 14 Bold)

Name of Author (Times New Roman- Font Size 12 Bold)
Place of Work (Times New Roman- Font Size 12 Italic)

1. Introduction (Times New Roman – Font Size 10 Bold)
Provide brief background information and the motivation of the paper.
Text: Times New Roman Font Size 10.

2. Key Features (Times New Roman – Font Size 10 Bold)
Outline the key aspects that will be discussed in your paper. Tables and figures can be included.
Text: Times New Roman Font Size 10.

3. Conclusions (Times New Roman – Font Size 10 Bold)
Outline the conclusions that will be made in your paper.
Text: Times New Roman Font Size 10.

4. References and Bibliography
Provide references cited above and other sources of information for which an interested reader could follow up on to learn more about the topical area of the paper.
Text: Times New Roman Font Size 10

4. Speaker's Biography
Provide a short biography for the speaker. This section is not to exceed half a page length.
Text: IN ONE PAGE Times New Roman Font Size 10

∗ See attached sample.

Name of Paper (Times New Roman- Font Size 14 Bold)

Name of Author (Times New Roman- Font Size 12 Bold)
Place of Work (Times New Roman- Font Size 12 Italic)

1. Introduction

Today, there is a large consensus to identify the increase of the concentration of greenhouse gases in the atmosphere as the most probable cause for creating a global warming effect and hence inducing a potentially severe climate change. As CO_2 is one of the main greenhouses gases emitted by the human activity, the mitigation of CO_2 emission represents thus an important target for reducing greenhouse gas emissions in the atmosphere.

One option which to reduce such emissions is to capture CO_2 and store it in the underground. This option draws more and more attention as it presents the advantage of reducing both drastically and rapidly those CO_2 emissions allowing to maintain the concentration of CO_2 in the atmosphere within a certain limit that could moderate the effects of climate change.

For several reasons regarding public acceptance, regulatory regimes and financial considerations, storing CO_2 in mature hydrocarbon fields appears to be a quite attractive option. This constitutes an important driver for promoting tertiary CO_2 EOR processes as an efficient and economic means for redeveloping mature oil fields.

2. Key Features

The challenges in reducing greenhouse gas emissions and the necessity of properly addressing climate change issues will be discussed in a first step. In a second step, the key volumetric properties of CO_2 as well as its impact on the oil properties when it get dissolved in the oil phase will be recalled.

Advantages and drawbacks of a CO_2 injection will be discussed and the main steps of a methodology developed for estimating the gain in recovery factor will be presented. As a matter of example, the Weyburn case (Canada) will be briefly presented.

In a final step, the conversion into a CO_2 storage of an oil reservoir flooded by CO_2 will be addressed. Some specific aspects related to the necessity of ensuring the integrity of the storage over long periods of time (typically one thousand of years) will be discussed.

3. Conclusions

The necessity of reducing the CO_2 emissions emitted by the human activity provides a good opportunity for revisiting the merits of CO_2 EOR.

Due to its properties of good solvency in the oil phase, CO_2 injection appears to be an attractive EOR process. As the production of CO_2 results from a capture process, its cost will be lower than if it was to be generated on purpose. This contributes to improve the economics of a CO_2 EOR process.

After the end of the EOR phase, CO_2 injection can be continued leading to convert the oil reservoir into an underground storage. Specific simulation tools are needed. Using COORES^{TM}, an IFP developed software simulations spanning over long periods of time and presenting the evolution of the CO_2 plume developed into the underground will be presented. Some key properties of this software will be underlined.

With the view of ensuring the integrity of the storage over long periods of time, some specificities of CO_2 such as its corrosive effect which can impact the wellbore integrity or the dissolution of the reservoir rock it induces will be addressed.