• TIPS

Volume 2, Issue 4

(Printable Version)

Upcoming Events

Apr. 17-19, 2007
Well Log Seminar
Calgary, Alberta
www.petsoc.org

Apr. 23-27, 2007
Well Completions & Workover Design
Calgary, Alberta
www.petsoc.org

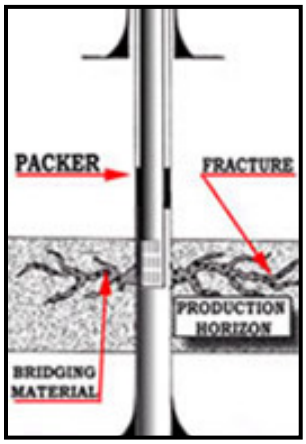
Apr. 30-May 4, 2007
Geology for Engineers
Calgary, Alberta
www.petsoc.org

May 09-10, 2007
Practical Rock Mechanics for Drilling & Completions
Calgary, Alberta
www.petsoc.org

Commingling of Fractured Formations

One of the criteria of Alberta commingling applications is you may only commingle zones if the reservoir pressure of one zone is no closer than 90% of the fracture pressure of another zone. These criteria may be more prominent when the operator would like to commingle a deeper zone with a shallow one.

Fracturing of shallow gas zones is common practice. For example, when a zone is originally fractured with a breakdown pressure of 30 Mpa, re-fracturing of the zone may only require a breakdown pressure of 10 Mpa. As a result, the reservoir pressure of the non-fractured deep zone needs to be 9 Mpa before the commingling of the two zones can occur.



The Pressure required to re-fracture a formation ("Fracture Closure Pressure") may be measured with a field test or calculated by formula knowing the original breakdown and current reservoir pressure plus the rock mechanic properties.

~Bill Winnick, P.Eng.

www.proven-reserves.com

Company News

We are pleased to announce the appointment of Karen Gowans as our new client support specialist!

Karen was born in Thompson Manitoba, and grew up mostly in Fort McMurray, Alberta. She moved to Calgary in 1993 and has been here ever since.

Karen has worked primarily in the field of client relations, and has provided client support for key decision makers in both technical and non-technical businesses.

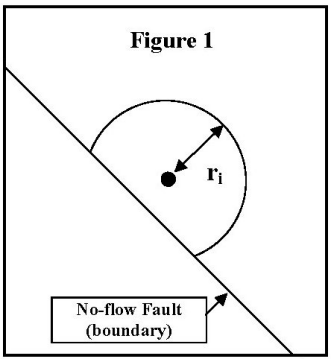
Karen is currently completing a degree in management while also studying land management.

In her spare time, Karen enjoys films and the performing arts. She also likes to travel, read biographies, and participate in public speaking.

Welcome Karen!

Tips & Tricks - Why Design a Pressure Build-Up Test

A company can lose a significant amount of revenue while their well is shut-in to perform a pressure build-up test. Incorrectly performed, no conclusions from the test will be obtained and the test will have to be re-run or other analysis used to determine the reservoir parameters.



A well test typically fails because the zone does not have a long enough flow and subsequent build up period. Analysis of a build-up test requires that the well be shut-in for a certain amount of time (tsi) to establish a distinctive and usable pressure response. This build-up time is dependent on the reservoir and fluid properties (porosity (f), viscosity (m), compressibility (ct) and permeability (k)).

Well test design should include an estimate of the radius of investigation (ri) as shown in Figure 1. This measures how much of the reservoir influences the build-up test (a circle originating from the wellbore). Any boundaries in the reservoir will only be detected if the radius of investigation is large enough. Reservoir modeling can be used to predict the minimum duration of a flow test and subsequent build-up. By simulating a build-up test using approximate values from core analysis or analogous wells, the actual test is much more likely to produce meaningful results.

~John Yeo

Metro Petro

click on above image for larger view

Did You Know?

World Oil Consumption

According to the Energy Information Administration of the United States (www.eia.doe.gov), an average of 85,011 thousands of barrels of oil were used daily around the world in 2006. Of that, the **United States** alone used an average of 20,588 thousand barrels per day, which is about 24.2% of the worldwide total. **Canada**, on the other hand, used an average 2,201 barrels per day - about 2.6% of the world's average consumption.

Listed below are the numbers (in thousands of barrels per day) for 6 other prominent countries within the Organization for Economic Cooperation and Development (OECD) for 2006.

France - 1,972
Germany - 2,630
Italy - 1,709
United Kingdom - 1,815
Japan - 5,222
South Korea - 2,157

For those interested in seeing the figures for previous years and/or by month, take a look at the table at http://www.eia.doe.gov/emeu/ipsr/t17.xls.

~Brandon Low

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