

Appendix C.1 Kelkar Report

Preliminary Report

Modeling of Gulf of Mexico (MC252 #1)

By

Kelkar and Associates, Inc.
3528 East 104th Street, Tulsa, OK 74117

Executive Summary

The project involves modeling of a well (MC252 # 1 B01) in Gulf of Mexico completed on April 22nd. Due to unforeseen circumstances, the well resulted in catastrophic explosion. In three days, after sustained flow, the well continues to pour oil and gas in Gulf of Mexico. The sub-sea depth of 5,000 ft. The purpose of the project is to predict the data from the first day till the well stops flowing.

Data Available

We received the following data from Mineral Management Services:

- Core Grain Size Summary MC 252 Well No.1 BP01
- MC 252 Well No.1 BP01 Iso at Swi Core Data
- Rotary Core Report from MC 252 Well No.1 BP01
- Rock Mechanics from Core Report MC 252 Well No.1 BP01
- MC 252 Well No.1 BP01 GEOTAP Pressure Transient Spreadsheet
- MC 252 Well No.1 BP01 GEO
- G32306 MC252 Well No.1 BP01
- MC 252 Well No.1 BP01 Smeq
- MC 252 Well No.1 BP01 Mud
- MC 252 Well No.1 BP01 Direc
- MMS Log Analysis 5 inch mid
- MMS Log Analysis Report MC 252 Well No.1 BP01
- MC 252 Well No.1 BP01 Pencil
- Preliminary Pencil Report MC 252 Well No.1 BP01
- Preliminary 05-19-10 Schlumberger PVT Report MC 252 Well No.1 BP01
- Offset Pencil Summary PVT Report 7-30-07 MC 252 Well No.1 BP01
- MC 252 Well No.1 BP01 Schematic Rev 15 2_04-22-2010 with BOP
- M56 Upper Sand Structure map
- M56 Upper Sand Structure with Amplitude map
- M56 Upper Sand Net Sand Isochore map
- M56 Upper Sand Net Oil map - Most Likely Case
- M56 Upper Sand Net Oil map - Maximum Case
- M56 Lower Sand Structure map
- M56 Lower Sand Structure with Amplitude map
- M56 Lower Sand Net Sand Isochore map

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Modeling of Gulf of Mexico (MC252 # 1 B01) Well

By

Kelkar and Associates, Inc.
3528 East 104th Street, Tulsa, OK 74137

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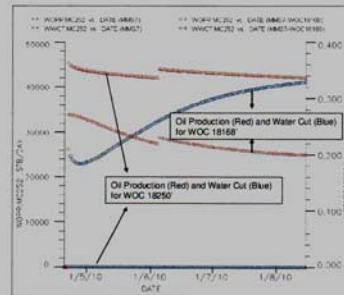


Figure 19 Simulations Results in Water Production for WOC 18168ft.

4. Uncertainty in rock compressibility: We have used the average rock compressibility (5.61 E-6) from the data as base case and maximum compressibility (8.29E-6) value for the high case.

cribed to simulate can be 7% higher porosity of 26% will

3. Uncertainty in permeability: This is one of the most important parameters for uncertainty due to its impact on wells productivity. Therefore, we assumed that permeability values can be 50% higher than that of the base case values obtained from core measurements.

4. Uncertainty in rock compressibility: We have used the average rock compressibility (5.61 E-6) from the data as base case and maximum compressibility (8.29E-6) value for the high case.

5. Uncertainty in PVT: We have assumed two different PVT tables to reflect uncertainty in the oil properties reflected in solution gas ratio (or bubble point pressure). The base case assumes an R_s (solution gas ratio) of 2544 and the maximum case uses 2100.

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