Calmon Waterflood Reservoir Voidage

Reservoir Factors

Initial Pressure= 1100#
Initial Gas in Solution, Rs=270 scf/STB
Initial Producing GOR= 1000 scf/STB
Bgi= 1.74 RB/MCF
Boi=1.14 RB/STB

At 10/00- Injection began

Cum Oil= 106 MBO
Cum H20= 49 MBW
Cum Gas= 213 MMCF
Producing GOR= 2000 scf/STB

Reservoir Voidage

Oil Voidage= Oil Produced*Boi
Gas Voidage= Oil Produced*(Produced GOR-Solution GOR)*Bgi
Water Voidage= Water Production

Oil Voidage= 106*1.14=120.8 MBbl
Gas Voidage= 106*(2-.27)*1.74=319 MBbl
Water Voidage= 49 MBbl

Total Voidage=120.8+319+49=488.8 MBbl

INJECTION vs. WITHDRAWAL

At 05/04 Cum Injection= 233 MBbl
This is 47.7% of fill up.
Barrels remaining to reach fill up is 256 MBbl.

CONCLUSIONS

An injection rate of 4000 to 5000 BWPM has injection pressures of 700 to 800 psi
Fill up would be achieved in about 4 more years.
An injection rate of 11000 BWPM has injection pressures of 1000 to 1100 psi.
Fill up would be achieved in about 2 more years.

BEFORE THE
OIL CONSERVATION COMMISSION
Case No.13249 Exhibit No. 10
Submitted By:
Thunderbolt Petroleum
Hearing Date: June 10, 2004