Belco AIA Federal #1 -- Drainage Area

1. Original Oil in Place (stock-tank barrels) is given by the equation

   OOIP = 7758*A*h* phi*So/Boi

   where h*phi*So is the hydrocarbon pore volume.

2. From the log, h = 34 feet (4924-4958)
   phi = 0.24 on average
   Sw = 0.45 since zone produces water ---> So = 0.55

   So **h*phi*So = (34)*0.24*(0.55) = 4.49**.

3. **Boi = 1.26** from the Standing Correlations where the parameters are as follows:

Solution GOR	=	500
Temperature	=	110 degrees F
Gas Gravity	=	0.7
Tank Oil Gravity	=	42 degrees API

4. Ultimate Primary Recovery (Np) = Recovery Factor*OOIP

   where Recovery Factor **(Rf)** = **0.20**
   from 1957 paper entitled "Estimation of Ultimate Recovery from Solution Gas-Drive Reservoirs" by Wahl, Mullins and Elfrink of Magnolia Petroleum.

5. Then, Np = Rf*7758*A*h*phi*So/Boi

   and, by rearranging, A = Np*Boi/(Rf*7758*h*phi*So) in acres

   A = 461000*1.26/(0.20*7758*4.49) in acres

   A = 83 acres is the Drainage Area

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Case No. 13020 Exhibit No. 10
Submitted by:
YATES PETROLEUM CORPORATION
Hearing Date: March 13, 2003