

HW 2 solution

1. $B_o = 1.67644$

$B_w = 1.02644$

$C_o = \frac{13.8 \times 10^{-6}}{1.38E-05} \text{ psi}^{-1} = - \frac{1}{1.67644} \frac{(1.579 - 1.695)}{(9014.7 - 4014.7)}$

$C_w = 3.12E-06 = - \frac{1}{1.02644} \frac{(1.0258 - 1.0290)}{(5014.7 - 4014.7)}$

$C_f = 3.00E-06$

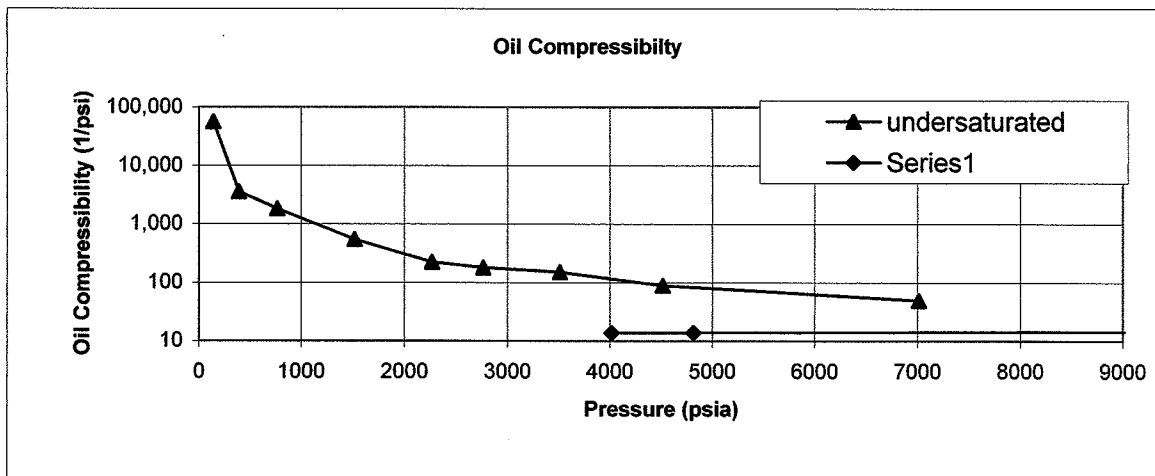
$C_t = 1.57E-05 = C_f + S_o C_o + S_w C_w + S_g C_g$
 $= (3.0 + (1.89)(13.8) + (0.11)(3.12) + 0) \times 10^{-6}$

2. Undersaturated

Pressure	FVF	C_o	p	c_o , microsips
4014.7	1.695		4014.7	13.68731563
4814.7	1.67644	1.38388E-05	4814.7	13.83884899
9014.7	1.579	1.46928E-05	9014.7	14.69284357

Saturated

Pressure	B_o	B_g	R_s	C_o	Avg. pres	C_o , microsips
14.7	1.062	0.168686	1			
264.7	1.15	0.012093	90.5	0.056532569	139.7	56,532.6
514.7	1.207	0.006274	180	0.003566343	389.7	3,566.3
1014.7	1.295	0.003197	371	0.001839824	764.7	1,839.8
2014.7	1.435	0.001614	636	0.000546104	1514.7	546.1
2514.7	1.5	0.001294	775	0.000222085	2264.7	222.1
3014.7	1.565	0.00108	930	0.00018076	2764.7	180.8
4014.7	1.695	0.000811	1270	0.000151565	3514.7	151.6
5014.7	1.827	0.000649	1618	8.86301E-05	4514.7	88.6
9014.7	2.357	0.000386	2984	4.87868E-05	7014.7	48.8



Gas

Pressure	Bg	Cg	microsips
14.7	0.168686		
264.7	0.012093	0.051796	51,796
514.7	0.006274	0.00371	3,710
1014.7	0.003197	0.001925	1,925
2014.7	0.001614	0.000981	981
2514.7	0.001294	0.000495	495
3014.7	0.00108	0.000396	396
4014.7	0.000811	0.000332	332
5014.7	0.000649	0.00025	250
9014.7	0.000386	0.00017	170

