

**Section 1, Hydrostatic Pressure**

**Exercise 3.1**

1. c.
2. c and e.
3. 8050 psi.
4. 12 ppg.



**Exercise 3.2**

1. b.
2. a.
3. a.
4. b.



**Exercise 3.3**

1. b. and d.
2. d.



**Exercise 3.4**

1. a. 4.5 psi.  
b. 45 psi.  
c. 450 psi.  
d. 5206.5 psi.
2. a. 64.95 psi  
b. 649.50 psi  
c. 6495 psi  
d. 6464.69 psi



**Exercise 3.5**

1. 7500 psi
2. 6000 psi
3. 12740 psi
4. 5417.5 psi
5. 1346.8 psi



Exercise 3.6



1.

psi/ft	to	ppg
0.572	$\text{ppg} = 0.572 \div 0.052$	11.0
0.884		17.0
0.5876		11.3
0.5564		10.7
0.9464		18.2

2.

ppg	to	psi/ft
9.7	$\text{psi/ft} = 9.7 \times 0.052$	0.504
11.8		0.6136
12.2		0.6344
17.9		0.9308
16.2		0.8424

Exercise 3.7



Mud density ppg	Depth (TVD) feet	Hydrostatic pressure psi
12.1	8600	5411
10	10000	5200
16.2	17010	14329
13.8	11530	8274
14.4	9850	7376

Exercise 3.8



1.

Mud density ppg	Depth (TVD) feet	Hydrostatic pressure psi
12	10000	6240
11.5	12500	7475
10.6	9780	5390
15.0	13430	10475
9.7	8400	4237

2.

Mud gradient psi/ft	Depth (TVD) feet	Hydrostatic pressure psi
0.75	12550	9412
0.91	15800	14378
0.624	9050	5647
0.55	7450	4098
0.8	16800	13440

**Section 2, Primary Well Control**

Exercise 3.9

1. b
2. a
3. d
4. 2325
5. b
6. c



Exercise 3.10

1. d
2. a and c
3. d



Exercise 3.11

1. b
2. a
3. a



Exercise 3.12

1. c
2. d
3. a



Exercise 3.13

1. c
2. i. b  
ii. c  
iii. a
3. c



Exercise 3.14

1. 8112 psi
2. 9612 psi
3. 0.8 psi/ft
4. 15.4 ppg



**Section 3, The Circulating System**

Exercise 3.15

- 1. b.
- 2. d
- 4. a. 1450  
b. 1350
- 5. a. 6864  
b. 7114  
c. 11.4
- 6. b, c, e, f.
- 7. a, c, d, e.



Exercise 3.16

- a. 1800 psi
- b. 1675 psi



Exercise 3.17

- 1. a. 172 psi  
b. 478 psi  
c. 2755 psi  
d. 4898 psi
- 4. a. 5400 psi  
a. 3456 psi  
b. 1176 psi  
c. 54 psi



Exercise 3.18

- 1. 2946 psi
- 2. 3143psi
- 3. 1768 psi
- 4. 2161 psi
- 5. 3339 psi



Exercise 3.19

- 1. a. 7722 psi  
b. 7897 psi
- 2. a. 4919 psi  
b. 5019 psi  
c. 1750 psi



Exercise 3.20



	Mud weight (ppg)	Depth TVD (feet)	APL (psi)	BHCP (psi)	ECD (ppg)
1.	10	10000	300	5500	10.58
2.	12	10000	200	6440	12.38
3.	11	12000	250	7114	11.4
4.	9.5	8500	150	4349	9.84
5.	17.3	16500	375	15218	17.74

**Section 4, Introduction to Well Control**

Exercise 3.21

1. 397 psi
2. a, b, c.
3. b, d
4. c.



Exercise 3.22

1. 150 psi
2. 250 psi



Exercise 3.23

1. underbalance = 750 psi
2. overbalance = 50 psi
3. overbalance = 1080 psi
4. on balance



Exercise 3,24

1. overbalance = 660 psi
2. underbalance = 2016 psi
3. on balance
4. overbalance = 117 psi



Exercise 3.25

1. a. 12 ppg  
b. 18 ppg
2. a. 6120 psi  
b. 6750 psi  
c. 630 psi



Exercise 3.26

1. 1413 psi
2. 187 psi



Exercise 3.27

1. 222 psi
2. 195
3. a. 10 bbl  
b. 80 feet  
c. 52 psi



Exercise 3.28

1. b
2. a, c, d



Exercise 3.29

1. a. 2640 psi  
b. 11.3



Exercise 3.30

1. a, c, d.
2. a.
3. b, c, d



Exercise 3.31

1. c.
2. b.
3. a, c.
4. a, c, f.



Exercise 3.32

1. a. 3.2 bbl  
b. 19.1 bbl





**Section 5, Kill Methods**

Exercise 3.33

1.
  - a. Driller's
  - b. Driller's
  - c. Wait & Weight
  - d. Driller's
2. b.
3. b.



Exercise 3.34

1. b.
2. b.



Exercise 3.35

1.
  - a. 8125
  - b. 13.6
2. 200 psi



Exercise 3.36

2. c, d.
2. c, d.
3. b.
4. b.
5.
  - a. False
  - b. True



Exercise 3.37

1. a, c, e.
2. a, b, f.



Exercise 3.38

1.
  - 1<sup>st</sup> c
  - 2<sup>nd</sup> b
  - 3<sup>rd</sup> d
  - 4<sup>th</sup> g
2.
  - a. false
  - b. false
  - c. false
  - d. true



Exercise 3.39

1. 13.1 ppg
2. 1250 psi
3. 546 psi
4. 47 psi/100 strokes



Exercise 3.40

1. 1150 psi
2. 700 (both)
3. 12.7 ppg
4. 497 psi

