

Microsoft Excel - Well Model.xls

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A19

Well Parameters				Reservoir Fluid				Flow Rates				Step Size			
4	Inside diameter	0.75	m	Res Pressure	185	bar	Design rate	100000	Sm ³ /hr	Step Size	1	s	Time	120.00	min
5	Outside diameter	1.00	m	Pressure	16	bar	Ramp rate	1000	(Sm ³ /hr)/min	SS?	yes		Target	100.00	min
6	Inside HT area per m	2.35	m ²	Cp	2.2	kJ/kgC				Calc Time	2.47	min			
7	Outside HT area per m	3.34	m ²	Density	88.6	kg/m ³				R.I. Rate	6.2				
8	Internal volume per m	0.144	m ³												
9	Wall mass per m	1250	kg												
10	Wall Cp	0.42	kJ/kgC												
11	HTC fluid to wall	8300	(kJ/hr)m ² C												
12	HTC wall to air	540	(kJ/hr)m ² C												
13	HTC wall to water	900	(kJ/hr)m ² C												
14	HTC wall to sand	160	(kJ/hr)m ² C												
15	HTC wall to rock	72	(kJ/hr)m ² C												
16	No. elements	54													

Choke Inlet		Separator Inlet	
Flow	100000 Sm ³ /hr	Flow	100000 Sm ³ /hr
Pressure	30.0 barg	Pressure	30 barg
Temp	28.4 C	Temp	C

Depth (m)	Ambient	Temperatures (C)		d/Wall	d/Fluid
		Wall	Fluid		
20		22.90	28.33	22.90	0.0000
21	-2	23.04	28.29	23.04	0.0000
22	-4	23.18	28.25	23.18	0.0000
23	-6	23.32	28.21	23.32	0.0000
24	-8	23.46	28.17	23.46	0.0000
25	-10	23.61	28.13	23.61	0.0000
26	-12	23.76	28.09	23.76	0.0000
27	-14	23.91	28.05	23.91	0.0000
28	-16	24.06	28.01	24.06	0.0000
29	-18	24.21	27.97	24.21	0.0000
30	-20	24.36	27.93	24.36	0.0000
31	-22	24.51	27.89	24.51	0.0000
32	-24	24.66	27.85	24.66	0.0000
33	-26	24.81	27.81	24.81	0.0000
34	-28	24.96	27.77	24.96	0.0000
35	-30	25.11	27.73	25.11	0.0000
36	-32	25.26	27.69	25.26	0.0000
37	-34	25.41	27.65	25.41	0.0000
38	-36	25.56	27.61	25.56	0.0000
39	-38	25.71	27.57	25.71	0.0000
40	-40	25.86	27.53	25.86	0.0000
41	-42	26.01	27.49	26.01	0.0000
42	-44	26.16	27.45	26.16	0.0000
43	-46	26.31	27.41	26.31	0.0000
44	-48	26.46	27.37	26.46	0.0000
45	-50	26.61	27.33	26.61	0.0000
46	-52	26.76	27.29	26.76	0.0000
47	-54	26.91	27.25	26.91	0.0000
48	-56	27.06	27.21	27.06	0.0000
49	-58	27.21	27.17	27.21	0.0000
50	-60	27.36	27.13	27.36	0.0000
51	-62	27.51	27.09	27.51	0.0000
52	-64	27.66	27.05	27.66	0.0000
53	-66	27.81	27.01	27.81	0.0000
54	-68	27.96	26.97	27.96	0.0000
55	-70	28.11	26.93	28.11	0.0000
56	-72	28.26	26.89	28.26	0.0000
57	-74	28.41	26.85	28.41	0.0000
58	-76	28.56	26.81	28.56	0.0000
59	-78	28.71	26.77	28.71	0.0000
60	-80	28.86	26.73	28.86	0.0000
61	-82	29.01	26.69	29.01	0.0000
62	-84	29.16	26.65	29.16	0.0000
63	-86	29.31	26.61	29.31	0.0000
64	-88	29.46	26.57	29.46	0.0000
65	-90	29.61	26.53	29.61	0.0000
66	-92	29.76	26.49	29.76	0.0000
67	-94	29.91	26.45	29.91	0.0000
68	-96	30.06	26.41	30.06	0.0000
69	-98	30.21	26.37	30.21	0.0000
70	-100	30.36	26.33	30.36	0.0000
71	-102	30.51	26.29	30.51	0.0000
72	-104	30.66	26.25	30.66	0.0000
73	-106	30.81	26.21	30.81	0.0000
74	-108	30.96	26.17	30.96	0.0000
75	-110	31.11	26.13	31.11	0.0000
76	-112	31.26	26.09	31.26	0.0000
77	-114	31.41	26.05	31.41	0.0000
78	-116	31.56	26.01	31.56	0.0000
79	-118	31.71	25.97	31.71	0.0000
80	-120	31.86	25.93	31.86	0.0000
81	-122	32.01	25.89	32.01	0.0000
82	-124	32.16	25.85	32.16	0.0000
83	-126	32.31	25.81	32.31	0.0000
84	-128	32.46	25.77	32.46	0.0000
85	-130	32.61	25.73	32.61	0.0000
86	-132	32.76	25.69	32.76	0.0000
87	-134	32.91	25.65	32.91	0.0000
88	-136	33.06	25.61	33.06	0.0000
89	-138	33.21	25.57	33.21	0.0000
90	-140	33.36	25.53	33.36	0.0000
91	-142	33.51	25.49	33.51	0.0000
92	-144	33.66	25.45	33.66	0.0000
93	-146	33.81	25.41	33.81	0.0000
94	-148	33.96	25.37	33.96	0.0000
95	-150	34.11	25.33	34.11	0.0000
96	-152	34.26	25.29	34.26	0.0000
97	-154	34.41	25.25	34.41	0.0000
98	-156	34.56	25.21	34.56	0.0000
99	-158	34.71	25.17	34.71	0.0000
100	-160	34.86	25.13	34.86	0.0000