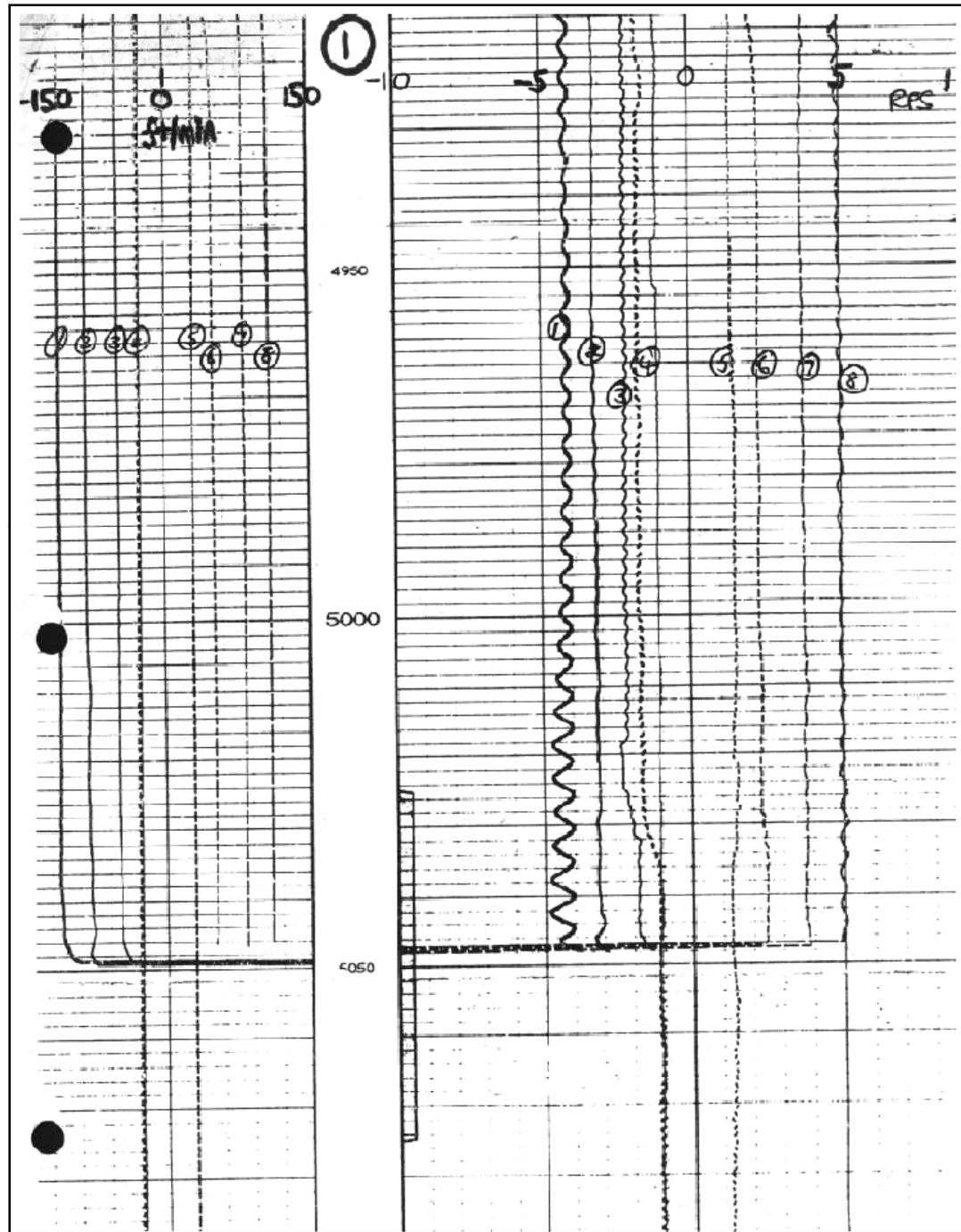
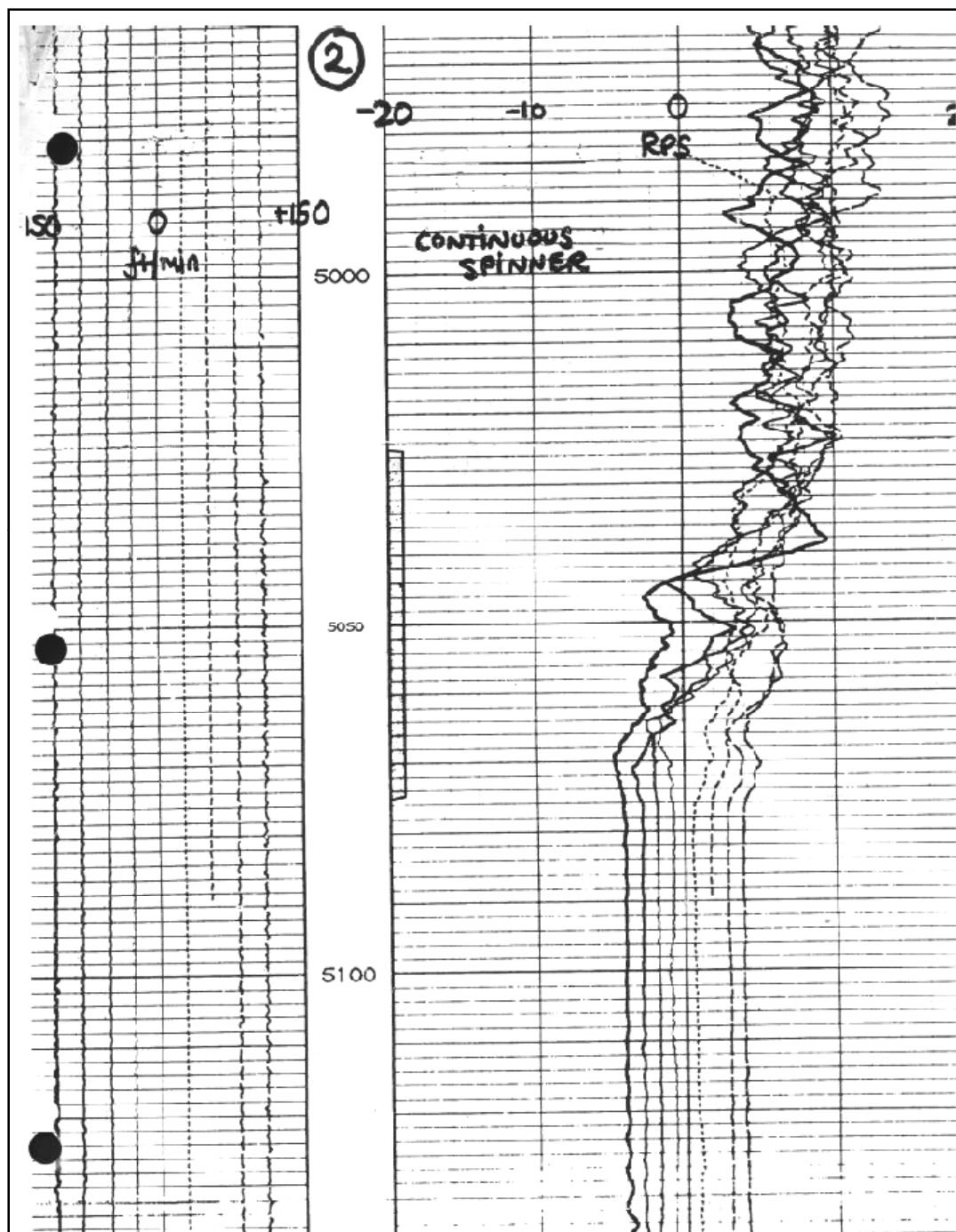
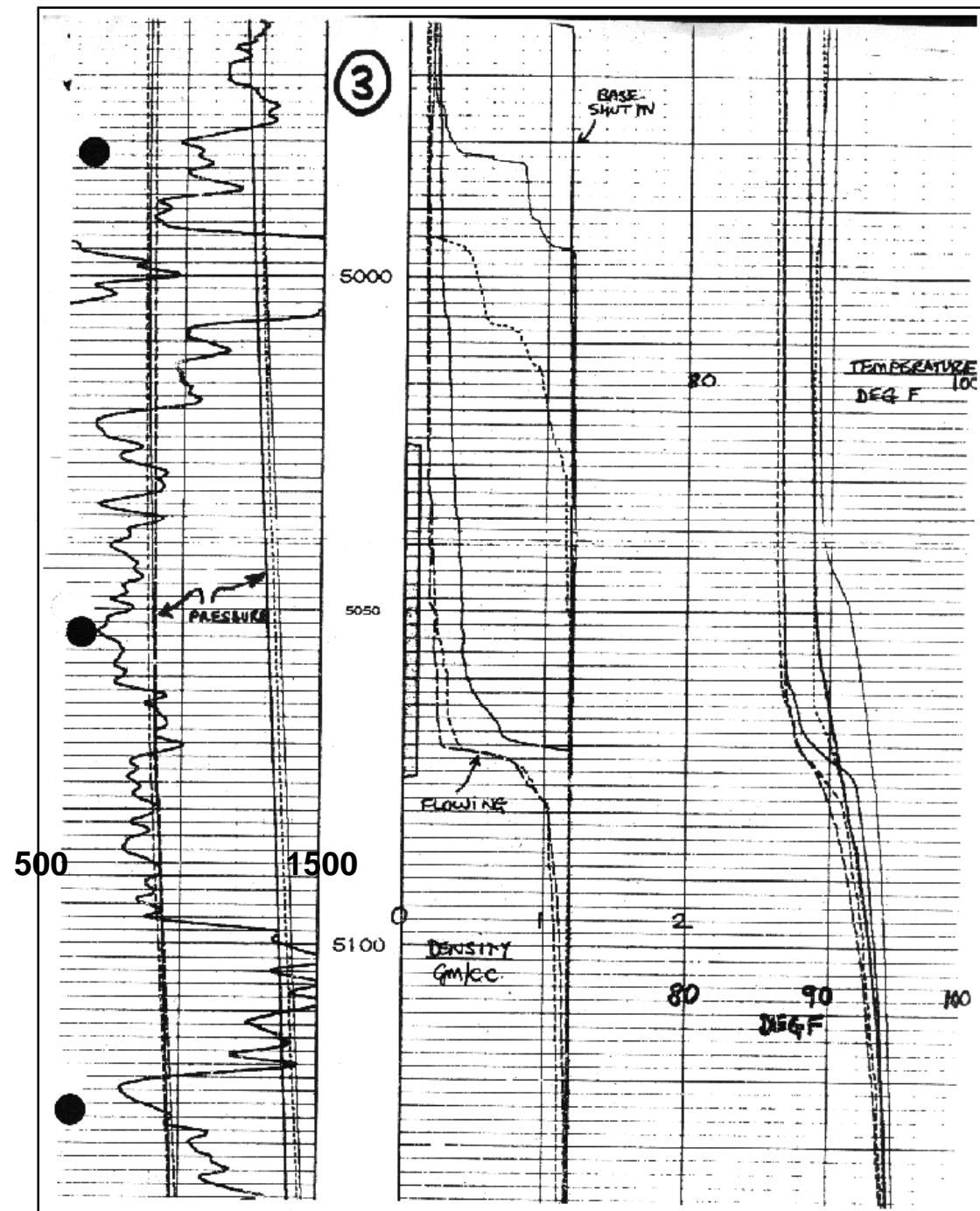
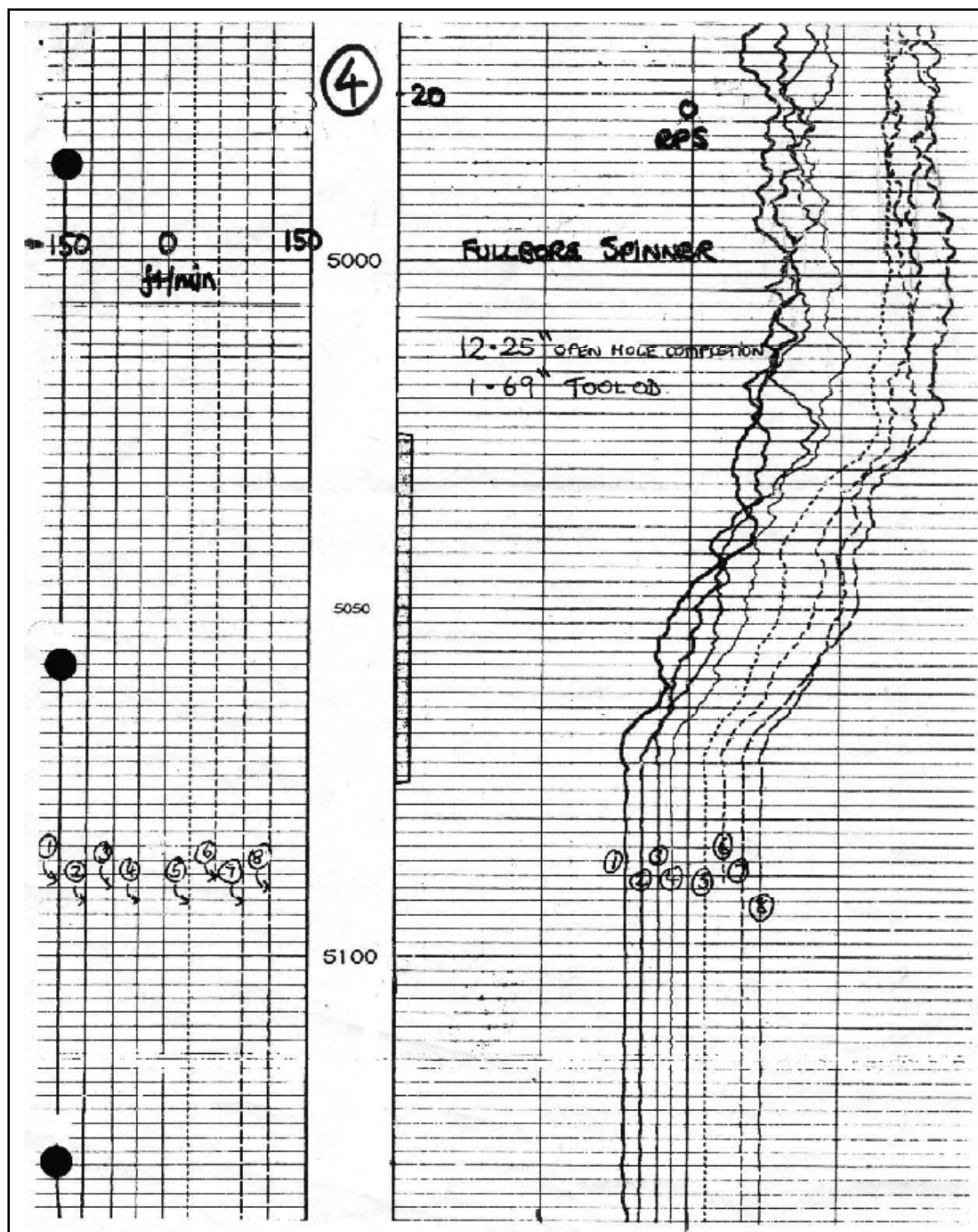


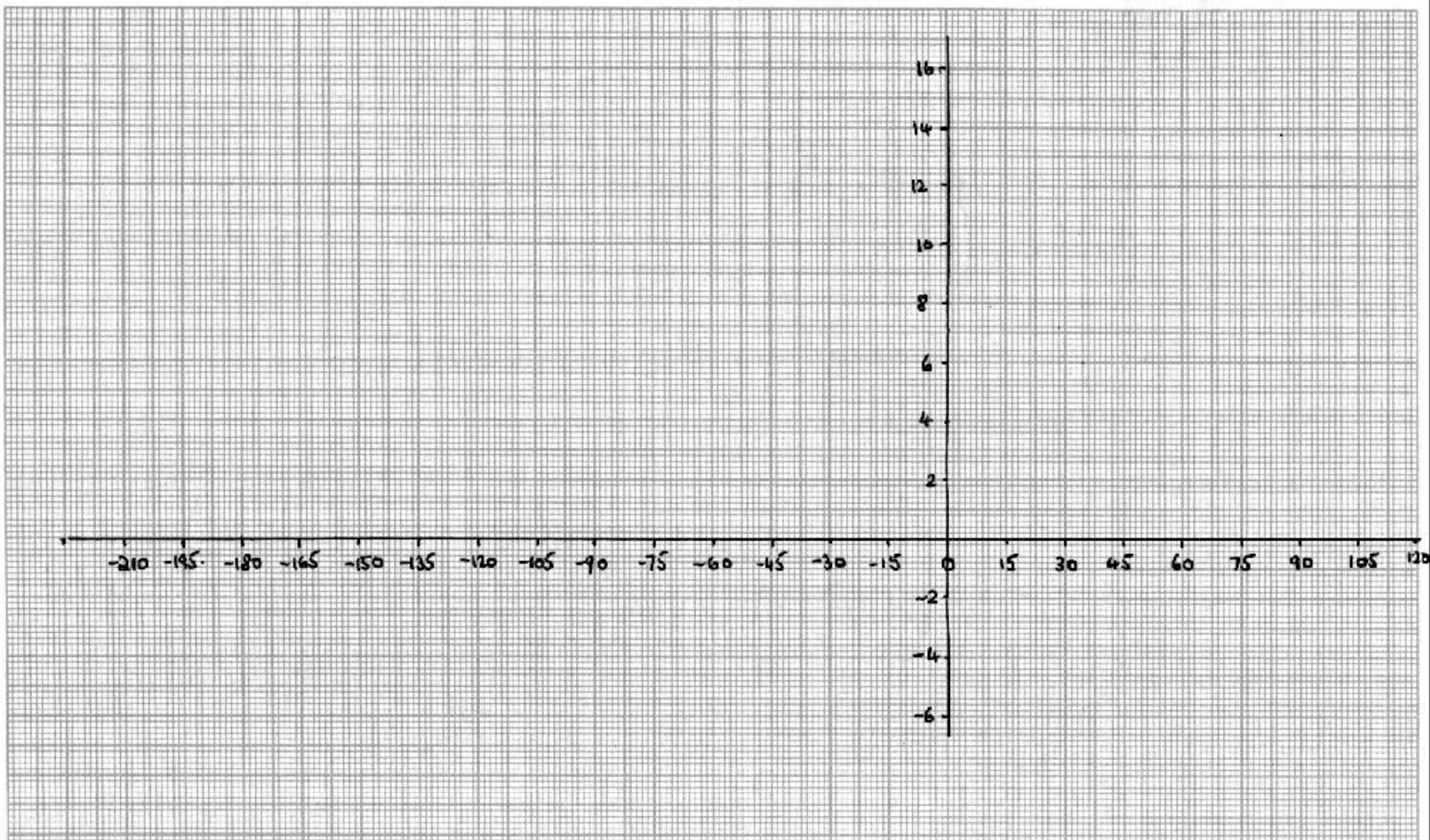
FOUNDATION  
PRODUCTION LOG  
INTERPRETATION  
MANUAL EXAMPLE













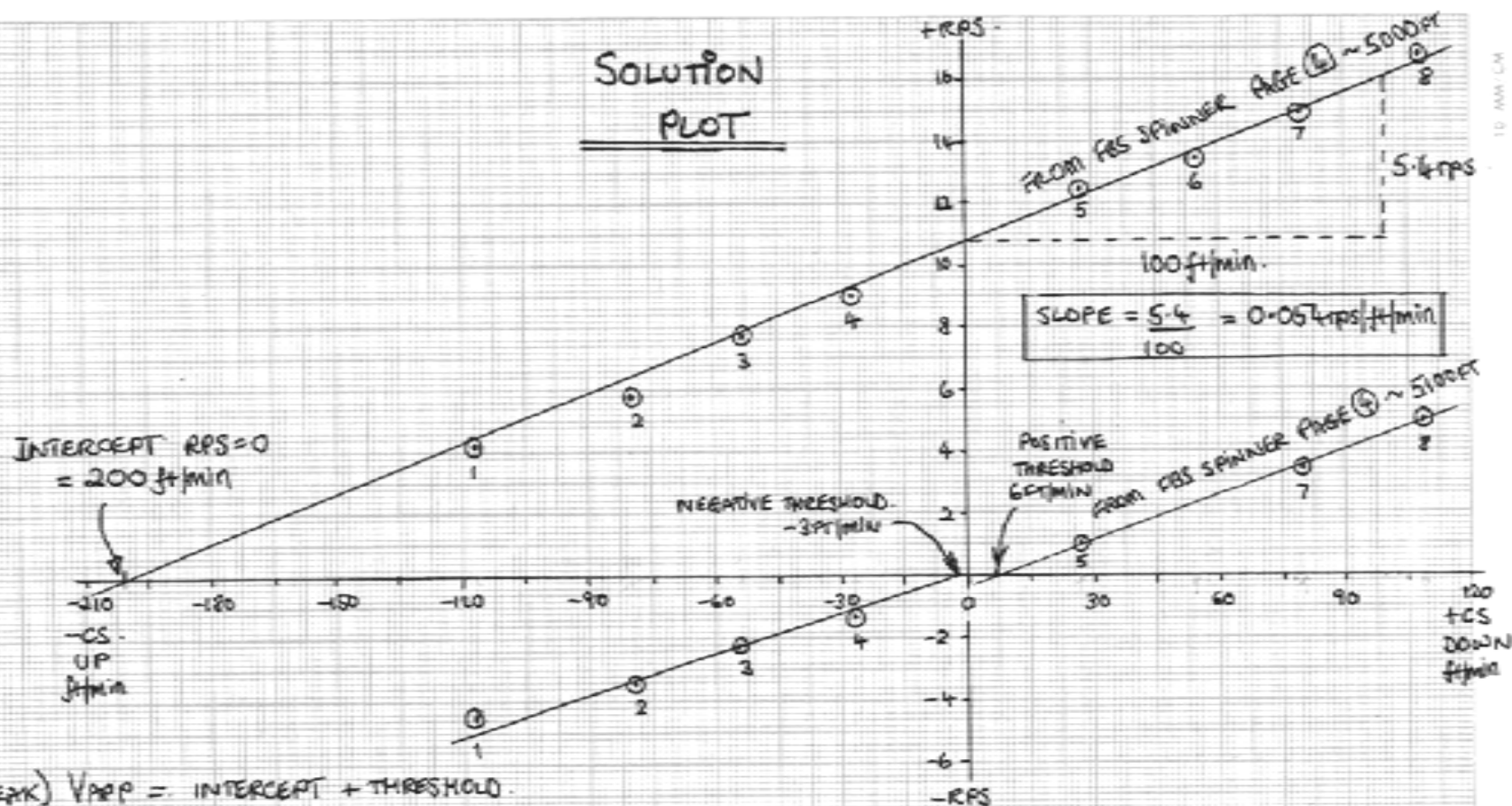
Description			Fluid velocity for flow rate of:											
Nom OD	Wt	Int Diameter	1,000 B/D			10 cu m/hr			100 cu m/D			1,000 cu ft/D		
in. mm	lb/ft	in. mm	m/min	cm/sec	ft/min	m/min	cm/sec	ft/min	m/min	cm/sec	ft/min	m/min	cm/sec	ft/min
4 1/2" (114.3)	9.50	4.090	103.9	13.08	21.8	42.7	19.74	32.9	64.8	8.21	13.70	26.90	2.320	3.867
	11.60	4.000	101.6	13.44	22.4	44.7	20.40	34.0	66.9	8.49	14.10	27.80	2.426	4.043
	13.50	3.920	99.6	14.22	23.7	46.6	21.48	35.8	70.5	8.94	14.90	29.30	2.530	4.216
	15.10	3.826	97.2	15.00	25.0	48.8	22.50	37.5	73.8	9.36	15.60	30.70	2.651	4.419
5" (127)	11.50	4.560	115.8	10.50	17.5	34.4	15.84	26.4	52.0	6.59	11.00	21.80	1.866	3.110
	13.00	4.494	114.2	10.80	18.0	35.4	16.26	27.1	53.4	6.76	11.30	22.20	1.921	3.202
	15.50	4.408	112.0	11.28	18.8	36.8	16.98	28.3	55.7	7.06	11.80	23.20	1.997	3.329
	18.00	4.276	108.6	11.88	19.8	39.1	17.94	29.9	58.9	7.46	12.40	24.50	2.123	3.538
5 1/2" (139.7)	13.00	5.044	128.1	8.64	14.4	28.1	12.96	21.6	42.5	5.39	8.90	17.70	1.525	2.542
	14.00	5.012	127.3	8.70	14.5	28.5	13.08	21.8	42.9	5.44	9.10	17.80	1.545	2.575
	15.50	4.960	125.7	8.94	14.9	29.2	13.44	22.4	44.1	5.59	9.30	18.30	1.584	2.640
	17.00	4.892	124.3	9.12	15.2	29.9	13.74	22.9	45.1	5.72	9.50	18.70	1.622	2.703
	20.00	4.778	121.4	9.60	16.0	31.3	14.40	24.0	47.3	5.99	9.90	19.70	1.700	2.833
	23.00	4.670	118.6	10.02	16.7	32.8	15.12	25.2	49.6	6.29	10.50	20.60	1.780	2.966
6 5/8" (168.3)	17.00	6.135	155.8	5.82	9.7	19.0	8.76	14.6	28.7	3.64	6.10	11.90	1.031	1.719
	20.00	6.049	153.6	5.94	9.9	19.5	9.00	15.0	29.5	3.74	6.20	12.30	1.061	1.768
	24.00	5.921	150.5	6.24	10.4	20.4	9.42	15.7	30.9	3.92	6.50	12.80	1.107	1.845
	28.00	5.791	147.1	6.54	10.9	21.3	9.90	16.5	32.5	4.12	6.80	13.50	1.167	1.929
7" (177.8)	32.00	5.675	144.1	6.78	11.3	22.2	10.20	17.0	33.5	4.24	7.10	13.90	1.205	2.008
	17.00	6.538	166.1	5.10	8.5	16.7	7.68	12.8	25.2	3.19	5.30	10.50	0.908	1.513
	20.00	6.456	164.0	5.22	8.7	17.2	7.86	13.1	25.8	3.27	5.40	10.70	0.931	1.552
	23.00	6.366	161.7	5.40	9.0	17.8	8.16	13.6	26.8	3.39	5.60	11.10	0.958	1.596
	26.00	6.276	159.4	5.52	9.2	18.2	8.34	13.9	27.4	3.47	5.80	11.40	0.985	1.642
	29.00	6.184	157.1	5.70	9.5	18.7	8.64	14.4	28.4	3.51	6.00	11.80	1.015	1.691
7 5/8" (193.7)	32.00	6.094	154.8	5.88	9.8	19.3	8.88	14.8	29.1	3.69	6.20	12.10	1.045	1.745
	35.00	6.004	152.5	6.06	10.1	19.8	9.12	15.2	29.9	3.79	6.30	12.40	1.077	1.794
	38.00	5.920	150.4	6.24	10.4	20.4	9.42	15.7	30.9	3.92	6.50	12.80	1.107	1.846
	20.00	7.125	181.0	4.32	7.2	14.1	6.48	10.8	21.9	2.69	4.40	8.86	0.764	1.274
8 5/8" (219.11)	24.00	7.052	178.4	4.44	7.4	14.5	6.54	10.9	21.5	2.72	4.50	8.94	0.786	1.310
	28.00	6.969	177.0	4.50	7.5	14.7	6.78	11.3	22.2	2.82	4.70	9.23	0.799	1.332
	29.70	6.875	174.6	4.62	7.7	15.1	6.96	11.8	22.8	2.90	4.80	9.48	0.821	1.369
	33.70	6.765	171.8	4.80	8.0	15.8	7.20	12.0	23.6	2.99	4.90	9.81	0.848	1.413
9 5/8" (244.5)	39.00	6.625	168.3	4.92	8.2	16.3	7.44	12.4	24.4	3.09	5.20	10.20	0.884	1.474
	24.00	8.097	205.7	3.33	5.55	10.9	5.02	8.38	16.50	2.09	3.50	6.86	0.592	0.9865
	28.00	8.017	203.6	3.39	5.66	11.1	5.13	8.55	16.80	2.13	3.60	6.98	0.604	1.006
	32.00	7.921	201.2	3.48	5.81	11.4	5.25	8.75	17.20	2.18	3.60	7.15	0.618	1.031
	36.00	7.825	198.8	3.55	5.92	11.7	5.35	8.93	17.60	2.23	3.70	7.32	0.634	1.056
	40.00	7.725	196.2	3.63	6.05	12.0	5.46	9.10	17.90	2.27	3.80	7.44	0.650	1.084
10 3/4" (273.0)	44.00	7.625	193.7	3.75	6.25	12.3	5.64	9.40	18.50	2.35	3.90	7.69	0.668	1.113
	49.00	7.511	190.8	3.87	6.45	12.7	5.82	9.70	19.10	2.42	4.00	7.94	0.688	1.147
	29.30	9.063	230.2	2.66	4.44	8.70	4.00	6.68	13.10	1.66	2.77	5.45	0.472	0.787
	32.30	9.001	228.6	2.69	4.49	8.83	4.05	6.75	13.30	1.68	2.80	5.53	0.479	0.799
	36.00	8.921	226.6	2.74	4.58	8.98	4.17	6.95	13.70	1.73	2.89	5.69	0.488	0.813
	40.00	8.835	224.4	2.80	4.67	9.16	4.23	7.05	13.90	1.76	2.93	5.78	0.497	0.829
11 3/4" (298.5)	43.50	8.755	222.4	2.85	4.75	9.33	4.29	7.15	14.10	1.78	2.97	5.86	0.506	0.844
	47.00	8.681	220.5	2.88	4.81	9.49	4.35	7.25	14.30	1.81	3.02	5.95	0.515	0.859
	53.50	8.535	216.8	3.00	5.00	9.81	4.51	7.53	14.80	1.88	3.13	6.16	0.533	0.888
	32.75	10.192	258.9	2.10	3.50	6.88	3.17	5.28	10.40	1.32	2.19	4.33	0.374	0.623
	40.50	10.050	255.3	2.18	3.60	7.08	3.25	5.42	10.70	1.35	2.25	4.45	0.384	0.641
	45.50	9.950	252.7	2.20	3.68	7.22	3.33	5.55	10.90	1.39	2.31	4.53	0.392	0.653
13 3/8" (339.7)	51.00	9.850	250.2	2.25	3.75	7.37	3.39	5.65	11.10	1.41	2.35	4.61	0.400	0.666
	55.50	9.760	247.9	2.29	3.82	7.51	3.45	5.75	11.30	1.44	2.39	4.70	0.408	0.679
	60.70	9.660	245.4	2.34	3.91	7.66	3.52	5.88	11.50	1.46	2.44	4.78	0.416	0.693
	65.70	9.560	242.8	2.40	4.00	7.82	3.60	6.00	11.80	1.50	2.49	4.81	0.425	0.708
	38.00	11.150	283.2	1.76	2.94	6.75	2.64	4.41	8.66	1.10	1.83	3.60	0.312	0.520
	42.00	11.084	281.5	1.77	2.96	6.82	2.67	4.45	8.76	1.11	1.85	3.64	0.316	0.526
18" (406.4)	47.00	11.000	279.4	1.81	3.02	5.91	2.73	4.55	8.96	1.14	1.89	3.73	0.321	0.534
	54.00	10.880	276.4	1.84	3.08	6.04	2.79	4.65	9.15	1.16	1.93	3.81	0.326	0.547
	60.00	10.772	273.6	1.88	3.14	6.16	2.83	4.73	9.29	1.18	1.97	3.86	0.334	0.557
	48.00	12.715	323.0	1.35	2.25	4.42	2.04	3.40	6.89	0.86	1.41	2.78	0.240	0.400
	54.50	12.615	320.4	1.37	2.29	4.49	2.07	3.46	6.79	0.86	1.44	2.82	0.244	0.406
	61.00	12.515	317.9	1.39	2.33	4.56	2.11	3.52	6.92	0.89	1.46	2.87	0.248	0.413
20" (508.0)	68.00	12.415	315.3	1.41	2.36	4.64	2.13	3.56	6.99	0.89	1.48	2.91	0.252	0.420
	72.00	12.347	313.6	1.43	2.39	4.69	2.16	3.60	7.09	0.90	1.49	2.95	0.255	0.424
	55.00	15.376	390.6	0.92	1.54	3.02	1.39	2.32	4.56	0.58	0.86	1.90	0.164	0.274
	65.00	15.250	387.4	0.93	1.56	3.07	1.41	2.36	4.63	0.59	0.91	1.92	0.167	0.278
20" (508.0)	75.00	15.124	384.2	0.95	1.59	3.13	1.44	2.40	4.72	0.60	0.99	1.96	0.170	0.283
	84.00	15.010	381.3	0.97	1.62	3.17	1.46	2.44	4.79	0.61	1.02	1.99	0.172	0.287
20" (508.0)	94.00	14.924	385.8	0.60	1.00	1.95	0.90	1.60	2.96	0.37	0.62	1.23	0.106	0.177

Rate  
Velocity  
ID  
Conversion chart

Description				Fluid velocity for flow rate of:												
Nom OD	Wt	Int Diameter		1,000 B/D			10 cu m/hr			100 cu m/D			1,000 cu ft/D			
in. mm	lb/ft	in	mm	m/min	cm/sec	ft/min	m/min	cm/sec	ft/min	m/min	cm/sec	ft/min	m/min	cm/sec	ft/min	
11 3/4" (298.5)	38.00	11.150	283.2	1.76	2.94	5.75	2.64	4.41	8.66	1.10	1.83	3.60	0.312	0.520	1.024	
	42.00	11.084	281.5	1.77	2.96	5.82	2.67	4.45	8.76	1.11	1.85	3.64	0.316	0.526	1.036	
	47.00	11.000	279.4	1.81	3.02	5.91	2.73	4.55	8.96	1.14	1.89	3.73	0.321	0.534	1.052	
	54.00	10.880	276.4	1.84	3.08	6.04	2.79	4.65	9.15	1.16	1.93	3.81	0.328	0.547	1.076	
	60.00	10.772	273.6	1.88	3.14	6.16	2.83	4.73	9.29	1.18	1.97	3.86	0.334	0.557	1.097	
13 3/8" (339.7)	48.00	12.715	323.0	1.35	2.25	4.42	2.04	3.40	6.69	0.85	1.41	2.78	0.240	0.400	0.7875	
	54.50	12.615	320.4	1.37	2.29	4.49	2.07	3.46	6.79	0.86	1.44	2.82	0.244	0.406	0.8001	
	61.00	12.515	317.9	1.39	2.33	4.56	2.11	3.52	6.92	0.88	1.46	2.87	0.248	0.413	0.8129	
	68.00	12.415	315.3	1.41	2.36	4.64	2.13	3.56	6.99	0.89	1.48	2.91	0.252	0.420	0.8261	
	72.00	12.347	313.6	1.43	2.39	4.69	2.16	3.60	7.09	0.90	1.49	2.95	0.255	0.424	0.8372	
16" (406.4)	55.00	15.376	390.6	0.92	1.54	3.02	1.39	2.32	4.56	0.58	0.86	1.90	0.164	0.274	0.5385	
	65.00	15.250	387.4	0.93	1.56	3.07	1.41	2.36	4.63	0.59	0.91	1.92	0.167	0.278	0.5475	
	75.00	15.124	384.2	0.95	1.59	3.13	1.44	2.40	4.72	0.60	0.99	1.96	0.170	0.283	0.5566	
	84.00	15.010	381.3	0.97	1.62	3.17	1.46	2.44	4.79	0.61	1.02	1.99	0.172	0.287	0.5651	
20" (508.0)	94.00	19.124	485.8	0.60	1.00	1.95	0.90	1.50	2.96	0.37	0.62	1.23	0.106	0.177	0.3481	



## SOLUTION PLOT



(PEAK)  $V_{app} = \text{INTERCEPT} + \text{THRESHOLD}$   
 $= 200 + 6 = 206 \text{ ft/min.}$

(AVERAGE)  $V_m = 206 \times 0.83 = 171 \text{ ft/min.}$

$\therefore Q_{gas} = \frac{171 \times 1000}{0.8352}$

$Q_{gas} = 204,740 \text{ cuft/d (downhole)}$

FROM VELOCITY  $\rightarrow$  RATE TABLE.  
 CLOSEST ID = 12.347" to 12.25"  
 EQUIVALENT OGSING = 13 3/8"

CHART GIVES GAS RATE :-

$1000 \text{ cuft/day} = 0.8352 \text{ ft/min}$

		SUMP	FULL FLOW
PASS	CABLE SPEED FT/MIN	SPINNER ~5100FT RPS	SPINNER ~5000FT RPS
1	-118	-4.5	4.2
2	-80	-3.5	5.8
3	-55	-2.3	7.8
4	-28	-1.3	9.0
5	28	1.0	12.5
6	55	no data	13.5
7	80	3.5	15.0
8	108	5.0	16.8

