111716

APPENDIX 4

Aquifer Test Data and Results

AR300616

T83438-86021

CW-1D Insert Test #1
SWL = 7.89' Ground Surface
Test Date: 3/9/88
Slug Size = 3' x 1 1/4"

Time (sec)	Transducer Head (feet)
0	0.17
0	0.2
0	0.14
0	0.14
0	0.14
2	0.18
7	0.15
12	0.13
17	0.11
22	0.09
27	0.09
32	0.08
37	0.07
42	0.06
47	0.06
52	0.05
57	0.05
62	0.04
67	0.04
72	0.03
77	0.03
82	0.02
87	0.02
92	0.02
97	0.02
102	0.01
107	0.01
112	0.01
117	0

AR300617

T03435-86021

CW-1D Removal Test #1
SWL = 7.96' Ground Surface
Test Date: 3/8/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	0.87	23.6	0.23	11.8	0.66
0.2	2.18	23.8	0.24	12	0.56
0.4	0.02	24	0.21	12.2	0.57
0.8	0.01	24.2	0.21	12.4	0.58
1	1.85	24.4	0.21	12.6	0.59
1.2	2.08	24.6	0.22	12.8	0.6
1.4	1.64	24.8	0.22	13	0.51
1.6	1.34	25	0.19	13.2	0.52
1.8	0.44	25.2	0.2	13.4	0.53
2	1.65	25.4	0.2	13.6	0.54
2.2	1.7	25.6	0.2	13.8	0.55
2.4	1.75	25.8	0.2	14	0.46
2.6	1.8	26	0.18	14.2	0.47
2.8	1.86	26.2	0.18	14.4	0.48
3	1.44	26.4	0.18	14.6	0.49
3.2	1.48	26.6	0.19	14.8	0.5
3.4	1.52	26.8	0.19	15	0.42
3.6	1.56	27	0.17	15.2	0.43
3.8	1.6	27.2	0.17	15.4	0.44
4	1.29	27.4	0.17	15.6	0.45
4.2	1.32	27.6	0.18	15.8	0.46
4.4	1.35	27.8	0.18	16	0.39
4.6	1.38	28	0.16	16.2	0.39
4.8	1.42	28.2	0.16	16.4	0.4
5	1.15	28.4	0.16	16.6	0.41
5.2	1.18	28.6	0.16	16.8	0.42
5.4	1.2	28.8	0.17	17	0.36
5.6	1.23	29	0.15	17.2	0.36
5.8	1.26	29.2	0.15	17.4	0.37
6	1.03	29.4	0.15	17.6	0.37
6.2	1.05	29.6	0.16	17.8	0.38
6.4	1.08	29.8	0.16	22	0.25
6.6	1.1	30	0.14	22.2	0.25
6.8	1.12	30.2	0.14	22.4	0.23
7	0.92	30.4	0.14	23	0.22
7.2	0.94	30.6	0.14	23.2	0.23
7.4	0.97	30.8	0.15	23.4	0.23
7.6	0.99	31	0.13	23.6	0.23
7.8	1.01	31.2	0.13	23.8	0.24
8	0.83	31.4	0.14	24	0.21
8.2	0.85	31.6	0.14	24.2	0.21
8.4	0.87	31.8	0.14	24.4	0.21
8.6	0.89	32	0.12	24.6	0.22
8.8	0.91	32.2	0.12	24.8	0.22
9	0.75	32.4	0.1	25	0.19
9.2	0.76	37	0.1	25.2	0.2
9.4	0.78	37.2	0.1	25.4	0.2
9.6	0.8	37.4	0.1	25.6	0.2
9.8	0.81	37.6	0.1	25.8	0.2
10	0.68	37.8	0.1	26	0.18
10.2	0.69	38	0.9	26.2	0.18
10.4	0.71	38.2	0.9	26.4	0.18
10.6	0.72	38.4	0.9	26.6	0.19
10.8	0.74	38.6	0.9	26.8	0.19
11	0.61	38.8	0.9	27	0.17
11.2	0.63	39	0.9	27.2	0.17
11.4	0.64	39.2	0.9	27.4	0.17
11.6	0.65	39.4	0.9	27.6	0.18
11.8	0.66	39.6	0.9	27.8	0.18
12	0.56	0	0.87	28	0.16
12.2	0.57	0.2	2.18	28.2	0.16
12.4	0.58	0.4	0.02	28.4	0.16
12.6	0.59	0.8	0.01	28.6	0.16
12.8	0.6	1	1.85	28.8	0.17
13	0.51	1.2	2.08	29	0.15
13.2	0.52	1.4	1.64	29.2	0.15
13.4	0.53	1.6	1.34	29.4	0.15
13.6	0.54	1.8	0.44	29.6	0.16
13.8	0.55	2	1.65	29.8	0.16
14	0.46	2.2	1.7	30	0.14
14.2	0.47	2.4	1.75	30.2	0.14
14.4	0.48	2.6	1.8	30.4	0.14
14.6	0.49	2.8	1.86	30.6	0.14
14.8	0.5	3	1.44	30.8	0.15
15	0.42	3.2	1.48	31	0.13
15.2	0.43	3.4	1.52	31.2	0.13
15.4	0.44	3.6	1.56	31.4	0.14
15.6	0.45	3.8	1.6	31.6	0.14
15.8	0.46	4	1.29	31.8	0.14
16	0.39	4.2	1.32	32	0.12
16.2	0.39	4.4	1.35	32.2	0.12
16.4	0.4	4.6	1.38	32.4	0.13
16.6	0.41	4.8	1.42	32.6	0.13
16.8	0.42	5	1.15	32.8	0.13
17	0.36	5.2	1.18	33	0.12
17.2	0.36	5.4	1.2	33.2	0.12
17.4	0.37	5.6	1.23	33.4	0.12
17.6	0.37	5.8	1.26	33.6	0.12
17.8	0.38	6	1.03	33.8	0.12
18	0.33	6.2	1.05	34	0.11
18.2	0.33	6.4	1.08	34.2	0.11
18.4	0.34	6.6	1.1	34.4	0.11
18.6	0.35	6.8	1.12	34.6	0.12
18.8	0.35	7	0.92	34.8	0.12
19	0.3	7.2	0.94	35	0.1
19.2	0.31	7.4	0.97	35.2	0.11
19.4	0.31	7.6	0.99	35.4	0.11
19.6	0.32	7.8	1.01	35.6	0.11
19.8	0.32	8	0.83	35.8	0.11
20	0.28	8.2	0.85	36	0.1
20.2	0.29	8.4	0.87	36.2	0.1
20.4	0.29	8.6	0.89	36.4	0.1
20.6	0.29	8.8	0.91	36.6	0.1
20.8	0.3	9	0.75	36.8	0.1
21	0.26	9.2	0.76	37	0.1
21.2	0.27	9.4	0.78	37.2	0.1
21.4	0.27	9.6	0.8	37.4	0.1
21.6	0.27	9.8	0.81	37.6	0.1
21.8	0.28	10	0.68	37.8	0.1
22	0.24	10.2	0.69	38	0.9
22.2	0.25	10.4	0.71	38.2	0.9
22.4	0.25	10.6	0.72	38.4	0.9
22.6	0.25	10.8	0.74	38.6	0.9
22.8	0.26	11	0.61	38.8	0.9
23	0.22	11.2	0.63	39	0.9
23.2	0.23	11.4	0.64	39.2	0.9
23.4	0.23	11.6	0.65	39.4	0.9
				39.6	0.9

AR300618

T03438-86021

CW-1D Removal Test #2
SWL = 7.96' Ground Surface
Test Date: 3/8/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	4.39	21	0.27	41.4	0.07
0.2	1.05	21.2	0.27	41.6	0.07
1	1.86	21.4	0.28	41.8	0.08
1.2	1.89	21.6	0.28	42	0.07
1.4	1.94	21.8	0.28	42.2	0.07
1.6	1.57	22	0.25	42.4	0.07
2	1.62	22.2	0.25	42.6	0.07
2.2	1.65	22.4	0.26	42.8	0.07
2.4	1.71	22.6	0.26	43	0.06
2.6	1.76	22.8	0.26	43.2	0.06
2.8	1.81	23	0.23	43.4	0.07
3	1.41	23.2	0.23	43.6	0.07
3.2	1.45	23.4	0.24	43.8	0.07
3.4	1.47	23.6	0.24	44	0.06
3.6	1.52	23.8	0.24	44.2	0.06
3.8	1.58	24	0.21	44.4	0.06
4	1.27	24.2	0.21	44.6	0.06
4.2	1.29	24.4	0.22	44.8	0.06
4.4	1.32	24.6	0.22	45	0.06
4.6	1.35	24.8	0.23	45.2	0.06
4.8	1.38	25	0.2	45.4	0.06
5	1.13	25.2	0.2	45.6	0.06
5.2	1.16	25.4	0.2	45.8	0.06
5.4	1.19	25.6	0.21	46	0.06
5.6	1.21	25.8	0.21	46.2	0.06
5.8	1.24	26	0.18	46.4	0.06
6	1.02	26.2	0.19	46.6	0.06
6.2	1.04	26.4	0.19	46.8	0.06
6.4	1.06	26.6	0.19	47	0.05
6.6	1.09	26.8	0.19	47.2	0.05
6.8	1.11	27	0.17	47.4	0.05
7	0.92	27.2	0.17	47.6	0.05
7.2	0.94	27.4	0.18	47.8	0.05
7.4	0.96	27.6	0.18	48	0.05
7.6	0.98	27.8	0.18	48.2	0.05
7.8	1	28	0.16	48.4	0.05
8	0.84	28.2	0.16	48.6	0.05
8.2	0.85	28.4	0.16	48.8	0.05
8.4	0.87	28.6	0.17	49	0.05
8.6	0.89	28.8	0.17	49.2	0.05
8.8	0.91	29	0.15	49.4	0.05
9	0.76	29.2	0.15	49.6	0.05
9.2	0.77	29.4	0.15	49.8	0.05
9.4	0.79	29.6	0.15	50	0.05
9.6	0.8	29.8	0.16	50.2	0.05
9.8	0.82	30	0.14	50.4	0.05
10	0.69	30.2	0.14	50.6	0.05
10.2	0.7	30.4	0.14	50.8	0.05
10.4	0.72	30.6	0.15	51	0.04
10.6	0.73	30.8	0.15	51.2	0.04
10.8	0.75	31	0.13	51.4	0.04
11	0.63	31.2	0.13	51.6	0.04
11.2	0.64	31.4	0.13	51.8	0.04
11.4	0.65	31.6	0.14	52	0.04
11.6	0.66	31.8	0.14	52.2	0.04
11.8	0.68	32	0.12	52.4	0.04
12	0.57	32.2	0.13	52.6	0.04
12.2	0.58	32.4	0.13	52.8	0.04
12.4	0.6	32.6	0.13	53	0.04
12.6	0.6	32.8	0.13	53.2	0.04
12.8	0.62	33	0.12	53.4	0.04
13	0.52	33.2	0.12	53.6	0.04
13.2	0.53	33.4	0.12	53.8	0.04
13.4	0.54	33.6	0.12	54	0.04
13.6	0.55	33.8	0.12	54.2	0.04
13.8	0.56	34	0.11	54.4	0.04
14	0.48	34.2	0.11	54.6	0.04
14.2	0.49	34.4	0.11	54.8	0.04
14.4	0.5	34.6	0.11	55	0.04
14.6	0.51	34.8	0.11	55.2	0.04
14.8	0.51	35	0.1	55.4	0.04
15	0.44	35.2	0.11	55.6	0.04
15.2	0.45	35.4	0.11	55.8	0.04
15.4	0.45	35.6	0.11	56	0.04
15.6	0.46	35.8	0.11	56.2	0.04
15.8	0.47	36	0.1	56.4	0.04
16	0.4	36.2	0.1	56.6	0.04
16.2	0.41	36.4	0.1	56.8	0.04
16.4	0.42	36.6	0.1	57	0.04
16.6	0.42	36.8	0.1	57.2	0.04
16.8	0.43	37	0.09	57.4	0.04
17	0.37	37.2	0.09	57.6	0.04
17.2	0.38	37.4	0.09	57.8	0.04
17.4	0.38	37.6	0.09	58	0.03
17.6	0.39	37.8	0.1	58.2	0.03
17.8	0.4	38	0.09	58.4	0.03
18	0.34	38.2	0.09	58.6	0.03
18.2	0.34	38.4	0.09	58.8	0.03
18.4	0.35	38.6	0.09	59	0.03
18.6	0.36	38.8	0.09	59.2	0.03
18.8	0.36	39	0.08	59.4	0.03
19	0.31	39.2	0.08	59.6	0.03
19.2	0.32	39.4	0.08	59.8	0.03
19.4	0.32	39.6	0.08	60	0.03
19.6	0.33	39.8	0.09	65	0.02
19.8	0.33	40	0.08	70	0.02
20	0.29	40.2	0.08	75	0.02
20.2	0.29	40.4	0.08	80	0.01
20.4	0.3	40.6	0.08	85	0.01
20.6	0.3	40.8	0.08	90	0.01
20.8	0.31	41	0.07	95	0.01
		41.2	0.07	100	0.01

AR300619

T03437-86021

CW-13 INSERT TEST #2

SWL = 8.29' Ground Surface
Test Date: 3/17/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Head (feet)	Time (sec)	Head (feet)	Time (sec)	Head (feet)
0.1	4.02	14.4	0.12	29.2	0.02
0.2	4.41	14.6	0.12	29.4	0.02
0.3	4.41	14.8	0.12	29.6	0.02
0.6	1.71	15	0.09	29.8	0.02
0.7	0.26	15.2	0.1	30	0.02
0.8	2.26	15.4	0.1	30.2	0.02
0.9	0.58	15.6	0.1	30.4	0.02
1	1.01	15.8	0.11	30.6	0.02
1.2	1.06	16	0.08	30.8	0.02
1.4	1.12	16.2	0.08	31	0.02
1.6	1.2	16.4	0.08	31.2	0.02
1.8	0.88	16.6	0.09	31.4	0.02
2	0.86	16.8	0.09	31.6	0.02
2.2	0.94	17	0.07	31.8	0.02
2.4	0.91	17.2	0.07	32	0.01
2.6	0.93	17.4	0.07	32.2	0.01
2.8	0.97	17.6	0.07	32.4	0.01
3	0.72	17.8	0.08	32.6	0.01
3.2	0.73	18	0.06	32.8	0.02
3.4	0.77	18.2	0.06	33	0.01
3.6	0.8	18.4	0.06	33.2	0.01
3.8	0.81	18.6	0.07	33.4	0.01
4	0.61	18.8	0.07	33.6	0.01
4.2	0.63	19	0.05	33.8	0.01
4.4	0.64	19.2	0.05	34	0.01
4.6	0.65	19.4	0.05	34.2	0.01
4.8	0.68	19.6	0.06	34.4	0.01
5	0.53	19.8	0.06	34.6	0.01
5.2	0.56	20	0.05	34.8	0.01
5.4	0.59	20.2	0.04	35	0.01
5.6	0.64	20.4	0.05	35.2	0.01
5.8	0.6	20.6	0.05	35.4	0.01
6	0.44	20.8	0.05	35.6	0.01
6.2	0.45	21	0.04	35.8	0.01
6.4	0.47	21.2	0.04	36	0.01
6.6	0.49	21.4	0.04	36.2	0.01
6.8	0.51	21.6	0.04	36.4	0.01
7	0.36	21.8	0.04	36.6	0.01
7.2	0.37	22	0.04	36.8	0.01
7.4	0.39	22.2	0.04	37	0.01
7.6	0.41	22.4	0.04	37.2	0.01
7.8	0.42	22.6	0.04	37.4	0.01
8	0.3	22.8	0.04	37.6	0.01
8.2	0.31	23	0.03	37.8	0.01
8.4	0.32	23.2	0.03	38	0.01
8.6	0.33	23.4	0.03	38.2	0.01
8.8	0.34	23.6	0.03	38.4	0.01
9	0.25	23.8	0.03	38.6	0.01
9.2	0.26	24	0.03	38.8	0.01
9.4	0.27	24.2	0.03	39	0.01
9.6	0.28	24.4	0.03	39.2	0.01
9.8	0.29	24.6	0.03	39.4	0.01
10	0.21	24.8	0.03	39.6	0.01
10.2	0.22	25	0.02	39.8	0.01
10.4	0.23	25.2	0.03	40	0.01
10.6	0.24	25.4	0.03	40.2	0.01
10.8	0.24	25.6	0.03	40.4	0.01
11	0.18	25.8	0.03	40.6	0.01
11.2	0.18	26	0.02	40.8	0.01
11.4	0.19	26.2	0.02	41	0.01
11.6	0.2	26.4	0.02	41.2	0.01
11.8	0.2	26.6	0.02	41.4	0.01
12	0.15	26.8	0.02	41.6	0.01
12.2	0.15	27	0.02	41.8	0.01
12.4	0.16	27.2	0.02	42	0.01
12.6	0.17	27.4	0.02	42.2	0.01
12.8	0.17	27.6	0.02	42.4	0.01
13	0.13	27.8	0.02	42.6	0.01
13.2	0.13	28	0.02	42.8	0.01
13.4	0.14	28.2	0.02	43	0.01
13.6	0.14	28.4	0.02	43.2	0.01
13.8	0.15	28.6	0.02	43.4	0.01
14	0.11	28.8	0.02	43.6	0.01
14.2	0.11	29	0.02	43.8	0.01

T03437-86021

CW-1I Removal Test #2
SWL = 8.29' Ground Surface
Test Date: 3/17/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	1.81	2.4	1.25	4.6	0.86
0.2	1.64	2.6	1.31	4.8	0.9
0.4	1.53	2.8	1.36	5	0.61
0.6	0.97	3	0.93	5.2	0.64
1	1.42	3.2	0.97	5.4	0.67
1.2	1.49	3.4	1.02	5.6	0.7
1.4	1.55	3.6	1.06	5.8	0.73
1.6	1.64	3.8	1.1	6	0.49
1.8	1.72	4	0.76	6.2	0.52
2	1.15	4.2	0.79	6.4	0.54
2.2	1.2	4.4	0.82	6.6	0.56

T03437-86021

CW-15 INSERT #1

SWL = 7.69' GROUND SURFACE

0	3.09	20	0.18	40	0.13
0.2	0.28	20.2	0.18	40.2	0.13
0.4	-1	20.4	0.18	40.4	0.13
0.6	1.9	20.6	0.19	40.6	0.13
0.8	0.88	20.8	0.19	40.8	0.14
1	0.83	21	0.18	41	0.13
1.2	1.16	21.2	0.18	41.2	0.13
1.4	0.5	21.4	0.18	41.4	0.13
1.6	2.94	21.6	0.18	41.6	0.13
1.8	-2.09	21.8	0.18	41.8	0.13
2	0.8	22	0.17	42	0.13
2.2	0.8	22.2	0.17	42.2	0.13
2.4	0.85	22.4	0.18	42.4	0.13
2.6	0.84	22.6	0.18	42.6	0.13
2.8	0.96	22.8	0.18	42.8	0.13
3	0.69	23	0.17	43	0.13
3.2	0.71	23.2	0.17	43.2	0.13
3.4	0.73	23.4	0.17	43.4	0.13
3.6	0.75	23.6	0.17	43.6	0.13
3.8	0.76	23.8	0.17	43.8	0.13
4	0.6	24	0.17	44	0.13
4.2	0.62	24.2	0.17	44.2	0.13
4.4	0.64	24.4	0.17	44.4	0.13
4.6	0.65	24.6	0.17	44.6	0.13
4.8	0.67	24.8	0.17	44.8	0.13
5	0.53	25	0.16	45	0.13
5.2	0.54	25.2	0.17	45.2	0.13
5.4	0.56	25.4	0.17	45.4	0.13
5.6	0.57	25.6	0.17	45.6	0.13
5.8	0.59	25.8	0.17	45.8	0.13
6	0.47	26	0.16	46	0.13
6.2	0.48	26.2	0.16	46.2	0.13
6.4	0.49	26.4	0.16	46.4	0.13
6.6	0.5	26.6	0.16	46.6	0.13
6.8	0.51	26.8	0.16	46.8	0.13
7	0.41	27	0.16	47	0.13
7.2	0.43	27.2	0.16	47.2	0.13
7.4	0.43	27.4	0.16	47.4	0.13
7.6	0.45	27.6	0.16	47.6	0.13
7.8	0.46	27.8	0.16	47.8	0.13
8	0.37	28	0.15	48	0.13
8.2	0.38	28.2	0.15	48.2	0.13
8.4	0.38	28.4	0.16	48.4	0.13
8.6	0.4	28.6	0.16	48.6	0.13
8.8	0.4	28.8	0.16	48.8	0.13
9	0.33	29	0.15	49	0.13
9.2	0.34	29.2	0.15	49.2	0.13
9.4	0.35	29.4	0.15	49.4	0.13
9.6	0.35	29.6	0.15	49.6	0.13
9.8	0.36	29.8	0.15	49.8	0.13
10	0.3	30	0.15	50	0.13
10.2	0.31	30.2	0.15	50.2	0.13
10.4	0.31	30.4	0.15	50.4	0.13
10.6	0.32	30.6	0.15	50.6	0.13
10.8	0.32	30.8	0.15	50.8	0.13
11	0.28	31	0.15	51	0.13
11.2	0.28	31.2	0.15	51.2	0.13
11.4	0.28	31.4	0.15	51.4	0.13
11.6	0.29	31.6	0.15	51.6	0.13
11.8	0.3	31.8	0.15	51.8	0.13
12	0.26	32	0.15	52	0.13
12.2	0.26	32.2	0.15	52.2	0.13
12.4	0.26	32.4	0.15	52.4	0.13
12.6	0.27	32.6	0.15	52.6	0.13
12.8	0.27	32.8	0.15	52.8	0.13
13	0.24	33	0.15	53	0.12
13.2	0.24	33.2	0.15	53.2	0.13
13.4	0.24	33.4	0.15	53.4	0.13
13.6	0.25	33.6	0.15	53.6	0.13
13.8	0.25	33.8	0.15	53.8	0.13
14	0.22	34	0.14	54	0.12
14.2	0.23	34.2	0.14	54.2	0.12
14.4	0.23	34.4	0.14	54.4	0.12
14.6	0.23	34.6	0.14	54.6	0.12
14.8	0.23	34.8	0.14	54.8	0.12
15	0.21	35	0.14	55	0.12
15.2	0.21	35.2	0.14	55.2	0.12
15.4	0.22	35.4	0.14	55.4	0.12
15.6	0.22	35.6	0.14	55.6	0.12
15.8	0.22	35.8	0.14	55.8	0.12
16	0.21	36	0.14	56	0.12
16.2	0.21	36.2	0.14	56.2	0.12
16.4	0.21	36.4	0.14	56.4	0.12
16.6	0.21	36.6	0.14	56.6	0.12
16.8	0.21	36.8	0.14	56.8	0.12
17	0.2	37	0.14	57	0.12
17.2	0.2	37.2	0.14	57.2	0.12
17.4	0.2	37.4	0.14	57.4	0.12
17.6	0.2	37.6	0.14	57.6	0.12
17.8	0.2	37.8	0.14	57.8	0.12
18	0.19	38	0.14	58	0.12
18.2	0.19	38.2	0.14	58.2	0.12
18.4	0.19	38.4	0.14	58.4	0.12
18.6	0.19	38.6	0.14	58.6	0.12
18.8	0.19	38.8	0.14	58.8	0.12
19	0.19	39	0.14	59	0.12
19.2	0.19	39.2	0.14	59.2	0.12
19.4	0.19	39.4	0.14	59.4	0.12
19.6	0.19	39.6	0.14	59.6	0.12
19.8	0.19	39.8	0.14	59.8	0.12
				60	0.12

T03437-86021

CW-15 Removal Test #1
SWL = 7.89' Ground Surface
Test Date: 3/9/88
Slug Size = 3' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0.2	1.89	20.2	0.18	40.2	0.12
0.4	0.87	20.4	0.18	40.4	0.13
0.6	0.82	20.6	0.17	40.6	0.12
0.8	1.15	20.8	0.17	40.8	0.12
1	0.49	21	0.17	41	0.12
1.2	2.93	21.2	0.17	41.2	0.12
1.6	0.79	21.4	0.17	41.4	0.12
1.8	0.79	21.6	0.16	41.6	0.12
2	0.84	21.8	0.16	41.8	0.12
2.2	0.83	22	0.17	42	0.12
2.4	0.95	22.2	0.17	42.2	0.12
2.6	0.68	22.4	0.17	42.4	0.12
2.8	0.7	22.6	0.16	42.6	0.12
3	0.72	22.8	0.16	42.8	0.12
3.2	0.74	23	0.16	43	0.12
3.4	0.75	23.2	0.16	43.2	0.12
3.6	0.59	23.4	0.16	43.4	0.12
3.8	0.61	23.6	0.16	43.6	0.12
4	0.63	23.8	0.16	43.8	0.12
4.2	0.64	24	0.16	44	0.12
4.4	0.66	24.2	0.16	44.2	0.12
4.6	0.52	24.4	0.16	44.4	0.12
4.8	0.53	24.6	0.15	44.6	0.12
5	0.55	24.8	0.16	44.8	0.12
5.2	0.56	25	0.16	45	0.12
5.4	0.58	25.2	0.16	45.2	0.12
5.6	0.46	25.4	0.16	45.4	0.12
5.8	0.47	25.6	0.15	45.6	0.12
6	0.48	25.8	0.15	45.8	0.12
6.2	0.49	26	0.15	46	0.12
6.4	0.5	26.2	0.15	46.2	0.12
6.6	0.4	26.4	0.15	46.4	0.12
6.8	0.42	26.6	0.15	46.6	0.12
7	0.42	26.8	0.15	46.8	0.12
7.2	0.44	27	0.15	47	0.12
7.4	0.45	27.2	0.15	47.2	0.12
7.6	0.36	27.4	0.15	47.4	0.12
7.8	0.37	27.6	0.14	47.6	0.12
8	0.37	27.8	0.14	47.8	0.12
8.2	0.39	28	0.15	48	0.12
8.4	0.39	28.2	0.15	48.2	0.12
8.6	0.32	28.4	0.15	48.4	0.12
8.8	0.33	28.6	0.14	48.6	0.12
9	0.34	28.8	0.14	48.8	0.12
9.2	0.34	29	0.14	49	0.12
9.4	0.35	29.2	0.14	49.2	0.12
9.6	0.29	29.4	0.14	49.4	0.12
9.8	0.3	29.6	0.14	49.6	0.12
10	0.3	29.8	0.14	49.8	0.12
10.2	0.31	30	0.14	50	0.12
10.4	0.31	30.2	0.14	50.2	0.12
10.6	0.27	30.4	0.14	50.4	0.12
10.8	0.27	30.6	0.14	50.6	0.12
11	0.27	30.8	0.14	50.8	0.12
11.2	0.28	31	0.14	51	0.12
11.4	0.29	31.2	0.14	51.2	0.12
11.6	0.25	31.4	0.14	51.4	0.12
11.8	0.25	31.6	0.14	51.6	0.12
12	0.25	31.8	0.14	51.8	0.12
12.2	0.26	32	0.14	52	0.12
12.4	0.26	32.2	0.14	52.2	0.12
12.6	0.23	32.4	0.14	52.4	0.12
12.8	0.23	32.6	0.14	52.6	0.11
13	0.23	32.8	0.14	52.8	0.12
13.2	0.24	33	0.14	53	0.12
13.4	0.24	33.2	0.14	53.2	0.12
13.6	0.21	33.4	0.14	53.4	0.12
13.8	0.22	33.6	0.13	53.6	0.11
14	0.22	33.8	0.13	53.8	0.11
14.2	0.22	34	0.13	54	0.11
14.4	0.22	34.2	0.13	54.2	0.11
14.6	0.2	34.4	0.14	54.4	0.11
14.8	0.2	34.6	0.13	54.6	0.11
15	0.21	34.8	0.13	54.8	0.11
15.2	0.21	35	0.13	55	0.11
15.4	0.21	35.2	0.13	55.2	0.11
15.6	0.2	35.4	0.13	55.4	0.11
15.8	0.2	35.6	0.13	55.6	0.11
16	0.2	35.8	0.13	55.8	0.11
16.2	0.2	36	0.13	56	0.11
16.4	0.2	36.2	0.13	56.2	0.11
16.6	0.19	36.4	0.13	56.4	0.11
16.8	0.19	36.6	0.13	56.6	0.11
17	0.19	36.8	0.13	56.8	0.11
17.2	0.19	37	0.13	57	0.11
17.4	0.19	37.2	0.13	57.2	0.11
17.6	0.18	37.4	0.13	57.4	0.11
17.8	0.18	37.6	0.13	57.6	0.11
18	0.18	37.8	0.13	57.8	0.11
18.2	0.18	38	0.13	58	0.11
18.4	0.18	38.2	0.13	58.2	0.11
18.6	0.18	38.4	0.13	58.4	0.11
18.8	0.18	38.6	0.13	58.6	0.11
19	0.18	38.8	0.13	58.8	0.11
19.2	0.18	39	0.13	59	0.11
19.4	0.18	39.2	0.13	59.2	0.11
19.6	0.17	39.4	0.13	59.4	0.11
19.8	0.17	39.6	0.12	59.6	0.11
20	0.17	39.8	0.12	59.8	0.1
		40	0.12	60	0.1

AR300623

T03438-86021

CW-2D Insert Test #1
SWL = 11.86' Ground Surface
Test Date: 3/8/88
Slug Size = 4 1/2' x 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0.2	2.72	17.8	0.41	35.2	0.04
0.4	1.85	18	0.34	35.4	0.04
0.8	4.82	18.2	0.34	35.6	0.04
1	1.57	18.4	0.35	35.8	0.04
1.2	1.35	18.6	0.36	36	0.03
1.4	1.78	18.8	0.37	36.2	0.03
1.6	1.26	19	0.3	36.4	0.03
1.8	2.3	19.2	0.31	36.6	0.04
2	1.38	19.4	0.32	36.8	0.04
2.2	1.41	19.6	0.32	37	0.03
2.4	1.42	19.8	0.33	37.2	0.03
2.6	1.48	20	0.27	37.4	0.03
2.8	1.44	20.2	0.28	37.6	0.03
3	1.29	20.4	0.28	37.8	0.03
3.2	1.3	20.6	0.29	38	0.02
3.4	1.31	20.8	0.3	38.2	0.03
3.6	1.35	21	0.24	38.4	0.03
3.8	1.37	21.2	0.25	38.6	0.03
4	1.14	21.4	0.25	38.8	0.03
4.2	1.19	21.6	0.26	39	0.02
4.4	1.18	21.8	0.27	39.2	0.02
4.6	1.26	22	0.22	39.4	0.02
4.8	1.26	22.2	0.22	39.6	0.02
5	1.13	22.4	0.23	39.8	0.02
5.2	1.14	22.6	0.23	40	0.02
5.4	1.19	22.8	0.24	40.2	0.02
5.6	1.2	23	0.19	40.4	0.02
5.8	1.22	23.2	0.2	40.6	0.02
6	1.04	23.4	0.2	40.8	0.02
6.2	1.05	23.6	0.21	41	0.02
6.4	1.07	23.8	0.21	41.2	0.02
6.6	1.09	24	0.17	41.4	0.02
6.8	1.1	24.2	0.17	41.6	0.02
7	0.95	24.4	0.18	41.8	0.02
7.2	0.97	24.6	0.18	42	0.01
7.4	0.98	24.8	0.19	42.2	0.01
7.6	1	25	0.15	42.4	0.01
7.8	1.02	25.2	0.15	42.6	0.01
8	0.87	25.4	0.16	42.8	0.02
8.2	0.89	25.6	0.16	43	0.01
8.4	0.91	25.8	0.16	43.2	0.01
8.6	0.92	26	0.13	43.4	0.01
8.8	0.93	26.2	0.13	43.6	0.01
9	0.81	26.4	0.14	43.8	0.01
9.2	0.82	26.6	0.14	44	0.01
9.4	0.83	26.8	0.14	44.2	0.01
9.6	0.85	27	0.11	44.4	0.01
9.8	0.86	27.2	0.12	44.6	0.01
10	0.74	27.4	0.12	44.8	0.01
10.2	0.75	27.6	0.12	45	0.01
10.4	0.76	27.8	0.12	45.2	0.01
10.6	0.78	28	0.1	45.4	0.01
10.8	0.79	28.2	0.1	45.6	0.01
11	0.68	28.4	0.1	45.8	0.01
11.2	0.69	28.6	0.11	46	0.01
11.4	0.7	28.8	0.11	46.2	0.01
11.6	0.71	29	0.08	46.4	0.01
11.8	0.72	29.2	0.09	46.6	0.01
12	0.61	29.4	0.09	46.8	0.01
12.2	0.63	29.6	0.09	47	0.01
12.4	0.64	29.8	0.1	47.2	0.01
12.6	0.65	30	0.07	47.4	0.01
12.8	0.66	30.2	0.08	47.6	0.01
13	0.56	30.4	0.08	47.8	0.01
13.2	0.57	30.6	0.08	48	0.01
13.4	0.58	30.8	0.08	48.2	0.01
13.6	0.59	31	0.06	48.4	0.01
13.8	0.6	31.2	0.07	48.6	0.01
14	0.51	31.4	0.07	48.8	0.01
14.2	0.52	31.6	0.07	49	0.01
14.4	0.53	31.8	0.07	49.2	0.01
14.6	0.54	32	0.06	49.4	0.01
14.8	0.55	32.2	0.06	49.6	0.01
15	0.46	32.4	0.06	49.8	0.01
15.2	0.47	32.6	0.06	50	0.01
15.4	0.48	32.8	0.06	50.2	0.01
15.6	0.49	33	0.05	50.4	0.01
15.8	0.5	33.2	0.05	50.6	0.01
16	0.42	33.4	0.05	50.8	0.01
16.2	0.42	33.6	0.05	51	0.01
16.4	0.43	33.8	0.06	51.2	0.01
16.6	0.44	34	0.04	51.4	0.01
16.8	0.45	34.2	0.04	51.6	0.01
17	0.38	34.4	0.04	51.8	0.01
17.2	0.38	34.6	0.05	85	0.01
17.4	0.39	34.8	0.05	90	0.01
17.6	0.4	35	0.04	140	0.01

T03438-86021

CW-2D Removal Test #1
SWL = 11.86' Ground Surface
Test Date: 3/8/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	1.59	5.8	0.92	11.4	0.33
0.2	1.59	6	0.72	11.6	0.34
0.4	1.49	6.2	0.75	11.8	0.36
0.6	1.35	6.4	0.77	12	0.23
1	1.38	6.6	0.79	12.2	0.25
1.2	1.42	6.8	0.81	12.4	0.26
1.4	1.46	7	0.63	12.6	0.27
1.6	1.49	7.2	0.64	12.8	0.29
1.8	1.53	7.4	0.66	13	0.17
2	1.21	7.6	0 68	13.2	0.18
2.2	1.24	7.8	0.7	13.4	0.2
2.4	1.27	8	0.53	13.6	0.21
2.6	1.3	8.2	0.55	13.8	0.22
2.8	1.34	8.4	0.57	14	0.12
3	1.07	8.6	0.59	14.2	0.13
3.2	1.1	8.8	0.61	14.4	0.14
3.4	1.12	9	0.45	14.6	0.15
3.6	1.15	9.2	0.46	14.8	0.16
3.8	1.18	9.4	0.48	15	0.06
4	0.95	9.6	0.5	15.2	0.07
4.2	0.97	9.8	0.52	15.4	0.08
4.4	1	10	0.37	15.6	0.1
4.6	1.02	10.2	0.39	15.8	0.11
4.8	1.05	10.4	0.4	16	0.01
5	0.83	10.6	0.42	16.2	0.02
5.2	0.85	10.8	0.43	16.4	0.03
5.4	0.88	11	0.3	16.6	0.04
5.6	0.9	11.2	0.31	16.8	0.05

T03437-86021

CW-3D Insert Test #1
SWL = 12.42' Ground Surface
Test Date: 3/16/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	4.41	22.4	1.65	44.8	1.32
0.2	4.78	22.6	1.65	45	1.29
0.4	0.09	22.8	1.66	45.2	1.3
0.6	0.08	23	1.63	45.4	1.3
0.8	0.07	23.2	1.63	45.6	1.3
1	0.46	23.4	1.63	45.8	1.31
1.2	3.64	23.6	1.64	46	1.28
1.4	3.2	23.8	1.64	46.2	1.29
1.8	4.78	24	1.61	46.4	1.29
2	2.02	24.2	1.61	46.6	1.29
2.2	1.9	24.4	1.62	46.8	1.29
2.4	2.14	24.6	1.62	47	1.27
2.6	1.77	24.8	1.62	47.2	1.27
2.8	2.52	25	1.59	47.4	1.27
3	1.96	25.2	1.6	47.6	1.28
3.2	1.98	25.4	1.6	47.8	1.28
3.4	2	25.6	1.6	48	1.26
3.6	2	25.8	1.61	48.2	1.26
3.8	1.98	26	1.58	48.4	1.26
4	1.96	26.2	1.58	48.6	1.26
4.2	1.96	26.4	1.59	48.8	1.27
4.4	1.97	26.6	1.59	49	1.25
4.6	2	26.8	1.59	49.2	1.25
4.8	1.96	27	1.56	49.4	1.25
5	1.94	27.2	1.57	49.6	1.25
5.2	1.94	27.4	1.57	49.8	1.25
5.4	1.95	27.6	1.57	50	1.23
5.6	1.95	27.8	1.58	50.2	1.23
5.8	1.96	28	1.55	50.4	1.24
6	1.93	28.2	1.55	50.6	1.24
6.2	1.93	28.4	1.55	50.8	1.24
6.4	1.93	28.6	1.55	51	1.22
6.6	1.94	28.8	1.56	51.2	1.22
6.8	1.94	29	1.52	51.4	1.23
7	1.91	29.2	1.53	51.6	1.23
7.2	1.92	29.4	1.53	51.8	1.23
7.4	1.92	29.6	1.53	52	1.21
7.6	1.93	29.8	1.54	52.2	1.21
7.8	1.93	30	1.51	52.4	1.21
8	1.9	30.2	1.51	52.6	1.22
8.2	1.9	30.4	1.52	52.8	1.22
8.4	1.91	30.6	1.52	53	1.2
8.6	1.91	30.8	1.52	53.2	1.2
8.8	1.91	31	1.5	53.4	1.2
9	1.89	31.2	1.5	53.6	1.2
9.2	1.89	31.4	1.5	53.8	1.2
9.4	1.89	31.6	1.5	54	1.18
9.6	1.89	31.8	1.51	54.2	1.19
9.8	1.9	32	1.48	54.4	1.19
10	1.87	32.2	1.48	54.6	1.19
10.2	1.87	32.4	1.49	54.8	1.2
10.4	1.87	32.6	1.49	55	1.17
10.6	1.88	32.8	1.49	55.2	1.17
10.8	1.88	33	1.47	55.4	1.18
11	1.85	33.2	1.47	55.6	1.18
11.2	1.85	33.4	1.47	55.8	1.18
11.4	1.86	33.6	1.48	56	1.16
11.6	1.86	33.8	1.48	56.2	1.16
11.8	1.87	34	1.45	56.4	1.17
12	1.83	34.2	1.45	56.6	1.17
12.2	1.84	34.4	1.46	56.8	1.17
12.4	1.84	34.6	1.46	57	1.15
12.6	1.85	34.8	1.46	57.2	1.16
12.8	1.85	35	1.43	57.4	1.16
13	1.81	35.2	1.44	57.6	1.16
13.2	1.82	35.4	1.44	57.8	1.16
13.4	1.82	35.6	1.44	58	1.14
13.6	1.82	35.8	1.44	58.2	1.14
13.8	1.83	36	1.42	58.4	1.14
14	1.79	36.2	1.42	58.6	1.14
14.2	1.8	36.4	1.42	58.8	1.15
14.4	1.8	36.6	1.42	59	1.13
14.6	1.8	36.8	1.43	59.2	1.13
14.8	1.81	37	1.4	59.4	1.13
15	1.78	37.2	1.41	59.6	1.13
15.2	1.78	37.4	1.41	59.8	1.14
15.4	1.78	37.6	1.41	60	1.13
15.6	1.79	37.8	1.42	65	1.07
15.8	1.79	38	1.39	70	1.02
16	1.76	38.2	1.4	75	0.97
16.2	1.76	38.4	1.4	80	0.93
16.4	1.76	38.6	1.4	85	0.88
16.6	1.77	38.8	1.4	90	0.84
16.8	1.77	39	1.38	95	0.8
17	1.74	39.2	1.38	100	0.77
17.2	1.74	39.4	1.38	105	0.73
17.4	1.74	39.6	1.39	110	0.7
17.6	1.75	39.8	1.39	115	0.67
17.8	1.75	40	1.36	120	0.63
18	1.72	40.2	1.36	125	0.61
18.2	1.72	40.4	1.37	130	0.58
18.4	1.73	40.6	1.37	135	0.56
18.6	1.73	40.8	1.37	140	0.54
18.8	1.73	41	1.35	145	0.51
19	1.7	41.2	1.35	150	0.49
19.2	1.7	41.4	1.35	155	0.47
19.4	1.71	41.6	1.35	160	0.45
19.6	1.71	41.8	1.35	165	0.43
19.8	1.72	42	1.34	170	0.42
20	1.68	42.2	1.34	175	0.4
20.2	1.69	42.4	1.34	180	0.38
20.4	1.69	42.6	1.34	185	0.37
20.6	1.7	42.8	1.35	190	0.36
20.8	1.7	43	1.32	195	0.34
21	1.66	43.2	1.33	200	0.33
21.2	1.67	43.4	1.33	205	0.31
21.4	1.67	43.6	1.33	210	0.3
21.6	1.67	43.8	1.33	215	0.29
21.8	1.68	44	1.31	220	0.28
22	1.65	44.2	1.31	225	0.27
22.2	1.65	44.4	1.31	230	0.26
		44.6	1.31	235	0.25

AR300626

T03437-86021

CW-3D Removal Test #1
SWL = 12.42' Ground Surface
Test Date: 3/16/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	1.91	20	1.29	40	0.94
0.2	1.92	20.2	1.29	40.2	0.94
0.4	1.92	20.4	1.3	40.4	0.94
0.6	1.95	20.6	1.3	40.6	0.95
0.8	1.97	20.8	1.31	40.8	0.95
1	1.85	21	1.27	41	0.93
1.2	1.86	21.2	1.27	41.2	0.93
1.4	1.87	21.4	1.28	41.4	0.93
1.6	1.88	21.6	1.28	41.6	0.93
1.8	1.89	21.8	1.29	41.8	0.94
2	1.8	22	1.25	42	0.91
2.2	1.81	22.2	1.25	42.2	0.91
2.4	1.82	22.4	1.26	42.4	0.92
2.6	1.83	22.6	1.26	42.6	0.92
2.8	1.84	22.8	1.27	42.8	0.92
3	1.76	23	1.23	43	0.89
3.2	1.76	23.2	1.23	43.2	0.9
3.4	1.77	23.4	1.24	43.4	0.9
3.6	1.78	23.6	1.24	43.6	0.9
3.8	1.79	23.8	1.25	43.8	0.91
4	1.71	24	1.21	44	0.88
4.2	1.73	24.2	1.21	44.2	0.89
4.4	1.73	24.4	1.22	44.4	0.89
4.6	1.74	24.6	1.22	44.6	0.89
4.8	1.75	24.8	1.23	44.8	0.89
5	1.68	25	1.19	45	0.87
5.2	1.69	25.2	1.19	45.2	0.87
5.4	1.7	25.4	1.2	45.4	0.87
5.6	1.7	25.6	1.2	45.6	0.87
5.8	1.71	25.8	1.21	45.8	0.88
6	1.65	26	1.17	46	0.85
6.2	1.65	26.2	1.17	46.2	0.86
6.4	1.66	26.4	1.18	46.4	0.86
6.6	1.67	26.6	1.18	46.6	0.86
6.8	1.68	26.8	1.19	46.8	0.87
7	1.61	27	1.15	47	0.84
7.2	1.62	27.2	1.15	47.2	0.84
7.4	1.63	27.4	1.15	47.4	0.84
7.6	1.63	27.6	1.16	47.6	0.85
7.8	1.64	27.8	1.17	47.8	0.85
8	1.58	28	1.13	48	0.83
8.2	1.59	28.2	1.13	48.2	0.83
8.4	1.59	28.4	1.14	48.4	0.84
8.6	1.61	28.6	1.14	48.6	0.84
8.8	1.61	28.8	1.14	48.8	0.84
9	1.56	29	1.12	49	0.81
9.2	1.56	29.2	1.12	49.2	0.82
9.4	1.57	29.4	1.12	49.4	0.82
9.6	1.57	29.6	1.12	49.6	0.82
9.8	1.58	29.8	1.13	49.8	0.82
10	1.53	30	1.1	50	0.8
10.2	1.53	30.2	1.1	50.2	0.8
10.4	1.54	30.4	1.11	50.4	0.8
10.6	1.55	30.6	1.11	50.6	0.81
10.8	1.55	30.8	1.11	50.8	0.81
11	1.5	31	1.08	51	0.79
11.2	1.51	31.2	1.08	51.2	0.8
11.4	1.51	31.4	1.09	51.4	0.8
11.6	1.52	31.6	1.09	51.6	0.8
11.8	1.53	31.8	1.1	51.8	0.8
12	1.47	32	1.06	52	0.78
12.2	1.48	32.2	1.07	52.2	0.78
12.4	1.49	32.4	1.07	52.4	0.78
12.6	1.49	32.6	1.07	52.6	0.79
12.8	1.5	32.8	1.08	52.8	0.79
13	1.45	33	1.05	53	0.76
13.2	1.46	33.2	1.05	53.2	0.77
13.4	1.46	33.4	1.06	53.4	0.77
13.6	1.47	33.6	1.06	53.6	0.77
13.8	1.47	33.8	1.06	53.8	0.78
14	1.43	34	1.03	54	0.75
14.2	1.43	34.2	1.04	54.2	0.76
14.4	1.44	34.4	1.04	54.4	0.76
14.6	1.44	34.6	1.04	54.6	0.76
14.8	1.44	34.8	1.04	54.8	0.76
15	1.4	35	1.02	55	0.74
15.2	1.41	35.2	1.02	55.2	0.74
15.4	1.41	35.4	1.02	55.4	0.74
15.6	1.42	35.6	1.03	55.6	0.75
15.8	1.42	35.8	1.03	55.8	0.75
16	1.38	36	1	56	0.73
16.2	1.38	36.2	1	56.2	0.73
16.4	1.39	36.4	1	56.4	0.74
16.6	1.39	36.6	1.01	56.6	0.74
16.8	1.4	36.8	1.01	56.8	0.74
17	1.36	37	0.98	57	0.72
17.2	1.36	37.2	0.99	57.2	0.72
17.4	1.37	37.4	0.99	57.4	0.72
17.6	1.37	37.6	0.99	57.6	0.72
17.8	1.38	37.8	0.99	57.8	0.73
18	1.34	38	0.97	58	0.71
18.2	1.34	38.2	0.97	58.2	0.71
18.4	1.34	38.4	0.97	58.4	0.71
18.6	1.35	38.6	0.97	58.6	0.72
18.8	1.35	38.8	0.98	58.8	0.72
19	1.31	39	0.95	59	0.7
19.2	1.32	39.2	0.95	59.2	0.7
19.4	1.32	39.4	0.96	59.4	0.7
19.6	1.33	39.6	0.96	59.6	0.7
19.8	1.33	39.8	0.97	59.8	0.7
				60	0.69

AR300627

T03437-86021

CW-3D Insert Test #2
SWL = 12.42' Ground Surface
Test Date: 3/16/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	0.33	22.4	1.56	44.6	1.23
0.2	3.37	22.6	1.56	44.8	1.23
0.4	3.39	22.8	1.57	45	1.21
0.8	4.76	23	1.54	45.2	1.21
1	1.91	23.2	1.54	45.4	1.21
1.2	1.88	23.4	1.54	45.6	1.22
1.4	2.04	23.6	1.55	45.8	1.22
1.6	1.57	23.8	1.55	46	1.2
1.8	2.6	24	1.52	46.2	1.2
2	1.88	24.2	1.52	46.4	1.2
2.2	1.9	24.4	1.53	46.6	1.21
2.4	1.9	24.6	1.53	46.8	1.21
2.6	1.89	24.8	1.53	47	1.18
2.8	1.93	25	1.5	47.2	1.19
3	1.89	25.2	1.5	47.4	1.19
3.2	1.89	25.4	1.51	47.6	1.19
3.4	1.89	25.6	1.51	47.8	1.2
3.6	1.89	25.8	1.51	48	1.18
3.8	1.9	26	1.48	48.2	1.18
4	1.87	26.2	1.49	48.4	1.18
4.2	1.88	26.4	1.49	48.6	1.18
4.4	1.88	26.6	1.5	48.8	1.18
4.6	2.88	26.8	1.5	49	1.16
4.8	1.88	27	1.47	49.2	1.16
5	1.85	27.2	1.47	49.4	1.17
5.2	1.86	27.4	1.48	49.6	1.17
5.4	1.86	27.6	1.48	49.8	1.17
5.6	1.86	27.8	1.48	50	1.15
5.8	1.87	28	1.46	50.2	1.15
6	1.84	28.2	1.46	50.4	1.15
6.2	1.84	28.4	1.46	50.6	1.16
6.4	1.84	28.6	1.46	50.8	1.16
6.6	1.85	28.8	1.47	51	1.14
6.8	1.85	29	1.44	51.2	1.14
7	1.82	29.2	1.44	51.4	1.14
7.2	1.82	29.4	1.44	51.6	1.14
7.4	1.83	29.6	1.45	51.8	1.15
7.6	1.83	29.8	1.45	52	1.12
7.8	1.84	30	1.42	52.2	1.13
8	1.8	30.2	1.42	52.4	1.13
8.2	1.81	30.4	1.43	52.6	1.13
8.4	1.81	30.6	1.43	52.8	1.14
8.6	1.81	30.8	1.44	53	1.11
8.8	1.82	31	1.41	53.2	1.11
9	1.79	31.2	1.41	53.4	1.12
9.2	1.79	31.4	1.41	53.6	1.12
9.4	1.79	31.6	1.42	53.8	1.12
9.6	1.8	31.8	1.42	54	1.1
9.8	1.8	32	1.39	54.2	1.1
10	1.77	32.2	1.4	54.4	1.1
10.2	1.77	32.4	1.4	54.6	1.1
10.4	1.78	32.6	1.4	54.8	1.11
10.6	1.78	32.8	1.4	55	1.09
10.8	1.78	33	1.38	55.2	1.09
11	1.75	33.2	1.38	55.4	1.09
11.2	1.76	33.4	1.38	55.6	1.1
11.4	1.76	33.6	1.38	55.8	1.1
11.6	1.76	33.8	1.39	56	1.08
11.8	1.77	34	1.36	56.2	1.08
12	1.74	34.2	1.36	56.4	1.08
12.2	1.74	34.4	1.37	56.6	1.08
12.4	1.74	34.6	1.37	56.8	1.09
12.6	1.74	34.8	1.37	57	1.07
12.8	1.75	35	1.35	57.2	1.07
13	1.72	35.2	1.35	57.4	1.07
13.2	1.72	35.4	1.35	57.6	1.07
13.4	1.72	35.6	1.36	57.8	1.08
13.6	1.73	35.8	1.36	58	1.06
13.8	1.73	36	1.33	58.2	1.06
14	1.7	36.2	1.33	58.4	1.06
14.2	1.7	36.4	1.34	58.6	1.06
14.4	1.7	36.6	1.34	58.8	1.07
14.6	1.71	36.8	1.34	59	1.05
14.8	1.71	37	1.32	59.2	1.05
15	1.68	37.2	1.32	59.4	1.05
15.2	1.68	37.4	1.33	59.6	1.05
15.4	1.68	37.6	1.33	59.8	1.06
15.6	1.69	37.8	1.33	60	1.04
15.8	1.69	38	1.31	65	0.99
16	1.66	38.2	1.31	70	0.94
16.2	1.66	38.4	1.31	75	0.89
16.4	1.67	38.6	1.31	80	0.85
16.6	1.67	38.8	1.32	85	0.8
16.8	1.67	39	1.29	90	0.77
17	1.64	39.2	1.29	95	0.73
17.2	1.64	39.4	1.3	100	0.69
17.4	1.65	39.6	1.3	105	0.66
17.6	1.65	39.8	1.3	110	0.63
17.8	1.65	40	1.28	115	0.6
18	1.62	40.2	1.28	120	0.57
18.2	1.63	40.4	1.28	125	0.54
18.4	1.63	40.6	1.29	130	0.51
18.6	1.63	40.8	1.29	135	0.49
18.8	1.64	41	1.26	140	0.46
19	1.6	41.2	1.27	145	0.44
19.2	1.61	41.4	1.27	150	0.42
19.4	1.61	41.6	1.27	155	0.4
19.6	1.61	41.8	1.27	160	0.39
19.8	1.62	42	1.25	165	0.37
20	1.59	42.2	1.25	170	0.35
20.2	1.59	42.4	1.26	175	0.34
20.4	1.59	42.6	1.26	180	0.32
20.6	1.6	42.8	1.26	185	0.31
20.8	1.6	43	1.23	190	0.3
21	1.57	43.2	1.24	195	0.28
21.2	1.57	43.4	1.24	200	0.27
21.4	1.58	43.6	1.25	205	0.26
21.6	1.58	43.8	1.25	210	0.25
21.8	1.58	44	1.22	215	0.24
22	1.55	44.2	1.22	220	0.23
22.2	1.56	44.4	1.23	225	0.22
				230	0.21

AR300628

T03438-86021

CW-3D Removal Test #2
SWL = 12.42' Ground Surface
Test Date: 3/16/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	1.91	22.2	1.27	44.6	0.91
0.2	1.93	22.4	1.27	44.8	0.91
0.4	1.94	22.6	1.27	45	0.88
0.6	1.98	22.8	1.28	45.2	0.89
0.8	1.98	23	1.24	45.4	0.89
1	1.87	23.2	1.25	45.6	0.89
1.2	1.87	23.4	1.25	45.8	0.89
1.4	1.88	23.6	1.25	46	0.87
1.6	1.89	23.8	1.26	46.2	0.87
1.8	1.9	24	1.22	46.4	0.87
2	1.82	24.2	1.23	46.6	0.88
2.2	1.83	24.4	1.23	46.8	0.88
2.4	1.84	24.6	1.23	47	0.86
2.6	1.85	24.8	1.24	47.2	0.86
2.8	1.86	25	1.2	47.4	0.86
3	1.77	25.2	1.21	47.6	0.87
3.2	1.78	25.4	1.21	47.8	0.87
3.4	1.79	25.6	1.22	48	0.84
3.6	1.81	25.8	1.22	48.2	0.85
3.8	1.81	26	1.18	48.4	0.85
4	1.73	26.2	1.19	48.6	0.85
4.2	1.74	26.4	1.19	48.8	0.85
4.4	1.74	26.6	1.19	49	0.83
4.6	1.75	26.8	1.2	49.2	0.83
4.8	1.76	27	1.16	49.4	0.84
5	1.69	27.2	1.17	49.6	0.84
5.2	1.7	27.4	1.17	49.8	0.84
5.4	1.7	27.6	1.18	50	0.82
5.6	1.71	27.8	1.18	50.2	0.82
5.8	1.72	28	1.15	50.4	0.82
6	1.66	28.2	1.15	50.6	0.82
6.2	1.66	28.4	1.15	50.8	0.83
6.4	1.67	28.6	1.16	51	0.8
6.6	1.68	28.8	1.16	51.2	0.81
6.8	1.68	29	1.13	51.4	0.81
7	1.63	29.2	1.13	51.6	0.81
7.2	1.63	29.4	1.14	51.8	0.81
7.4	1.64	29.6	1.14	52	0.79
7.6	1.64	29.8	1.15	52.2	0.79
7.8	1.65	30	1.11	52.4	0.8
8	1.59	30.2	1.11	52.6	0.8
8.2	1.6	30.4	1.12	52.8	0.8
8.4	1.61	30.6	1.12	53	0.78
8.6	1.61	30.8	1.13	53.2	0.78
8.8	1.62	31	1.09	53.4	0.78
9	1.57	31.2	1.1	53.6	0.79
9.2	1.57	31.4	1.1	53.8	0.79
9.4	1.58	31.6	1.1	54	0.77
9.6	1.58	31.8	1.11	54.2	0.77
9.8	1.59	32	1.08	54.4	0.77
10	1.54	32.2	1.08	54.6	0.78
10.2	1.54	32.4	1.08	54.8	0.78
10.4	1.55	32.6	1.08	55	0.76
10.6	1.55	32.8	1.09	55.2	0.76
10.8	1.56	33	1.06	55.4	0.76
11	1.51	33.2	1.06	55.6	0.76
11.2	1.52	33.4	1.07	55.8	0.77
11.4	1.52	33.6	1.07	56	0.74
11.6	1.53	33.8	1.07	56.2	0.75
11.8	1.53	34	1.04	56.4	0.75
12	1.49	34.2	1.05	56.6	0.75
12.2	1.49	34.4	1.05	56.8	0.76
12.4	1.5	34.6	1.05	57	0.74
12.6	1.5	34.8	1.06	57.2	0.74
12.8	1.51	35	1.03	57.4	0.74
13	1.46	35.2	1.03	57.6	0.74
13.2	1.47	35.4	1.04	57.8	0.74
13.4	1.47	35.6	1.04	58	0.72
13.6	1.48	35.8	1.04	58.2	0.73
13.8	1.48	36	1.02	58.4	0.73
14	1.44	36.2	1.02	58.6	0.73
14.2	1.44	36.4	1.02	58.8	0.73
14.4	1.45	36.6	1.02	59	0.71
14.6	1.45	36.8	1.03	59.2	0.72
14.8	1.46	37	1	59.4	0.72
15	1.47	37.2	1	59.6	0.72
15.2	1.42	37.4	1.01	59.8	0.72
15.4	1.42	37.6	1.01	60	0.71
15.6	1.43	37.8	1.01	65	0.65
15.8	1.43	38	0.98	70	0.61
16	1.39	38.2	0.99	75	0.56
16.2	1.4	38.4	0.99	80	0.52
16.4	1.4	38.6	0.99	85	0.48
16.6	1.4	38.8	1	90	0.44
16.8	1.41	39	0.96	95	0.4
17	1.37	39.2	0.97	100	0.38
17.2	1.37	39.4	0.97	105	0.35
17.4	1.38	39.6	0.97	110	0.32
17.6	1.38	39.8	0.98	115	0.29
17.8	1.38	40	0.96	120	0.27
18	1.35	40.2	0.96	125	0.25
18.2	1.35	40.4	0.96	130	0.22
18.4	1.35	40.6	0.96	135	0.21
18.6	1.36	40.8	0.96	150	0.18
18.8	1.36	41	0.94	145	0.17
19	1.32	41.2	0.95	150	0.16
19.2	1.33	41.4	0.95	155	0.14
19.4	1.33	41.6	0.95	160	0.12
19.6	1.34	41.8	0.95	165	0.11
19.8	1.34	42	0.93	170	0.1
20	1.3	42.2	0.93	175	0.09
20.2	1.31	42.4	0.93	180	0.08
20.4	1.31	42.6	0.93	185	0.07
20.6	1.32	42.8	0.94	190	0.06
20.8	1.32	43	0.91	195	0.05
21	1.28	43.2	0.92	200	0.04
21.2	1.29	43.4	0.92	205	0.03
21.4	1.29	43.6	0.92	210	0.03
21.6	1.29	43.8	0.92	215	0.02
21.8	1.3	44	0.9	220	0.02
22	1.26	44.2	0.9	225	0.01
		44.4	0.91	230	0.01

T03437-86021

CW-3X Removal Test #1
SWL = 12.29' Ground Surface
Test Date: 3/16/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	1.18	22.8	0.75	45	0.35
1	1.6	23	0.7	45.2	0.35
1.2	1.65	23.2	0.71	45.4	0.36
1.4	1.67	23.4	0.71	45.6	0.36
1.6	1.56	23.6	0.72	45.8	0.36
1.8	2.01	23.8	0.72	46	0.35
2	1.52	24	0.68	46.2	0.35
2.2	1.53	24.2	0.68	46.4	0.35
2.4	1.56	24.4	0.69	46.6	0.35
2.6	1.57	24.6	0.69	46.8	0.35
2.8	1.59	24.8	0.69	47	0.33
3	1.44	25	0.66	47.2	0.34
3.2	1.45	25.2	0.66	47.4	0.34
3.4	1.47	25.4	0.67	47.6	0.34
3.6	1.48	25.6	0.67	47.8	0.34
3.8	1.5	25.8	0.67	48	0.33
4	1.38	26	0.64	48.2	0.33
4.2	1.39	26.2	0.64	48.4	0.33
4.4	1.4	26.4	0.65	48.6	0.33
4.6	1.41	26.6	0.65	48.8	0.33
4.8	1.42	26.8	0.65	49	0.32
5	1.32	27	0.62	49.2	0.32
5.2	1.33	27.2	0.62	49.4	0.32
5.4	1.34	27.4	0.63	49.6	0.33
5.6	1.35	27.6	0.63	49.8	0.33
5.8	1.36	27.8	0.64	50	0.31
6	1.26	28	0.6	50.2	0.31
6.2	1.27	28.2	0.6	50.4	0.31
6.4	1.28	28.4	0.61	50.6	0.31
6.6	1.3	28.6	0.61	50.8	0.32
6.8	1.31	28.8	0.61	51	0.3
7	1.21	29	0.58	51.2	0.3
7.2	1.23	29.2	0.58	51.4	0.31
7.4	1.23	29.4	0.59	51.6	0.31
7.6	1.24	29.6	0.59	51.8	0.31
7.8	1.25	29.8	0.59	52	0.29
8	1.17	30	0.56	52.2	0.3
8.2	1.18	30.2	0.57	52.4	0.3
8.4	1.19	30.4	0.57	52.6	0.3
8.6	1.2	30.6	0.57	52.8	0.3
8.8	1.21	30.8	0.58	53	0.29
9	1.13	31	0.54	53.2	0.29
9.2	1.14	31.2	0.55	53.4	0.29
9.4	1.15	31.4	0.55	53.6	0.29
9.6	1.16	31.6	0.56	53.8	0.29
9.8	1.16	31.8	0.56	54	0.28
10	1.1	32	0.53	54.2	0.28
10.2	1.1	32.2	0.53	54.4	0.28
10.4	1.11	32.4	0.53	54.6	0.28
10.6	1.12	32.6	0.54	54.8	0.29
10.8	1.12	32.8	0.54	55	0.27
11	1.06	33	0.51	55.2	0.27
11.2	1.07	33.2	0.51	55.4	0.27
11.4	1.07	33.4	0.52	55.6	0.27
11.6	1.08	33.6	0.52	55.8	0.28
11.8	1.09	33.8	0.52	56	0.27
12	1.02	34	0.5	56.2	0.27
12.2	1.03	34.2	0.5	56.4	0.27
12.4	1.04	34.4	0.5	56.6	0.27
12.6	1.04	34.6	0.5	56.8	0.27
12.8	1.05	34.8	0.51	57	0.26
13	0.98	35	0.48	57.2	0.26
13.2	0.99	35.2	0.48	57.4	0.26
13.4	1	35.4	0.48	57.6	0.26
13.6	1.01	35.6	0.49	57.8	0.26
13.8	1.01	35.8	0.49	58	0.25
14	0.95	36	0.46	58.2	0.25
14.2	0.96	36.2	0.47	58.4	0.25
14.4	0.96	36.4	0.47	58.6	0.26
14.6	0.97	36.6	0.47	58.8	0.26
14.8	0.98	36.8	0.48	59	0.25
15	0.92	37	0.45	59.2	0.25
15.2	0.93	37.2	0.46	59.4	0.25
15.4	0.93	37.4	0.46	59.6	0.25
15.6	0.94	37.6	0.46	59.8	0.25
15.8	0.95	37.8	0.46	60	0.25
16	0.89	38	0.44	65	0.21
16.2	0.89	38.2	0.44	70	0.19
16.4	0.9	38.4	0.44	75	0.18
16.6	0.91	38.6	0.45	80	0.16
16.8	0.91	38.8	0.45	85	0.15
17	0.86	39	0.43	90	0.14
17.2	0.86	39.2	0.43	95	0.13
17.4	0.87	39.4	0.43	100	0.12
17.6	0.88	39.6	0.43	105	0.11
17.8	0.88	39.8	0.44	110	0.11
18	0.83	40	0.41	115	0.1
18.2	0.84	40.2	0.42	120	0.1
18.4	0.84	40.4	0.42	125	0.1
18.6	0.85	40.6	0.42	130	0.1
18.8	0.85	40.8	0.42	135	0.09
19	0.8	41	0.4	140	0.09
19.2	0.81	41.2	0.4	145	0.09
19.4	0.82	41.4	0.4	150	0.09
19.6	0.82	41.6	0.41	155	0.09
19.8	0.82	41.8	0.41	160	0.09
20	0.78	42	0.39	165	0.09
20.2	0.78	42.2	0.39	170	0.09
20.4	0.79	42.4	0.39	175	0.08
20.6	0.79	42.6	0.39	180	0.09
20.8	0.8	42.8	0.39	185	0.08
21	0.75	43	0.37	190	0.08
21.2	0.76	43.2	0.37	195	0.08
21.4	0.76	43.4	0.37	200	0.08
21.6	0.77	43.6	0.38	205	0.08
21.8	0.78	43.8	0.38	210	0.08
22	0.73	44	0.36	215	0.08
22.2	0.73	44.2	0.36	220	0.08
22.4	0.74	44.4	0.37	225	0.08
22.6	0.74	44.6	0.37	230	0.08
		44.8	0.37	235	0.09

AR300630

T03437-86021

CW-3I Insert Test #2
SWL = 12.29' Ground Surface
Test Date: 3/16/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0.2	4.24	22.6	1	44.8	0.61
0.4	5.3	22.8	1.01	45	0.59
0.6	3.59	23	0.97	45.2	0.59
0.8	0.02	23.2	0.97	45.4	0.59
1	0.85	23.4	0.98	45.6	0.6
1.2	1.09	23.6	0.98	45.8	0.6
1.4	3.13	23.8	0.98	46	0.58
1.6	3.2	24	0.94	46.2	0.58
2	1.7	24.2	0.95	46.4	0.58
2.2	1.51	24.4	0.95	46.6	0.58
2.4	1.48	24.6	0.96	46.8	0.59
2.6	1.99	24.8	0.96	47	0.57
2.8	1.95	25	0.92	47.2	0.57
3	1.56	25.2	0.93	47.4	0.57
3.2	1.59	25.4	0.93	47.6	0.57
3.4	1.59	25.6	0.93	47.8	0.57
3.6	1.55	25.8	0.94	48	0.55
3.8	1.63	26	0.9	48.2	0.56
4	1.53	26.2	0.9	48.4	0.56
4.2	1.53	26.4	0.91	48.6	0.56
4.4	1.54	26.6	0.91	48.8	0.56
4.6	1.55	26.8	0.92	49	0.54
4.8	1.56	27	0.88	49.2	0.55
5	1.49	27.2	0.88	49.4	0.55
5.2	1.5	27.4	0.89	49.6	0.55
5.4	1.51	27.6	0.89	49.8	0.55
5.6	1.51	27.8	0.89	50	0.53
5.8	1.52	28	0.86	50.2	0.53
6	1.45	28.2	0.86	50.4	0.54
6.2	1.46	28.4	0.87	50.6	0.54
6.4	1.47	28.6	0.87	50.8	0.54
6.6	1.48	28.8	0.87	51	0.52
6.8	1.48	29	0.84	51.2	0.53
7	1.42	29.2	0.84	51.4	0.53
7.2	1.43	29.4	0.85	51.6	0.53
7.4	1.43	29.6	0.85	51.8	0.53
7.6	1.44	29.8	0.85	52	0.51
7.8	1.45	30	0.82	52.2	0.51
8	1.38	30.2	0.82	52.4	0.52
8.2	1.39	30.4	0.83	52.6	0.52
8.4	1.4	30.6	0.83	52.8	0.52
8.6	1.4	30.8	0.83	53	0.5
8.8	1.41	31	0.8	53.2	0.51
9	1.35	31.2	0.81	53.4	0.51
9.2	1.36	31.4	0.81	53.6	0.51
9.4	1.37	31.6	0.81	53.8	0.51
9.6	1.38	31.8	0.82	54	0.49
9.8	1.38	32	0.78	54.2	0.49
10	1.32	32.2	0.78	54.4	0.5
10.2	1.32	32.4	0.79	54.6	0.5
10.4	1.33	32.6	0.79	54.8	0.5
10.6	1.34	32.8	0.8	55	0.48
10.8	1.34	33	0.77	55.2	0.49
11	1.29	33.2	0.77	55.4	0.49
11.2	1.29	33.4	0.77	55.6	0.49
11.4	1.3	33.6	0.78	55.8	0.49
11.6	1.31	33.8	0.78	56	0.47
11.8	1.31	34	0.75	56.2	0.48
12	1.25	34.2	0.75	56.4	0.48
12.2	1.26	34.4	0.76	56.6	0.48
12.4	1.27	34.6	0.76	56.8	0.48
12.6	1.28	34.8	0.76	57	0.46
12.8	1.28	35	0.73	57.2	0.47
13	1.23	35.2	0.74	57.4	0.47
13.2	1.23	35.4	0.74	57.6	0.47
13.4	1.24	35.6	0.74	57.8	0.47
13.6	1.24	35.8	0.75	58	0.46
13.8	1.25	36	0.72	58.2	0.46
14	1.2	36.2	0.72	58.4	0.46
14.2	1.2	36.4	0.72	58.6	0.46
14.4	1.21	36.6	0.73	58.8	0.46
14.6	1.21	36.8	0.73	59	0.44
14.8	1.22	37	0.7	59.2	0.45
15	1.17	37.2	0.7	59.4	0.45
15.2	1.17	37.4	0.71	59.6	0.45
15.4	1.18	37.6	0.71	59.8	0.46
15.6	1.19	37.8	0.71	60	0.44
15.8	1.19	38	0.69	65	0.41
16	1.14	38.2	0.69	70	0.36
16.2	1.15	38.4	0.69	75	0.35
16.4	1.15	38.6	0.7	80	0.32
16.6	1.16	38.8	0.7	85	0.29
16.8	1.16	39	0.67	90	0.28
17	1.11	39.2	0.68	95	0.26
17.2	1.12	39.4	0.68	100	0.25
17.4	1.13	39.6	0.68	105	0.24
17.6	1.13	39.8	0.68	110	0.22
17.8	1.13	40	0.66	115	0.21
18	1.09	40.2	0.66	120	0.21
18.2	1.09	40.4	0.66	125	0.2
18.4	1.1	40.6	0.67	130	0.19
18.6	1.1	40.8	0.67	135	0.19
18.8	1.11	41	0.64	140	0.18
19	1.06	41.2	0.65	145	0.17
19.2	1.07	41.4	0.65	150	0.17
19.4	1.07	41.6	0.65	155	0.17
19.6	1.08	41.8	0.66	160	0.17
19.8	1.08	42	0.63	165	0.16
20	1.04	42.2	0.63	170	0.16
20.2	1.04	42.4	0.64	175	0.15
20.4	1.05	42.6	0.64	180	0.15
20.6	1.05	42.8	0.64	185	0.15
20.8	1.06	43	0.62	190	0.15
21	1.01	43.2	0.62	195	0.15
21.2	1.02	43.4	0.62	200	0.14
21.4	1.02	43.6	0.62	205	0.14
21.6	1.03	43.8	0.62	210	0.14
21.8	1.03	44	0.6	215	0.14
22	0.99	44.2	0.61	220	0.14
22.2	1	44.4	0.61	225	0.14
22.4	1	44.6	0.61	230	0.14
				235	0.14

AR300631

T03437-86021

CW-3I Removal Test #2
SWL = 12.29' Ground Surface
Test Date: 3/16/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	3.04	22.8	0.65	45	0.26
0.2	4.52	23	0.61	45.2	0.27
0.4	2.5	23.2	0.62	45.4	0.27
1	1.58	23.4	0.62	45.6	0.27
1.2	1.47	23.6	0.63	45.8	0.27
1.4	1.66	23.8	0.63	46	0.26
1.6	1.71	24	0.59	46.2	0.26
1.8	1.25	24.2	0.6	46.4	0.26
2	1.43	24.4	0.6	46.6	0.26
2.2	1.45	24.6	0.61	46.8	0.26
2.4	1.47	24.8	0.61	47	0.25
2.6	1.49	25	0.57	47.2	0.25
2.8	1.51	25.2	0.57	47.4	0.25
3	1.34	25.4	0.58	47.6	0.25
3.2	1.35	25.6	0.58	47.8	0.25
3.4	1.37	25.8	0.58	48	0.24
3.6	1.39	26	0.55	48.2	0.24
3.8	1.42	26.2	0.55	48.4	0.24
4	1.28	26.4	0.56	48.6	0.24
4.2	1.29	26.6	0.56	48.8	0.24
4.4	1.3	26.8	0.56	49	0.22
4.6	1.32	27	0.52	49.2	0.23
4.8	1.33	27.2	0.53	49.4	0.23
5	1.22	27.4	0.54	49.6	0.23
5.2	1.23	27.6	0.54	49.8	0.23
5.4	1.24	27.8	0.54	50	0.22
5.6	1.25	28	0.5	50.2	0.22
5.8	1.27	28.2	0.51	50.4	0.22
6	1.17	28.4	0.51	50.6	0.22
6.2	1.18	28.6	0.52	50.8	0.23
6.4	1.19	28.8	0.52	51	0.21
6.6	1.2	29	0.49	51.2	0.21
6.8	1.21	29.2	0.49	51.4	0.22
7	1.12	29.4	0.49	51.6	0.22
7.2	1.13	29.6	0.5	51.8	0.22
7.4	1.14	29.8	0.5	52	0.2
7.6	1.15	30	0.47	52.2	0.21
7.8	1.16	30.2	0.47	52.4	0.21
8	1.08	30.4	0.48	52.6	0.21
8.2	1.09	30.6	0.48	52.8	0.21
8.4	1.1	30.8	0.48	53	0.2
8.6	1.1	31	0.45	53.2	0.2
8.8	1.11	31.2	0.46	53.4	0.2
9	1.04	31.4	0.46	53.6	0.2
9.2	1.05	31.6	0.46	53.8	0.2
9.4	1.05	31.8	0.47	54	0.19
9.6	1.06	32	0.44	54.2	0.19
9.8	1.07	32.2	0.44	54.4	0.19
10	1.1	32.4	0.44	54.6	0.19
10.2	1.01	32.6	0.45	54.8	0.2
10.4	1.01	32.8	0.45	55	0.18
10.6	1.02	33	0.42	55.2	0.18
18.8	1.03	33.2	0.42	55.4	0.19
11	0.96	33.4	0.43	55.6	0.19
11.2	0.97	33.6	0.43	55.8	0.19
11.4	0.98	33.8	0.43	56	0.18
11.6	0.99	34	0.4	56.2	0.18
11.8	0.99	34.2	0.41	56.4	0.18
12	0.92	34.4	0.41	56.6	0.18
12.2	0.93	34.6	0.41	56.8	0.18
12.4	0.94	34.8	0.42	57	0.17
12.6	0.95	35	0.39	57.2	0.17
12.8	0.95	35.2	0.39	57.4	0.17
13	0.89	35.4	0.39	57.6	0.17
13.2	0.9	35.6	0.4	57.8	0.17
13.4	0.9	35.8	0.4	58	0.16
13.6	0.91	36	0.37	58.2	0.16
13.8	0.92	36.2	0.37	58.4	0.17
14	0.86	36.4	0.38	58.6	0.17
14.2	0.86	36.6	0.38	58.8	0.17
14.4	0.87	36.8	0.39	59	0.16
14.6	0.88	37	0.36	59.2	0.16
14.8	0.88	37.2	0.36	59.4	0.16
15	0.82	37.4	0.37	59.6	0.16
15.2	0.83	37.6	0.37	59.8	0.16
15.4	0.84	37.8	0.37	60	0.16
15.6	0.84	38	0.35	65	0.13
15.8	0.85	38.2	0.35	70	0.1
16	0.79	38.4	0.35	75	0.09
16.2	0.8	38.6	0.35	80	0.07
16.4	0.8	38.8	0.36	85	0.06
16.6	0.81	39	0.33	90	0.05
16.8	0.82	39.2	0.33	95	0.04
17	0.77	39.4	0.34	100	0.04
17.2	0.77	39.6	0.34	105	0.03
17.4	0.78	39.8	0.35	110	0.03
17.6	0.78	40	0.33	115	0.03
17.8	0.79	40.2	0.33	120	0.02
18	0.74	40.4	0.33	125	0.02
18.2	0.74	40.6	0.33	130	0.02
18.4	0.75	40.8	0.33	135	0.01
18.6	0.75	41	0.31	140	0.01
18.8	0.76	41.2	0.31	145	0.01
19	0.71	41.4	0.32	150	0.01
19.2	0.72	41.6	0.32	155	0.01
19.4	0.72	41.8	0.32	160	0.01
19.6	0.73	42	0.3	165	0.01
19.8	0.73	42.2	0.3	170	0.01
20	0.68	42.4	0.3	175	0.01
20.2	0.69	42.6	0.3	180	0.01
20.4	0.69	42.8	0.31	185	0.01
20.6	0.7	43	0.29	190	0.01
20.8	0.71	43.2	0.29	195	0.01
21	0.66	43.4	0.29	200	0.01
21.2	0.66	43.6	0.29	205	0.01
21.4	0.67	43.8	0.3	210	0.01
21.6	0.67	44	0.28	215	0.01
21.8	0.68	44.2	0.28	220	0.01
22	0.64	44.4	0.28	225	0.01
22.2	0.64	44.6	0.28	230	0.01
22.4	0.65	44.8	0.28	235	0.01
22.6	0.65				

AR300632

T03438-86021

CW-3S Insert Test #1
SWL = 12.33' Ground Surface
Test Date: 3/16/88
Slug Size = 2 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	6.38	22.8	0.14	44.6	0.12
0.2	0.2	23	0.14	44.8	0.12
1	0.3	23.2	0.14	45	0.12
1.2	0.29	23.4	0.14	45.2	0.12
1.4	0.71	23.6	0.14	45.4	0.12
2	0.21	23.8	0.14	45.6	0.12
2.2	0.21	24	0.14	45.8	0.12
2.4	0.23	24.2	0.14	46	0.12
2.6	0.24	24.4	0.14	46.2	0.12
2.8	0.27	24.6	0.14	46.4	0.12
3	0.18	24.8	0.14	46.6	0.12
3.2	0.18	25	0.14	46.8	0.12
3.4	0.19	25.2	0.14	47	0.12
3.6	0.19	25.4	0.14	47.2	0.12
3.8	0.2	25.6	0.14	47.4	0.12
4	0.16	25.8	0.14	47.6	0.12
4.2	0.17	26	0.14	47.8	0.12
4.4	0.17	26.2	0.14	48	0.12
4.6	0.17	26.4	0.14	48.2	0.12
4.8	0.18	26.6	0.14	48.4	0.12
5	0.16	26.8	0.14	48.6	0.12
5.2	0.16	27	0.14	48.8	0.12
5.4	0.16	27.2	0.14	49	0.12
5.6	0.16	27.4	0.14	49.2	0.12
5.8	0.16	27.6	0.14	49.4	0.12
6	0.16	27.8	0.14	49.6	0.12
6.2	0.16	28	0.14	49.8	0.12
6.4	0.16	28.2	0.14	50	0.11
6.6	0.16	28.4	0.14	50.2	0.11
6.8	0.16	28.6	0.14	50.4	0.11
7	0.15	28.8	0.14	50.6	0.11
7.2	0.15	29	0.14	50.8	0.12
7.4	0.15	29.2	0.14	51	0.11
7.6	0.15	29.4	0.14	51.2	0.11
7.8	0.16	29.6	0.14	51.4	0.11
8	0.15	29.8	0.14	51.6	0.11
8.2	0.15	30	0.13	51.8	0.11
8.4	0.15	30.2	0.13	52	0.11
8.6	0.15	30.4	0.13	52.2	0.11
8.8	0.15	30.6	0.13	52.4	0.11
9	0.15	30.8	0.13	52.6	0.11
9.2	0.15	31	0.13	52.8	0.11
9.4	0.15	31.2	0.13	53	0.11
9.6	0.15	31.4	0.13	53.2	0.11
9.8	0.16	31.6	0.13	53.4	0.11
10	0.15	31.8	0.13	53.6	0.11
10.2	0.15	32	0.13	53.8	0.11
10.4	0.15	32.2	0.13	54	0.11
10.6	0.15	32.4	0.13	54.2	0.11
10.8	0.15	32.6	0.13	54.4	0.11
11	0.15	32.8	0.13	54.6	0.11
11.2	0.15	33	0.13	54.8	0.11
11.4	0.15	33.2	0.13	55	0.11
11.6	0.15	33.4	0.13	55.2	0.11
11.8	0.16	33.6	0.13	55.4	0.11
12	0.15	33.8	0.13	55.6	0.11
12.2	0.15	34	0.13	55.8	0.11
12.4	0.15	34.2	0.13	56	0.11
12.6	0.15	34.4	0.13	56.2	0.11
12.8	0.15	34.6	0.13	56.4	0.11
13	0.15	34.8	0.13	56.6	0.11
13.2	0.15	35	0.13	56.8	0.11
13.4	0.15	35.2	0.13	57	0.11
13.6	0.15	35.4	0.13	57.2	0.11
13.8	0.16	35.6	0.13	57.4	0.11
14	0.14	35.8	0.13	57.6	0.11
14.2	0.14	36	0.13	57.8	0.11
14.4	0.14	36.2	0.13	58	0.11
14.6	0.15	36.4	0.13	58.2	0.11
14.8	0.15	36.6	0.13	58.4	0.11
15	0.14	36.8	0.13	58.6	0.11
15.2	0.14	37	0.13	58.8	0.11
15.4	0.14	37.2	0.13	59	0.1
15.6	0.14	37.4	0.13	59.2	0.1
15.8	0.14	37.6	0.13	59.4	0.1
16	0.14	37.8	0.13	59.6	0.11
16.2	0.14	38	0.13	59.8	0.11
16.4	0.14	38.2	0.13	60	0.1
16.6	0.14	38.4	0.13	65	0.1
16.8	0.14	38.6	0.13	70	0.1
17	0.14	38.8	0.13	75	0.09
17.2	0.14	39	0.13	80	0.08
17.4	0.14	39.2	0.13	85	0.08
17.6	0.14	39.4	0.13	90	0.08
17.8	0.14	39.6	0.13	95	0.08
18	0.14	39.8	0.13	100	0.07
18.2	0.14	40	0.12	105	0.07
18.4	0.14	40.2	0.13	110	0.06
18.6	0.14	40.4	0.13	115	0.06
18.8	0.14	40.6	0.13	120	0.05
19	0.14	40.8	0.13	125	0.05
19.2	0.14	41	0.12	130	0.05
19.4	0.14	41.2	0.12	135	0.04
19.6	0.14	41.4	0.12	140	0.04
19.8	0.14	41.6	0.12	145	0.04
20	0.14	41.8	0.12	150	0.03
20.2	0.14	42	0.12	155	0.03
20.4	0.14	42.2	0.12	160	0.03
20.6	0.14	42.4	0.12	165	0.03
20.8	0.14	42.6	0.12	170	0.03
21	0.14	42.8	0.12	175	0.02
21.2	0.14	43	0.12	180	0.01
21.4	0.14	43.2	0.12	185	0.01
21.6	0.14	43.4	0.12	190	0.01
21.8	0.14	43.6	0.12	195	0.01
22	0.14	43.8	0.12	200	0.01
22.2	0.14	44	0.12	205	0.01
22.4	0.14	44.2	0.12	210	0.01
22.6	0.14	44.4	0.12	215	0.01

T03438-86021

CW-3S Removal Test #1
SWL = 12.33' Ground Surface
Test Date: 3/16/88
Slug Size = 2 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	0.76	22	0.1	44	0.07
0.2	0.8	22.2	0.1	44.2	0.07
0.4	0.84	22.4	0.1	44.4	0.07
0.6	0.89	22.6	0.1	44.6	0.07
0.8	0.95	22.8	0.1	44.8	0.07
1	0.6	23	0.1	45	0.07
1.2	0.63	23.2	0.1	45.2	0.07
1.4	0.65	23.4	0.1	45.4	0.07
1.6	0.67	23.6	0.1	45.6	0.07
1.8	0.73	23.8	0.1	45.8	0.07
2	0.48	24	0.1	46	0.07
2.2	0.49	24.2	0.1	46.2	0.07
2.4	0.52	24.4	0.1	46.4	0.07
2.6	0.53	24.6	0.1	46.6	0.07
2.8	0.58	24.8	0.1	46.8	0.07
3	0.38	25	0.1	47	0.07
3.2	0.4	25.2	0.1	47.2	0.07
3.4	0.42	25.4	0.1	47.4	0.07
3.6	0.44	25.6	0.1	47.6	0.07
3.8	0.45	25.8	0.1	47.8	0.07
4	0.32	26	0.1	48	0.06
4.2	0.33	26.2	0.1	48.2	0.06
4.4	0.33	26.4	0.1	48.4	0.06
4.6	0.33	26.6	0.1	48.6	0.06
4.8	0.36	26.8	0.1	48.8	0.06
5	0.25	27	0.09	49	0.06
5.2	0.28	27.2	0.09	49.2	0.06
5.4	0.29	27.4	0.09	49.4	0.06
5.6	0.28	27.6	0.09	49.6	0.06
5.8	0.3	27.8	0.1	49.8	0.06
6	0.24	28	0.09	50	0.06
6.2	0.24	28.2	0.09	50.2	0.06
6.4	0.25	28.4	0.09	50.4	0.06
6.6	0.25	28.6	0.09	50.6	0.06
6.8	0.26	28.8	0.09	50.8	0.06
7	0.21	29	0.09	51	0.06
7.2	0.21	29.2	0.09	51.2	0.06
7.4	0.22	29.4	0.09	51.4	0.06
7.6	0.22	29.6	0.09	51.6	0.06
7.8	0.23	29.8	0.09	51.8	0.06
8	0.19	30	0.09	52	0.06
8.2	0.19	30.2	0.09	52.2	0.06
8.4	0.2	30.4	0.09	52.4	0.06
8.6	0.2	30.6	0.09	52.6	0.06
8.8	0.21	30.8	0.09	52.8	0.06
9	0.18	31	0.08	53	0.06
9.2	0.18	31.2	0.08	53.2	0.06
9.4	0.18	31.4	0.08	53.4	0.06
9.6	0.18	31.6	0.08	53.6	0.06
9.8	0.19	31.8	0.08	53.8	0.06
10	0.16	32	0.08	54	0.06
10.2	0.17	32.2	0.08	54.2	0.06
10.4	0.17	32.4	0.08	54.4	0.06
10.6	0.17	32.6	0.08	54.6	0.06
10.8	0.17	32.8	0.08	54.8	0.06
11	0.15	33	0.08	55	0.06
11.2	0.16	33.2	0.08	55.2	0.06
11.4	0.16	33.4	0.08	55.4	0.06
11.6	0.16	33.6	0.08	55.6	0.06
11.8	0.16	33.8	0.08	55.8	0.06
12	0.14	34	0.08	56	0.06
12.2	0.15	34.2	0.08	56.2	0.06
12.4	0.15	34.4	0.08	56.4	0.06
12.6	0.15	34.6	0.08	56.6	0.06
12.8	0.15	34.8	0.08	56.8	0.06
13	0.14	35	0.08	57	0.06
13.2	0.14	35.2	0.08	57.2	0.06
13.4	0.14	35.4	0.08	57.4	0.06
13.6	0.14	35.6	0.08	57.6	0.06
13.8	0.14	35.8	0.08	57.8	0.06
14	0.13	36	0.08	58	0.06
14.2	0.14	36.2	0.08	58.2	0.06
14.4	0.14	36.4	0.08	58.4	0.06
14.6	0.14	36.6	0.08	58.6	0.06
14.8	0.14	36.8	0.08	58.8	0.06
15	0.13	37	0.08	59	0.06
15.2	0.13	37.2	0.08	59.2	0.06
15.4	0.13	37.4	0.08	59.4	0.06
15.6	0.13	37.6	0.08	59.6	0.06
15.8	0.13	37.8	0.08	59.8	0.06
16	0.12	38	0.07	60	0.05
16.2	0.12	38.2	0.08	65	0.05
16.4	0.12	38.4	0.08	70	0.04
16.6	0.12	38.6	0.08	75	0.04
16.8	0.13	38.8	0.08	80	0.04
17	0.12	39	0.07	85	0.04
17.2	0.12	39.2	0.07	90	0.03
17.4	0.12	39.4	0.07	95	0.03
17.6	0.12	39.6	0.07	100	0.03
17.8	0.12	39.8	0.07	105	0.03
18	0.11	40	0.07	110	0.03
18.2	0.12	40.2	0.07	115	0.03
18.4	0.12	40.4	0.07	120	0.02
18.6	0.12	40.6	0.07	125	0.02
18.8	0.12	40.8	0.07	130	0.02
19	0.11	41	0.07	135	0.02
19.2	0.11	41.2	0.07	140	0.02
19.4	0.11	41.4	0.07	145	0.01
19.6	0.11	41.6	0.07	150	0.01
19.8	0.11	41.8	0.07	155	0.01
20	0.11	42	0.07	160	0.01
20.2	0.11	42.2	0.07	165	0.01
20.4	0.11	42.4	0.07	170	0.01
20.6	0.11	42.6	0.07	175	0.01
20.8	0.11	42.8	0.07	180	0.01
21	0.1	43	0.07	185	0.01
21.2	0.1	43.2	0.07	190	0.01
21.4	0.11	43.4	0.07	195	0.01
21.6	0.11	43.6	0.07	205	0.01
21.8	0.11	43.8	0.07		

AR300634

T03438-86021

CW-3S Insert Test #2
SWL = 12.33' Ground Surface
Test Date: 3/16/88
Slug Size = 2 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	0.44	22	0.15	44	0.13
0.2	-0.74	22.2	0.15	44.2	0.13
0.4	1.52	22.4	0.15	44.4	0.13
0.6	5.1	22.6	0.15	44.6	0.13
0.8	-0.21	22.8	0.15	44.8	0.13
1	0.23	23	0.15	45	0.13
1.2	0.24	23.2	0.15	45.2	0.13
1.4	0.26	23.4	0.15	45.4	0.13
1.6	0.28	23.6	0.15	45.6	0.13
1.8	0.38	23.8	0.15	45.8	0.13
2	0.18	24	0.15	46	0.13
2.2	0.19	24.2	0.15	46.2	0.13
2.4	0.19	24.4	0.15	46.4	0.13
2.6	0.2	24.6	0.15	46.6	0.13
2.8	0.21	24.8	0.15	46.8	0.13
3	0.16	25	0.15	47	0.12
3.2	0.17	25.2	0.15	47.2	0.12
3.4	0.17	25.4	0.15	47.4	0.12
3.6	0.17	25.6	0.15	47.6	0.12
3.8	0.17	25.8	0.15	47.8	0.12
4	0.15	26	0.15	48	0.12
4.2	0.16	26.2	0.15	48.2	0.12
4.4	0.16	26.4	0.15	48.4	0.12
4.6	0.16	26.6	0.15	48.6	0.12
4.8	0.16	26.8	0.15	48.8	0.12
5	0.15	27	0.15	49	0.12
5.2	0.15	27.2	0.15	49.2	0.12
5.4	0.15	27.4	0.15	49.4	0.12
5.6	0.15	27.6	0.15	49.6	0.12
5.8	0.15	27.8	0.15	49.8	0.12
6	0.16	28	0.15	50	0.12
6.2	0.16	28.2	0.15	50.2	0.12
6.4	0.15	28.4	0.15	50.4	0.12
6.6	0.15	28.6	0.15	50.6	0.12
6.8	0.15	28.8	0.15	50.8	0.12
7	0.16	29	0.14	51	0.12
7.2	0.16	29.2	0.14	51.2	0.12
7.4	0.16	29.4	0.14	51.4	0.13
7.6	0.16	29.6	0.15	51.6	0.13
7.8	0.16	29.8	0.15	51.8	0.12
8	0.16	30	0.13	52	0.12
8.2	0.16	30.2	0.13	52.2	0.12
8.4	0.16	30.4	0.13	52.4	0.12
8.6	0.16	30.6	0.14	52.6	0.12
8.8	0.16	30.8	0.14	52.8	0.12
9	0.15	31	0.13	53	0.12
9.2	0.15	31.2	0.14	53.2	0.12
9.4	0.15	31.4	0.14	53.4	0.12
9.6	0.15	31.6	0.13	53.6	0.12
9.8	0.16	31.8	0.13	53.8	0.12
10	0.16	32	0.13	54	0.12
10.2	0.16	32.2	0.13	54.2	0.12
10.4	0.16	32.4	0.14	54.4	0.12
10.6	0.16	32.6	0.14	54.6	0.12
10.8	0.15	32.8	0.14	54.8	0.12
11	0.16	33	0.16	55	0.12
11.2	0.16	33.2	0.13	55.2	0.12
11.4	0.16	33.4	0.13	55.4	0.12
11.6	0.16	33.6	0.14	55.6	0.12
11.8	0.16	33.8	0.13	55.8	0.12
12	0.16	34	0.14	56	0.12
12.2	0.16	34.2	0.14	56.2	0.12
12.4	0.16	34.4	0.14	56.4	0.12
12.6	0.16	34.6	0.14	56.6	0.12
12.8	0.16	34.8	0.14	56.8	0.12
13	0.16	35	0.14	57	0.12
13.2	0.16	35.2	0.14	57.2	0.12
13.4	0.16	35.4	0.14	57.4	0.12
13.6	0.16	35.6	0.14	57.6	0.12
13.8	0.16	35.8	0.14	57.8	0.12
14	0.16	36	0.14	58	0.12
14.2	0.16	36.2	0.14	58.2	0.12
14.4	0.16	36.4	0.14	58.4	0.12
14.6	0.16	36.6	0.14	58.6	0.12
14.8	0.16	36.8	0.14	58.8	0.12
15	0.16	37	0.13	59	0.11
15.2	0.16	37.2	0.13	59.2	0.11
15.4	0.16	37.4	0.13	59.4	0.12
15.6	0.16	37.6	0.13	59.6	0.12
15.8	0.16	37.8	0.14	59.8	0.12
16	0.16	38	0.13	60	0.11
16.2	0.16	38.2	0.13	65	0.11
16.4	0.16	38.4	0.13	70	0.1
16.6	0.16	38.6	0.13	75	0.1
16.8	0.16	38.8	0.13	80	0.09
17	0.16	39	0.13	85	0.09
17.2	0.16	39.2	0.13	90	0.08
17.4	0.16	39.4	0.13	95	0.08
17.6	0.16	39.6	0.13	100	0.07
17.8	0.16	39.8	0.13	105	0.07
18	0.16	40	0.13	110	0.06
18.2	0.16	40.2	0.13	115	0.06
18.4	0.16	40.4	0.13	120	0.06
18.6	0.16	40.6	0.13	125	0.05
18.8	0.16	40.8	0.13	130	0.05
19	0.16	41	0.13	135	0.04
19.2	0.16	41.2	0.13	140	0.04
19.4	0.16	41.4	0.13	145	0.04
19.6	0.16	41.6	0.13	150	0.03
19.8	0.16	41.8	0.13	155	0.03
20	0.15	42	0.13	160	0.03
20.2	0.15	42.2	0.13	165	0.02
20.4	0.15	42.4	0.13	170	0.02
20.6	0.16	42.6	0.13	175	0.02
20.8	0.16	42.8	0.13	180	0.02
21	0.15	43	0.13	185	0.02
21.2	0.15	43.2	0.13	190	0.01
21.4	0.15	43.4	0.13	195	0.01
21.6	0.15	43.6	0.13	200	0.01
21.8	0.15	43.8	0.13		

T03438-86021

CM-3S Recovery Test #2
SWL = 12.33' Ground Surface
Test Date: 3/16/88
Slug Size = 2 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	0.4	1	0.22	2	0.1
0.2	0.45	1.2	0.24	2.2	0.14
0.4	0.49	1.4	0.29	2.4	0.13
0.6	0.69	1.6	0.29	2.6	0.17
0.8	1.07	1.8	0.35	2.8	0.19

T03435-86021

CW-4D Removal Test #1
SWL = 12.90' Ground Surface
Test Date: 3/9/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	1.93	20	0.06	40	0.02
0.2	1.99	20.2	0.06	40.2	0.02
0.4	2.09	20.4	0.06	40.4	0.02
0.6	1.69	20.6	0.06	40.6	0.02
0.8	1.38	20.8	0.06	40.8	0.02
1	1.64	21	0.05	41	0.02
1.2	1.68	21.2	0.05	41.2	0.02
1.4	1.75	21.4	0.05	41.4	0.02
1.6	1.81	21.6	0.05	41.6	0.02
1.8	1.86	21.8	0.05	41.8	0.02
2	1.41	22	0.04	42	0.02
2.2	1.45	22.2	0.04	42.2	0.02
2.4	1.49	22.4	0.04	42.4	0.02
2.6	1.54	22.6	0.05	42.6	0.02
2.8	1.59	22.8	0.05	42.8	0.02
3	1.2	23	0.04	43	0.02
3.2	1.24	23.2	0.04	43.2	0.02
3.4	1.28	23.4	0.04	43.4	0.02
3.6	1.32	23.6	0.04	43.6	0.02
3.8	1.36	23.8	0.04	43.8	0.02
4	1.03	24	0.03	44	0.02
4.2	1.06	24.2	0.03	44.2	0.02
4.4	1.1	24.4	0.04	44.4	0.02
4.6	1.13	24.6	0.04	44.6	0.02
4.8	1.17	24.8	0.04	44.8	0.02
5	0.87	25	0.03	45	0.02
5.2	0.9	25.2	0.03	45.2	0.02
5.4	0.93	25.4	0.03	45.4	0.02
5.6	0.96	25.6	0.03	45.6	0.02
5.8	1	25.8	0.03	45.8	0.02
6	0.74	26	0.03	46	0.02
6.2	0.76	26.2	0.03	46.2	0.02
6.4	0.79	26.4	0.03	46.4	0.02
6.6	0.81	26.6	0.03	46.6	0.02
6.8	0.84	26.8	0.03	46.8	0.02
7	0.62	27	0.02	47	0.02
7.2	0.64	27.2	0.02	47.2	0.02
7.4	0.66	27.4	0.02	47.4	0.02
7.6	0.69	27.6	0.02	47.6	0.02
7.8	0.71	27.8	0.02	47.8	0.02
8	0.52	28	0.02	48	0.02
8.2	0.53	28.2	0.02	48.2	0.02
8.4	0.55	28.4	0.02	48.4	0.02
8.6	0.58	28.6	0.02	48.6	0.02
8.8	0.6	28.8	0.02	48.8	0.02
9	0.43	29	0.02	49	0.02
9.2	0.45	29.2	0.02	49.2	0.02
9.4	0.46	29.4	0.02	49.4	0.02
9.6	0.48	29.6	0.02	49.6	0.02
9.8	0.5	29.8	0.02	49.8	0.02
10	0.35	30	0.02	50	0.02
10.2	0.37	30.2	0.02	50.2	0.02
10.4	0.38	30.4	0.02	50.4	0.02
10.6	0.4	30.6	0.02	50.6	0.02
10.8	0.41	30.8	0.02	50.8	0.02
11	0.29	31	0.02	51	0.02
11.2	0.3	31.2	0.02	51.2	0.02
11.4	0.32	31.4	0.02	51.4	0.02
11.6	0.33	31.6	0.02	51.6	0.02
11.8	0.34	31.8	0.02	51.8	0.02
12	0.24	32	0.02	52	0.02
12.2	0.25	32.2	0.02	52.2	0.02
12.4	0.26	32.4	0.02	52.4	0.02
12.6	0.27	32.6	0.02	52.6	0.02
12.8	0.28	32.8	0.02	52.8	0.02
13	0.2	33	0.02	53	0.02
13.2	0.2	33.2	0.02	53.2	0.02
13.4	0.21	33.4	0.02	53.4	0.02
13.6	0.22	33.6	0.02	53.6	0.01
13.8	0.23	33.8	0.02	53.8	0.02
14	0.16	34	0.02	54	0.02
14.2	0.17	34.2	0.02	54.2	0.02
14.4	0.17	34.4	0.02	54.4	0.02
14.6	0.18	34.6	0.02	54.6	0.02
14.8	0.19	34.8	0.02	54.8	0.02
15	0.13	35	0.02	55	0.02
15.2	0.14	35.2	0.02	55.2	0.02
15.4	0.14	35.4	0.02	55.4	0.02
15.6	0.15	35.6	0.02	55.6	0.02
15.8	0.15	35.8	0.02	55.8	0.02
16	0.11	36	0.02	56	0.02
16.2	0.11	36.2	0.02	56.2	0.02
16.4	0.12	36.4	0.02	56.4	0.02
16.6	0.12	36.6	0.02	56.6	0.02
16.8	0.13	36.8	0.02	56.8	0.02
17	0.09	37	0.02	57	0.02
17.2	0.1	37.2	0.02	57.2	0.02
17.4	0.1	37.4	0.02	57.4	0.02
17.6	0.1	37.6	0.02	57.6	0.02
17.8	0.11	37.8	0.02	57.8	0.02
18	0.08	38	0.02	58	0.02
18.2	0.08	38.2	0.02	58.2	0.02
18.4	0.08	38.4	0.02	58.4	0.02
18.6	0.08	38.6	0.02	58.6	0.02
18.8	0.09	38.8	0.02	58.8	0.02
19	0.07	39	0.02	59	0.02
19.2	0.07	39.2	0.02	59.2	0.02
19.4	0.07	39.4	0.02	59.4	0.02
19.6	0.07	39.6	0.02	59.6	0.02
19.8	0.08	39.8	0.02	59.8	0.02

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T03438-86021

CW-4D Insert Test #2
SWL = 12.90' Ground Surface
Test Date: 3/9/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	1.61	13.2	0.17	26.2	0.02
0.4	4.43	13.4	0.18	26.4	0.02
0.6	4.58	13.6	0.18	26.6	0.02
0.8	4.58	13.8	0.19	26.8	0.02
1	1.26	14	0.14	27	0.02
1.2	1.48	14.2	0.14	27.2	0.02
1.4	1.53	14.4	0.15	27.4	0.02
1.6	0.72	14.6	0.15	27.6	0.02
1.8	2.99	14.8	0.16	27.8	0.02
2	1.08	15	0.12	28	0.02
2.2	1.28	15.2	0.12	28.2	0.02
2.4	1.16	15.4	0.12	28.4	0.02
2.6	1.35	15.6	0.13	28.6	0.02
2.8	1.32	15.8	0.13	28.8	0.02
3	0.97	16	0.1	29	0.01
3.2	1	16.2	0.1	29.2	0.01
3.4	1.05	16.4	0.11	29.4	0.01
3.6	1.06	16.6	0.11	29.6	0.02
3.8	1.17	16.8	0.11	29.8	0.02
4	0.83	17	0.08	30	0.01
4.2	0.85	17.2	0.09	30.2	0.01
4.4	0.89	17.4	0.09	30.4	0.01
4.6	0.91	17.6	0.09	30.6	0.01
4.8	0.96	17.8	0.09	30.8	0.01
5	0.69	18	0.07	31	0.01
5.2	0.71	18.2	0.07	31.2	0.01
5.4	0.74	18.4	0.07	31.4	0.01
5.6	0.77	18.6	0.08	31.6	0.01
5.8	0.79	18.8	0.08	31.8	0.01
6	0.6	19	0.06	32	0.01
6.2	0.6	19.2	0.06	32.2	0.01
6.4	0.64	19.4	0.06	32.4	0.01
6.6	0.64	19.6	0.06	32.6	0.01
6.8	0.66	19.8	0.06	32.8	0.01
7	0.49	20	0.05	33	0.01
7.2	0.51	20.2	0.05	33.2	0.01
7.4	0.52	20.4	0.05	33.4	0.01
7.6	0.53	20.6	0.05	33.6	0.01
7.8	0.57	20.8	0.05	33.8	0.01
8	0.41	21	0.04	34	0.01
8.2	0.43	21.2	0.04	34.2	0.01
8.4	0.43	21.4	0.04	34.4	0.01
8.6	0.45	21.6	0.05	34.6	0.01
8.8	0.47	21.8	0.05	34.8	0.01
9	0.34	22	0.03	35	0.01
9.2	0.35	22.2	0.04	35.2	0.01
9.4	0.36	22.4	0.04	35.4	0.01
9.6	0.38	22.6	0.04	35.6	0.01
9.8	0.39	22.8	0.04	35.8	0.01
10	0.28	23	0.03	36	0.01
10.2	0.3	23.2	0.03	36.2	0.01
10.4	0.3	23.4	0.03	36.4	0.01
10.6	0.32	23.6	0.03	36.6	0.01
10.8	0.33	23.8	0.03	36.8	0.01
11	0.24	24	0.02	37	0.01
11.2	0.25	24.2	0.02	37.2	0.01
11.4	0.26	24.4	0.03	37.4	0.01
11.6	0.26	24.6	0.03	37.6	0.01
11.8	0.27	24.8	0.03	37.8	0.01
12	0.2	25	0.02	38	0.01
12.2	0.2	25.2	0.02	38.2	0.01
12.4	0.21	25.4	0.02	38.4	0.01
12.6	0.22	25.6	0.02	38.6	0.01
12.8	0.23	25.8	0.02	38.8	0.01
13	0.17	26	0.02	39.8	0.01

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CW-4D Removal Test #2
SWL = 12.90' Ground Surface
Test Date: 3/9/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	2.03	18	0.07	36	0.01
0.2	2.07	18.2	0.07	36.2	0.01
0.4	1.78	18.4	0.07	36.4	0.01
0.6	5.14	18.6	0.08	36.6	0.01
0.8	0.19	18.8	0.08	36.8	0.01
1	1.71	19	0.05	37	0.01
1.2	1.76	19.2	0.05	37.2	0.01
1.4	1.83	19.4	0.06	37.4	0.01
1.6	1.91	19.6	0.06	37.6	0.01
1.8	1.97	19.8	0.06	37.8	0.01
2	1.46	20	0.04	38	0.01
2.2	1.51	20.2	0.05	38.2	0.01
2.4	1.55	20.4	0.05	38.4	0.01
2.6	1.6	20.6	0.05	38.6	0.01
2.8	1.66	20.8	0.05	38.8	0.01
3	1.24	21	0.04	39	0.01
3.2	1.29	21.2	0.04	39.2	0.01
3.4	1.33	21.4	0.04	39.4	0.01
3.6	1.37	21.6	0.04	39.6	0.01
3.8	1.41	21.8	0.04	39.8	0.01
4	1.06	22	0.03	40	0.01
4.2	1.09	22.2	0.03	40.2	0.01
4.4	1.13	22.4	0.03	40.4	0.01
4.6	1.16	22.6	0.03	40.6	0.01
4.8	1.21	22.8	0.03	40.8	0.01
5	0.89	23	0.03	41	0.01
5.2	0.92	23.2	0.03	41.2	0.01
5.4	0.95	23.4	0.03	41.4	0.01
5.6	0.99	23.6	0.03	41.6	0.01
5.8	1.01	23.8	0.03	41.8	0.01
6	0.75	24	0.02	42	0.01
6.2	0.77	24.2	0.02	42.2	0.01
6.4	0.8	24.4	0.02	42.4	0.01
6.6	0.83	24.6	0.02	42.6	0.01
6.8	0.86	24.8	0.02	42.8	0.01
7	0.63	25	0.02	43	0.01
7.2	0.65	25.2	0.02	43.2	0.01
7.4	0.67	25.4	0.02	43.6	0.01
7.6	0.69	25.6	0.02	43.8	0.01
7.8	0.72	25.8	0.02	44	0.01
8	0.52	26	0.01	44.2	0.01
8.2	0.54	26.2	0.01	44.4	0.01
8.4	0.56	26.4	0.02	44.6	0.01
8.6	0.58	26.6	0.02	44.8	0.01
8.8	0.6	26.8	0.02	45	0.01
9	0.43	27	0.01	45.2	0.01
9.2	0.45	27.2	0.01	45.4	0.01
9.4	0.46	27.4	0.01	45.6	0.01
9.6	0.48	27.6	0.01	45.8	0.01
9.8	0.5	27.8	0.01	46	0.01
10	0.35	28	0.01	46.2	0.01
10.2	0.37	28.2	0.01	46.4	0.01
10.4	0.38	28.4	0.01	46.6	0.01
10.6	0.4	28.6	0.01	46.8	0.01
10.8	0.42	28.8	0.01	47	0.01
11	0.29	29	0.01	47.2	0.01
11.2	0.3	29.2	0.01	47.4	0.01
11.4	0.32	29.4	0.01	47.6	0.01
11.6	0.33	29.6	0.01	47.8	0.01
11.8	0.34	29.8	0.01	48	0.01
12	0.24	30	0.01	48.2	0.01
12.2	0.25	30.2	0.01	48.4	0.01
12.4	0.26	30.4	0.01	48.6	0.01
12.6	0.27	30.6	0.01	48.8	0.01
12.8	0.28	30.8	0.01	49	0.01
13	0.19	31	0.01	49.2	0.01
13.2	0.2	31.2	0.01	49.4	0.01
13.4	0.21	31.4	0.01	49.6	0.01
13.6	0.22	31.6	0.01	49.8	0.01
13.8	0.23	31.8	0.01	50	0.01
14	0.16	32	0.01	50.2	0.01
14.2	0.16	32.2	0.01	50.4	0.01
14.4	0.17	32.4	0.01	50.6	0.01
14.6	0.18	32.6	0.01	50.8	0.01
14.8	0.19	32.8	0.01	51	0.01
15	0.13	33	0.01	51.2	0.01
15.2	0.13	33.2	0.01	51.4	0.01
15.4	0.14	33.4	0.01	51.6	0.01
15.6	0.14	33.6	0.01	51.8	0.01
15.8	0.15	33.8	0.01	52	0.01
16	0.1	34	0.01	52.2	0.01
16.2	0.11	34.2	0.01	52.4	0.01
16.4	0.11	34.4	0.01	52.6	0.01
16.6	0.12	34.6	0.01	52.8	0.01
16.8	0.12	34.8	0.01	53	0.01
17	0.08	35	0.01	53.2	0.01
17.2	0.09	35.2	0.01	53.4	0.01
17.4	0.09	35.4	0.01	53.6	0.01
17.6	0.1	35.6	0.01	53.8	0.01
17.8	0.1	35.8	0.01	54.8	0.01

T03435-86021

CW-4I INSERT TEST #1
SWL = 13.15' GROUND SURFACE
TEST DATE: 3/9/88
SLUG SIZE = 4 1/2' X 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
1	2.27	22	1.55	43	1.22
1.2	4.5	22.2	1.56	43.2	1.22
1.4	4.91	22.4	1.56	43.4	1.23
1.6	0.03	22.6	1.57	43.6	1.23
1.8	0.01	22.8	1.57	43.8	1.23
2	2.22	23	1.53	44	1.21
2.2	0.49	23.2	1.54	44.2	1.21
2.4	3.48	23.4	1.54	44.4	1.21
2.6	2.87	23.6	1.55	44.6	1.22
3	1.88	23.8	1.55	44.8	1.22
3.2	1.9	24	1.52	45	1.19
3.4	1.97	24.2	1.52	45.2	1.2
3.6	1.72	24.4	1.53	45.4	1.2
3.8	2.14	24.6	1.53	45.6	1.2
4	1.88	24.8	1.53	45.8	1.21
4.2	1.88	25	1.5	46	1.18
4.4	1.9	25.2	1.51	46.2	1.18
4.6	1.91	25.4	1.51	46.4	1.18
4.8	1.9	25.6	1.51	46.6	1.19
5	1.87	25.8	1.51	46.8	1.19
5.2	1.87	26	1.48	47	1.17
5.4	1.87	26.2	1.49	47.2	1.17
5.6	1.87	26.4	1.49	47.4	1.17
5.8	1.87	26.6	1.49	47.6	1.17
6	1.85	26.8	1.5	47.8	1.18
6.2	1.85	27	1.47	48	1.15
6.4	1.85	27.2	1.47	48.2	1.16
6.6	1.86	27.4	1.47	48.4	1.16
6.8	1.86	27.6	1.48	48.6	1.16
7	1.83	27.8	1.48	48.8	1.16
7.2	1.84	28	1.45	49	1.14
7.4	1.84	28.2	1.45	49.2	1.14
7.6	1.84	28.4	1.46	49.4	1.14
7.8	1.85	28.6	1.46	49.6	1.15
8	1.82	28.8	1.46	49.8	1.15
8.2	1.82	29	1.43	50	1.13
8.4	1.82	29.2	1.44	50.2	1.13
8.6	1.83	29.4	1.44	50.4	1.13
8.8	1.83	29.6	1.44	50.6	1.14
9	1.8	29.8	1.45	50.8	1.14
9.2	1.8	30	1.42	51	1.11
9.4	1.8	30.2	1.42	51.2	1.12
9.6	1.81	30.4	1.42	51.4	1.12
9.8	1.81	30.6	1.43	51.6	1.12
10	1.78	30.8	1.43	51.8	1.12
10.2	1.78	31	1.4	52	1.1
10.4	1.79	31.2	1.4	52.2	1.11
10.6	1.79	31.4	1.41	52.4	1.11
10.8	1.79	31.6	1.41	52.6	1.11
11	1.76	31.8	1.41	52.8	1.11
11.2	1.76	32	1.38	53	1.09
11.4	1.77	32.2	1.39	53.2	1.09
11.6	1.77	32.4	1.39	53.4	1.1
11.8	1.78	32.6	1.4	53.6	1.1
12	1.74	32.8	1.4	53.8	1.1
12.2	1.75	33	1.37	54	1.08
12.4	1.75	33.2	1.37	54.2	1.08
12.6	1.76	33.4	1.38	54.4	1.08
12.8	1.76	33.6	1.38	54.6	1.08
13	1.72	33.8	1.38	54.8	1.09
13.2	1.73	34	1.35	55	1.06
13.4	1.73	34.2	1.36	55.2	1.07
13.6	1.73	34.4	1.36	55.4	1.07
13.8	1.74	34.6	1.36	55.6	1.07
14	1.7	34.8	1.37	55.8	1.08
14.2	1.71	35	1.34	56	1.05
14.4	1.71	35.2	1.34	56.2	1.06
14.6	1.72	35.4	1.34	56.4	1.06
14.8	1.72	35.6	1.35	56.6	1.06
15	1.69	35.8	1.35	56.8	1.06
15.2	1.69	36	1.32	57	1.04
15.4	1.69	36.2	1.33	57.2	1.04
15.6	1.7	36.4	1.33	57.4	1.05
15.8	1.7	36.6	1.33	57.6	1.05
16	1.67	36.8	1.33	57.8	1.05
16.2	1.67	37	1.31	58	1.03
16.4	1.68	37.2	1.31	58.2	1.03
16.6	1.68	37.4	1.31	58.4	1.04
16.8	1.68	37.6	1.31	58.6	1.04
17	1.65	37.8	1.32	58.8	1.04
17.2	1.65	38	1.29	59	1.02
17.4	1.65	38.2	1.29	59.2	1.02
17.6	1.66	38.4	1.3	59.4	1.02
17.8	1.66	38.6	1.3	59.6	1.03
18	1.63	38.8	1.3	59.8	1.03
18.2	1.63	39	1.28	60	1.01
18.4	1.64	39.2	1.28	65	0.96
18.6	1.64	39.4	1.28	70	0.91
18.8	1.64	39.6	1.29	75	0.86
19	1.61	39.8	1.29	80	0.81
19.2	1.61	40	1.26	85	0.76
19.4	1.62	40.2	1.27	90	0.7
19.6	1.62	40.4	1.27	95	0.66
19.8	1.63	40.6	1.27	100	0.62
20	1.59	40.8	1.27	105	0.59
20.2	1.59	41	1.25	110	0.56
20.4	1.6	41.2	1.25	115	0.52
20.6	1.6	41.4	1.25	120	0.5
20.8	1.6	41.6	1.26	125	0.47
21	1.57	41.8	1.26	130	0.44
21.2	1.57	42	1.23	135	0.42
21.4	1.58	42.2	1.24	140	0.39
21.6	1.58	42.4	1.24	145	0.37
21.8	1.59	42.6	1.24	150	0.35
		42.8	1.25	155	0.33

T03435-86021

CW-4I Removal Test #1
SWL = 12.90' Ground Surface
Test Date: 3/9/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	1.47	21.4	1.59	42.8	1.26
0.2	4.14	21.6	1.59	43	1.24
0.4	3.88	21.8	1.6	43.2	1.24
0.6	0.22	22	1.56	43.4	1.24
0.8	0.02	22.2	1.57	43.6	1.25
1	2.15	22.4	1.57	43.8	1.25
1.2	2.17	22.6	1.58	44	1.22
1.4	2.2	22.8	1.58	44.2	1.23
1.6	2.16	23	1.55	44.4	1.23
1.8	2.46	23.2	1.55	44.6	1.23
2	2.07	23.4	1.55	44.8	1.24
2.2	2.09	23.6	1.56	45	1.21
2.4	2.1	23.8	1.56	45.2	1.22
2.6	2.12	24	1.53	45.4	1.22
2.8	2.13	24.2	1.53	45.6	1.22
3	2.04	24.4	1.54	45.8	1.22
3.2	2.05	24.6	1.54	46	1.2
3.4	2.05	24.8	1.54	46.2	1.2
3.6	2.06	25	1.51	46.4	1.2
3.8	2.07	25.2	1.52	46.6	1.21
4	2	25.4	1.52	46.8	1.21
4.2	2	25.6	1.52	47	1.19
4.4	2.01	25.8	1.52	47.2	1.19
4.6	2.02	26	1.5	47.4	1.19
4.8	2.03	26.2	1.5	47.6	1.19
5	1.96	26.4	1.5	47.8	1.2
5.2	1.97	26.6	1.5	48	1.18
5.4	1.98	26.8	1.51	48.2	1.18
5.6	1.98	27	1.48	48.4	1.18
5.8	1.99	27.2	1.48	48.6	1.18
6	1.93	27.4	1.48	48.8	1.18
6.2	1.93	27.6	1.49	49	1.16
6.4	1.94	27.8	1.49	49.2	1.17
6.6	1.95	28	1.46	49.4	1.17
6.8	1.95	28.2	1.46	49.6	1.17
7	1.9	28.4	1.47	49.8	1.17
7.2	1.9	28.6	1.47	50	1.16
7.4	1.9	28.8	1.47	50.2	1.16
7.6	1.92	29	1.44	50.4	1.16
7.8	1.92	29.2	1.44	50.6	1.16
8	1.86	29.4	1.45	50.8	1.16
8.2	1.88	29.6	1.45	51	1.14
8.4	1.88	29.8	1.46	51.2	1.14
8.6	1.89	30	1.43	51.4	1.15
8.8	1.89	30.2	1.43	51.6	1.15
9	1.84	30.4	1.43	51.8	1.15
9.2	1.85	30.6	1.44	52	1.13
9.4	1.85	30.8	1.44	52.2	1.13
9.6	1.86	31	1.41	52.4	1.14
9.8	1.87	31.2	1.41	52.6	1.14
10	1.82	31.4	1.42	52.8	1.14
10.2	1.83	31.6	1.42	53	1.12
10.4	1.83	31.8	1.42	53.2	1.12
10.6	1.84	32	1.4	53.4	1.12
10.8	1.84	32.2	1.4	53.6	1.13
11	1.8	32.4	1.4	53.8	1.11
11.2	1.8	32.6	1.41	54	1.11
11.4	1.8	32.8	1.41	54.2	1.11
11.6	1.81	33	1.38	54.4	1.11
11.8	1.81	33.2	1.39	54.6	1.11
12	1.77	33.4	1.39	54.8	1.12
12.2	1.77	33.6	1.39	55	1.09
12.4	1.78	33.8	1.39	55.2	1.1
12.6	1.78	34	1.37	55.4	1.1
12.8	1.79	34.2	1.37	55.6	1.1
13	1.75	34.4	1.37	55.8	1.1
13.2	1.75	34.6	1.37	56	1.08
13.4	1.76	34.8	1.38	56.2	1.09
13.6	1.76	35	1.35	56.4	1.09
13.8	1.77	35.2	1.35	56.6	1.09
14	1.73	35.4	1.36	56.8	1.09
14.2	1.73	35.6	1.36	57	1.07
14.4	1.73	35.8	1.36	57.2	1.07
14.6	1.74	36	1.34	57.4	1.08
14.8	1.74	36.2	1.34	57.6	1.08
15	1.7	36.4	1.34	57.8	1.08
15.2	1.71	36.6	1.35	58	1.06
15.4	1.71	36.8	1.35	58.2	1.06
15.6	1.72	37	1.32	58.4	1.07
15.8	1.72	37.2	1.33	58.6	1.07
16	1.67	37.4	1.33	58.8	1.07
16.2	1.69	37.6	1.33	59	1.05
16.4	1.69	37.8	1.33	59.2	1.05
16.6	1.69	38	1.31	59.4	1.05
16.8	1.7	38.2	1.31	59.6	1.06
17	1.66	38.4	1.31	59.8	1.06
17.2	1.67	38.6	1.32	60	1.05
17.4	1.67	38.8	1.32	65.2	1.5
17.6	1.67	39	1.29	70.4	0.95
17.8	1.68	39.2	1.3	75.6	0.91
18	1.64	39.4	1.3	80.8	0.87
18.2	1.65	39.6	1.3	85	0.83
18.4	1.65	39.8	1.31	90.2	0.79
18.6	1.65	40	1.28	95.4	0.76
18.8	1.66	40.2	1.28	100.6	0.73
19	1.62	40.4	1.29	105.8	0.7
19.2	1.63	40.6	1.29	110	0.67
19.4	1.63	40.8	1.29	115.2	0.64
19.6	1.63	41	1.27	120.4	0.62
19.8	1.64	41.2	1.27	125.6	0.6
20	1.6	41.4	1.27	130.8	0.58
20.2	1.61	41.6	1.28	135	0.56
20.4	1.61	41.8	1.28	140.2	0.54
20.6	1.61	42	1.25	145.4	0.52
20.8	1.62	42.2	1.25	150.6	0.51
21	1.58	42.4	1.26	155.8	0.49
21.2	1.59	42.6	1.26	160	0.48

AR300641

T03438-86021

CW-4I Insert Test #2
SWL = 13.15' Ground Surface
Test Date: 3/9/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	1.57	22	1.16	43.2	0.85
0.2	4.66	22.2	1.17	43.4	0.86
0.4	4.66	22.4	1.17	43.6	0.86
1	1.11	22.6	1.17	43.8	0.86
1.2	0.11	22.8	1.18	44	0.84
1.4	4.66	23	1.15	44.2	0.84
2	1.48	23.2	1.15	44.4	0.84
2.2	1.57	23.4	1.15	44.6	0.85
2.4	1.45	23.6	1.16	44.8	0.85
2.6	1.34	23.8	1.16	45	0.83
2.8	2.08	24	1.13	45.2	0.83
3	1.49	24.2	1.13	45.4	0.83
3.2	1.49	24.4	1.13	45.6	0.83
3.4	1.5	24.6	1.14	45.8	0.84
3.6	1.5	24.8	1.14	46	0.81
3.8	1.51	25	1.11	46.2	0.82
4	1.48	25.2	1.12	46.4	0.82
4.2	1.48	25.4	1.12	46.6	0.82
4.4	1.49	25.6	1.12	46.8	0.82
4.6	1.49	25.8	1.13	47	0.8
4.8	1.49	26	1.1	47.2	0.8
5	1.47	26.2	1.1	47.4	0.81
5.2	1.47	26.4	1.1	47.6	0.81
5.4	1.47	26.6	1.11	47.8	0.81
5.6	1.47	26.8	1.11	48	0.79
5.8	1.47	27	1.08	48.2	0.79
6	1.45	27.2	1.08	48.4	0.79
6.2	1.45	27.4	1.09	48.6	0.8
6.4	1.46	27.6	1.09	48.8	0.8
6.6	1.46	27.8	1.09	49	0.78
6.8	1.46	28	1.06	49.2	0.78
7	1.43	28.2	1.07	49.4	0.78
7.2	1.44	28.4	1.07	49.6	0.78
7.4	1.44	28.6	1.07	49.8	0.79
7.6	1.44	28.8	1.08	50	0.76
7.8	1.45	29	1.05	50.2	0.77
8	1.41	29.2	1.05	50.4	0.77
8.2	1.42	29.4	1.06	50.6	0.77
8.4	1.42	29.6	1.06	50.8	0.77
8.6	1.43	29.8	1.06	51	0.75
8.8	1.43	30	1.03	51.2	0.76
9	1.4	30.2	1.04	51.4	0.76
9.2	1.4	30.4	1.04	51.6	0.76
9.4	1.4	30.6	1.04	51.8	0.76
9.6	1.41	30.8	1.04	52	0.74
9.8	1.41	31	1.02	52.2	0.74
10	1.38	31.2	1.02	52.4	0.75
10.2	1.38	31.4	1.02	52.6	0.75
10.4	1.39	31.6	1.03	52.8	0.75
10.6	1.39	31.8	1.03	53	0.73
10.8	1.39	32	1	53.2	0.73
11	1.36	32.2	1.01	53.4	0.74
11.2	1.36	32.4	1.01	53.6	0.74
11.4	1.37	32.6	1.01	53.8	0.74
11.6	1.37	32.8	1.02	54	0.72
11.8	1.37	33	0.99	54.2	0.72
12	1.34	33.2	0.99	54.4	0.72
12.2	1.34	33.4	1	54.6	0.72
12.4	1.35	33.6	1	54.8	0.73
12.6	1.35	33.8	1	55	0.71
12.8	1.36	34	0.98	55.2	0.71
13	1.32	34.2	0.98	55.4	0.71
13.2	1.33	34.4	0.98	55.6	0.71
13.4	1.33	34.6	0.98	55.8	0.72
13.6	1.34	34.8	0.99	56	0.7
13.8	1.34	35	0.96	56.2	0.7
14	1.3	35.2	0.96	56.4	0.7
14.2	1.31	35.4	0.97	56.6	0.7
14.4	1.31	35.6	0.97	56.8	0.7
14.6	1.32	35.8	0.97	57	0.69
14.8	1.32	36	0.95	57.2	0.69
15	1.29	36.2	0.95	57.4	0.69
15.2	1.29	36.4	0.95	57.6	0.69
15.4	1.29	36.6	0.96	57.8	0.69
15.6	1.3	36.8	0.96	58	0.68
15.8	1.3	37	0.93	58.2	0.68
16	1.27	37.2	0.93	58.4	0.68
16.2	1.27	37.4	0.94	58.6	0.68
16.4	1.28	37.6	0.94	58.8	0.68
16.6	1.28	37.8	0.94	59	0.66
16.8	1.28	38	0.92	59.2	0.67
17	1.25	38.2	0.92	59.4	0.67
17.2	1.25	38.4	0.92	59.6	0.67
17.4	1.26	38.6	0.93	59.8	0.67
17.6	1.26	38.8	0.93	60	0.66
17.8	1.28	39	0.91	65	0.61
18	1.23	39.2	0.91	70	0.56
18.2	1.24	39.4	0.91	75	0.52
18.4	1.24	39.6	0.91	80	0.47
18.6	1.24	39.8	0.91	85	0.43
18.8	1.25	40	0.89	90	0.4
19	1.21	40.2	0.89	95	0.36
19.2	1.22	40.4	0.9	100	0.32
19.4	1.22	40.6	0.9	105	0.29
19.6	1.23	40.8	0.9	110	0.26
19.8	1.23	41	0.88	115	0.23
20	1.2	41.2	0.88	120	0.21
20.2	1.2	41.4	0.88	125	0.18
20.4	1.2	41.6	0.89	130	0.16
20.6	1.21	41.8	0.89	135	0.14
20.8	1.21	42	0.87	140	0.12
21	1.18	42.2	0.87	145	0.1
21.2	1.18	42.4	0.87	150	0.08
21.4	1.19	42.6	0.87	155	0.06
21.6	1.19	42.8	0.87	160	0.04
21.8	1.19	43	0.87	165	0.03
				170	0.01

AR300642

T03438-86021

CW-4I Removal Test #2
SWL = 13.15' Ground Surface
Test Date: 3/9/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	.85	13.4	0.47	26.6	0.22
0.2	0.6	13.6	0.48	26.8	0.22
0.4	5.67	13.8	0.48	27	0.19
0.6	0.53	14	0.44	27.2	0.19
1	0.84	14.2	0.45	27.4	0.19
1.2	0.87	14.4	0.45	27.6	0.2
1.4	0.92	14.6	0.46	27.8	0.2
1.6	0.86	14.8	0.46	28	0.17
1.8	1.08	15	0.42	28.2	0.17
2	0.8	15.2	0.42	28.4	0.18
2.2	0.8	15.4	0.43	28.6	0.18
2.4	0.81	15.6	0.43	28.8	0.18
2.6	0.82	15.8	0.44	29	0.16
2.8	0.84	16	0.39	29.2	0.16
3	0.76	16.2	0.4	29.4	0.16
3.2	0.76	16.4	0.41	29.6	0.16
3.4	0.77	16.6	0.41	29.8	0.17
3.6	0.78	16.8	0.41	30	0.14
3.8	0.79	17	0.37	30.2	0.14
4	0.72	17.2	0.38	30.4	0.15
4.2	0.73	17.4	0.38	30.6	0.15
4.4	0.74	17.6	0.39	30.8	0.15
4.6	0.74	17.8	0.39	31	0.12
4.8	0.75	18	0.35	31.2	0.13
5	0.67	18.2	0.36	31.4	0.13
5.2	0.68	18.4	0.36	31.6	0.13
5.4	0.69	18.6	0.36	31.8	0.14
5.6	0.7	18.8	0.37	32	0.11
5.8	0.71	19	0.33	32.2	0.11
6	0.64	19.2	0.34	32.4	0.11
6.2	0.65	19.4	0.34	32.6	0.12
6.4	0.65	19.6	0.35	32.8	0.12
6.6	0.66	19.8	0.35	33	0.09
6.8	0.67	20	0.31	33.2	0.09
7	0.61	20.2	0.32	33.4	0.1
7.2	0.62	20.4	0.32	33.6	0.1
7.4	0.62	20.6	0.33	33.8	0.1
7.6	0.63	20.8	0.33	34	0.08
7.8	0.64	21	0.29	34.2	0.08
8	0.59	21.2	0.3	34.4	0.08
8.2	0.59	21.4	0.3	34.6	0.09
8.4	0.6	21.6	0.31	34.8	0.09
8.6	0.6	21.8	0.31	35	0.06
8.8	0.61	22	0.28	35.2	0.07
9	0.56	22.2	0.28	35.4	0.07
9.2	0.56	22.4	0.28	35.6	0.07
9.4	0.57	22.6	0.29	35.8	0.07
9.6	0.57	22.8	0.29	36	0.05
9.8	0.58	23	0.26	36.2	0.05
10	0.53	23.2	0.26	36.4	0.05
10.2	0.54	23.4	0.27	36.6	0.06
10.4	0.54	23.6	0.27	36.8	0.06
10.6	0.55	23.8	0.27	37	0.03
10.8	0.55	24	0.24	37.2	0.04
11	0.51	24.2	0.24	37.4	0.04
11.2	0.52	24.4	0.25	37.6	0.04
11.4	0.52	24.6	0.25	37.8	0.05
11.6	0.52	24.8	0.25	38	0.02
11.8	0.53	25	0.22	38.2	0.02
12	0.49	25.2	0.22	38.4	0.03
12.2	0.49	25.4	0.23	38.6	0.03
12.4	0.5	25.6	0.23	38.8	0.03
12.6	0.5	25.8	0.24	39	0.01
12.8	0.5	26	0.2	39.2	0.01
13	0.46	26.2	0.21	39.4	0.01
13.2	0.47	26.4	0.21	39.6	0.01
				39.8	0.02

T03436-86021

CW-5I Insert Test #1
SWL = 10.76' Ground Surface
Test Date: 3/10/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	4.35	4.8	0.05	8.2	0.01
0.5	0.88	5	0.02	8.4	0.01
0.6	0.93	5.2	0.02	8.6	0.01
0.8	3.98	5.4	0.03	8.8	0.01
0.9	4.24	5.6	0.03	9	0.01
1	0.17	5.8	0.03	9.2	0.01
1.4	0.39	6	0.01	9.4	0.01
1.6	0.28	6.2	0.01	9.6	0.01
2.2	0.02	6.4	0.01	9.8	0.01
2.4	0.05	6.6	0.01	10	0.01
2.6	0.02	6.8	0.02	10.2	0.01
3	0.05	7	0.01	10.4	0.01
3.8	0.01	7.2	0.01	10.6	0.01
4	0.04	7.4	0.01	10.8	0.01
4.2	0.05	7.6	0.01	11	0.01
4.4	0.02	7.8	0.01	11.2	0.01
4.6	0.03	8	0.01	11.6	0.01
				11.8	0.01

T03436-86021

CW-5I Removal Test #1
SWL = 10.76' Ground Surface
Test Date: 3/10/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	0.63	23.4	0.01	43.4	0.01
0.2	0.85	23.6	0.01	43.6	0.01
0.4	0.5	23.8	0.01	43.8	0.01
0.8	0.87	24	0.01	44	0.01
1	0.59	24.2	0.01	44.2	0.01
1.2	0.76	24.4	0.01	44.4	0.01
1.4	0.09	24.6	0.01	44.6	0.01
1.6	1.1	24.8	0.01	44.8	0.01
1.8	0.89	25	0.01	45	0.01
2.2	0.04	25.2	0.01	45.2	0.01
2.4	0.14	25.4	0.01	45.4	0.01
2.6	0.27	25.6	0.01	45.6	0.01
2.8	0.44	25.8	0.01	45.8	0.01
4	0.01	26	0.01	46	0.01
5	0.07	26.2	0.01	46.2	0.01
5.2	0.06	26.4	0.01	46.4	0.01
5.4	0.06	26.6	0.01	46.6	0.01
5.6	0.05	26.8	0.01	46.8	0.01
5.8	0.03	27	0.01	47	0.01
6	0.04	27.2	0.01	47.2	0.01
6.2	0.04	27.4	0.01	47.4	0.01
6.4	0.05	27.6	0.01	47.6	0.01
6.6	0.06	27.8	0.01	47.8	0.01
6.8	0.06	28	0.01	48	0.01
7.2	0.01	28.2	0.01	48.2	0.01
7.4	0.02	28.4	0.01	48.4	0.01
7.6	0.02	28.6	0.01	48.6	0.01
7.8	0.03	28.8	0.01	48.8	0.01
8	0.01	29	0.01	49	0.01
9	0.02	29.2	0.01	49.2	0.01
9.2	0.02	29.4	0.01	49.4	0.01
9.4	0.01	29.6	0.01	49.6	0.01
9.6	0.01	29.8	0.01	49.8	0.01
9.8	0.01	30	0.01	50	0.01
10	0.02	30.2	0.01	50.2	0.01
10.2	0.02	30.4	0.01	50.4	0.01
10.4	0.02	30.6	0.01	50.6	0.01
10.6	0.02	30.8	0.01	50.8	0.01
10.8	0.02	31	0.01	51	0.01
11	0.02	31.2	0.01	51.2	0.01
11.2	0.02	31.4	0.01	51.4	0.01
11.4	0.02	31.6	0.01	51.6	0.01
11.6	0.02	31.8	0.01	51.8	0.01
11.8	0.02	32	0.01	52	0.01
12	0.01	32.2	0.01	52.2	0.01
12.2	0.01	32.4	0.01	52.4	0.01
12.4	0.02	32.6	0.01	52.6	0.01
12.6	0.02	32.8	0.01	52.8	0.01
12.8	0.02	33	0.01	53	0.01
13	0.01	33.2	0.01	53.2	0.01
13.2	0.02	33.4	0.01	53.4	0.01
13.4	0.01	33.6	0.01	53.6	0.01
13.6	0.01	33.8	0.01	53.8	0.01
13.8	0.01	34	0.01	54	0.01
14	0.02	34.2	0.01	54.2	0.01
14.2	0.02	34.4	0.01	54.4	0.01
14.4	0.01	34.6	0.01	54.6	0.01
14.6	0.01	34.8	0.01	54.8	0.01
14.8	0.01	35	0.01	55	0.01
15	0.02	35.2	0.01	55.2	0.01
15.2	0.02	35.4	0.01	55.4	0.01
15.4	0.02	35.6	0.01	55.6	0.01
15.6	0.02	35.8	0.01	55.8	0.01
15.8	0.02	36	0.01	56	0.01
16	0.01	36.2	0.01	56.2	0.01
16.2	0.01	36.4	0.01	56.4	0.01
16.4	0.01	36.6	0.01	56.6	0.01
16.6	0.01	36.8	0.01	56.8	0.01
16.8	0.02	37	0.01	57	0.01
17	0.01	37.2	0.01	57.2	0.01
17.2	0.01	37.4	0.01	57.4	0.01
17.4	0.01	37.6	0.01	57.6	0.01
17.6	0.01	37.8	0.01	57.8	0.01
17.8	0.01	38	0.01	58	0.01
18	0.01	38.2	0.01	58.2	0.01
18.2	0.01	38.4	0.01	58.4	0.01
18.4	0.01	38.6	0.01	58.6	0.01
18.6	0.01	38.8	0.01	58.8	0.01
18.8	0.01	39	0.01	59	0.01
19	0.01	39.2	0.01	59.2	0.01
19.2	0.01	39.4	0.01	59.4	0.01
19.4	0.01	39.6	0.01	59.6	0.01
19.6	0.01	39.8	0.01	59.8	0.01
19.8	0.01	40	0.01	60	0.01
20	0.01	40.2	0.01	65	0.01
20.2	0.01	40.4	0.01	70	0.01
20.4	0.01	40.6	0.01	75	0.01
20.6	0.01	40.8	0.01	80	0.01
20.8	0.01	41	0.01	85	0.01
21	0.01	41.2	0.01	90	0.01
21.2	0.01	41.4	0.01	95	0.01
21.4	0.01	41.6	0.01	100	0.01
21.6	0.01	41.8	0.01	105	0.01
21.8	0.01	42	0.01	110	0.01
22	0.01	42.2	0.01	115	0.01
22.2	0.01	42.4	0.01	120	0.01
22.4	0.01	42.6	0.01	125	0.01
22.6	0.01	42.8	0.01	130	0.01
22.8	0.01	43	0.01	135	0.01
23	0.01	43.2	0.01	140	0.01
23.2	0.01				

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CW-5I Insert Test #2
SWL = 10.76' Ground Surface
Test Date: 3/10/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	1.35	3.8	0.02	7.4	0.01
0.1	4.19	4	0.04	7.6	0.01
0.2	1.67	4.2	0.04	7.8	0.01
0.3	0.01	4.4	0.04	8	0.01
0.5	0.26	4.6	0.04	8.2	0.01
0.7	0.81	4.8	0.03	8.4	0.01
0.8	0.59	5	0.02	8.6	0.01
1.4	0.3	5.2	0.03	8.8	0.01
1.8	0.54	5.4	0.03	9	0.01
2	0.01	5.6	0.03	9.2	0.01
2.2	0.01	5.8	0.03	9.4	0.01
2.4	0.02	6	0.01	9.6	0.01
2.6	0.03	6.2	0.01	9.8	0.01
2.8	0.08	6.4	0.01	10	0.01
3	0.04	6.6	0.01	10.2	0.01
3.2	0.03	6.8	0.01	10.4	0.01
3.4	0.01	7	0.01	10.6	0.01
3.6	0.01	7.2	0.01	10.8	0.01
				11.8	0.01

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CW-5I Removal Test #2
SWL = 10.76' Ground Surface
Test Date: 3/10/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	0.47	22	0.01	41.6	0.01
0.2	1	22.2	0.01	41.8	0.01
0.6	1.58	22.4	0.01	42	0.01
0.8	0.19	22.6	0.01	42.2	0.01
1	0.6	22.8	0.01	42.4	0.01
1.2	0.77	23	0.01	42.6	0.01
1.4	0.91	23.2	0.01	42.8	0.01
1.6	1.08	23.4	0.01	43	0.01
1.8	0.93	23.6	0.01	43.2	0.01
2.2	0.05	23.8	0.01	43.4	0.01
2.4	0.15	24	0.01	43.6	0.01
2.6	0.28	24.2	0.01	43.8	0.01
2.8	0.43	24.4	0.01	44	0.01
4	0.01	24.6	0.01	44.2	0.01
5	0.06	24.8	0.01	44.4	0.01
5.2	0.06	25	0.01	44.6	0.01
5.4	0.05	25.2	0.01	44.8	0.01
5.6	0.04	25.4	0.01	45	0.01
5.8	0.03	25.6	0.01	45.2	0.01
6	0.04	25.8	0.01	45.4	0.01
6.2	0.05	26	0.01	45.6	0.01
6.4	0.05	26.2	0.01	45.8	0.01
6.6	0.06	26.4	0.01	46	0.01
6.8	0.06	26.6	0.01	46.2	0.01
7	0.01	26.8	0.01	46.4	0.01
7.2	0.01	27	0.01	46.6	0.01
7.4	0.01	27.2	0.01	46.8	0.01
7.6	0.02	27.4	0.01	47	0.01
7.8	0.03	27.6	0.01	47.2	0.01
8	0.01	27.8	0.01	47.4	0.01
8.2	0.01	28	0.01	47.6	0.01
8.8	0.01	28.2	0.01	47.8	0.01
9	0.02	28.4	0.01	48	0.01
9.2	0.01	28.6	0.01	48.2	0.01
9.2	0.01	28.8	0.01	48.4	0.01
9.4	0.01	29	0.01	48.6	0.01
9.6	0.01	29.2	0.01	48.8	0.01
9.8	0.01	29.4	0.01	49	0.01
10	0.02	29.6	0.01	49.2	0.01
10.2	0.02	29.8	0.01	49.4	0.01
10.4	0.02	30	0.01	49.6	0.01
10.6	0.02	30.2	0.01	49.8	0.01
10.8	0.02	30.4	0.01	50	0.01
11	0.01	30.6	0.01	50.2	0.01
11.2	0.02	30.8	0.01	50.4	0.01
11.4	0.02	31	0.01	50.6	0.01
11.6	0.02	31.2	0.01	50.8	0.01
11.8	0.02	31.4	0.01	51	0.01
12	0.01	31.6	0.01	51.2	0.01
12.2	0.01	31.8	0.01	51.4	0.01
12.4	0.01	32	0.01	51.6	0.01
12.6	0.01	32.2	0.01	51.8	0.01
12.8	0.01	32.4	0.01	52	0.01
13	0.01	32.6	0.01	52.2	0.01
13.2	0.01	32.8	0.01	52.4	0.01
13.4	0.01	33	0.01	52.6	0.01
13.6	0.01	33.2	0.01	52.8	0.01
13.8	0.01	33.4	0.01	53	0.01
14	0.01	33.6	0.01	53.2	0.01
14.2	0.01	33.8	0.01	53.4	0.01
14.4	0.01	34	0.01	53.6	0.01
14.6	0.01	34.2	0.01	53.8	0.01
14.8	0.01	34.4	0.01	54	0.01
15	0.01	34.6	0.01	54.2	0.01
15.2	0.01	34.8	0.01	54.4	0.01
15.4	0.01	35	0.01	54.6	0.01
15.6	0.01	35.2	0.01	54.8	0.01
15.8	0.01	35.4	0.01	55	0.01
16	0.01	35.6	0.01	55.2	0.01
16.2	0.01	35.8	0.01	55.4	0.01
16.4	0.01	36	0.01	55.6	0.01
16.6	0.01	36.2	0.01	55.8	0.01
16.8	0.01	36.4	0.01	56	0.01
17	0.01	36.6	0.01	56.2	0.01
17.2	0.01	36.8	0.01	56.4	0.01
17.4	0.01	37	0.01	56.6	0.01
17.6	0.01	37.2	0.01	56.8	0.01
17.8	0.01	37.4	0.01	57	0.01
18	0.01	37.6	0.01	57.2	0.01
18.2	0.01	37.8	0.01	57.4	0.01
18.4	0.01	38	0.01	57.6	0.01
18.6	0.01	38.2	0.01	57.8	0.01
18.8	0.01	38.4	0.01	58	0.01
19	0.01	38.6	0.01	58.2	0.01
19.2	0.01	38.8	0.01	58.4	0.01
19.4	0.01	39	0.01	58.6	0.01
19.6	0.01	39.2	0.01	58.8	0.01
19.8	0.01	39.4	0.01	59	0.01
20	0.01	39.6	0.01	59.2	0.01
20.2	0.01	39.8	0.01	59.4	0.01
20.4	0.01	40	0.01	59.6	0.01
20.6	0.01	40.2	0.01	59.8	0.01
20.8	0.01	40.4	0.01	60	0.01
21	0.01	40.6	0.01	65	0.01
21.2	0.01	40.8	0.01	70	0.01
21.4	0.01	41	0.01	75	0.01
21.6	0.01	41.2	0.01	80	0.01
21.8	0.01	41.4	0.01	85	0.01
				90	0.01

T03436-86021

CW-6D Insert Test #1
SWL = 15.56' Ground Surface
Test Date: 3/11/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	4.38	23.8	1.43	46.6	1.13
1	3.37	24	1.4	46.8	1.13
1.2	0.85	24.2	1.4	47	1.11
1.6	3.8	24.4	1.41	47.2	1.12
1.8	4.38	24.6	1.41	47.4	1.12
2	1.72	24.8	1.41	47.6	1.12
2.2	1.52	25	1.39	47.8	1.12
2.4	1.78	25.2	1.39	48	1.1
2.6	1.33	25.4	1.39	48.2	1.1
2.8	1.32	25.6	1.4	48.4	1.11
3	1.61	25.8	1.4	48.6	1.11
3.2	1.64	26	1.31	48.8	1.11
3.4	1.64	26.2	1.38	49	1.09
3.6	1.7	26.4	1.38	49.2	1.1
3.8	1.6	26.6	1.38	49.4	1.1
4	1.65	26.8	1.39	49.6	1.1
4.2	1.64	27	1.36	49.8	1.1
4.4	1.65	27.2	1.36	50	1.08
4.6	1.62	27.4	1.37	50.2	1.08
4.8	1.69	27.6	1.37	50.4	1.08
5	1.64	27.8	1.37	50.6	1.09
5.2	1.64	28	1.35	50.8	1.09
5.4	1.64	28.2	1.35	51	1.07
5.6	1.64	28.4	1.35	51.2	1.07
5.8	1.65	28.6	1.36	51.4	1.07
6	1.62	28.8	1.36	51.6	1.08
6.2	1.63	29	1.34	51.8	1.08
6.4	1.63	29.2	1.34	52	1.06
6.6	1.63	29.4	1.34	52.2	1.06
6.8	1.64	29.6	1.34	52.4	1.06
7	1.63	29.8	1.35	52.6	1.06
7.2	1.63	30	1.30	52.8	1.07
7.4	1.63	30.2	1.30	53	1.05
7.6	1.64	30.4	1.33	53.2	1.05
7.8	1.64	30.6	1.33	53.4	1.05
8	0.659699	30.8	1.33	53.6	1.06
8.2	1.62	31	1.31	53.8	1.06
8.4	1.62	31.2	1.31	54	1.04
8.6	1.62	31.4	1.32	54.2	1.04
8.8	1.63	31.6	1.32	54.4	1.04
9	1.61	31.8	1.32	54.6	1.05
9.2	1.61	32	1.3	54.8	1.05
9.4	1.61	32.2	1.3	55	1.03
9.6	1.62	32.4	1.3	55.2	1.03
9.8	1.62	32.6	1.3	55.4	1.03
10	1.6	32.8	1.31	55.6	1.03
10.2	1.6	33	1.28	55.8	1.04
10.4	1.6	33.2	1.29	56	1.02
10.6	1.6	33.4	1.29	56.2	1.02
10.8	1.61	33.6	1.29	56.4	1.02
11	1.59	33.8	1.29	56.6	1.03
11.2	1.59	34	1.27	56.8	1.03
11.4	1.59	34.2	1.27	57	1.01
11.6	1.59	34.4	1.27	57.2	1.01
11.8	1.6	34.6	1.28	57.4	1.01
12	1.57	34.8	1.28	57.6	1.02
12.2	1.58	35	1.26	57.8	1.02
12.4	1.58	35.2	1.26	58	1
12.6	1.58	35.4	1.26	58.2	1
12.8	1.58	35.6	1.27	58.4	1
13	1.56	35.8	1.27	58.6	1.01
13.2	1.57	36	1.25	58.8	1.01
13.4	1.57	36.2	1.25	59	0.99
13.6	1.57	36.4	1.25	59.2	0.99
13.8	1.57	36.6	1.25	59.4	0.99
14	1.55	36.8	1.25	59.6	1
14.2	1.55	37	1.23	59.8	1
14.4	1.55	37.2	1.23	60	0.99
14.6	1.55	37.4	1.24	65	0.94
14.8	1.56	37.6	1.24	70	0.89
15	1.54	37.8	1.24	75	0.85
15.2	1.54	38	1.22	80	0.81
15.4	1.54	38.2	1.22	85	0.77
15.6	1.54	38.4	1.23	90	0.74
15.8	1.55	38.6	1.23	95	0.7
16	1.52	38.8	1.23	100	0.66
16.2	1.53	39	1.21	105	0.63
16.4	1.53	39.2	1.21	110	0.59
16.6	1.53	39.4	1.21	115	0.56
16.8	1.53	39.6	1.21	120	0.53
17	1.51	39.8	1.22	125	0.51
17.2	1.51	40	1.2	130	0.48
17.4	1.51	40.2	1.2	135	0.45
17.6	1.52	40.4	1.2	140	0.43
17.8	1.52	40.6	1.2	145	0.41
18	1.49	40.8	1.21	150	0.38
18.2	1.49	41	1.18	155	0.36
18.4	1.5	41.2	1.19	160	0.34
18.6	1.5	41.4	1.19	165	0.32
18.8	1.5	41.6	1.19	170	0.3
19	1.48	41.8	1.19	175	0.28
19.2	1.48	42	1.17	180	0.27
19.4	1.48	42.2	1.17	185	0.25
19.6	1.49	42.4	1.18	190	0.23
19.8	1.49	42.6	1.18	195	0.21
20	1.46	42.8	1.18	200	0.2
20.2	1.47	43	1.16	205	0.18
20.4	1.47	43.2	1.16	210	0.17
20.6	1.47	43.4	1.17	215	0.16
20.8	1.47	43.6	1.17	220	0.15
21	1.45	43.8	1.17	225	0.13
21.2	1.45	44	1.15	230	0.12
21.4	1.45	44.2	1.15	235	0.11
21.6	1.46	44.4	1.15	240	0.1
21.8	1.46	44.6	1.16	245	0.09
22	1.43	44.8	1.16	250	0.08
22.2	1.43	45	1.14	255	0.07
22.4	1.44	45.2	1.14	260	0.06
22.6	1.44	45.4	1.14	265	0.05
22.8	1.45	45.6	1.15	270	0.04
23	1.42	45.8	1.15	275	0.04
23.2	1.42	46	1.12	280	0.03
23.4	1.42	46.2	1.12	285	0.02
23.6	1.42	46.4	1.13	290	0.01

AR300648

T03436-86021

CW-6D Removal Test #1
SWL = 15.56' Ground Surface
Test Date: 3/10/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	1.76	23.2	1.26	46.2	0.99
0.2	1.78	23.4	1.26	46.4	0.99
0.4	1.81	23.6	1.26	46.6	0.99
0.6	1.87	23.8	1.27	46.8	0.99
1	1.7	24	1.24	47	0.97
1.2	1.71	24.2	1.25	47.2	0.98
1.4	1.72	24.4	1.25	47.4	0.98
1.6	1.73	24.6	1.25	47.6	0.98
1.8	1.74	24.8	1.25	47.8	0.98
2	1.66	25	1.23	48	0.96
2.2	1.67	25.2	1.23	48.2	0.96
2.4	1.68	25.4	1.23	48.4	0.97
2.6	1.68	25.6	1.24	48.6	0.97
2.8	1.69	25.8	1.24	48.8	0.97
3	1.63	26	1.21	49	0.95
3.2	1.63	26.2	1.22	49.2	0.95
3.4	1.64	26.4	1.22	49.4	0.96
3.6	1.65	26.6	1.22	49.6	0.96
3.8	1.66	26.8	1.23	49.8	0.96
4	1.6	27	1.2	50	0.94
4.2	1.6	27.2	1.2	50.2	0.94
4.4	1.61	27.4	1.21	50.4	0.95
4.6	1.62	27.6	1.21	50.6	0.95
4.8	1.62	27.8	1.21	50.8	0.95
5	1.57	28	1.19	51	0.93
5.2	1.57	28.2	1.19	51.2	0.93
5.4	1.58	28.4	1.19	51.4	0.94
5.6	1.59	28.6	1.19	51.6	0.94
5.8	1.59	28.8	1.2	51.8	0.94
6	1.55	29	1.18	52	0.92
6.2	1.55	29.2	1.18	52.2	0.92
6.4	1.56	29.4	1.18	52.4	0.93
6.6	1.56	29.6	1.18	52.6	0.93
6.8	1.57	29.8	1.19	52.8	0.93
7	1.53	30	1.16	53	0.91
7.2	1.53	30.2	1.17	53.2	0.91
7.4	1.53	30.4	1.17	53.4	0.92
7.6	1.54	30.6	1.17	53.6	0.92
7.8	1.54	30.8	1.17	53.8	0.92
8	1.51	31	1.15	54	0.9
8.2	1.51	31.2	1.15	54.2	0.91
8.4	1.51	31.4	1.15	54.4	0.91
8.6	1.52	31.6	1.16	54.6	0.91
8.8	1.52	31.8	1.16	54.8	0.91
9	1.48	32	1.14	55	0.89
9.2	1.49	32.2	1.14	55.2	0.9
9.4	1.49	32.4	1.14	55.4	0.9
9.6	1.49	32.6	1.15	55.6	0.9
9.8	1.5	32.8	1.15	55.8	0.9
10	1.46	33	1.13	56	0.89
10.2	1.47	33.2	1.13	56.2	0.89
10.4	1.47	33.4	1.13	56.4	0.89
10.6	1.47	33.6	1.13	56.6	0.89
10.8	1.48	33.8	1.13	56.8	0.89
11	1.44	34	1.11	57	0.88
11.2	1.45	34.2	1.12	57.2	0.88
11.4	1.45	34.4	1.12	57.4	0.88
11.6	1.46	34.6	1.12	57.6	0.88
11.8	1.46	34.8	1.13	57.8	0.88
12	1.42	35	1.1	58	0.87
12.2	1.43	35.2	1.1	58.2	0.87
12.4	1.43	35.4	1.1	58.4	0.87
12.6	1.44	35.6	1.11	58.6	0.87
12.8	1.44	35.8	1.11	58.8	0.87
13	1.41	36	1.09	59	0.86
13.2	1.41	36.2	1.09	59.2	0.86
13.4	1.42	36.4	1.09	59.4	0.86
13.6	1.42	36.6	1.1	59.6	1 86
13.8	1.42	36.8	1.1	59.8	1.87
14	1.39	37	1.09	60	0.85
14.2	1.4	37.2	1.09	65	0.81
14.4	1.4	37.4	1.09	70	0.77
14.6	1.4	37.6	1.09	75	0.73
14.8	1.4	37.8	1.09	80	0.7
15	1.38	38	1.06	85	0.66
15.2	1.38	38.2	1.07	90	0.63
15.4	1.38	38.4	1.07	95	0.59
15.6	1.39	38.6	1.08	100	0.56
15.8	1.39	38.8	1.08	105	0.53
16	1.36	39	1.06	110	0.51
16.2	1.36	39.2	1.06	115	0.48
16.4	1.37	39.4	1.06	120	0.45
16.6	1.37	39.6	1.06	125	0.43
16.8	1.37	39.8	1.06	130	0.41
17	1.34	40	1.04	135	0.38
17.2	1.35	40.2	1.05	140	0.36
17.4	1.35	40.4	1.05	145	0.34
17.6	1.36	40.6	1.05	150	0.32
17.8	1.36	40.8	1.05	155	0.3
18	1.33	41	1.03	160	0.28
18.2	1.33	41.2	1.04	165	0.26
18.4	1.34	41.4	1.04	170	0.25
18.6	1.34	41.6	1.04	175	0.23
18.8	1.34	41.8	1.04	180	0.22
19	1.31	42	1.02	185	0.21
19.2	1.32	42.2	1.02	190	0.19
19.4	1.32	42.4	1.03	195	0.18
19.6	1.32	42.6	1.03	200	0.16
19.8	1.33	42.8	1.03	205	0.15
20	1.3	43	1.01	210	0.14
20.2	1.3	43.2	1.02	215	0.13
20.4	1.3	43.4	1.02	220	0.12
20.6	1.31	43.6	1.02	225	0.1
20.8	1.31	43.8	1.02	230	0.1
21	1.28	44	1	235	0.09
21.2	1.29	44.2	1	240	0.08
21.4	1.29	44.4	1.01	245	0.07
21.6	1.29	44.6	1.01	250	0.06
21.8	1.3	44.8	1.01	255	0.05
22	1.27	45	0.99	260	0.04
22.2	1.27	45.2	1	265	0.04
22.4	1.27	45.4	1	270	0.03
22.6	1.28	45.6	1	275	0.02
22.8	1.28	45.8	1	280	0.01
23	1.26	46	0.98	285	0.01

T03436-86021

CW-6D Insert Test #2
SWL = 15.56' Ground Surface
Test Date: 3/10/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0.2	3.48	23.4	1.29	46.4	1.02
0.4	4.4	23.6	1.29	46.6	1.02
0.6	4.4	23.8	1.3	46.8	1.02
1	1.18	24	1.27	47	1
1.2	2	24.2	1.27	47.2	1
1.4	0.6	24.4	1.28	47.4	1.01
1.6	2.73	24.6	1.28	47.6	1.01
1.8	2.28	24.8	1.28	47.8	1.01
2	1.59	25	1.26	48	0.99
2.2	1.5	25.2	1.26	48.2	1
2.4	1.57	25.4	1.26	48.4	1
2.6	1.42	25.6	1.27	48.6	1
2.8	1.77	25.8	1.27	48.8	1
3	1.53	26	1.25	49	0.98
3.2	1.53	26.2	1.25	49.2	0.98
3.4	1.55	26.4	1.25	49.4	0.99
3.6	1.52	26.6	1.25	49.6	0.99
3.8	1.48	26.8	1.25	49.8	0.99
4	1.51	27	1.23	50	0.97
4.2	1.51	27.2	1.23	50.2	0.97
4.4	1.51	27.4	1.24	50.4	0.97
4.6	1.52	27.6	1.24	50.6	0.98
4.8	1.51	27.8	1.24	50.8	0.98
5	1.52	28	1.22	51	0.96
5.2	1.52	28.2	1.22	51.2	0.96
5.4	1.5	28.4	1.23	51.4	0.97
5.6	1.51	28.6	1.23	51.6	0.97
5.8	1.51	28.8	1.23	51.8	0.97
6	1.51	29	1.21	52	0.95
6.2	1.51	29.2	1.21	52.2	0.95
6.4	1.51	29.4	1.21	52.4	0.95
6.6	1.51	29.6	1.21	52.6	0.96
6.8	1.52	29.8	1.22	52.8	0.96
7	1.5	30	1.19	53	0.94
7.2	1.5	30.2	1.2	53.2	0.94
7.4	1.5	30.4	1.2	53.4	0.95
7.6	1.51	30.6	1.2	53.6	0.95
7.8	1.51	30.8	1.21	53.8	0.95
8	1.49	31	1.18	54	0.93
8.2	1.49	31.2	1.19	54.2	0.93
8.4	1.49	31.4	1.19	54.4	0.94
8.6	1.49	31.6	1.19	54.6	0.94
8.8	1.5	31.8	1.19	54.8	0.94
9	1.48	32	1.17	55	0.92
9.2	1.48	32.2	1.17	55.2	0.92
9.4	1.48	32.4	1.17	55.4	0.92
9.6	1.49	32.6	1.18	55.6	0.93
9.8	1.49	32.8	1.18	55.8	0.93
10	1.47	33	1.16	56	0.91
10.2	1.47	33.2	1.16	56.2	0.91
10.4	1.47	33.4	1.16	56.4	0.92
10.6	1.47	33.6	1.17	56.6	0.92
10.8	1.47	33.8	1.17	56.8	0.92
11	1.45	34	1.15	57	0.9
11.2	1.45	34.2	1.15	57.2	0.91
11.4	1.46	34.4	1.15	57.4	0.91
11.6	1.46	34.6	1.15	57.6	0.91
11.8	1.46	34.8	1.16	57.8	0.91
12	1.44	35	1.14	58	0.89
12.2	1.44	35.2	1.14	58.2	0.9
12.4	1.44	35.4	1.14	58.4	0.9
12.6	1.44	35.6	1.14	58.6	0.9
12.8	1.45	35.8	1.14	58.8	0.9
13	1.42	36	1.12	59	0.89
13.2	1.43	36.2	1.12	59.2	0.89
13.4	1.43	36.4	1.13	59.4	0.89
13.6	1.43	36.6	1.13	59.6	0.89
13.8	1.44	36.8	1.13	59.8	0.89
14	1.41	37	1.11	60	0.88
14.2	1.41	37.2	1.11	65	0.84
14.4	1.42	37.4	1.12	70	0.8
14.6	1.42	37.6	1.12	75	0.76
14.8	1.42	37.8	1.12	80	0.72
15	1.4	38	1.1	85	0.68
15.2	1.4	38.2	1.1	90	0.65
15.4	1.4	38.4	1.1	95	0.61
15.6	1.4	38.6	1.1	100	0.58
15.8	1.41	38.8	1.11	105	0.55
16	1.38	39	1.09	110	0.52
16.2	1.38	39.2	1.09	115	0.49
16.4	1.39	39.4	1.09	120	0.46
16.6	1.39	39.6	1.09	125	0.44
16.8	1.39	39.8	1.1	130	0.42
17	1.37	40	1.08	135	0.39
17.2	1.37	40.2	1.08	140	0.37
17.4	1.37	40.4	1.08	145	0.35
17.6	1.38	40.6	1.08	150	0.33
17.8	1.38	40.8	1.09	155	0.31
18	1.36	41	1.07	160	0.29
18.2	1.36	41.2	1.07	165	0.27
18.4	1.36	41.4	1.07	170	0.25
18.6	1.36	41.6	1.07	175	0.24
18.8	1.36	41.8	1.08	180	0.22
19	1.34	42	1.06	185	0.21
19.2	1.34	42.2	1.06	190	0.19
19.4	1.35	42.4	1.06	195	0.18
19.6	1.35	42.6	1.06	200	0.17
19.8	1.35	42.8	1.06	205	0.16
20	1.33	43	1.04	210	0.14
20.2	1.33	43.2	1.05	215	0.13
20.4	1.33	43.4	1.05	220	0.12
20.6	1.34	43.6	1.05	225	0.11
20.8	1.34	43.8	1.05	230	0.1
21	1.31	44	1.03	235	0.09
21.2	1.32	44.2	1.04	240	0.08
21.4	1.32	44.4	1.04	245	0.07
21.6	1.32	44.6	1.04	250	0.06
21.8	1.32	44.8	1.04	255	0.06
22	1.3	45	1.02	260	0.05
22.2	1.3	45.2	1.03	265	0.04
22.4	1.3	45.4	1.03	270	0.03
22.6	1.31	45.6	1.03	275	0.02
22.8	1.31	45.8	1.03	280	0.02
23	1.29	46	1.01	285	0.01
23.2	1.29	46.2	1.02		

AR300650

T03438-86021

CW-6I Insert Test #2
SWL = 7.96' Ground Surface
Test Date: 3/8/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0.2	0.51	7.2	0.29	40.4	0.03
0.4	0.52	7.4	0.29	40.6	0.04
0.6	0.53	7.6	0.29	40.8	0.04
0.8	0.54	7.8	0.3	41.	0.03
1	0.46	8	0.26	41.2	0.03
1.2	0.47	8.2	0.26	41.4	0.03
1.4	0.48	8.4	0.27	41.6	0.03
1.6	0.48	8.6	0.27	41.8	0.03
1.8	0.49	8.8	0.28	42	0.03
2	0.43	35	0.05	42.2	0.03
2.2	0.43	35.2	0.05	42.4	0.03
2.4	0.44	35.4	0.05	42.6	0.03
2.6	0.45	35.6	0.05	42.8	0.03
2.8	0.46	36	0.04	43	0.03
3	0.39	36.2	0.04	43.2	0.03
3.2	0.4	36.4	0.04	43.4	0.03
3.4	0.4	36.6	0.04	43.6	0.03
3.6	0.41	36.8	0.05	43.8	0.03
3.8	0.42	37	0.04	44	0.03
4	0.36	37.2	0.04	44.2	0.03
4.2	0.37	37.4	0.04	44.4	0.03
4.4	0.37	37.6	0.04	44.6	0.03
4.6	0.38	37.8	0.04	44.8	0.03
4.8	0.39	38	0.04	45	0.03
5	0.33	38.2	0.04	45.2	0.03
5.2	0.34	38.4	0.04	45.4	0.03
5.4	0.34	38.6	0.04	45.6	0.03
5.6	0.35	38.8	0.04	45.8	0.03
5.8	0.35	39	0.04	46	0.03
6	0.3	39.2	0.04	51	0.02
6.2	0.31	39.4	0.04	56	0.02
6.4	0.31	39.6	0.04	61	0.01
6.6	0.32	39.8	0.04	66	0.01
6.8	0.33	40	0.03	71	0.01
7	0.28	40.2	0.03	76	0.01
				81	0.01

T03438-86021

CW-6I Removal Test #2
SWL = 15.80' Ground Surface
Test Date: 3/11/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	5.28	5.8	0.37	10.8	0.05
0.2	0.97	6	0.16	11	0.03
1	1.24	6.2	0.18	11.2	0.03
1.2	0.96	6.4	0.19	11.4	0.03
1.4	1.77	6.6	0.22	11.6	0.04
1.8	6.95	6.8	0.23	11.8	0.03
2	0.84	7	0.11	12.2	0.01
2.2	0.89	7.2	0.11	12.4	0.02
2.4	0.94	7.4	0.13	12.6	0.03
2.6	1.01	7.6	0.14	12.8	0.03
2.8	1.01	7.8	0.15	13	0.02
3	0.6	8	0.07	13.2	0.02
3.2	0.64	8.2	0.07	13.4	0.01
3.4	0.69	8.4	0.08	13.6	0.04
3.6	0.74	8.6	0.09	13.8	0.04
3.8	0.79	8.8	0.09	14	0.01
4	0.4	9	0.05	14.2	0.01
4.2	0.43	9.2	0.06	14.4	0.01
4.4	0.47	9.4	0.06	14.6	0.01
4.6	0.51	9.6	0.06	14.8	0.02
4.8	0.55	9.8	0.07	15	0.01
5	0.26	10	0.04	15.2	0.01
5.2	0.28	10.2	0.04	15.4	0.01
5.4	0.3	10.4	0.04	15.6	0.01
5.6	0.34	10.6	0.05	15.8	0.01
				16.8	0.01

T03436-86021

CW-6S Insert Test #1
SWL = 15.80' Ground Surface
Test Date: 3/11/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0.2	0.88	23.4	0.14	45.8	0.11
0.4	4.73	23.6	0.14	46	0.11
0.6	3.84	23.8	0.14	46.2	0.11
1	0.57	24	0.13	46.4	0.11
1.6	1.61	24.2	0.13	46.6	0.11
1.8	0.92	24.4	0.14	46.8	0.11
2	0.13	24.6	0.14	47	0.11
2.2	0.23	24.8	0.14	47.2	0.11
2.4	0.28	25	0.13	47.4	0.11
2.8	0.36	25.2	0.13	47.6	0.11
3	0.17	25.4	0.13	47.8	0.11
3.2	0.16	25.6	0.13	48	0.11
3.4	0.16	25.8	0.13	48.2	0.11
3.6	0.18	26	0.13	48.4	0.11
3.8	0.18	26.2	0.13	48.6	0.11
4	0.15	26.4	0.13	48.8	0.11
4.2	0.15	26.6	0.13	49	0.11
4.4	0.16	26.8	0.13	49.2	0.11
4.6	0.16	27	0.13	49.4	0.11
4.8	0.16	27.2	0.13	49.6	0.11
5	0.16	27.4	0.13	49.8	0.11
5.2	0.16	27.6	0.13	50	0.1
5.4	0.15	27.8	0.13	50.2	0.1
5.6	0.15	28	0.13	50.4	0.11
5.8	0.16	28.2	0.13	50.6	0.11
6	0.16	28.4	0.13	50.8	0.11
6.2	0.16	28.6	0.13	51	0.1
6.4	0.16	28.8	0.13	51.2	0.1
6.6	0.16	29	0.13	51.4	0.1
6.8	0.16	29.2	0.13	51.6	0.1
7	0.16	29.4	0.13	51.8	0.1
7.2	0.16	29.6	0.13	52	0.1
7.4	0.16	29.8	0.13	52.2	0.1
7.6	0.16	30	0.13	52.4	0.1
7.8	0.16	30.2	0.13	52.6	0.1
8	0.16	30.4	0.13	52.8	0.1
8.2	0.16	30.6	0.13	53	0.1
8.4	0.16	30.8	0.13	53.2	0.1
8.6	0.16	31	0.13	53.4	0.1
8.8	0.16	31.2	0.13	53.6	0.1
9	0.16	31.4	0.13	53.8	0.1
9.2	0.16	31.6	0.13	54	0.1
9.4	0.16	31.8	0.13	54.2	0.1
9.6	0.16	32	0.13	54.4	0.1
9.8	0.16	32.2	0.13	54.6	0.1
10	0.16	32.4	0.13	54.8	0.1
10.2	0.16	32.6	0.13	55	0.1
10.4	0.16	32.8	0.13	55.2	0.1
10.6	0.16	33	0.13	55.4	0.1
10.8	0.16	33.2	0.13	55.6	0.1
11	0.15	33.4	0.13	55.8	0.1
11.2	0.16	33.6	0.13	56	0.1
11.4	0.16	33.8	0.13	56.2	0.1
11.6	0.16	34	0.12	56.4	0.1
11.8	0.16	34.2	0.12	56.6	0.1
12	0.15	34.4	0.13	56.8	0.1
12.2	0.15	34.6	0.13	57	0.1
12.4	0.15	34.8	0.13	57.2	0.1
12.6	0.15	35	0.12	57.4	0.1
12.8	0.15	35.2	0.12	57.6	0.1
13	0.15	35.4	0.12	57.8	0.1
13.2	0.15	35.6	0.12	58	0.1
13.4	0.15	35.8	0.12	58.2	0.1
13.6	0.15	36	0.12	58.4	0.1
13.8	0.15	36.2	0.12	58.6	0.1
14	0.15	36.4	0.12	58.8	0.1
14.2	0.15	36.6	0.12	59	0.1
14.4	0.15	36.8	0.12	64	0.09
14.6	0.15	37	0.12	69	0.09
14.8	0.15	37.2	0.12	74	0.09
15	0.15	37.4	0.12	79	0.08
15.2	0.15	37.6	0.12	84	0.08
15.4	0.15	37.8	0.12	89	0.08
15.6	0.15	38	0.12	94	0.07
15.8	0.15	38.2	0.12	99	0.07
16	0.15	38.4	0.12	104	0.07
16.2	0.15	38.6	0.12	109	0.07
16.4	0.15	38.8	0.12	114	0.06
16.6	0.15	39	0.12	119	0.06
16.8	0.15	39.2	0.12	124	0.06
17	0.15	39.4	0.12	129	0.06
17.2	0.15	39.6	0.12	134	0.05
17.4	0.15	39.8	0.12	139	0.05
17.6	0.15	40	0.11	144	0.05
17.8	0.15	40.2	0.11	149	0.05
18	0.15	40.4	0.11	154	0.04
18.2	0.15	40.6	0.12	159	0.04
18.4	0.15	40.8	0.12	164	0.04
18.6	0.15	41	0.11	169	0.04
18.8	0.15	41.2	0.11	174	0.04
19	0.15	41.4	0.11	179	0.04
19.2	0.15	41.6	0.11	184	0.04
19.4	0.15	41.8	0.11	189	0.03
19.6	0.15	42	0.11	194	0.03
19.8	0.15	42.2	0.11	199	0.03
20	0.15	42.4	0.11	204	0.03
20.2	0.15	42.6	0.11	209	0.03
20.4	0.15	42.8	0.11	214	0.02
20.6	0.15	43	0.11	219	0.02
20.8	0.15	43.2	0.11	224	0.02
21	0.14	43.4	0.11	229	0.02
21.2	0.14	43.6	0.11	234	0.02
21.4	0.14	43.8	0.11	239	0.02
21.6	0.14	44	0.11	244	0.02
21.8	0.15	44.2	0.11	249	0.01
22	0.14	44.4	0.11	254	0.02
22.2	0.14	44.6	0.11	259	0.01
22.4	0.14	44.8	0.11	264	0.01
22.6	0.14	45	0.11	269	0.01
22.8	0.14	45.2	0.11	274	0.01
23	0.14	45.4	0.11	279	0.01
23.2	0.14	45.6	0.11	284	0.01
				289	0.01

AR300653

T03438-86021

CM-6S Removal Test #1
SWL = 15.80' Ground Surface
Test Date: 3/11/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0.2	1.44	20	0.03	39.8	0.01
0.4	4.2	20.2	0.03	40	0.01
0.6	5.29	20.4	0.03	40.2	0.01
0.8	2.71	20.6	0.03	40.4	0.01
1	1.07	20.8	0.03	40.6	0.01
1.2	1.12	21	0.03	40.8	0.01
1.4	1.21	21.2	0.03	41	0.01
1.6	1.18	21.4	0.03	41.2	0.01
1.8	1.44	21.6	0.03	41.4	0.01
2	0.78	21.8	0.03	41.6	0.01
2.2	0.83	22	0.03	41.8	0.01
2.4	0.89	22.2	0.02	42	0.01
2.6	0.95	22.4	0.03	42.2	0.01
2.8	1	22.6	0.03	42.4	0.01
3	0.55	22.8	0.02	42.6	0.01
3.2	0.59	23	0.02	42.8	0.01
3.4	0.63	23.2	0.02	43	0.01
3.6	0.68	23.4	0.02	43.2	0.01
3.8	0.73	23.6	0.03	43.4	0.01
4	0.36	23.8	0.02	43.6	0.01
4.2	0.39	24	0.02	43.8	0.01
4.4	0.43	24.2	0.02	44	0.01
4.6	0.46	24.4	0.02	44.2	0.01
4.8	0.5	24.6	0.02	44.4	0.01
5	0.23	24.8	0.02	44.6	0.01
5.2	0.25	25	0.02	44.8	0.01
5.4	0.27	25.2	0.02	45	0.01
5.6	0.3	25.4	0.02	45.2	0.01
5.8	0.33	25.6	0.02	45.4	0.01
6	0.15	25.8	0.02	45.6	0.01
6.2	0.17	26	0.02	45.8	0.01
6.4	0.18	26.2	0.02	46	0.01
6.6	0.2	26.4	0.02	46.2	0.01
6.8	0.21	26.6	0.02	46.4	0.01
7	0.11	26.8	0.02	46.6	0.01
7.2	0.12	27	0.02	46.8	0.01
7.4	0.12	27.2	0.02	47	0.01
7.6	0.14	27.4	0.02	47.2	0.01
7.8	0.14	27.6	0.02	47.4	0.01
8	0.08	27.8	0.02	47.6	0.01
8.2	0.09	28	0.02	47.8	0.01
8.4	0.09	28.2	0.02	48	0.01
8.6	0.1	28.4	0.02	48.2	0.01
8.8	0.1	28.6	0.02	48.4	0.01
9	0.07	28.8	0.02	48.6	0.01
9.2	0.07	29	0.02	48.8	0.01
9.4	0.08	29.2	0.02	49	0.01
9.6	0.08	29.4	0.02	49.2	0.01
9.8	0.08	29.6	0.02	49.4	0.01
10	0.06	29.8	0.02	49.6	0.01
10.2	0.06	30	0.02	49.8	0.01
10.4	0.07	30.2	0.02	50	0.01
10.6	0.06	30.4	0.02	50.2	0.01
10.8	0.07	30.6	0.02	50.4	0.01
11	0.06	30.8	0.02	50.6	0.01
11.2	0.06	31	0.02	50.8	0.01
11.4	0.06	31.2	0.02	51	0.01
11.6	0.06	31.4	0.02	51.2	0.01
11.8	0.06	31.6	0.02	51.4	0.01
12	0.05	31.8	0.02	51.6	0.01
12.2	0.05	32	0.02	51.8	0.01
12.4	0.05	32.2	0.02	52	0.01
12.6	0.05	32.4	0.02	52.2	0.01
12.8	0.06	32.6	0.02	52.4	0.01
13	0.05	32.8	0.02	52.6	0.01
13.2	0.05	33	0.01	52.8	0.01
13.4	0.05	33.2	0.01	53	0.01
13.6	0.05	33.4	0.01	53.2	0.01
13.8	0.05	33.6	0.01	53.4	0.01
14	0.04	33.8	0.01	53.6	0.01
14.2	0.04	34	0.01	53.8	0.01
14.4	0.04	34.2	0.01	54	0.01
14.6	0.04	34.4	0.01	54.2	0.01
14.8	0.05	34.6	0.01	54.4	0.01
15	0.04	34.8	0.01	54.6	0.01
15.2	0.04	35	0.01	54.8	0.01
15.4	0.04	35.2	0.01	55	0.01
15.6	0.04	35.4	0.01	55.2	0.01
15.8	0.04	35.6	0.02	55.4	0.01
16	0.04	35.8	0.02	55.6	0.01
16.2	0.04	36	0.01	55.8	0.01
16.4	0.04	36.2	0.01	56	0.01
16.6	0.04	36.4	0.01	56.2	0.01
16.8	0.04	36.6	0.01	56.4	0.01
17	0.03	36.8	0.01	56.6	0.01
17.2	0.03	37	0.01	56.8	0.01
17.4	0.03	37.2	0.01	57	0.01
17.6	0.03	37.4	0.01	57.2	0.01
17.8	0.03	37.6	0.01	57.4	0.01
18	0.03	37.8	0.01	57.6	0.01
18.2	0.03	38	0.01	57.8	0.01
18.4	0.03	38.2	0.01	58	0.01
18.6	0.03	38.4	0.01	58.2	0.01
18.8	0.03	38.6	0.01	58.4	0.01
19	0.03	38.8	0.01	58.6	0.01
19.2	0.03	39	0.01	58.8	0.01
19.4	0.03	39.2	0.01	59	0.01
19.6	0.03	39.4	0.01	59.2	0.01
19.8	0.03	39.6	0.01	59.4	0.01
				59.6	0.01

AR300654

T03436-86021

CW-6S Insert Test #2
SWL = 15.80' Ground Surface
Test Date: 3/11/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0.2	2.98	23.4	0.52	46	0.49
0.4	0.02	23.6	0.52	46.2	0.49
0.6	0.01	23.8	0.52	46.4	0.49
1.2	3.77	24	0.52	46.6	0.49
1.4	0.38	24.2	0.52	46.8	0.49
1.8	3.42	24.4	0.52	47	0.49
2	0.61	24.6	0.52	47.2	0.49
2.2	0.2	24.8	0.52	47.4	0.49
2.4	1.24	25	0.52	47.6	0.49
2.6	0.64	25.2	0.52	47.8	0.49
2.8	0.12	25.4	0.52	48	0.49
3	0.53	25.6	0.52	48.2	0.49
3.2	0.58	25.8	0.52	48.4	0.49
3.4	0.5	26	0.52	48.6	0.49
3.6	0.53	26.2	0.52	48.8	0.49
3.8	0.67	26.4	0.52	49	0.49
4	0.53	26.6	0.51	49.2	0.49
4.2	0.52	26.8	0.52	49.4	0.49
4.4	0.52	27	0.51	49.6	0.49
4.6	0.54	27.2	0.51	49.8	0.49
4.8	0.52	27.4	0.51	50	0.49
5	0.53	27.6	0.51	50.2	0.49
5.2	0.53	27.8	0.51	50.4	0.49
5.4	0.53	28	0.51	50.6	0.49
5.6	0.52	28.2	0.51	50.8	0.49
5.8	0.53	28.4	0.51	51	0.49
6	0.53	28.6	0.51	51.2	0.49
6.2	0.53	28.8	0.52	51.4	0.49
6.4	0.53	29	0.51	51.6	0.49
6.6	0.53	29.2	0.51	51.8	0.49
6.8	0.53	29.4	0.51	52	0.49
7	0.54	29.6	0.51	52.2	0.49
7.2	0.53	29.8	0.51	52.4	0.49
7.4	0.53	30	0.51	52.6	0.49
7.6	0.53	30.2	0.51	52.8	0.49
7.8	0.53	30.4	0.51	53	0.49
8	0.53	30.6	0.51	53.2	0.49
8.2	0.53	30.8	0.51	53.4	0.49
8.4	0.53	31	0.51	53.6	0.49
8.6	0.53	31.2	0.51	53.8	0.49
8.8	0.54	31.4	0.51	54	0.49
9	0.53	31.6	0.51	54.2	0.49
9.2	0.53	31.8	0.51	54.4	0.49
9.4	0.53	32	0.51	54.6	0.49
9.6	0.53	32.2	0.51	54.8	0.49
9.8	0.53	32.4	0.51	55	0.48
10	0.53	32.6	0.51	55.2	0.48
10.2	0.53	32.8	0.51	55.4	0.48
10.4	0.53	33	0.5	55.6	0.49
10.6	0.53	33.2	0.5	55.8	0.49
10.8	0.53	33.4	0.51	56	0.48
11	0.53	33.6	0.51	56.2	0.48
11.2	0.53	33.8	0.51	56.4	0.48
11.4	0.54	34	0.5	56.6	0.48
11.6	0.53	34.2	0.5	56.8	0.48
11.8	0.53	34.4	0.5	57	0.48
12	0.53	34.6	0.5	57.2	0.48
12.2	0.53	34.8	0.5	57.4	0.48
12.4	0.53	35	0.5	57.6	0.48
12.6	0.53	35.2	0.5	57.8	0.48
12.8	0.53	35.4	0.5	58	0.48
13	0.53	35.6	0.5	58.2	0.48
13.2	0.53	35.8	0.5	58.4	0.48
13.4	0.53	36	0.5	58.6	0.48
13.6	0.53	36.2	0.5	58.8	0.48
13.8	0.53	36.4	0.5	59	0.48
14	0.53	36.6	0.5	64	0.48
14.2	0.53	36.8	0.5	69	0.47
14.4	0.53	37	0.5	74	0.47
14.6	0.53	37.2	0.5	79	0.46
14.8	0.53	37.4	0.5	84	0.46
15	0.53	37.6	0.5	89	0.46
15.2	0.53	37.8	0.5	94	0.46
15.4	0.53	38	0.5	99	0.45
15.6	0.53	38.2	0.5	104	0.45
15.8	0.53	38.4	0.5	109	0.44
16	0.53	38.6	0.5	114	0.44
16.2	0.53	38.8	0.5	119	0.44
16.4	0.53	39	0.5	124	0.43
16.6	0.53	39.2	0.5	129	0.43
16.8	0.53	39.4	0.5	134	0.43
17	0.53	39.6	0.5	139	0.43
17.2	0.53	39.8	0.5	144	0.43
17.4	0.53	40	0.5	149	0.42
17.6	0.53	40.2	0.5	154	0.42
17.8	0.53	40.4	0.5	159	0.42
18	0.52	40.6	0.5	164	0.42
18.2	0.52	40.8	0.5	169	0.41
18.4	0.52	41	0.5	174	0.41
18.6	0.53	41.2	0.5	179	0.41
18.8	0.53	41.4	0.5	184	0.41
19	0.52	41.6	0.5	189	0.41
19.2	0.52	41.8	0.5	194	0.4
19.4	0.52	42	0.5	199	0.4
19.6	0.52	42.2	0.5	204	0.4
19.8	0.52	42.4	0.5	209	0.39
20	0.52	42.6	0.5	214	0.39
20.2	0.52	42.8	0.5	219	0.39
20.4	0.52	43	0.5	224	0.39
20.6	0.52	43.2	0.5	229	0.39
20.8	0.52	43.4	0.5	234	0.39
21	0.52	43.6	0.5	239	0.38
21.2	0.52	43.8	0.5	244	0.38
21.4	0.52	44	0.5	249	0.38
21.6	0.52	44.2	0.5	254	0.38
21.8	0.52	44.4	0.5	259	0.38
22	0.52	44.6	0.5	264	0.37
22.2	0.52	44.8	0.5	269	0.37
22.4	0.52	45	0.5	274	0.37
22.6	0.52	45.2	0.5	279	0.37
22.8	0.52	45.4	0.5	284	0.36
23	0.52	45.6	0.5	289	0.37
23.2	0.52	45.8	0.5	294	0.37

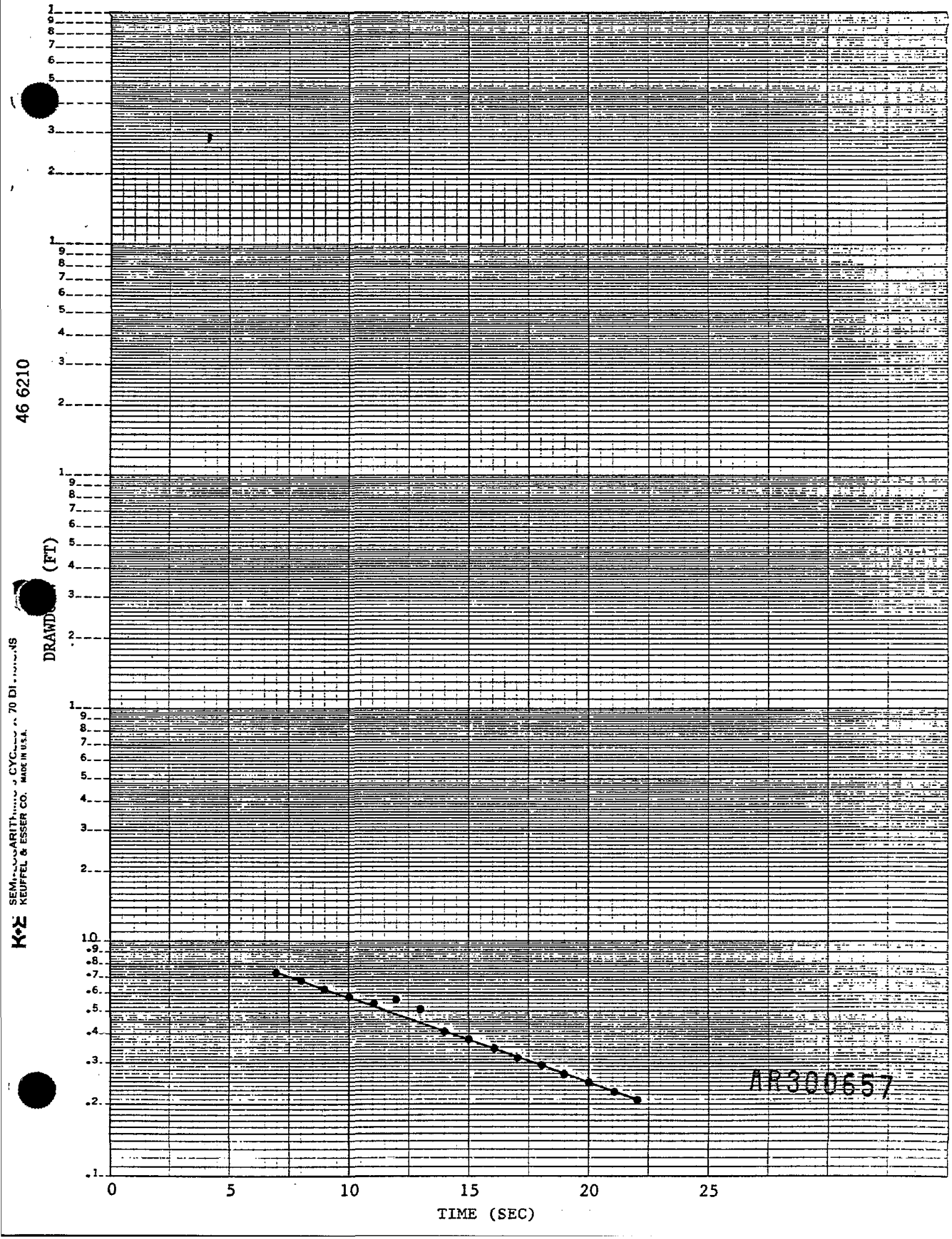
AR300655

T03436-86021

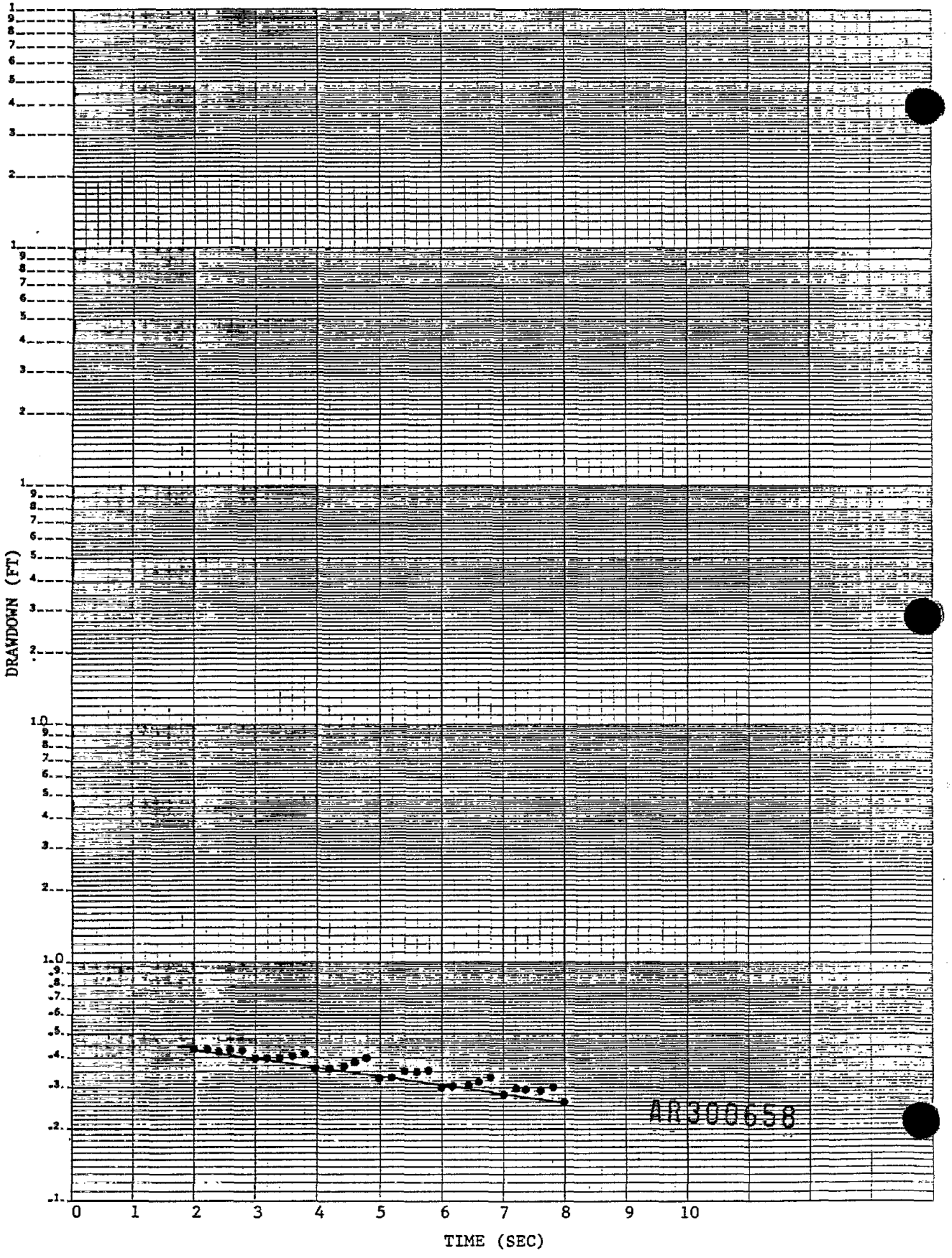
CW-6S Removal Test #2
SWL = 15.80' Ground Surface
Test Date: 3/11/88
Slug Size = 4 1/2' x 1 1/4"

Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)	Time (sec)	Transducer Head (feet)
0	5.3	15.2	0.03	29.8	0.01
0.2	0.99	15.4	0.03	30	0.01
1	1.26	15.6	0.03	30.2	0.01
1.2	0.98	15.8	0.03	30.4	0.01
1.4	1.79	16	0.02	30.6	0.01
1.8	6.97	16.2	0.02	30.8	0.01
2	0.86	16.4	0.02	31	0.01
2.2	0.91	16.6	0.02	31.2	0.01
2.4	0.96	16.8	0.03	31.4	0.01
2.6	1.03	17	0.02	31.6	0.01
2.8	1.03	17.2	0.02	31.8	0.01
3	0.62	17.4	0.02	32	0.01
3.2	0.66	17.6	0.02	32.2	0.01
3.4	0.71	17.8	0.02	32.4	0.01
3.6	0.76	18	0.02	32.6	0.01
3.8	0.81	18.2	0.02	32.8	0.01
4	0.42	18.4	0.02	33	0.01
4.2	0.45	18.6	0.02	33.2	0.01
4.4	0.49	18.8	0.02	33.4	0.01
4.6	0.53	19	0.02	33.6	0.01
4.8	0.57	19.2	0.02	33.8	0.01
5	0.28	19.4	0.02	34	0.01
5.2	0.3	19.6	0.02	34.2	0.01
5.4	0.32	19.8	0.02	34.4	0.01
5.6	0.36	20	0.02	34.6	0.01
5.8	0.39	20.2	0.02	34.8	0.01
6	0.18	20.4	0.02	35	0.01
6.2	0.2	20.6	0.02	35.2	0.01
6.4	0.21	20.8	0.02	35.4	0.01
6.6	0.24	21	0.02	35.6	0.01
6.8	0.25	21.2	0.02	36	0.01
7	0.13	21.4	0.02	36.2	0.01
7.2	0.13	21.6	0.02	36.4	0.01
7.4	0.15	21.8	0.02	36.6	0.01
7.6	0.16	22	0.02	36.8	0.01
7.8	0.17	22.2	0.02	37	0.01
8	0.09	22.4	0.02	37.2	0.01
8.2	0.09	22.6	0.02	37.4	0.01
8.4	0.1	22.8	0.02	37.6	0.01
8.6	0.11	23	0.01	37.8	0.01
8.8	0.11	23.2	0.01	135	0.01
9	0.07	23.4	0.01	140	0.01
9.2	0.08	23.6	0.01	145	0.01
9.4	0.08	23.8	0.01	150	0.01
9.6	0.08	24	0.01	155	0.01
9.8	0.09	24.2	0.01	160	0.01
10	0.06	24.4	0.01	165	0.01
10.2	0.06	24.6	0.01	170	0.01
10.4	0.06	24.8	0.01	175	0.01
10.6	0.07	25	0.01	180	0.01
10.8	0.07	25.2	0.01	185	0.01
11	0.05	25.4	0.01	190	0.01
11.2	0.05	25.6	0.01	195	0.01
11.4	0.05	25.8	0.01	200	0.01
11.6	0.06	26	0.01	205	0.01
11.8	0.05	26.2	0.01	210	0.01
12	0	26.4	0.01	215	0.01
12.2	0.03	26.6	0.01	220	0.01
12.4	0.04	26.8	0.01	225	0.01
12.6	0.05	27	0.01	230	0.02
12.8	0.05	27.2	0.01	235	0.02
13	0.04	27.4	0.01	240	0.02
13.2	0.03	27.6	0.01	245	0.02
13.4	0.03	27.8	0.01	250	0.02
13.6	0.06	28	0.01	255	0.02
13.8	0.06	28.2	0.01	260	0.02
14	0.03	28.4	0.01	265	0.02
14.2	0.03	28.6	0.01	270	0.02
14.4	0.03	28.8	0.01	275	0.02
14.6	0.03	29	0.01	280	0.02
14.8	0.04	29.2	0.01	285	0.02
15	0.03	29.4	0.01	290	0.02
		29.6	0.01	295	0.02

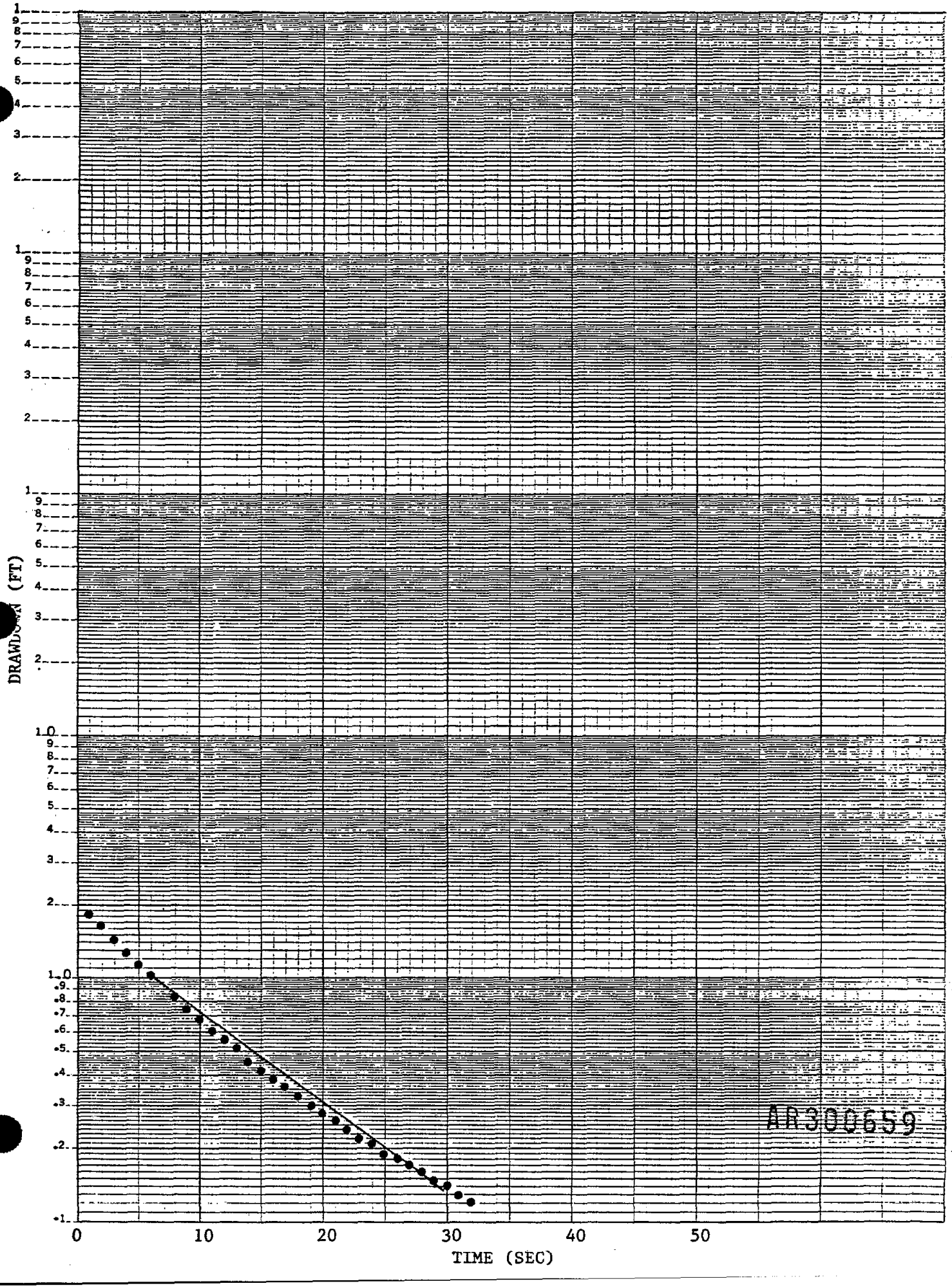
CW - 1D - INSERT TEST #1



CW - 1D INSERT RUN #2

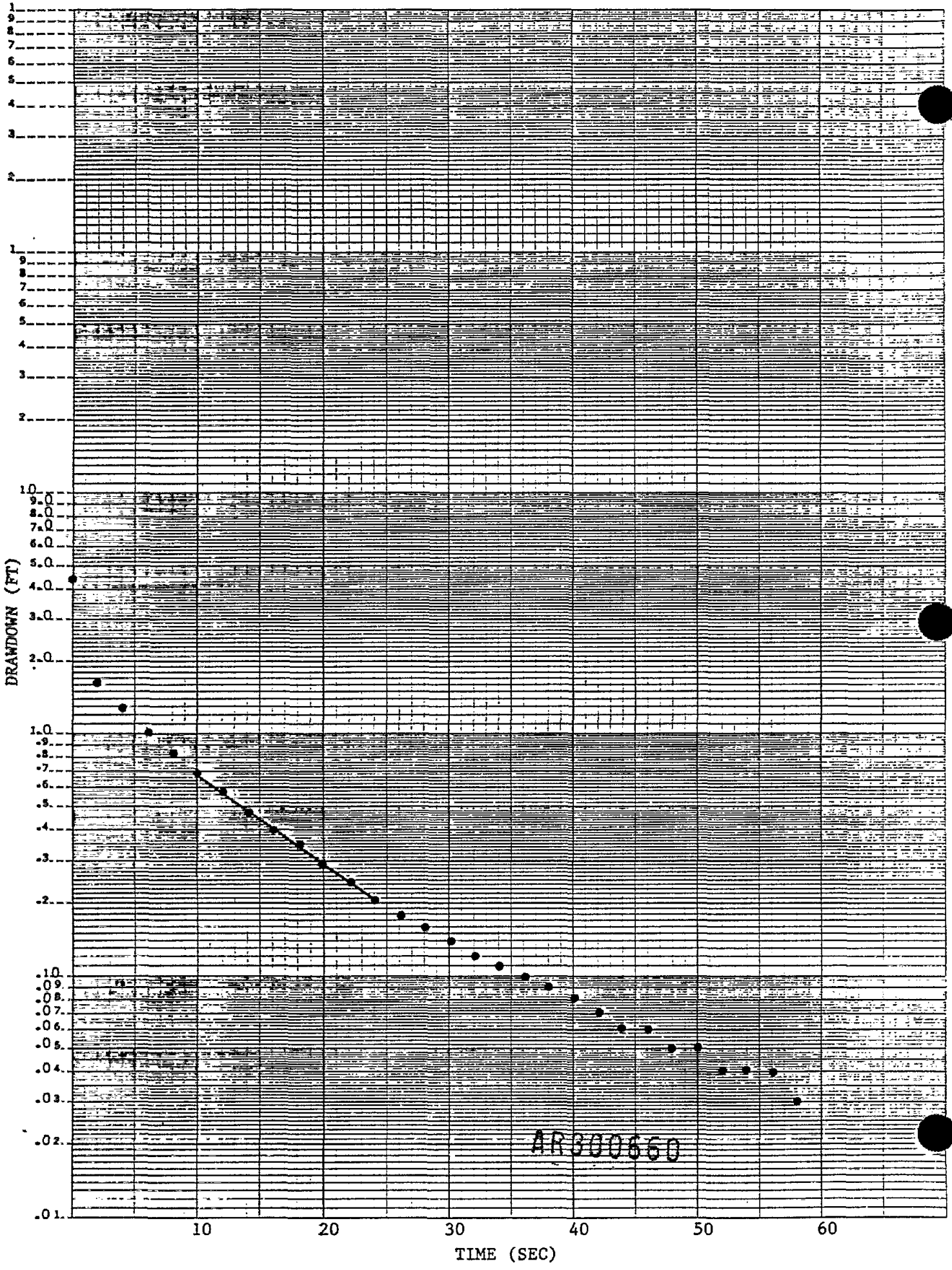


CW - 1D - REMOVAL TEST #1

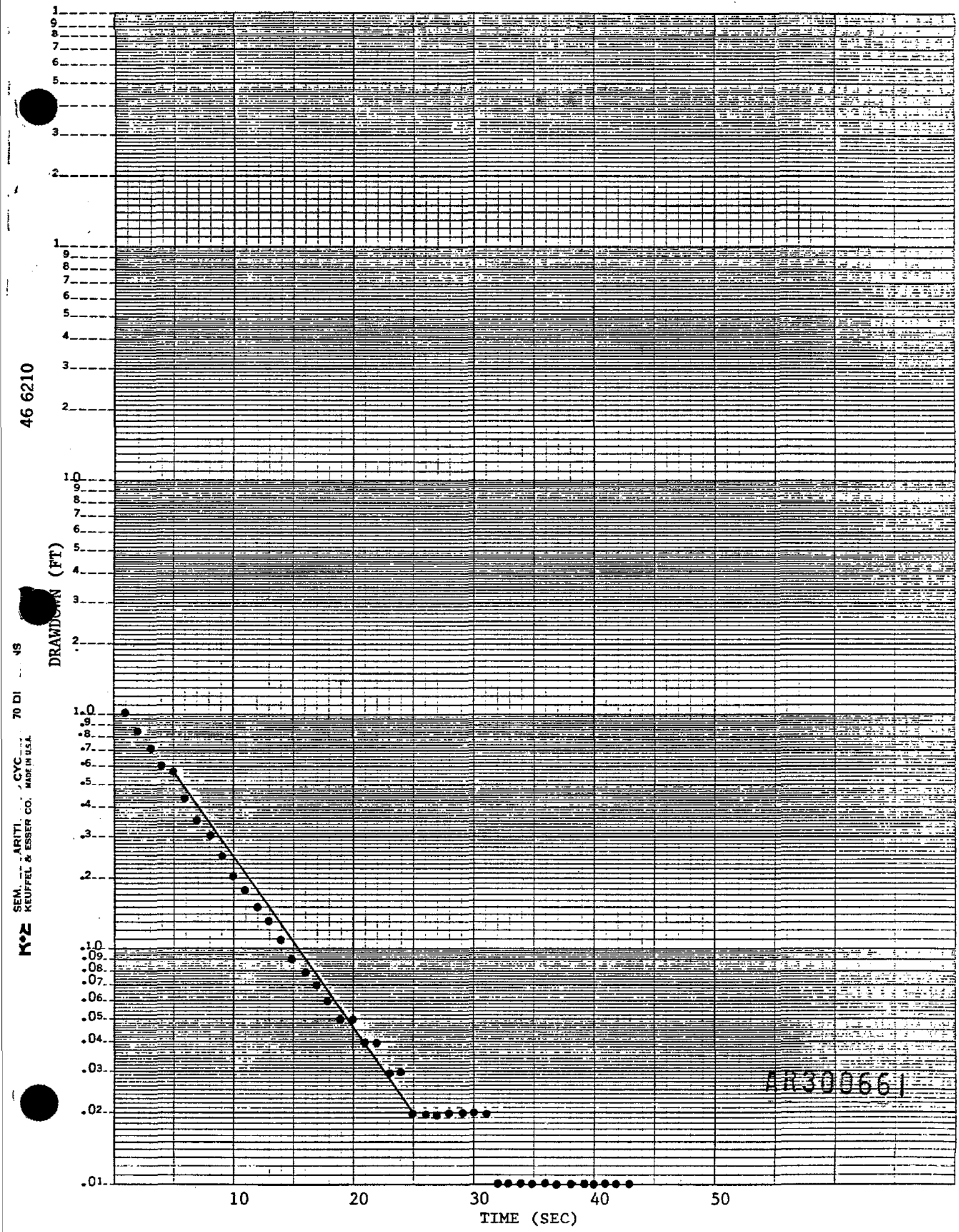


AR300659

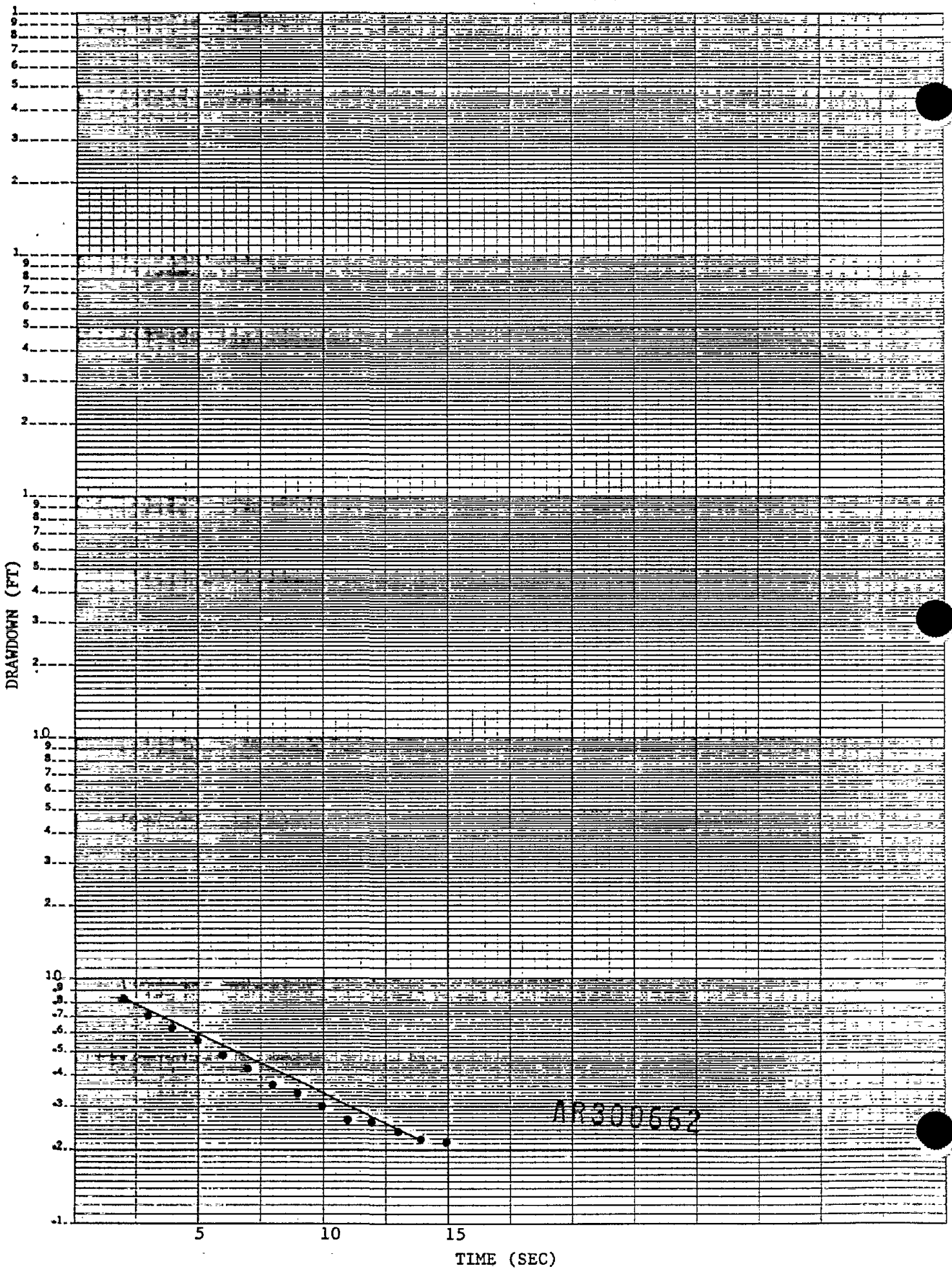
CW - 1D - REMOVAL TEST #2



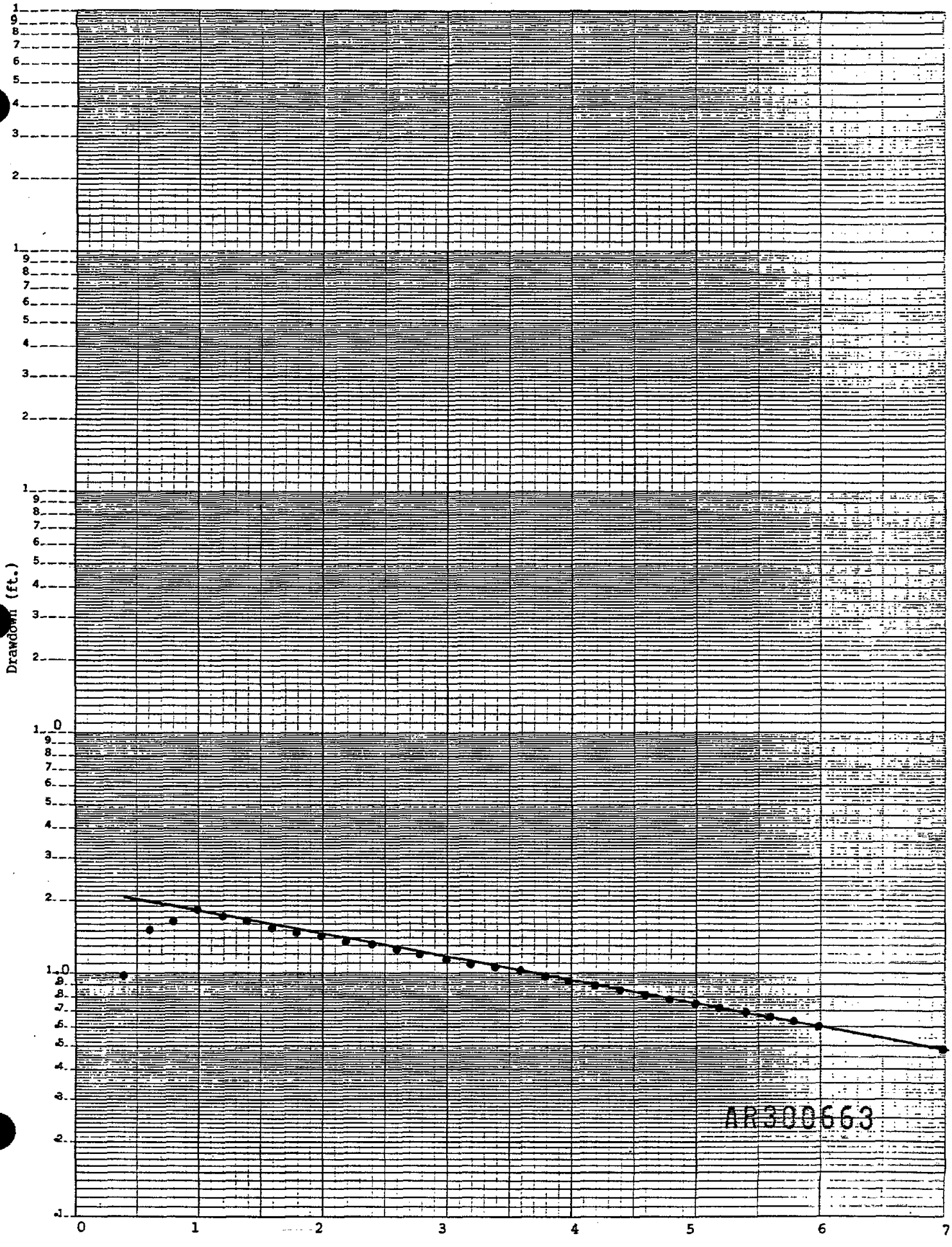
CW - 1I - INSERT TEST #1



CW - 1I - REMOVE TEST #1

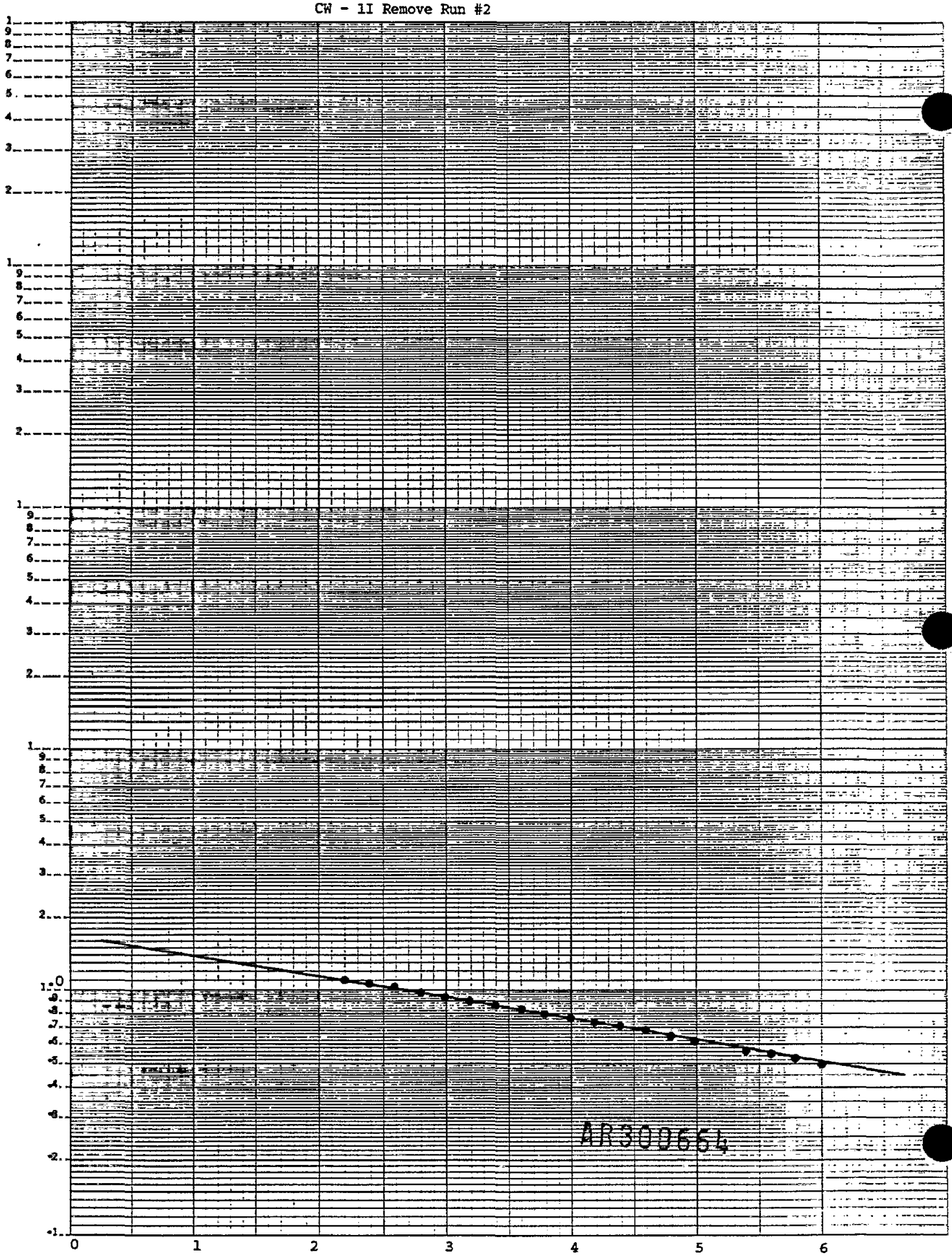


CW - 1I Insert Run #2

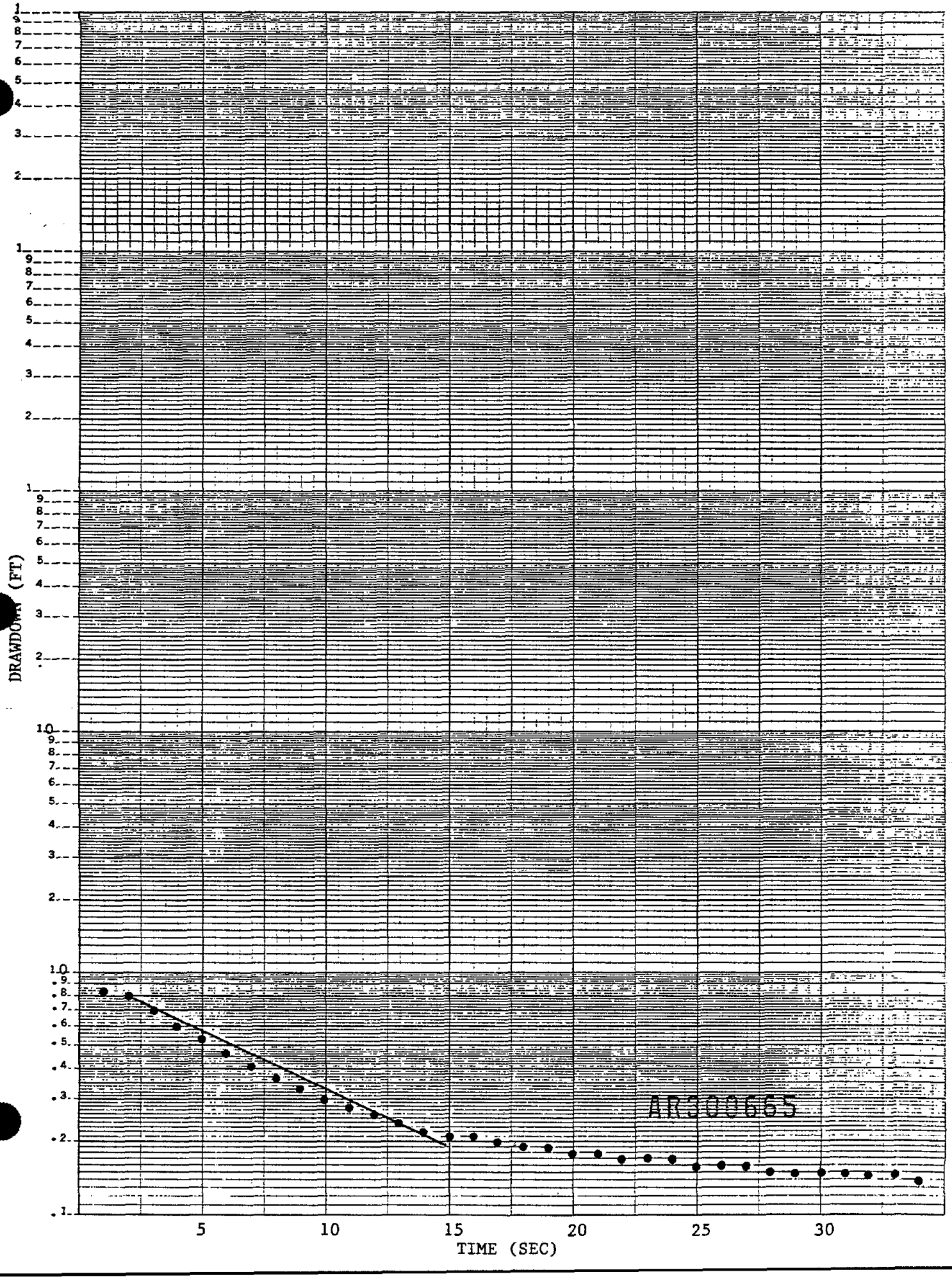


46 6210
K+E SEMI-LOGARITHMIC 3 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.
AR300663

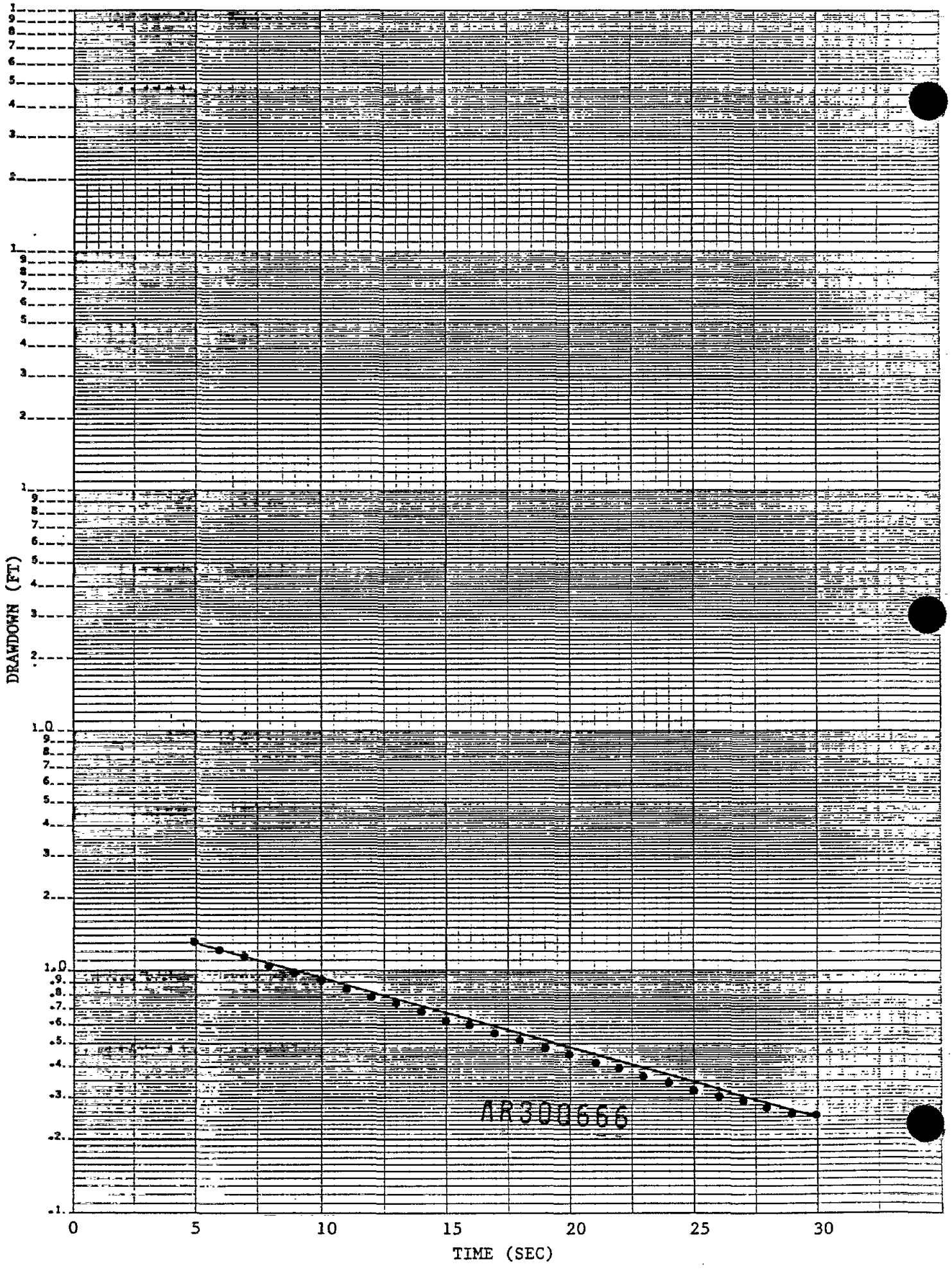
CW - 1I Remove Run #2



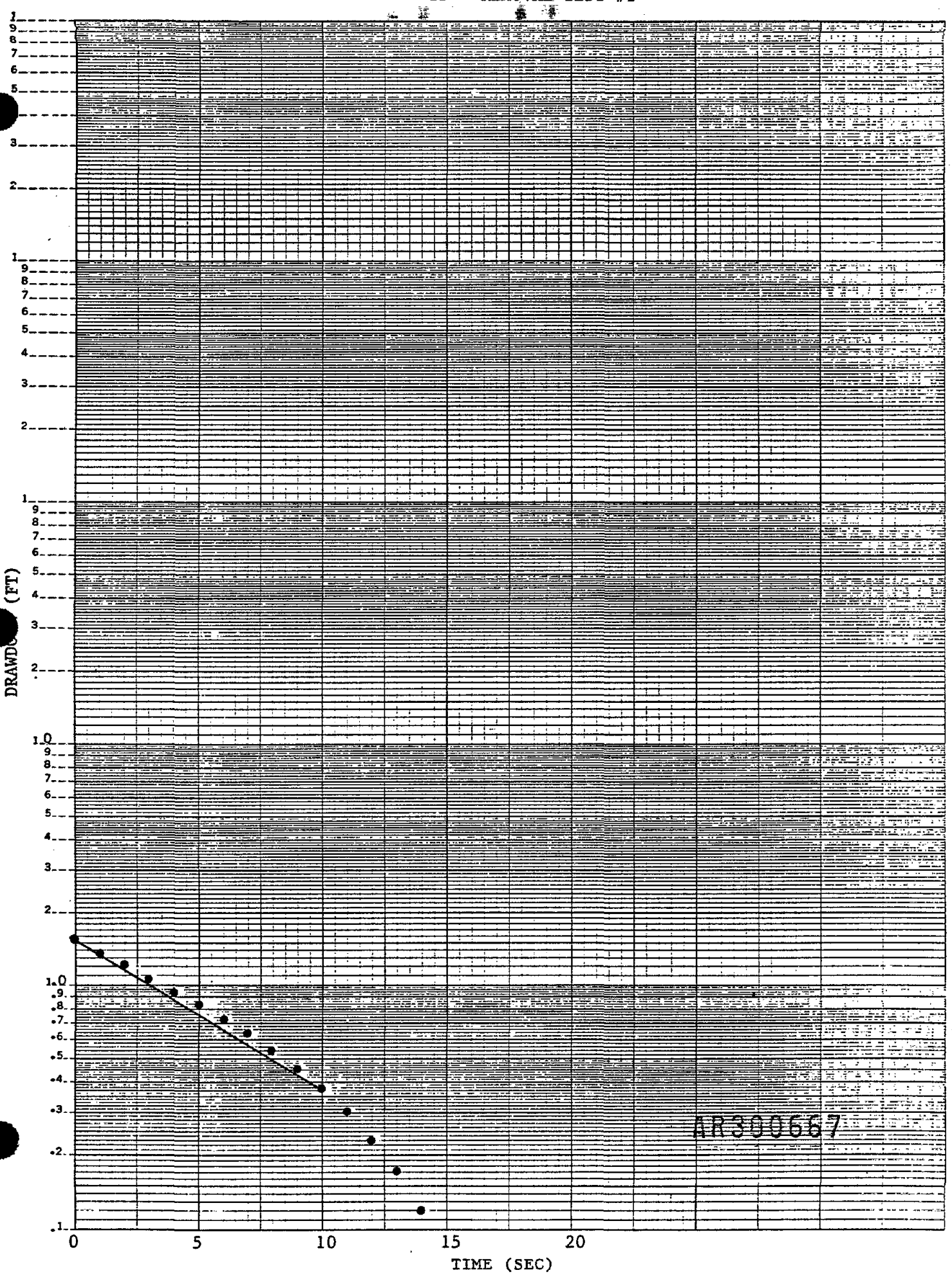
CW 1S - REMOVE TEST #1



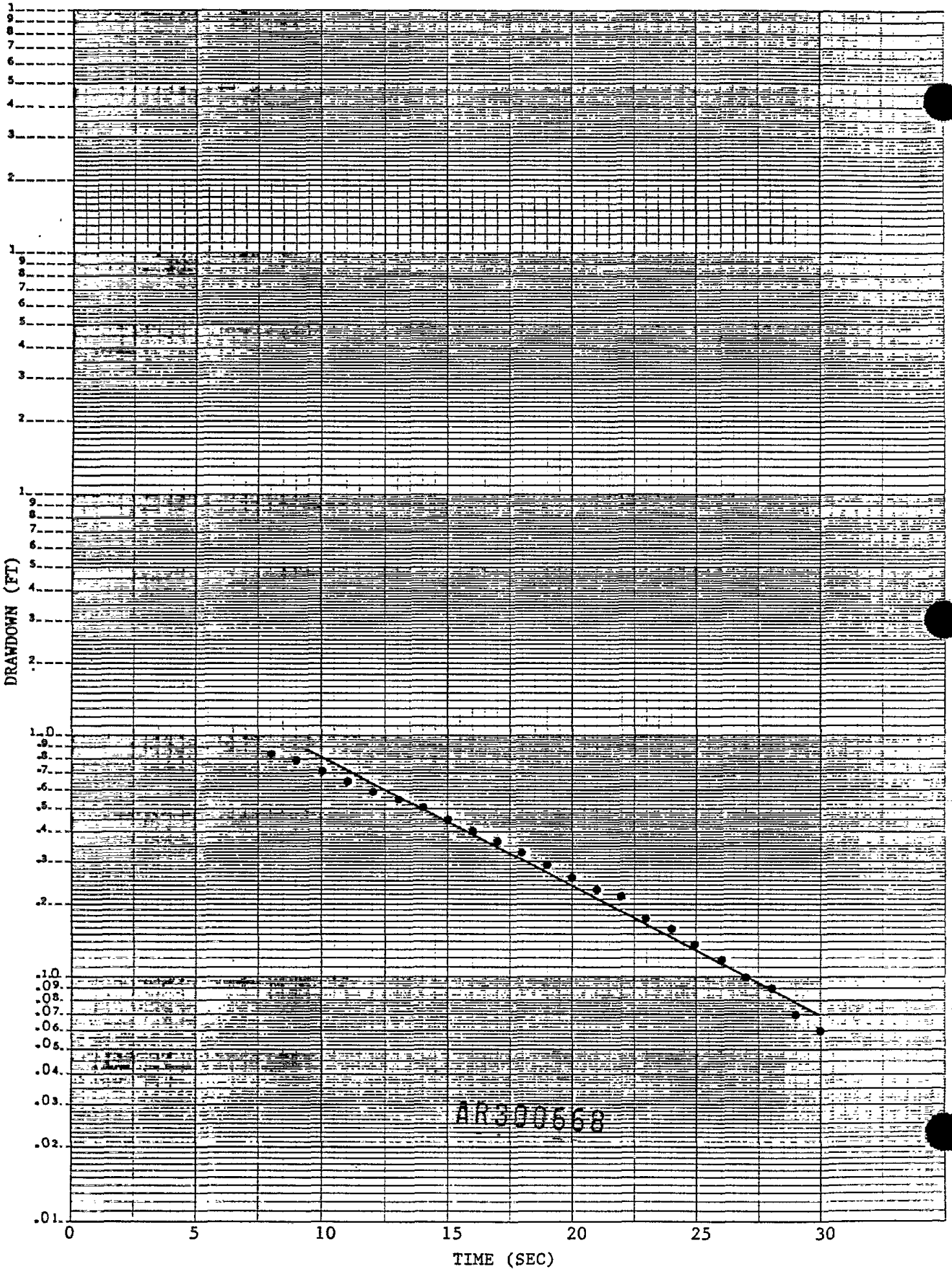
CW - 2D - INSERT TEST #1



CW - 2D - REMOVAL TEST #1

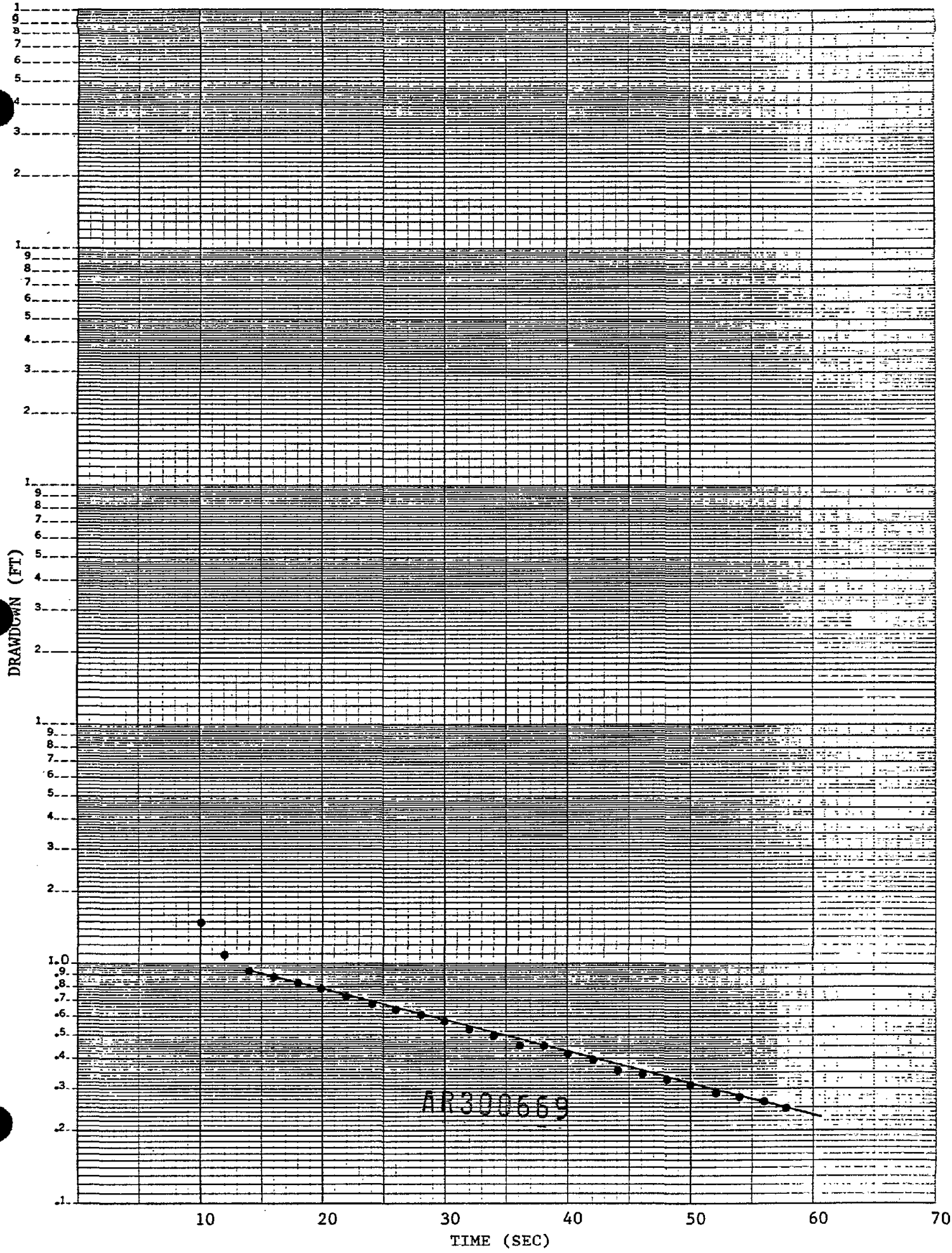


CW - 2I - INSERT TEST #1

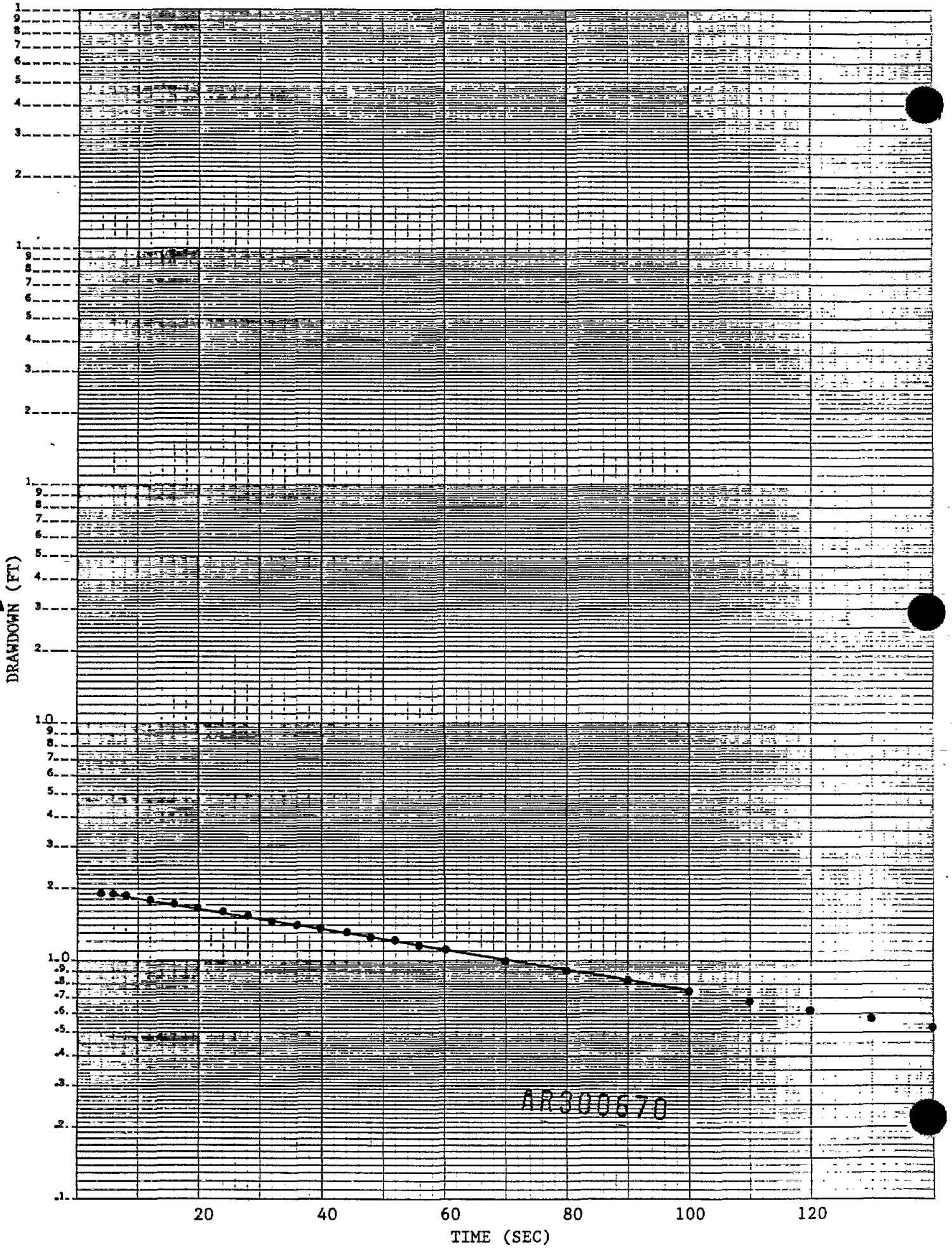


46 6210
K+E SEMI-LOGARITHMIC 3 CYCLE 3 DIV.
KEUFFEL & ESSER CO. MADE IN U.S.A.

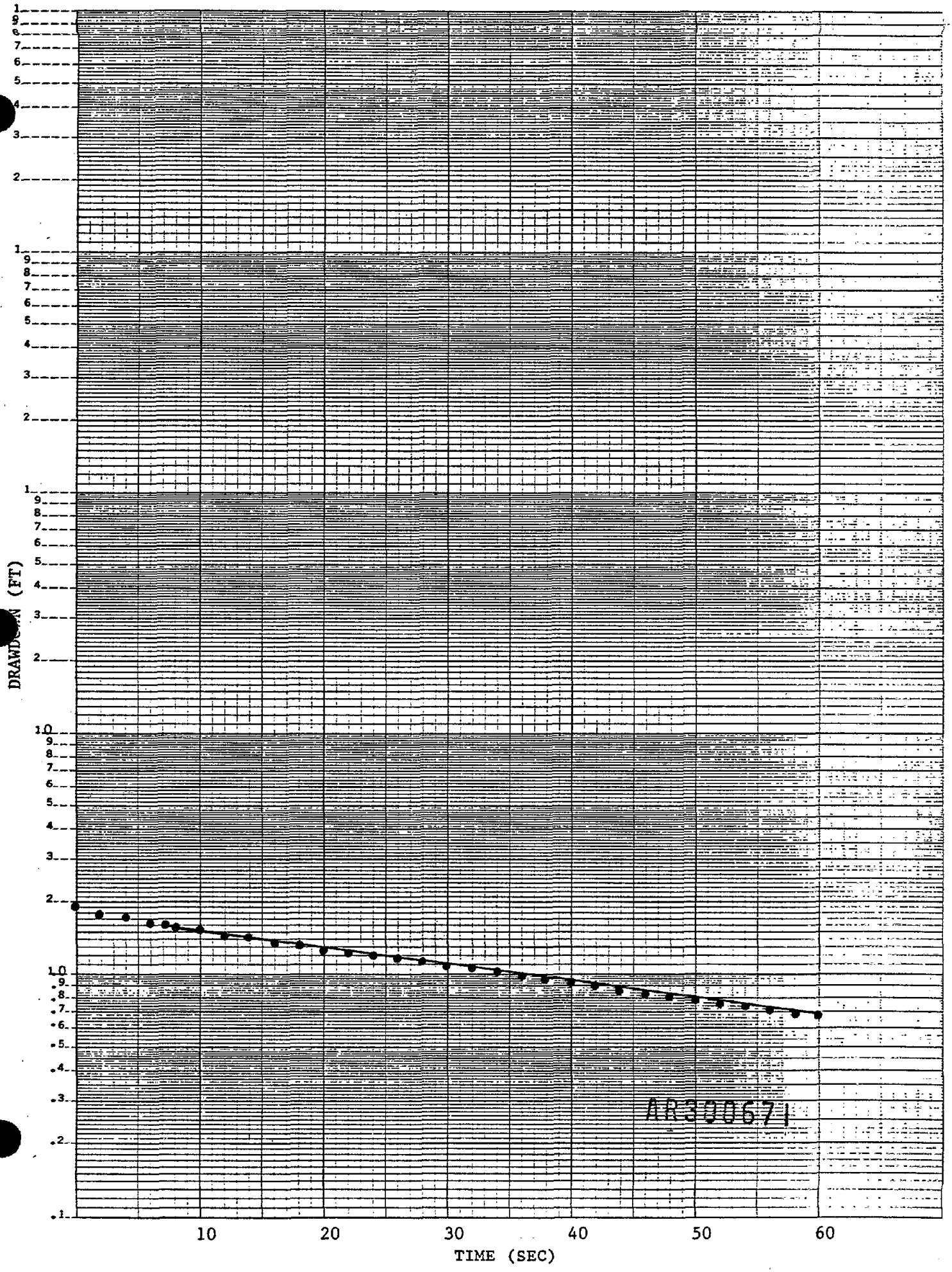
CW - 2I - REMOVAL TEST #1



CW - 3D - INSERT TEST #1

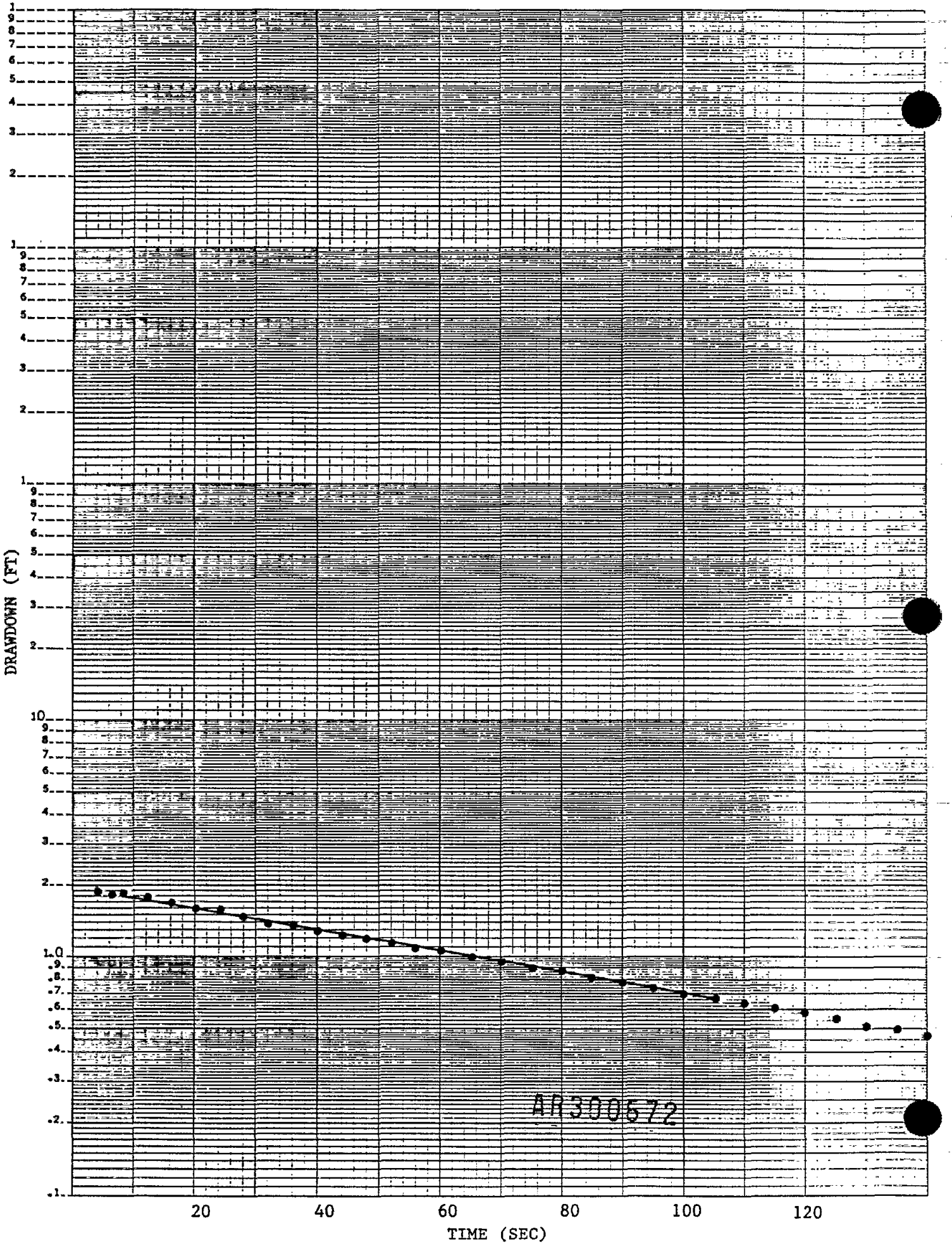


CW - 3D - REMOVAL TEST #1

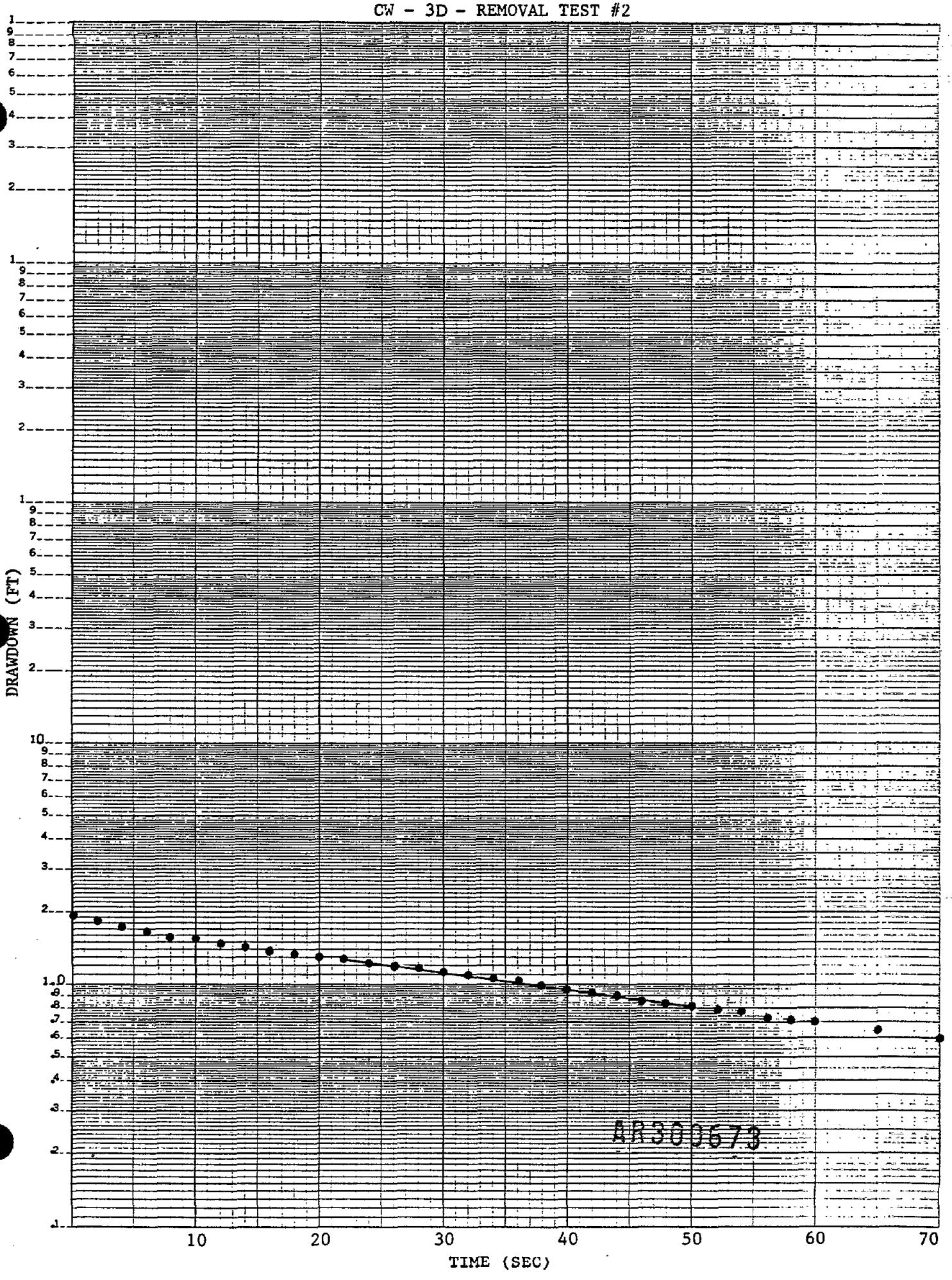


46 6210
K+E SEMI-LOGARITHMIC 3 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

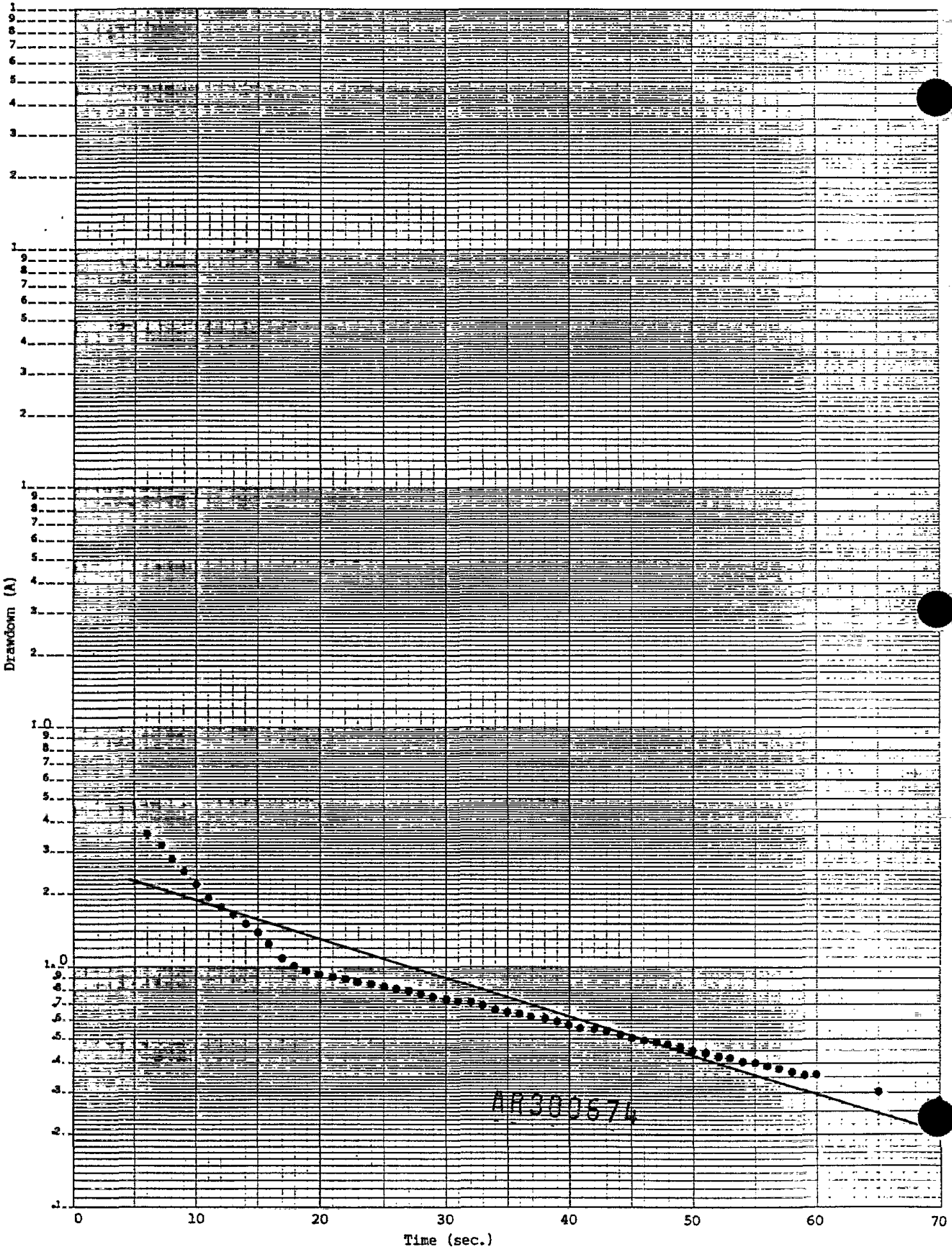
CW - 3D - INSERT TEST #2



CW - 3D - REMOVAL TEST #2

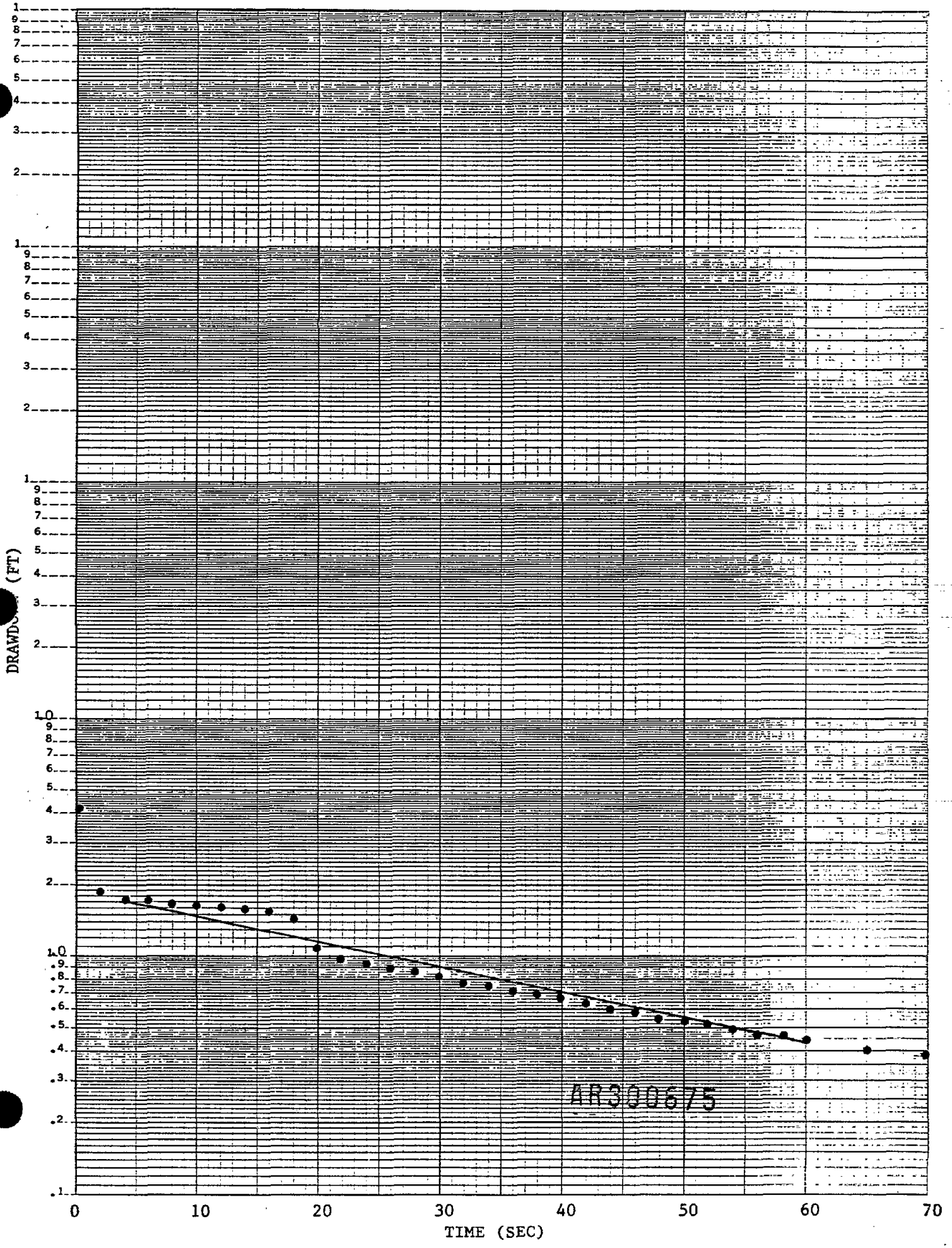


CW - 3I Insert Test #1



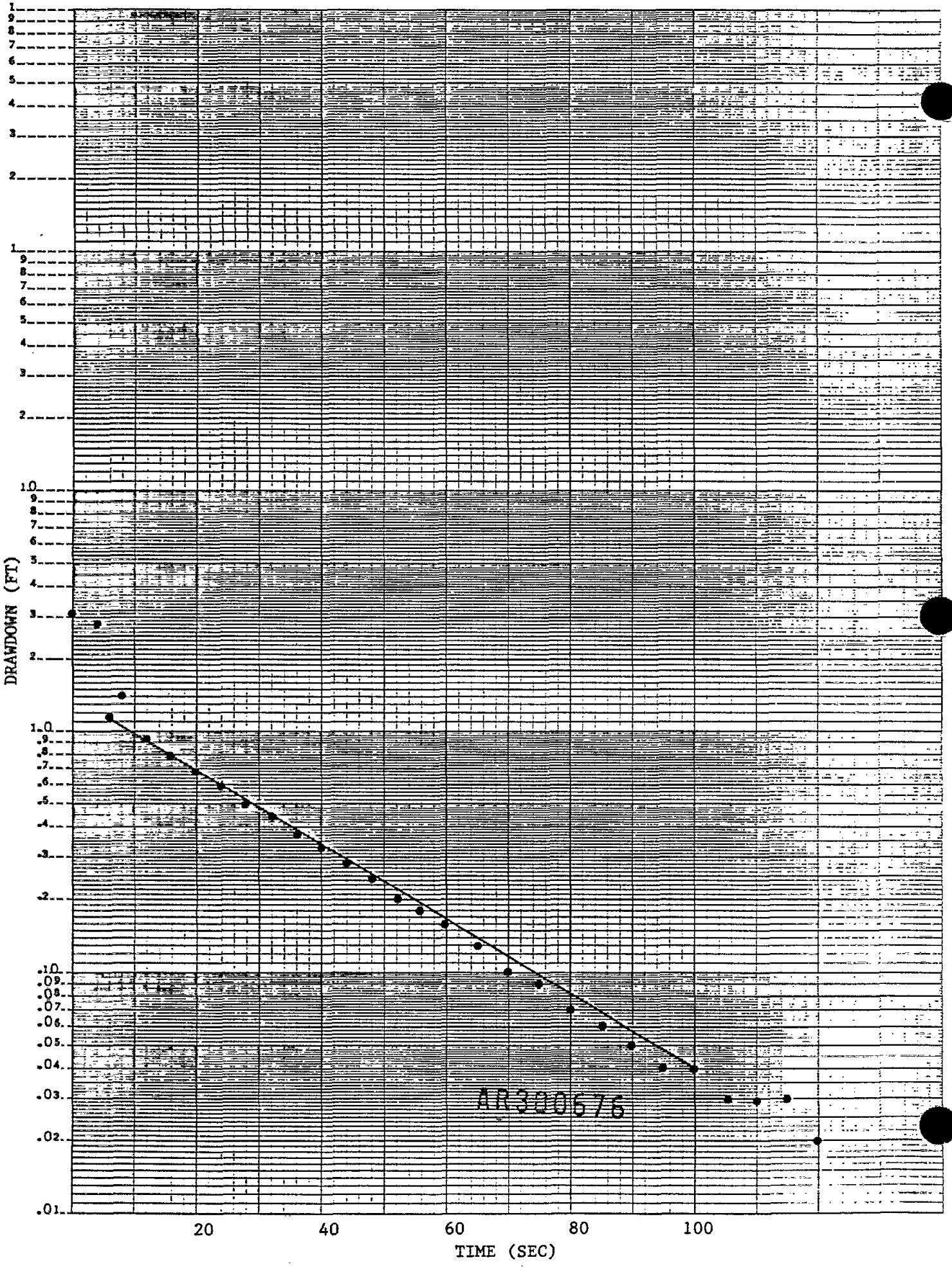
AR300674

CW - 3I - INSERT TEST #2

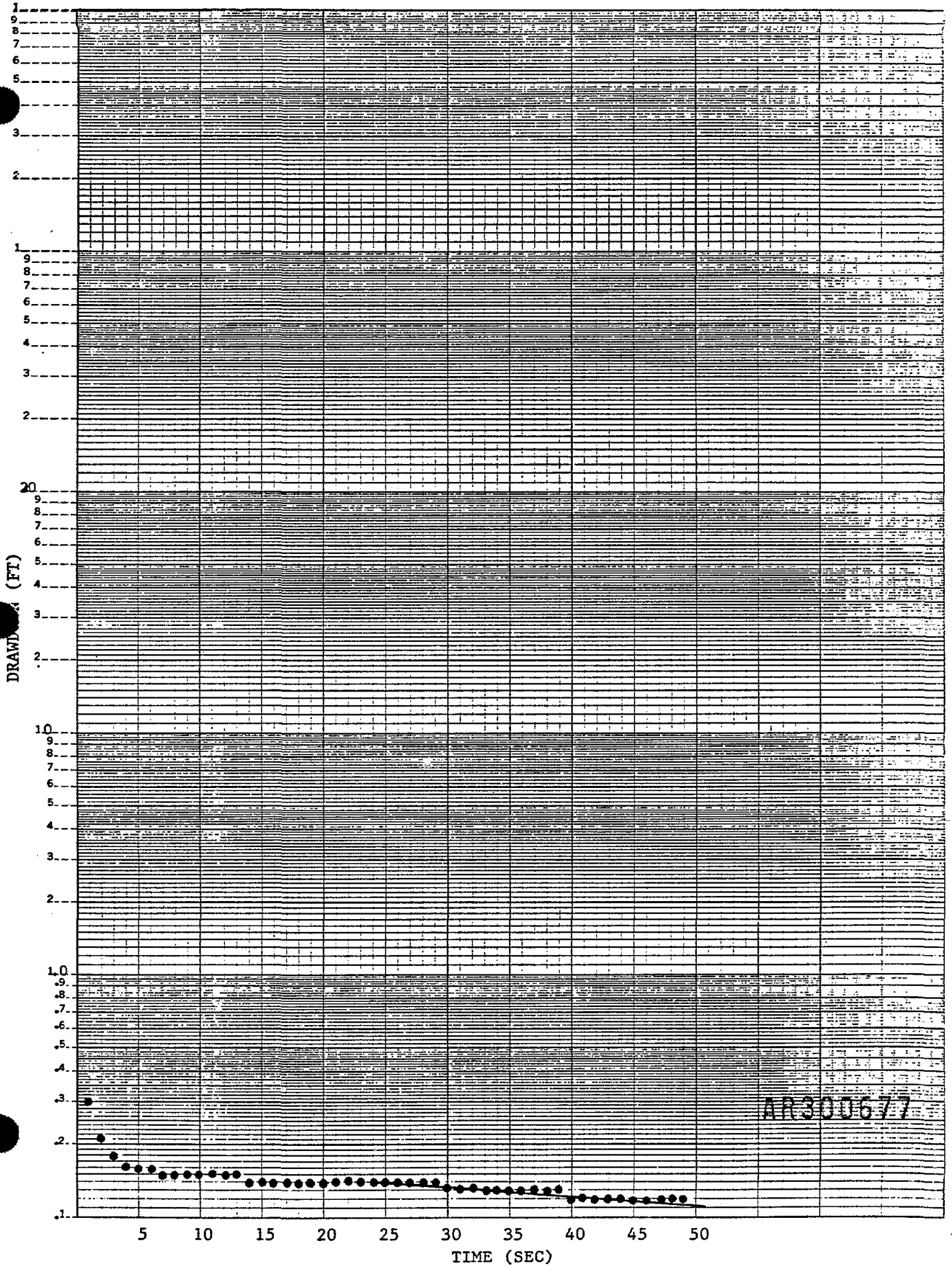


46 6210
K+E SEMI-LOGARITHMIC 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

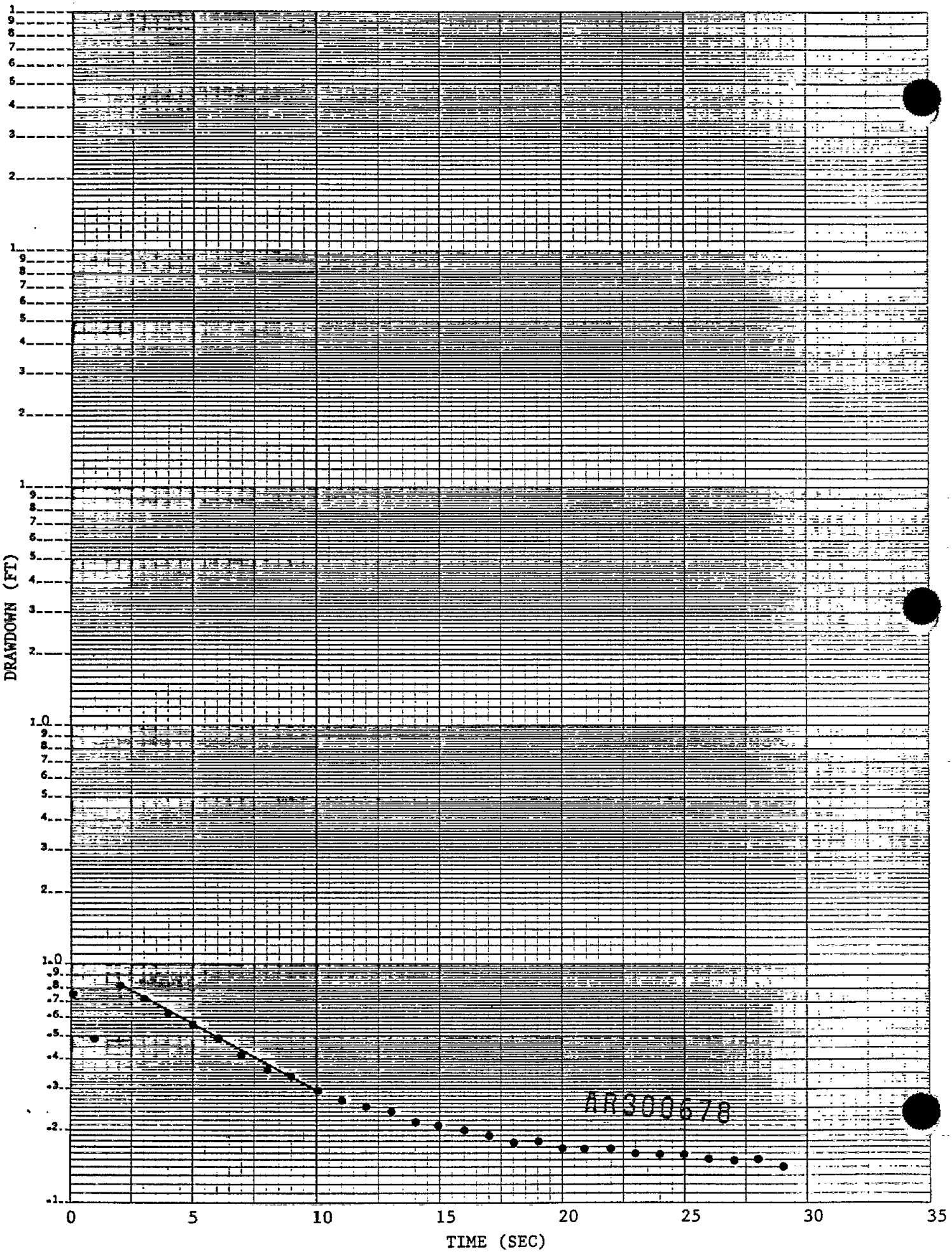
CW - 3I - REMOVAL RUN #2



CW - 3S - INSERT RUN #1

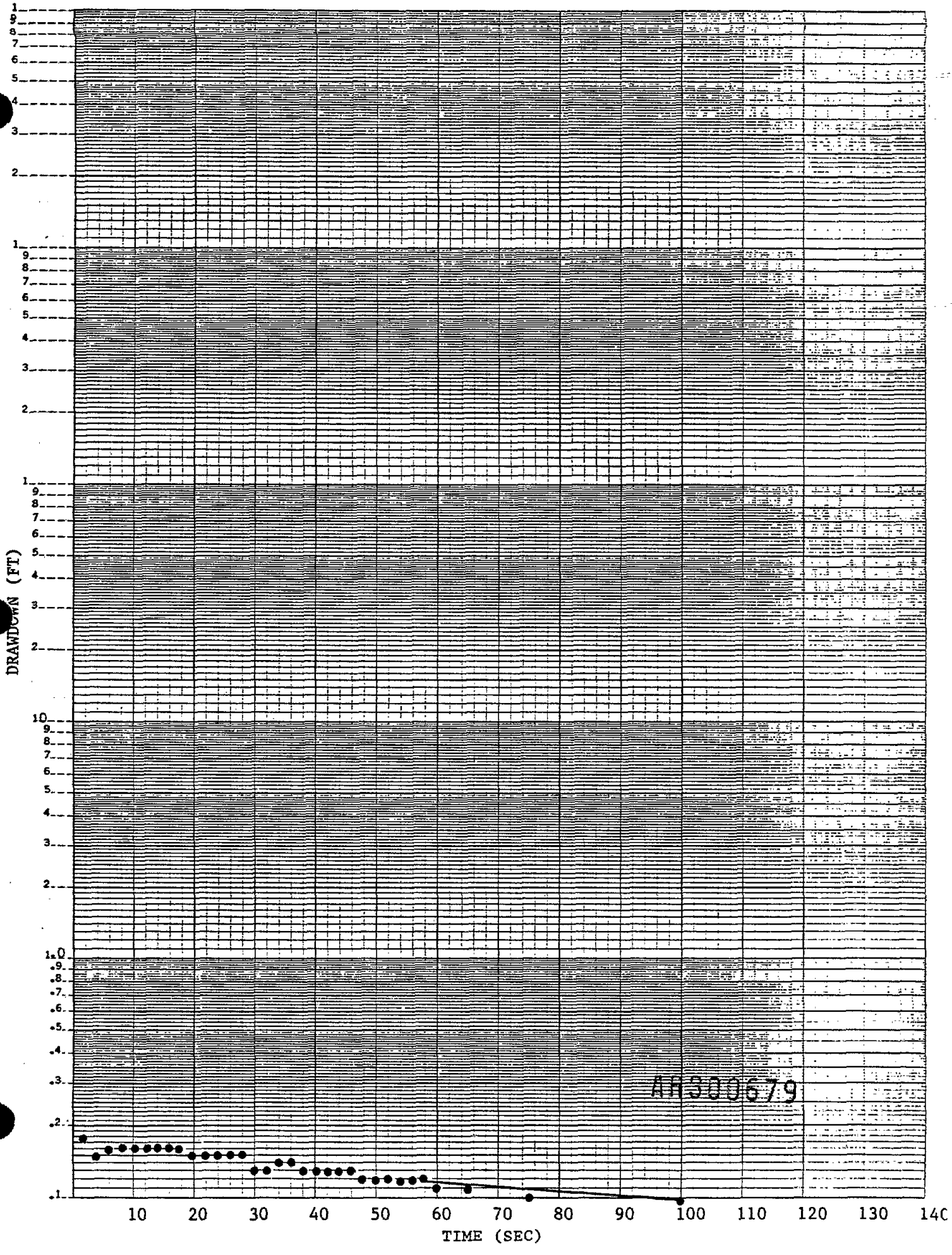


CW - 3S - REMOVAL TEST #1



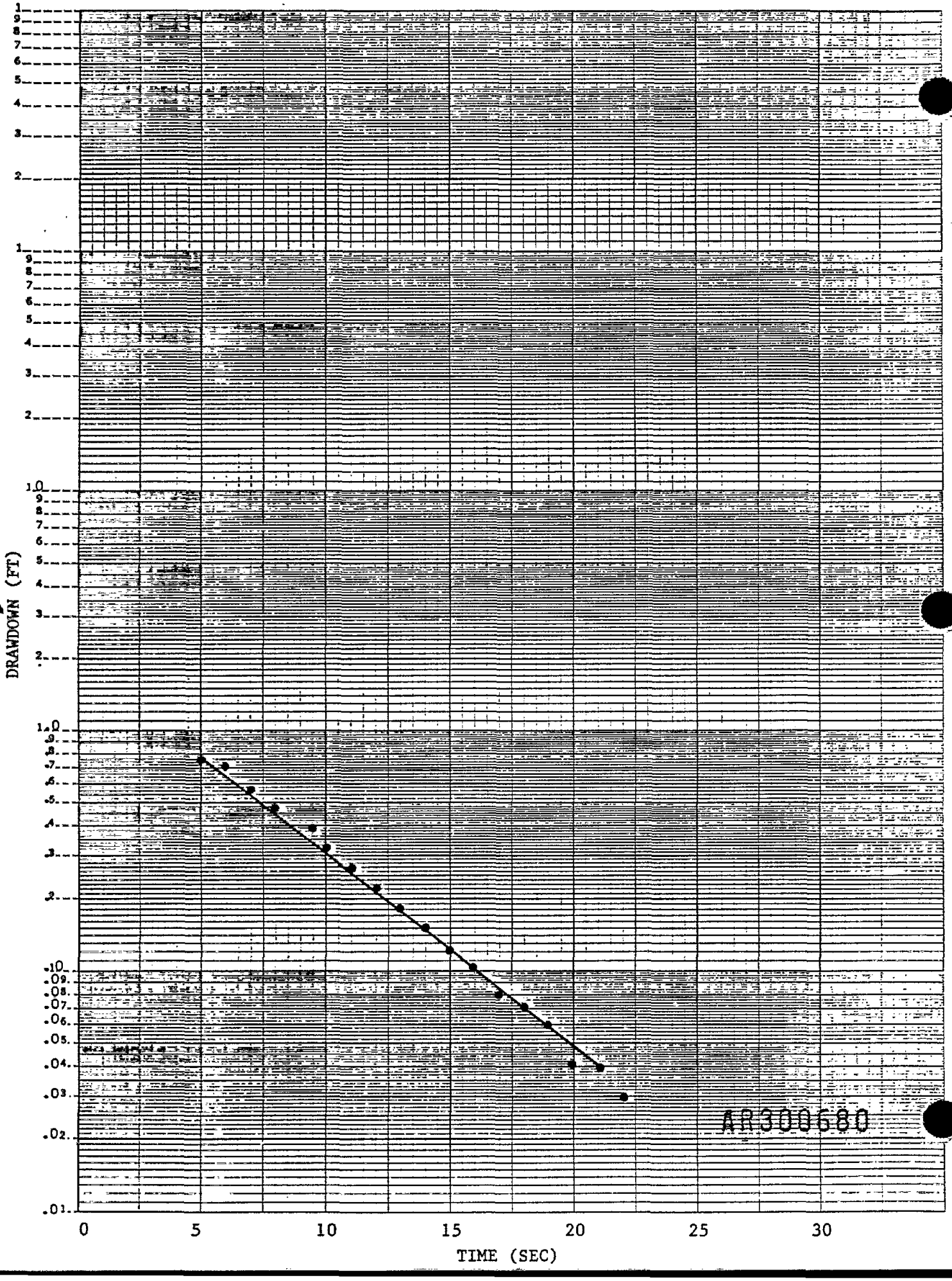
SEMI RITH CYCL 10 DIV 5
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 0210

CW - 3S - INSERT RUN #2

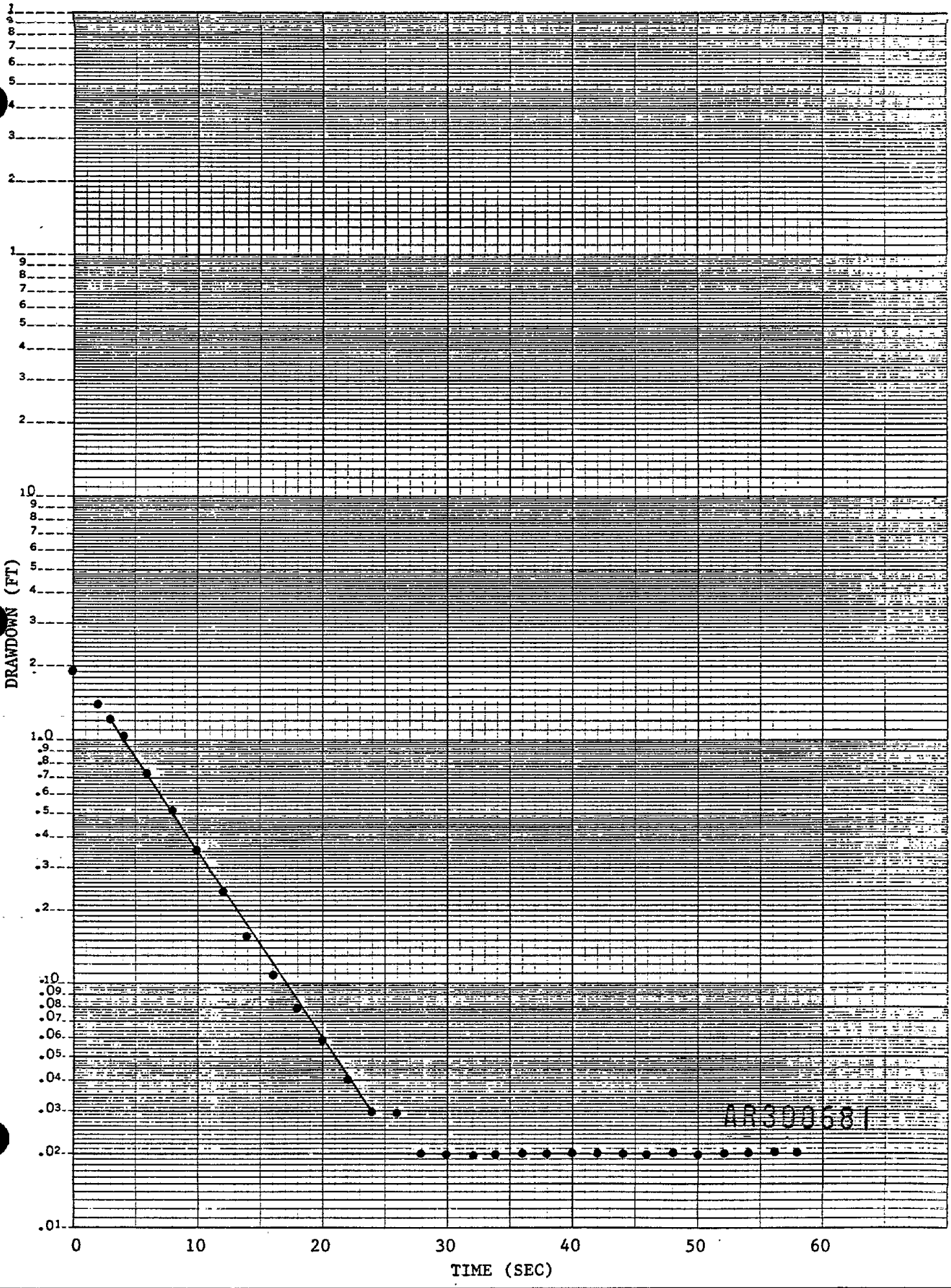


46 6210
K+E SEMI-LOGARITHMIC 3 CYCLES X 10 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

CW - 4D - INSERT TEST #1

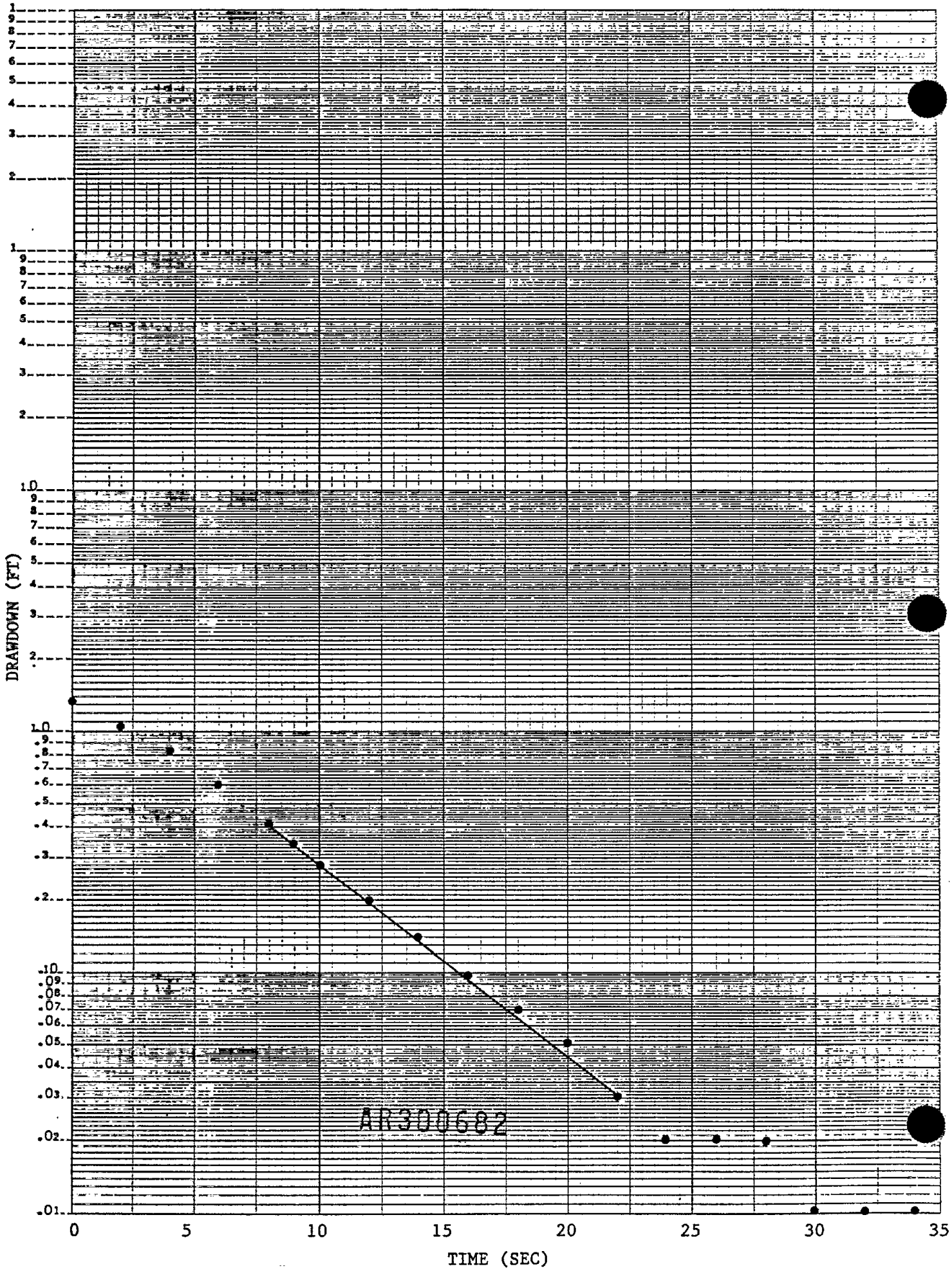


CW - 4D - REMOVAL TEST #1

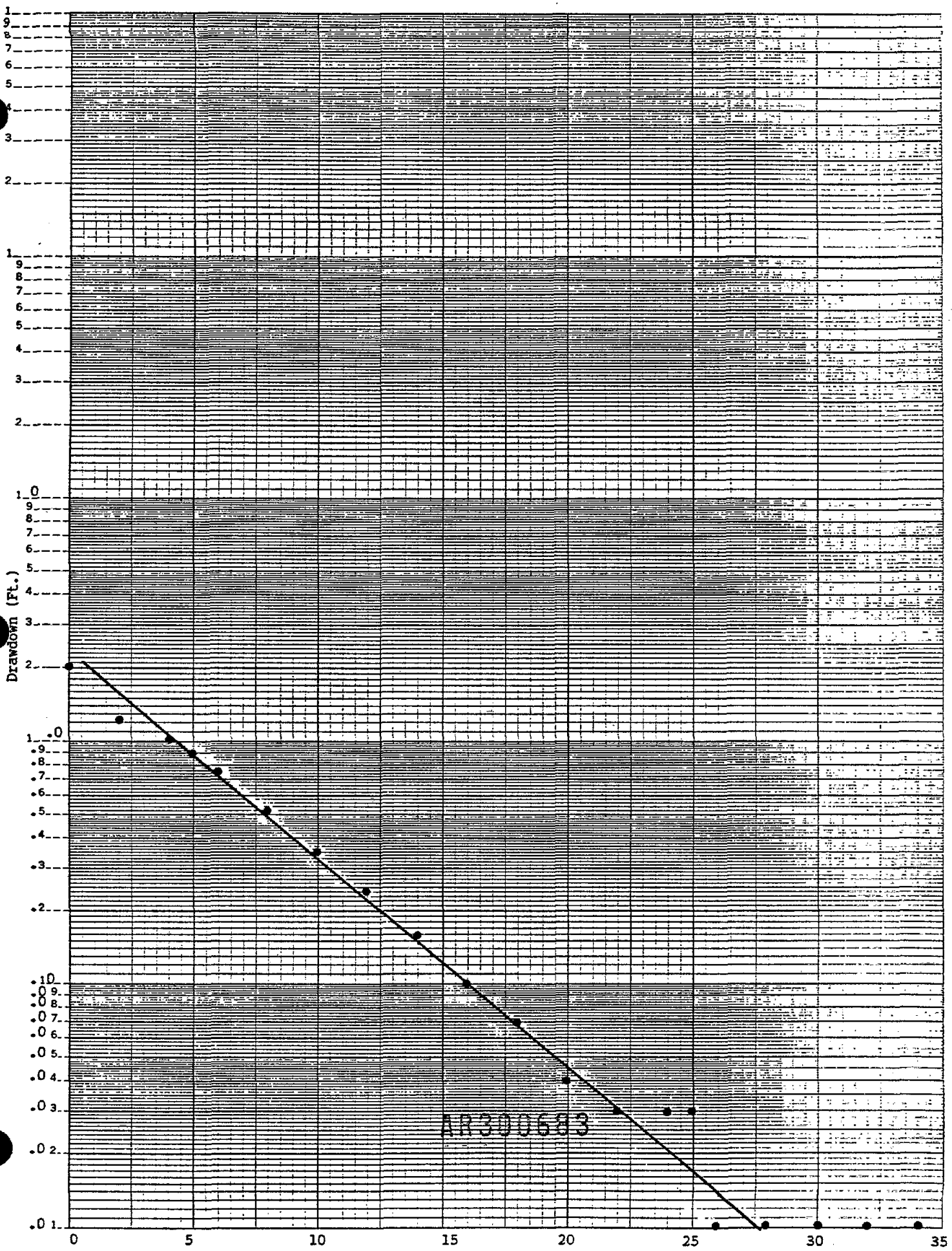


AR300681

CW - 4D - INSERT TEST #2



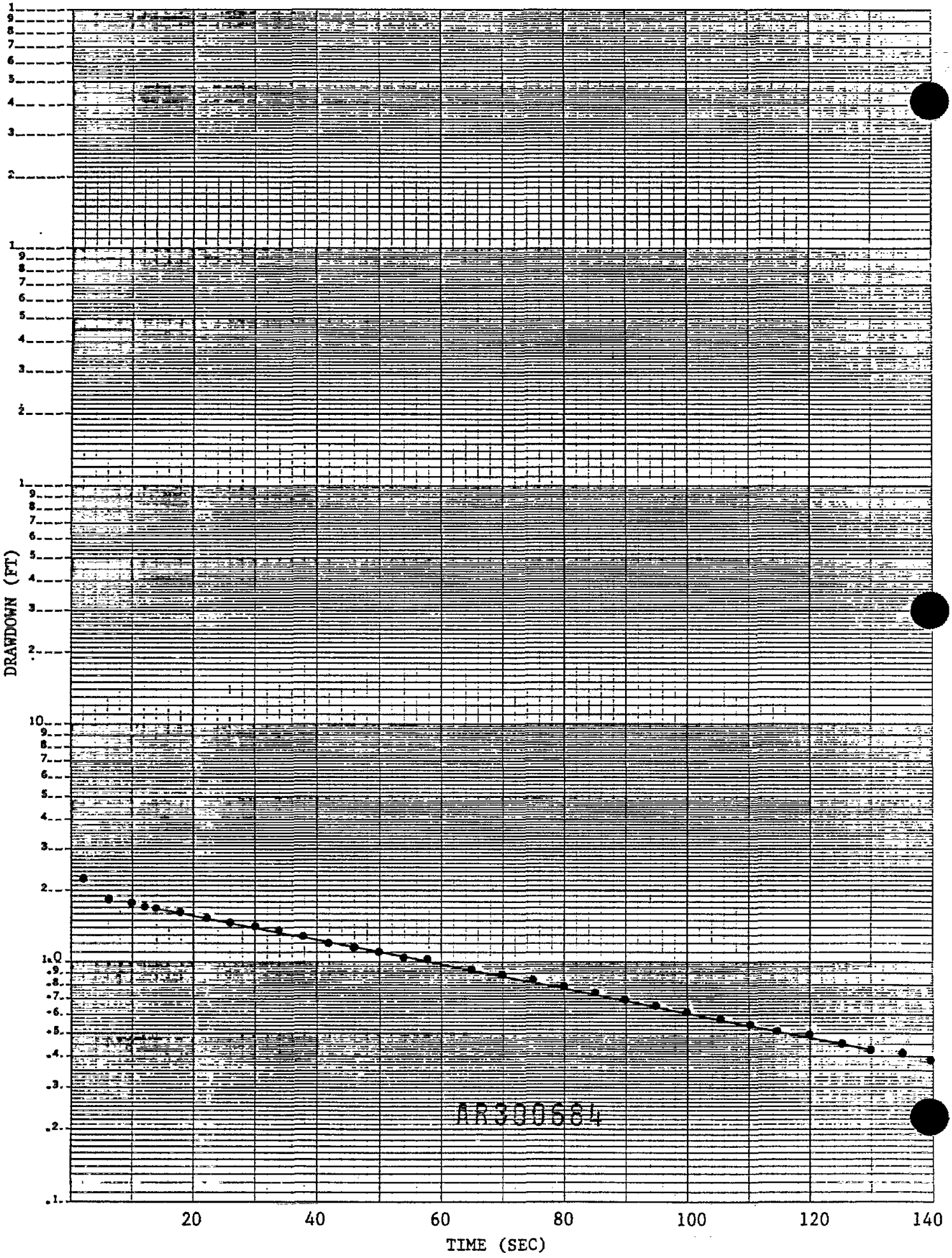
CW - 4D Remove Test #2



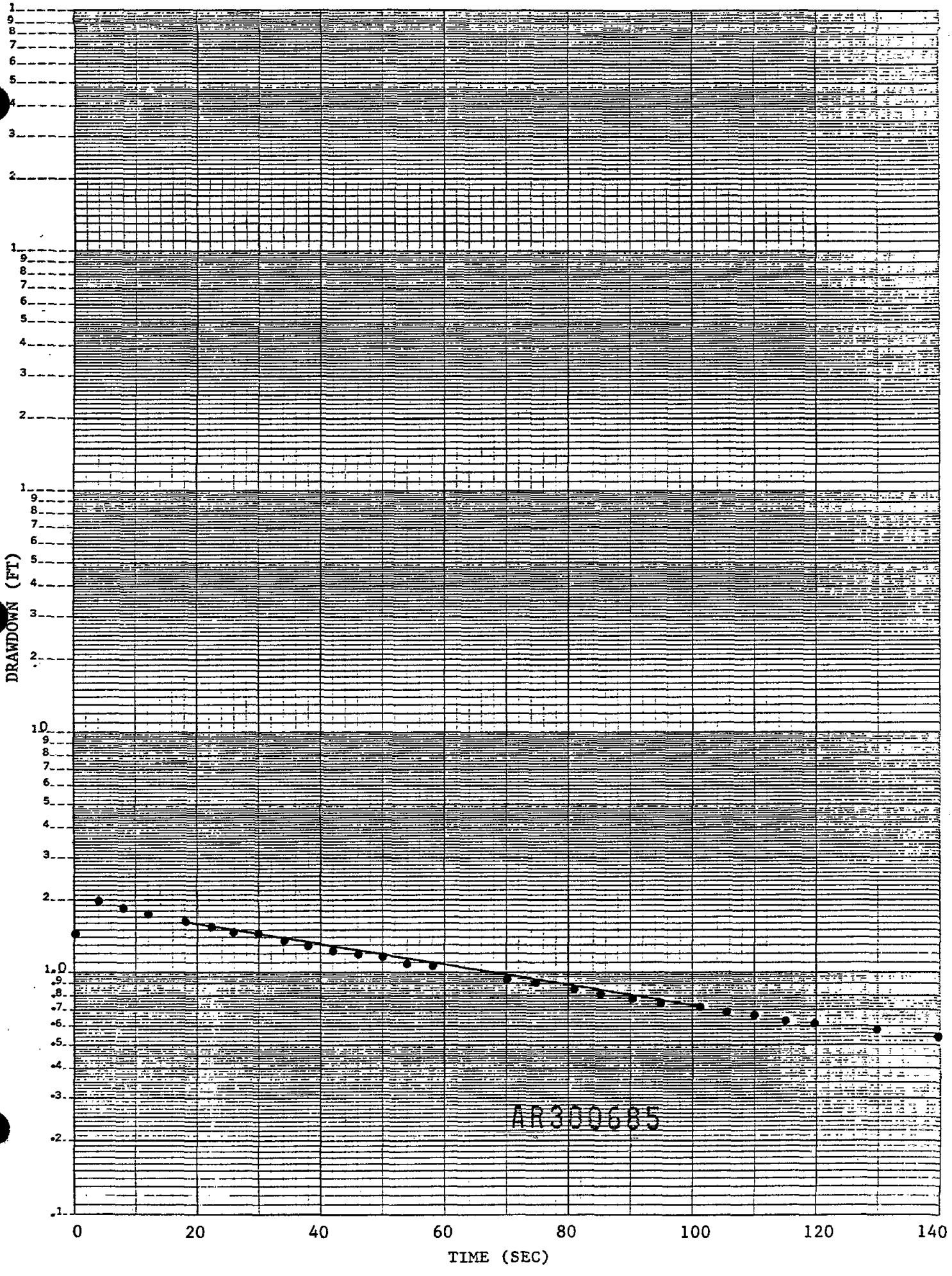
AR300683

46 6210
K+E SEMI-LOGARITHMIC 3 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

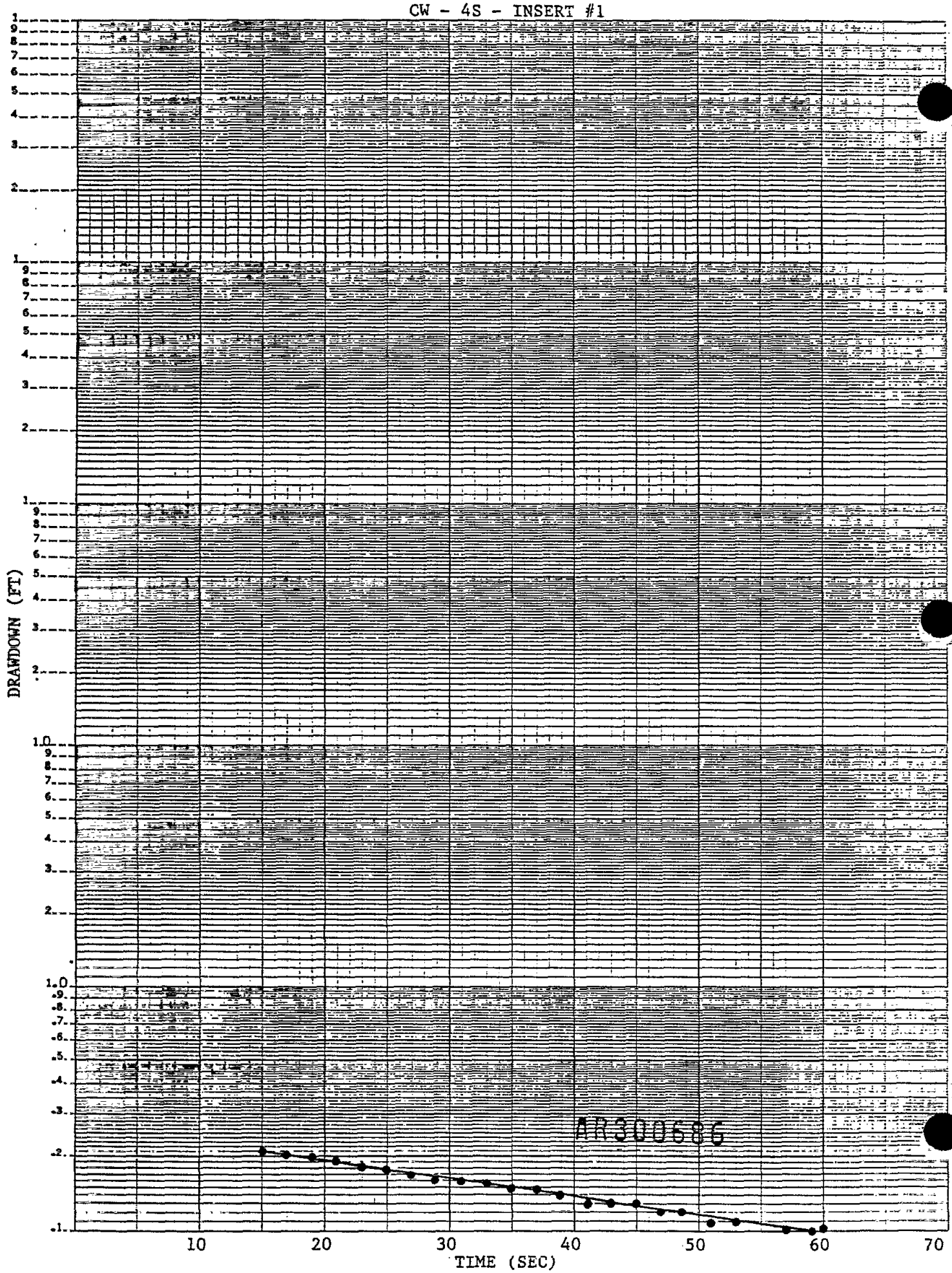
CW - 4I - INSERT TEST #1



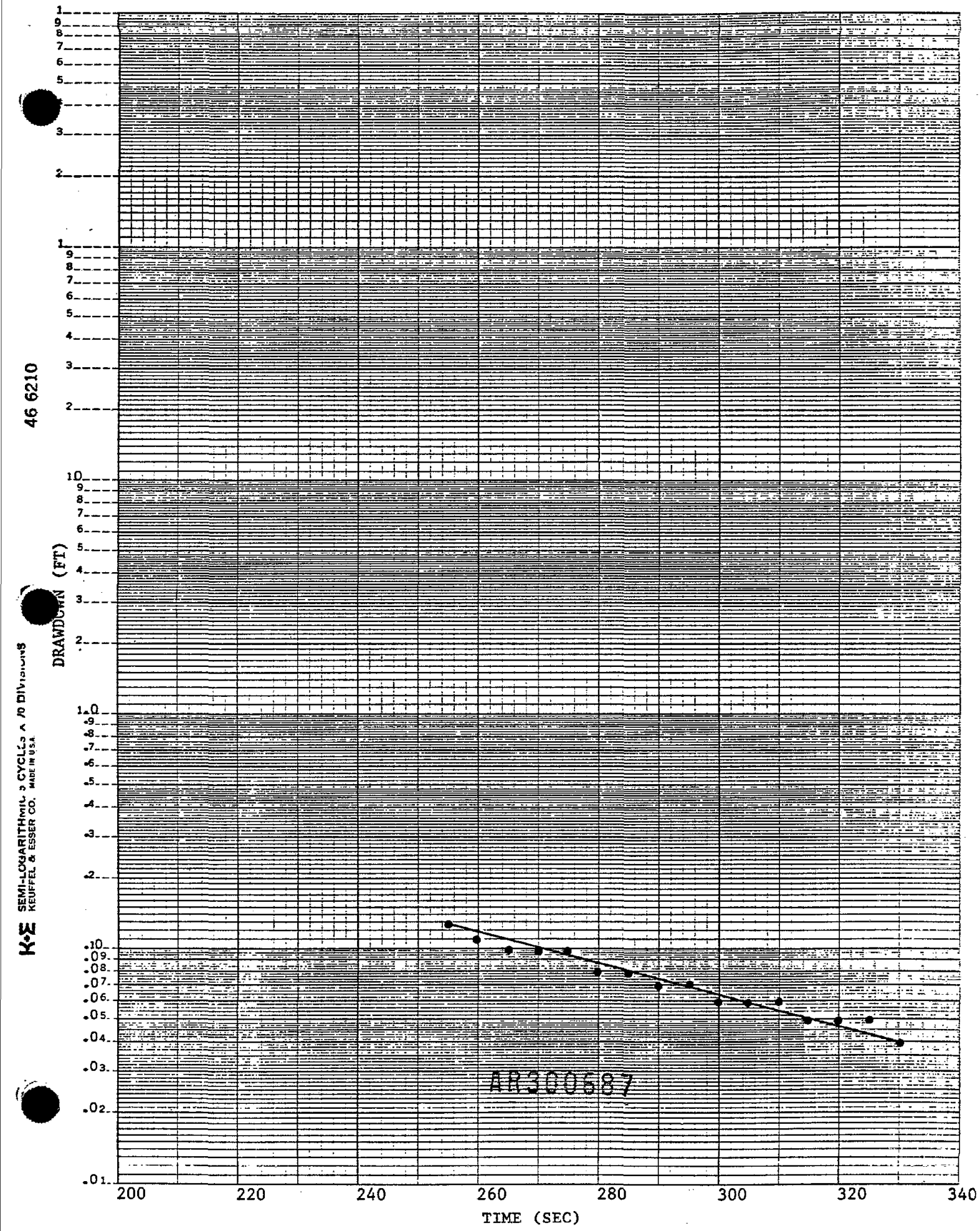
CW - 4I - REMOVAL TEST #1



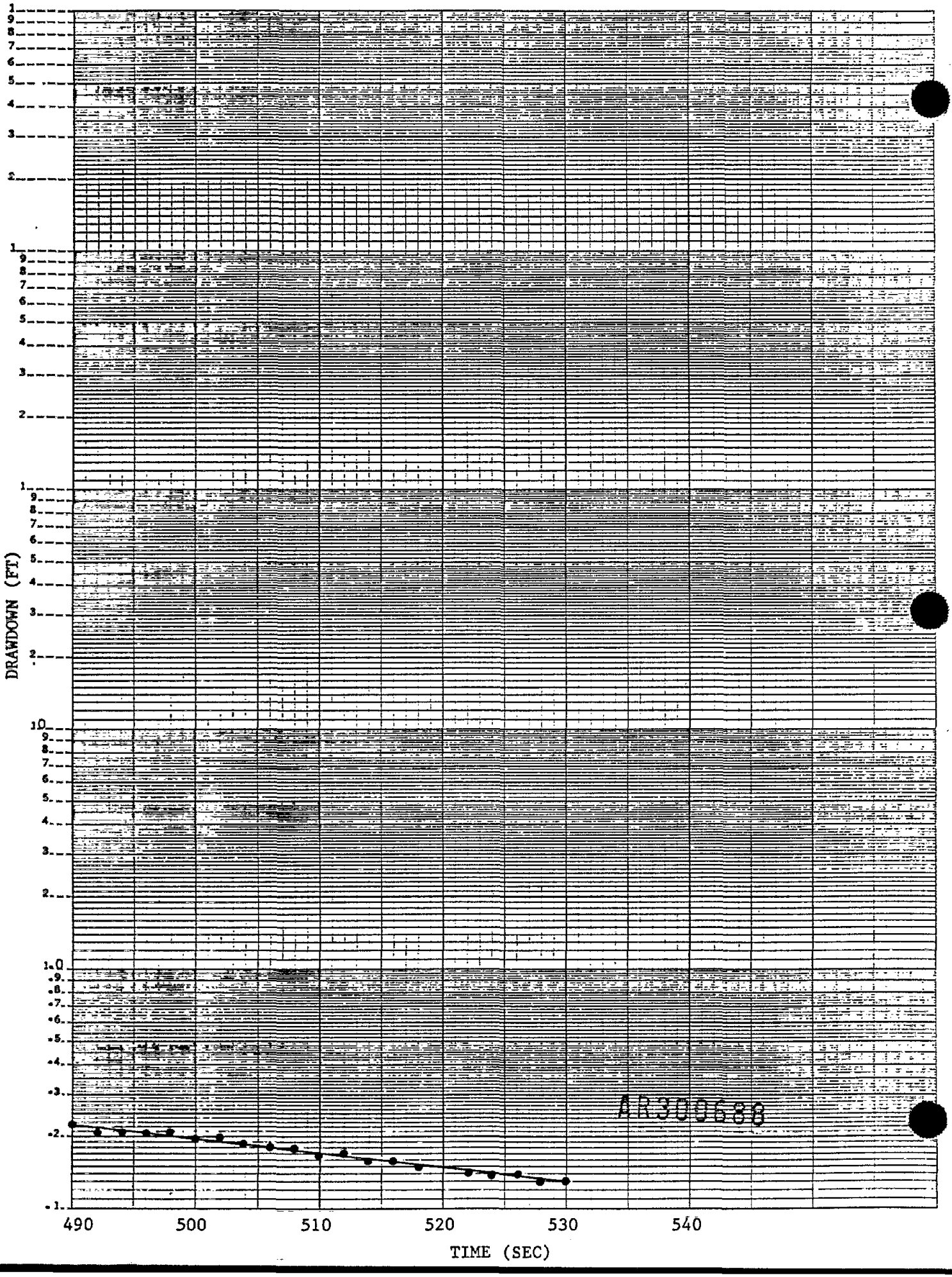
CW - 4S - INSERT #1



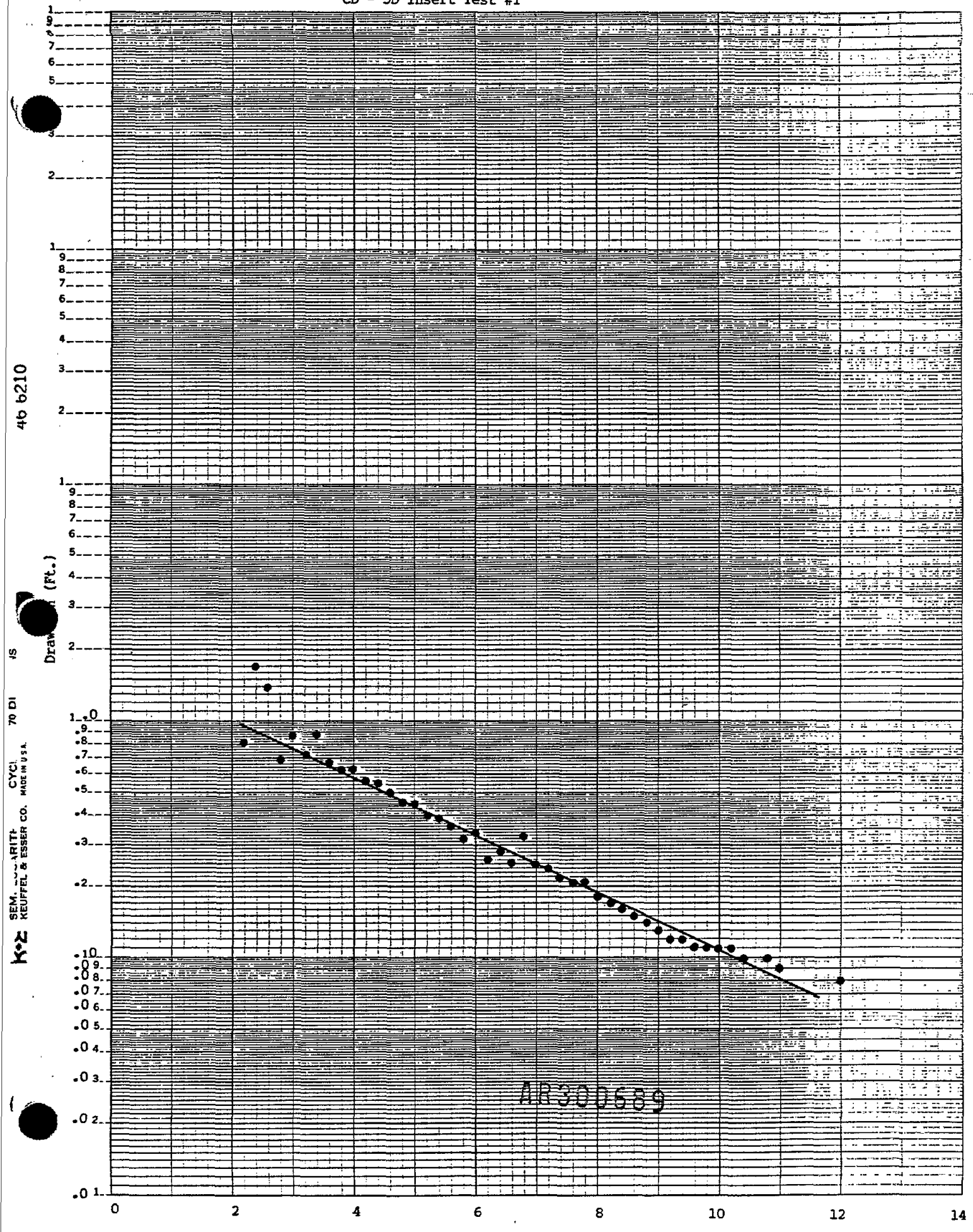
CW - 4S - REMOVAL TEST #1



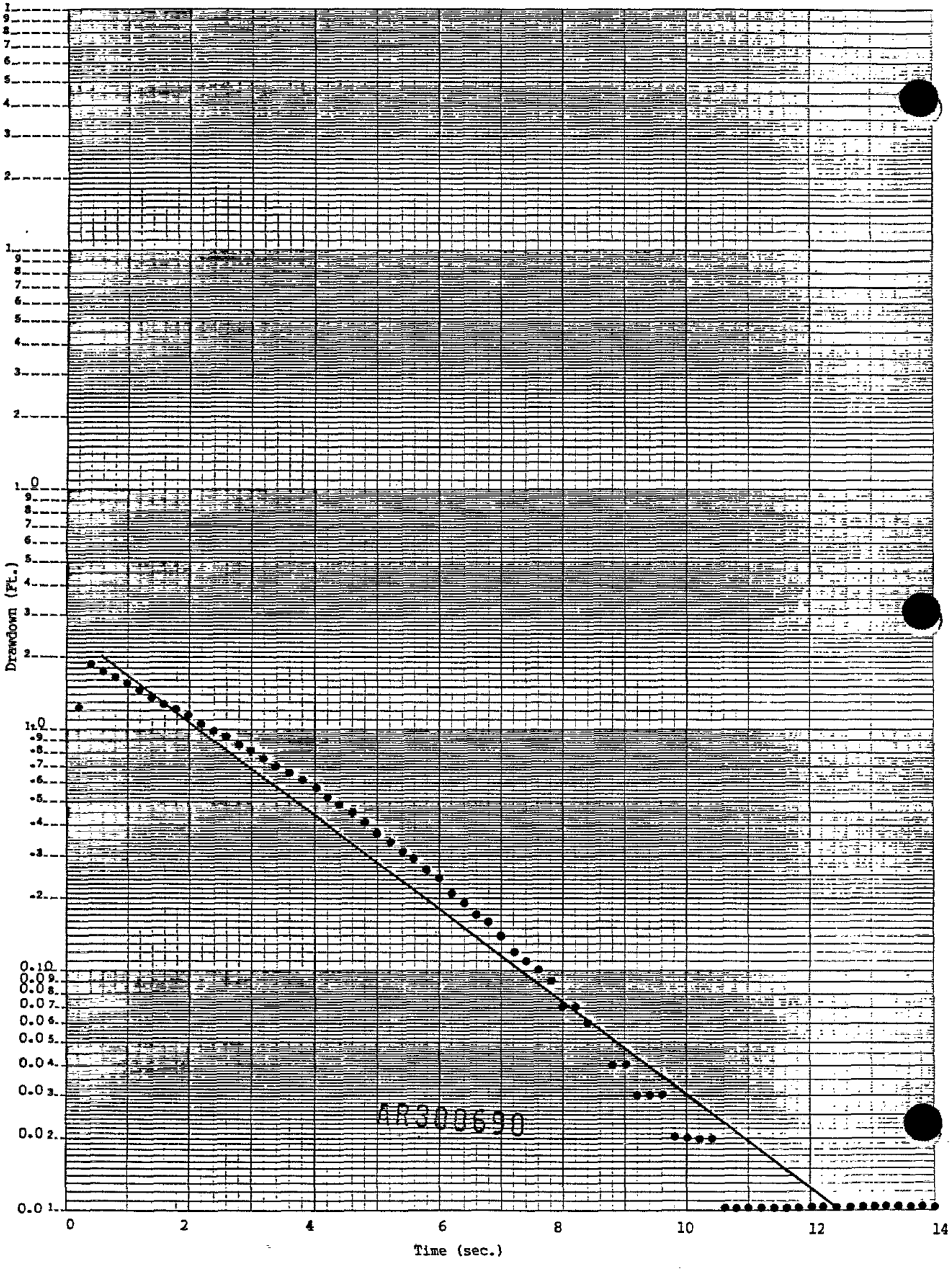
CW - 4S - INSERT TEST #2



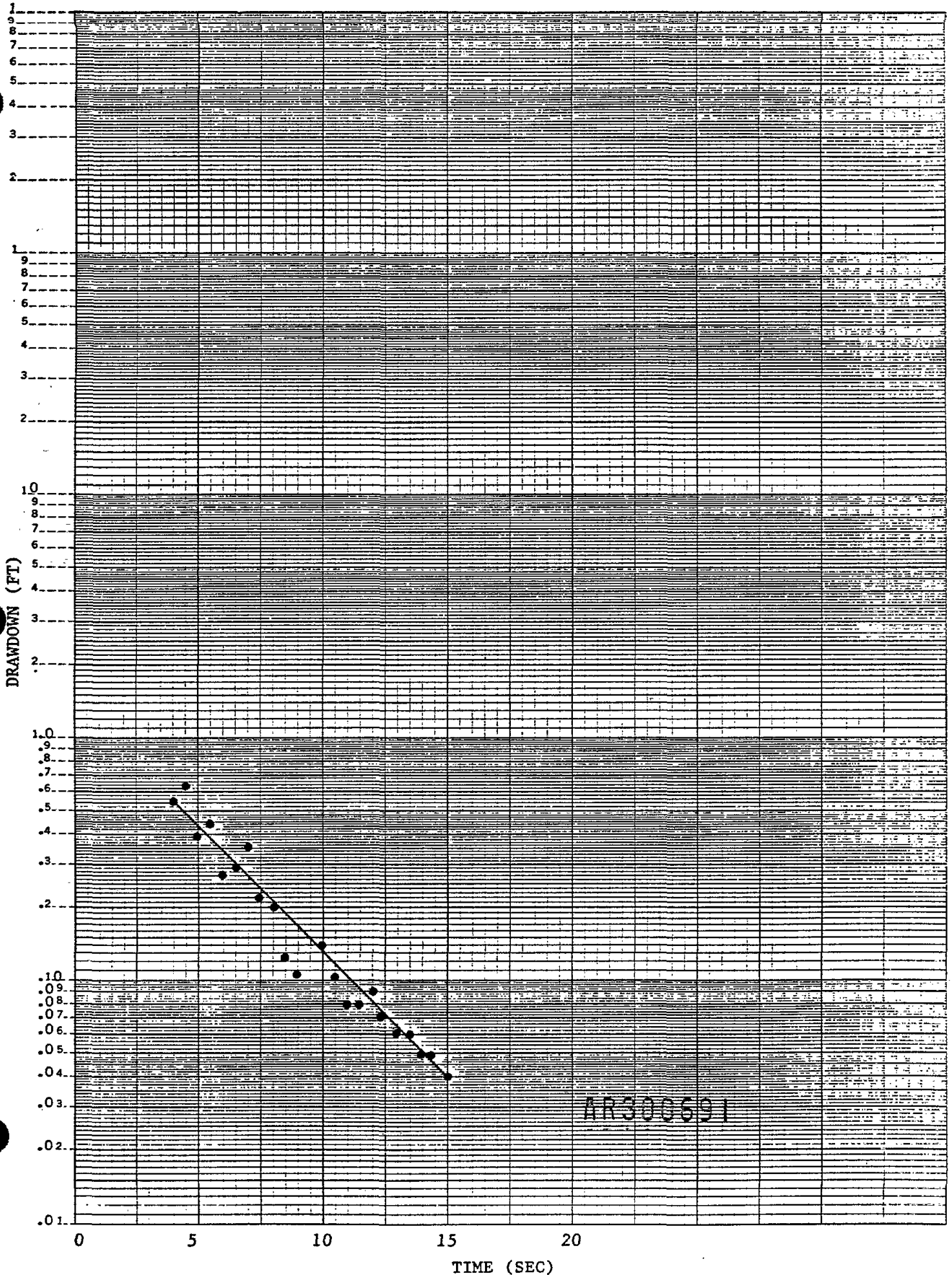
CD - 5D Insert Test #1



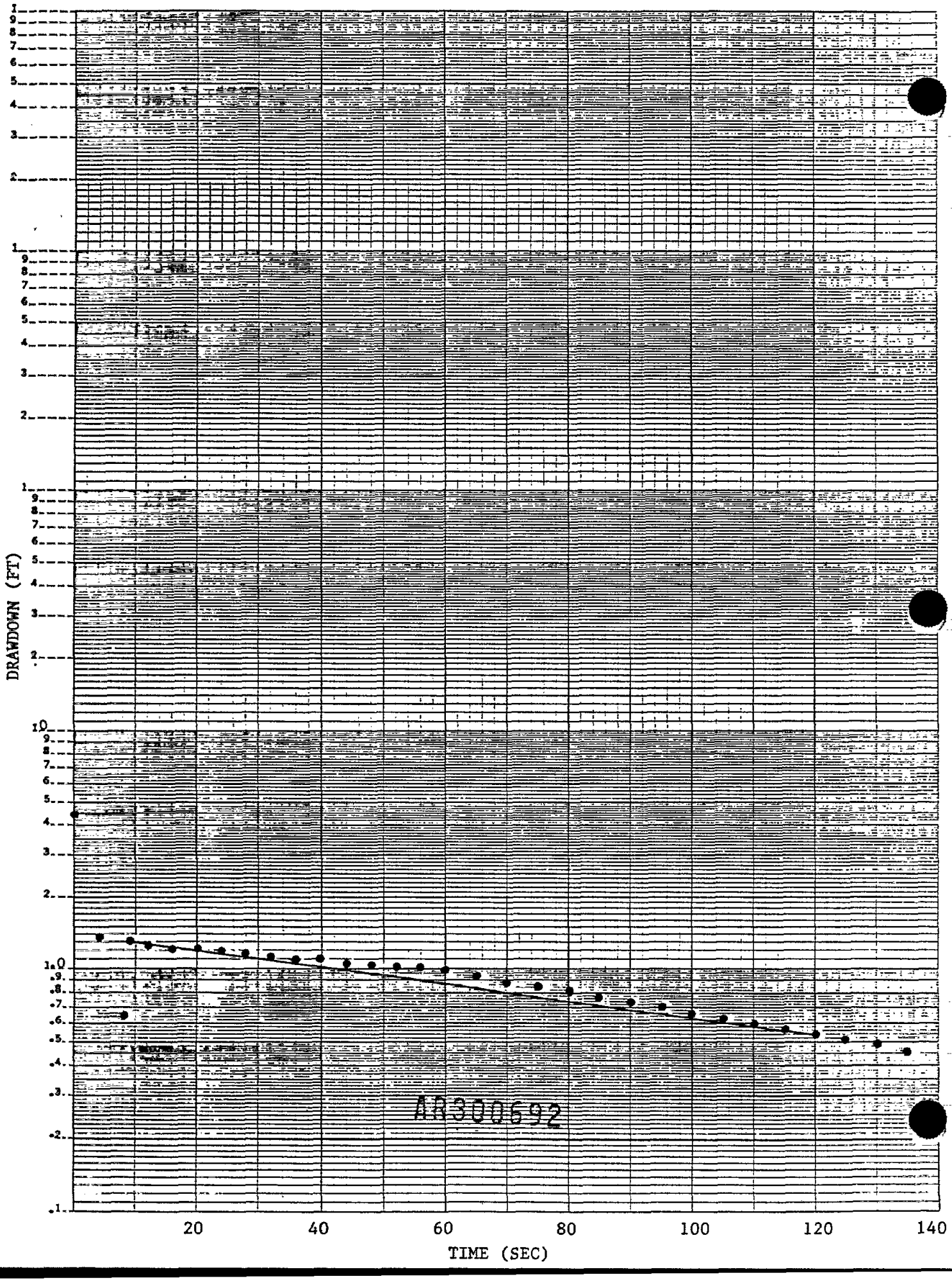
CW - 5D Remove Test #1



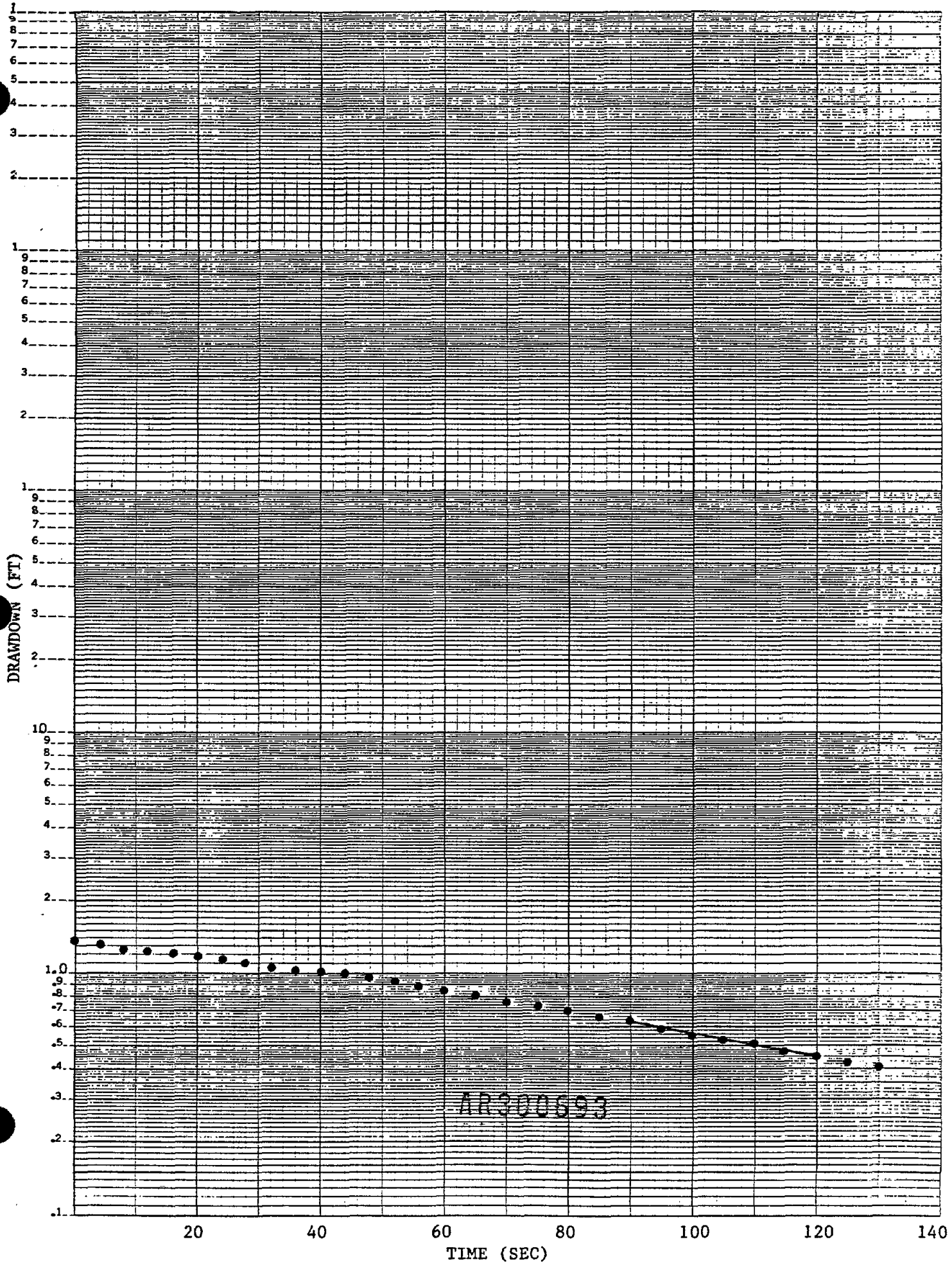
CW - 5D - INSERT TEST #2



CW - 6D - INSERT TEST #1

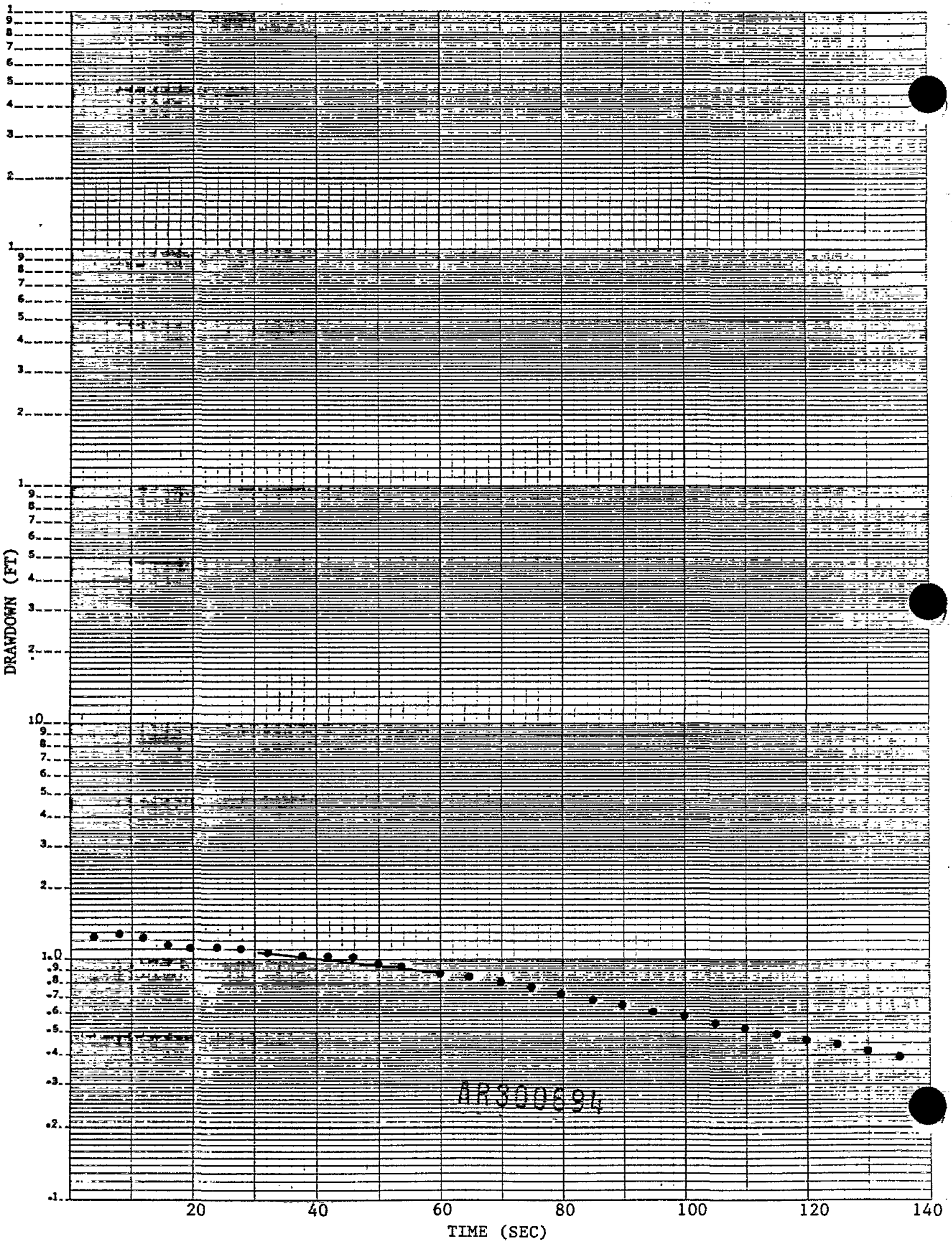


CW - 6D - REMOVAL TEST #1

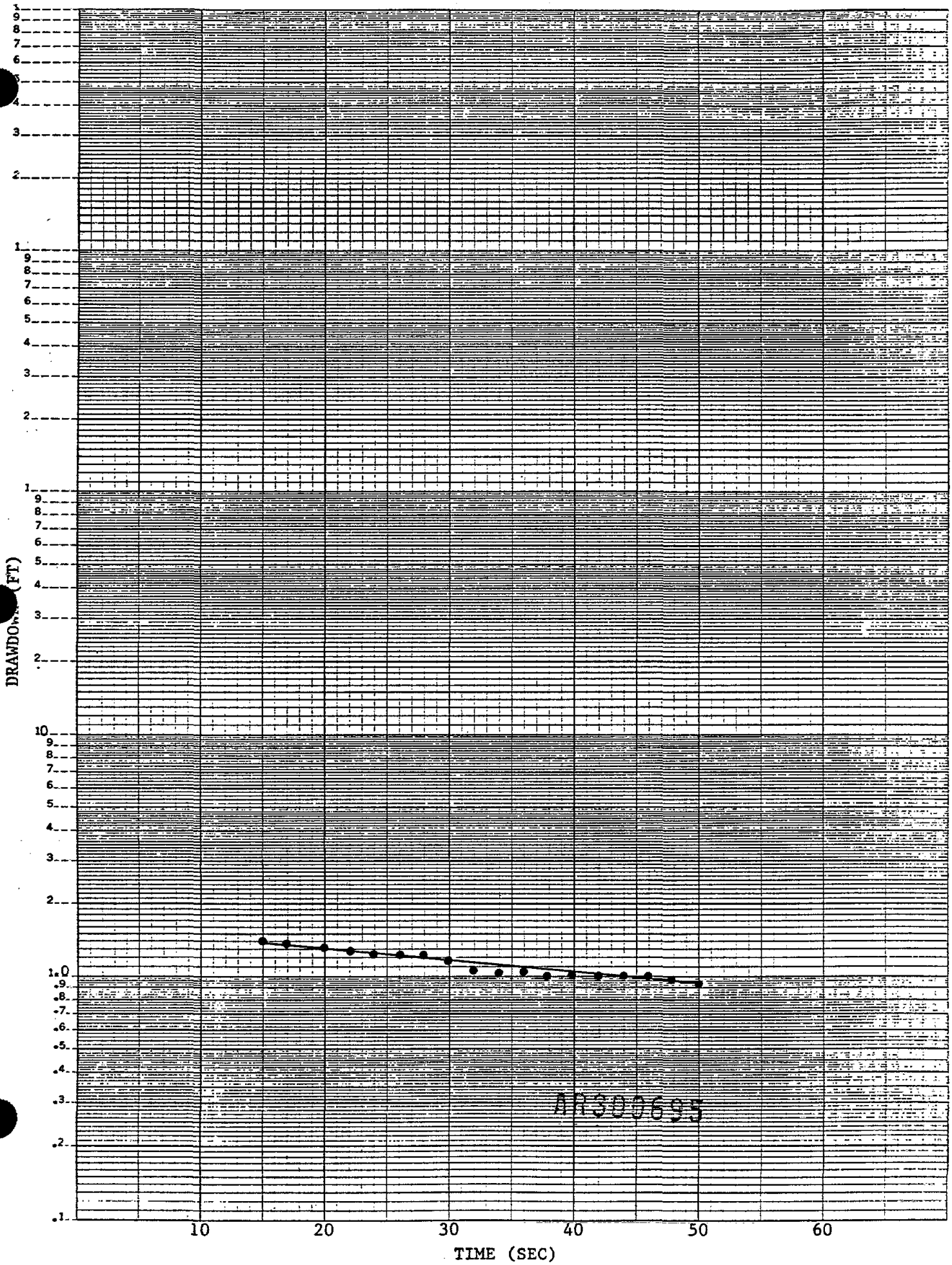


46 6210
K+E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

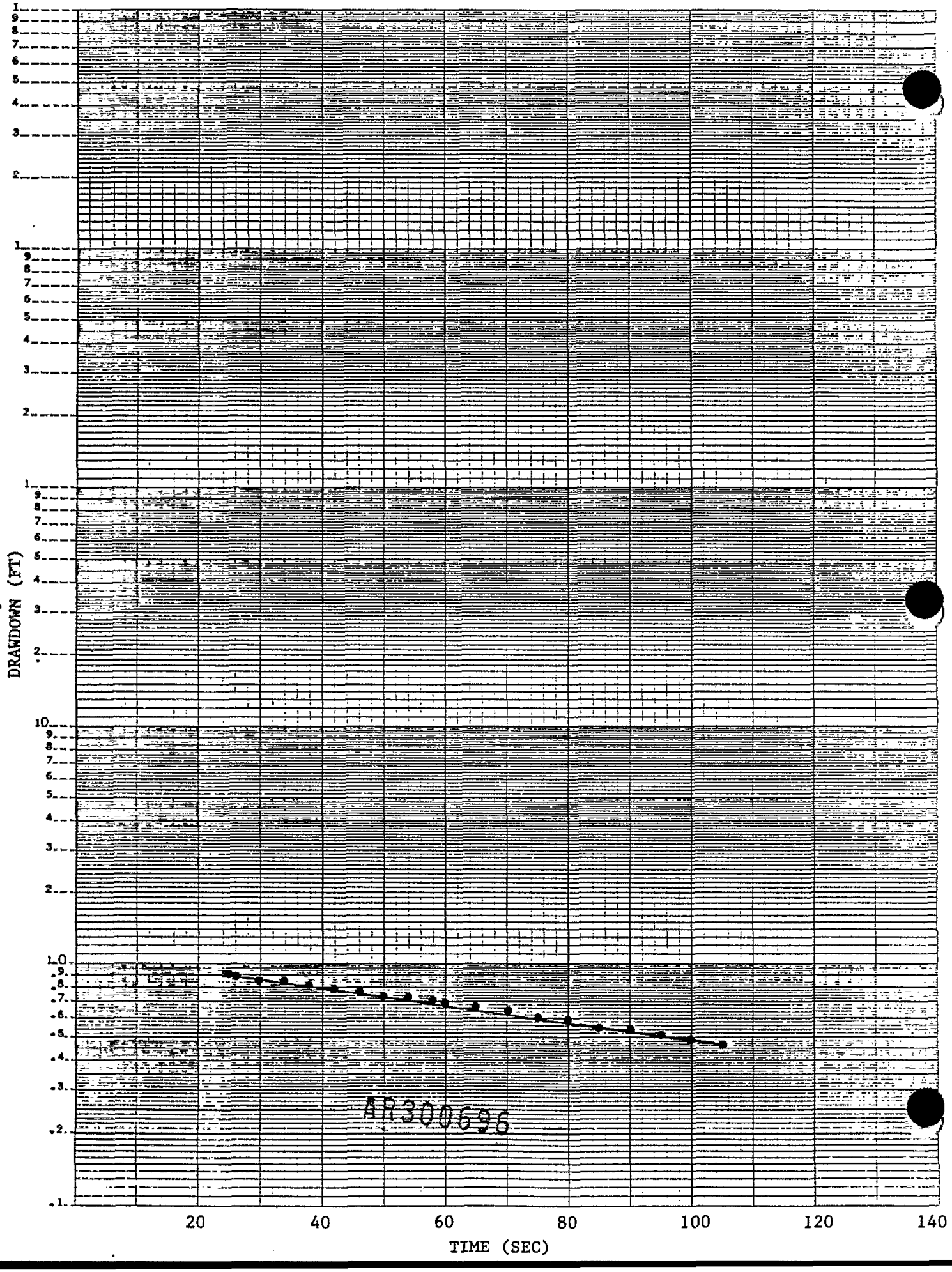
CW - 6D - INSERT TEST #2



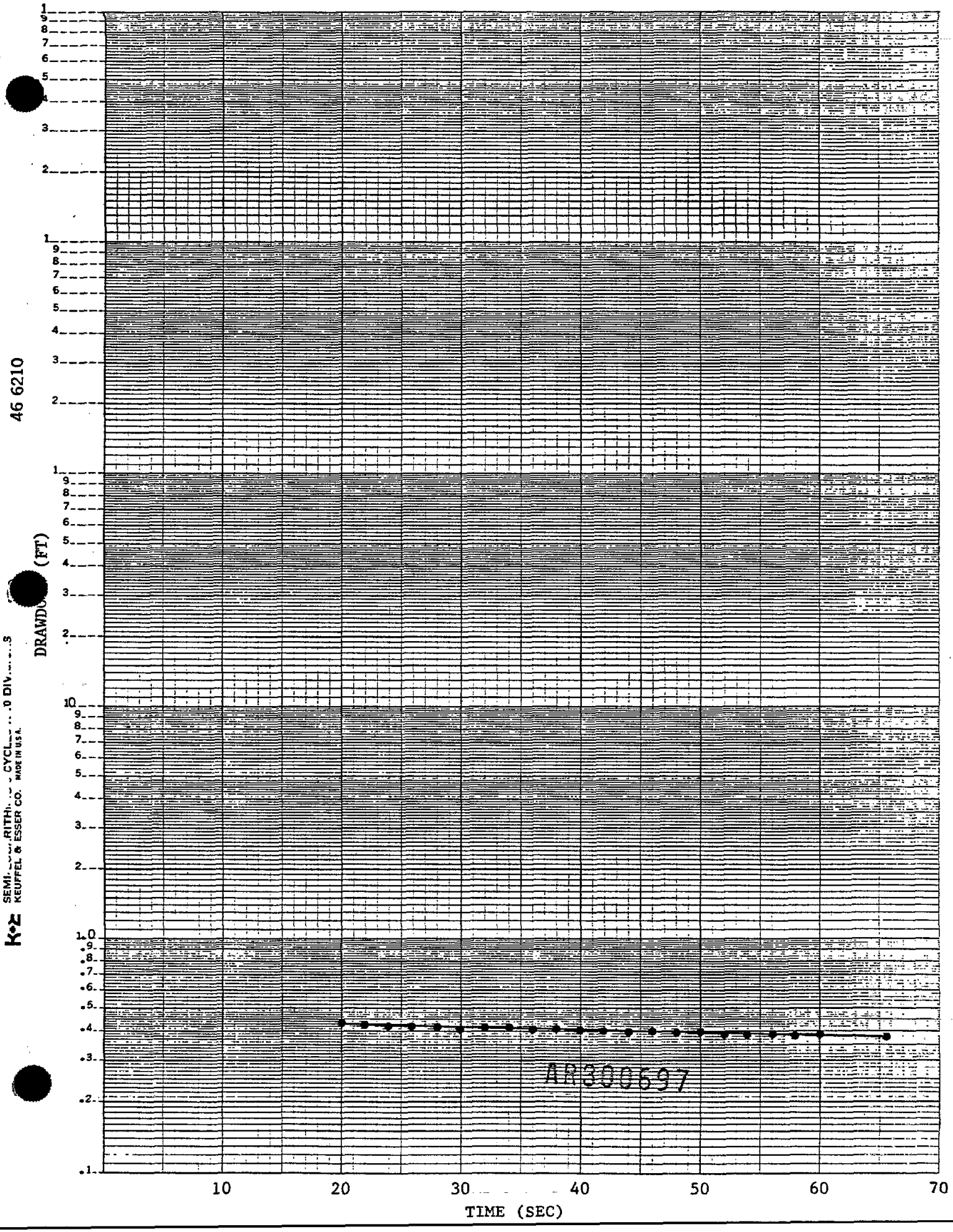
CW - 6D - REMOVAL TEST #2



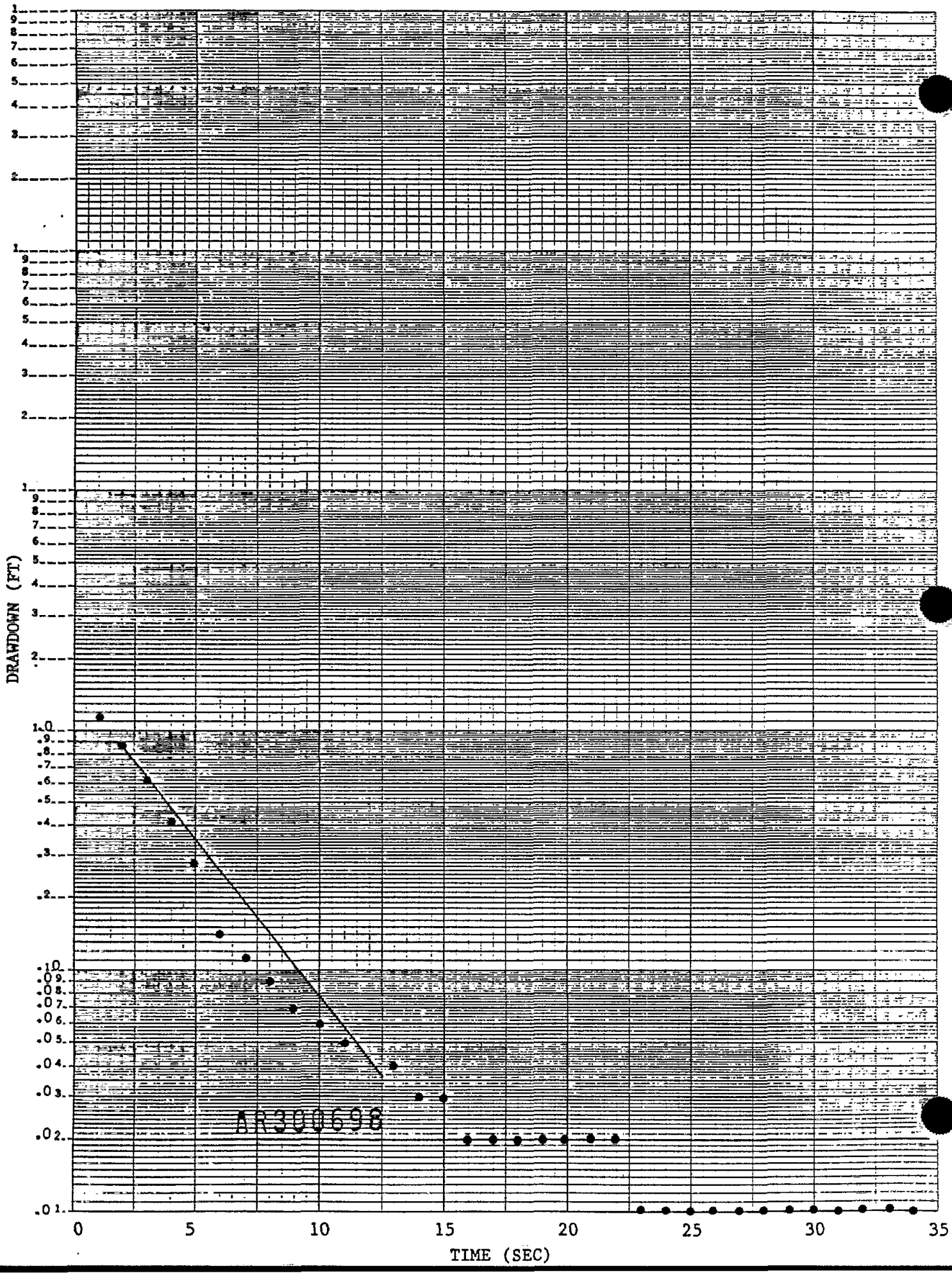
CW - 6I - INSERT TEST #2



CW - 6S - INSERT TEST #1



CW - 6S - REMOVAL TEST #2



T03543-6021

Packer Test Data

Well	Test Interval (ft)	Test Pressure (psi)	Time (min)	Gage Reading (gal)	Water Volume (gal)
CW-2D	40 - 50	30	0	137.4	--
			1	153.6	16.2
			2	169.7	16.1
			3	185.7	16.0
			4	201.6	15.9
			5	217.6	16.0
CW-2D	40 - 50	40	0	271.5	--
			1	290.4	18.9
			2	309.3	18.9
			3	328.0	18.7
			4	346.7	18.7
			5	365.2	18.5
CW-2D	40 - 50	45	0	408.0	--
			1	428.0	20.0
			2	448.0	20.0
			3	467.8	19.8
			4	487.8	20.0
			5	407.6	19.8
CW-2D	50 - 55 1/2	30	0	532.0	--
			1	537.1	5.1
			2	542.0	4.9
			3	547.2	5.2
			4	553.2	6.0
			5	559.5	6.3
CW-2D	50 - 55 1/2	40	Test Void - Packer Broke		
CW-3D	35 - 45	30	0	782.8	--
			1	784.7	1.9
			2	786.5	1.8
			3	788.2	1.7
			4	790.0	1.8
			5	791.8	1.8
CW-3D	35 - 45	35	0	794.8	--
			1	797.3	2.5
			2	800.1	2.8
			3	802.9	2.8
			4	806.1	3.2
			5	809.1	3.0

T03543-6021

Packer Test Data (cont'd)

Well	Test Interval (ft)	Test Pressure (psi)	Time (min)	Gage Reading (gal)	Water Volume (gal)
CW-3D	35 - 45	40	0	821.0	--
			1	826.4	5.4
			2	831.6	5.2
			3	837.1	5.5
			4	842.7	5.4
			5	847.7	5.4
CW-4D	Unable to Seal Test Intervals				
CW-5D	34 - 46	30	0	930.2	--
			1	951.2	21.0
			2	971.9	20.7
			3	992.5	20.6
			4	1013.1	20.6
			5	1033.7	20.6
CW-5D	34 - 46	40	0	1191.4	--
			1	1214.0	22.6
			2	1237.5	23.5
			3	1261.2	23.7
			4	1284.5	23.3
			5	1308.3	23.8
CW-6D	37 1/2 - 47 1/2	30	0	1320.0	--
			1	1321.6	1.6
			2	1322.9	1.3
			3	1324.4	1.5
			4	1325.8	1.4
			5	1327.2	1.4
CW-6D	37 1/2 - 47 1/2	35	0	1330.2	--
			1	1332.2	2.0
			2	1334.1	1.9
			3	1336.2	2.1
			4	1337.9	1.7
			5	1339.9	2.0
CW-6D	37 1/2 - 47 1/2	40	0	1343.2	--
			1	1346.3	3.1
			2	1348.8	2.5
			3	1351.8	3.0
			4	1354.9	3.1
			5	1358.8	3.9

AR300700

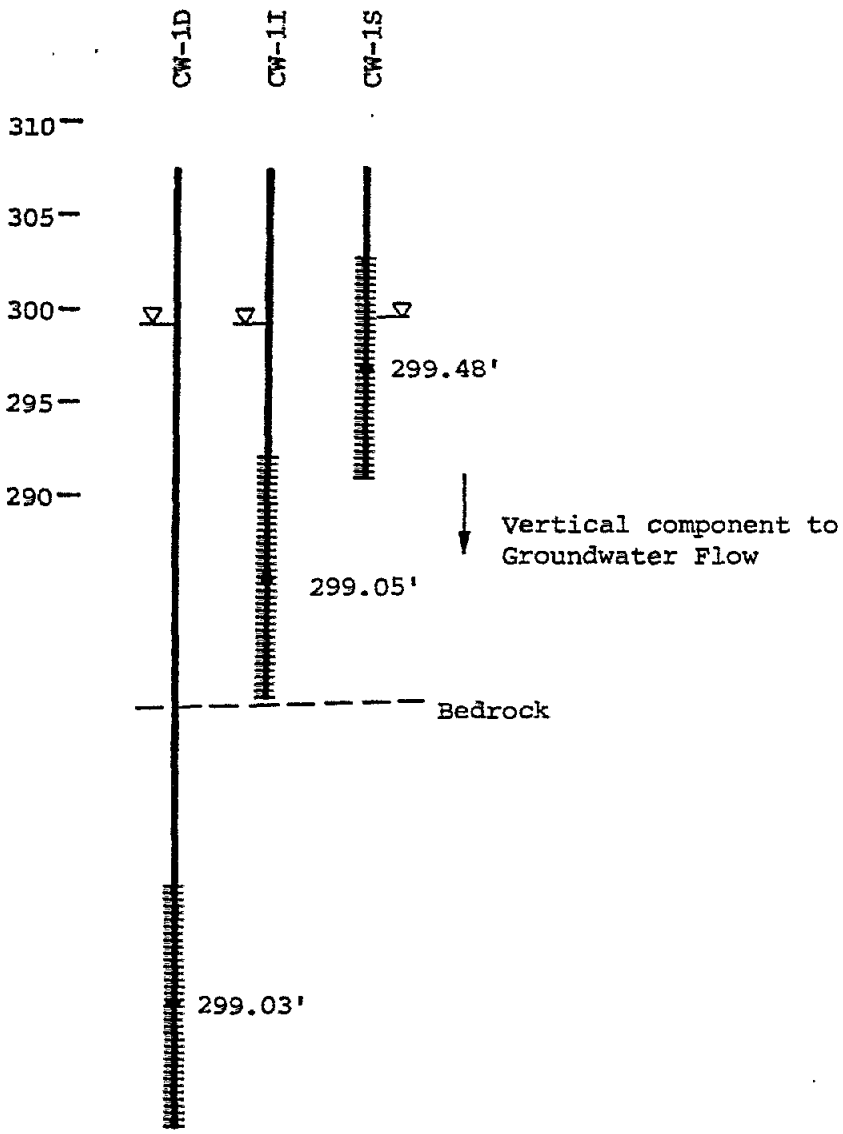
APPENDIX 5

Calculation of Vertical Gradients

AR300701

Vertical Gradient Calculation

Monitoring Well Series CW-1



Vertical gradient (v.g.) = change in head ÷ vertical distance

v.g. = (299.48' - 299.03')/34'

v.g. = 0.45/34

v.g. = 0.013

*March 17, 1988 Water Level Data

Vertical Scale: 1" = 10'

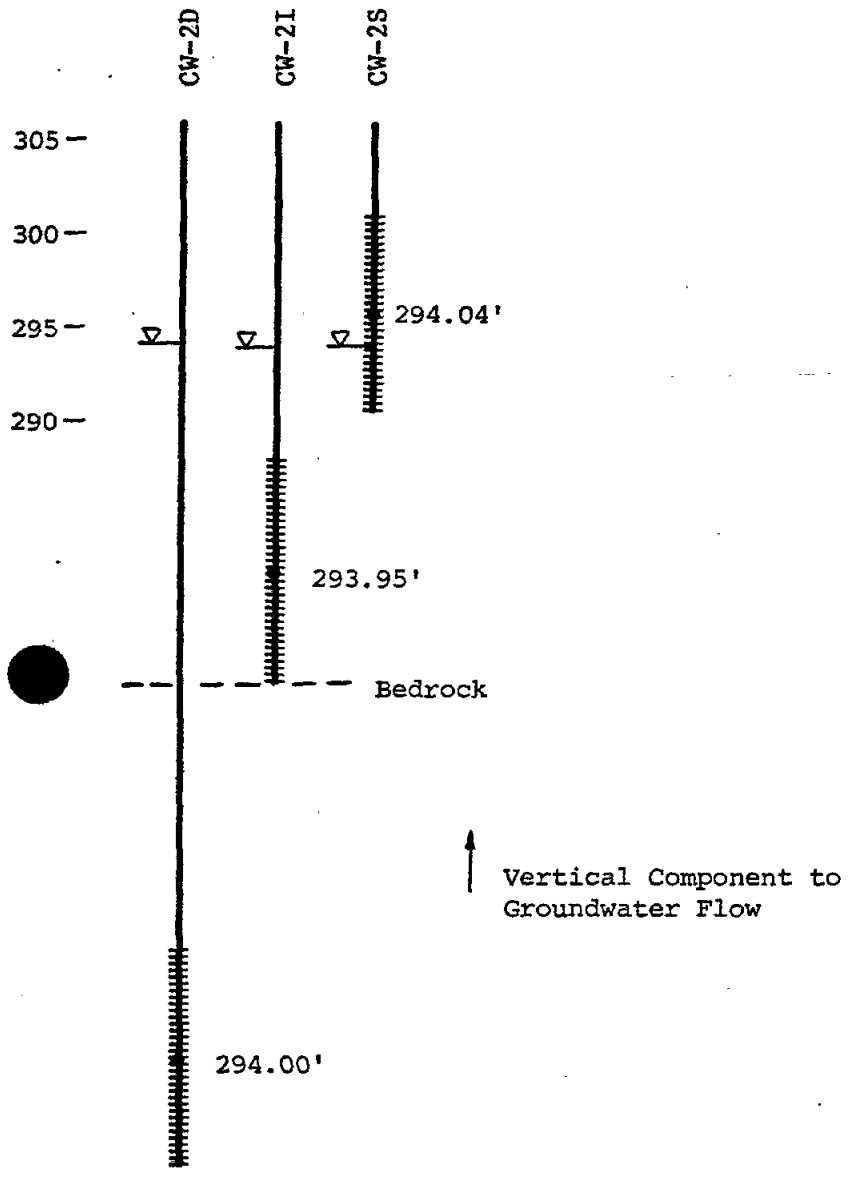
Horizontal Scale: 1" = 1

AR300702

r.e. wright associates, inc.

Vertical Gradient Calculation

Monitoring Well Series CW-2



Vertical gradient (v.g.) = change in head

vertical distance

v.g. = (293.95' - 294.00')/39.8'

v.g. = -0.05/39.8

v.g. = -0.001

*March 17, 1988 Level Data
Shallow well was not used in calculation
as the majority of open well screen was unsaturated.

Vertical Scale: 1" = 10'

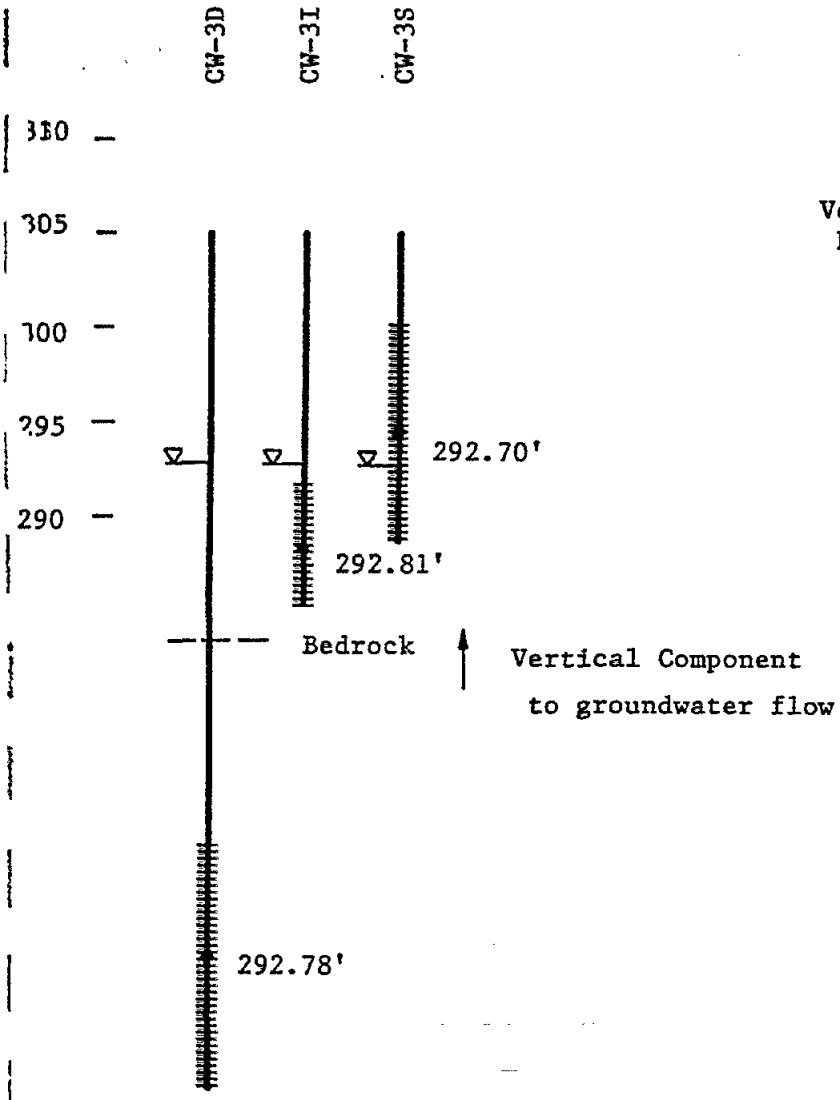
Horizontal Scale: 1" = 10'

AR300703

r.e. wright associates, inc.

Vertical Gradient Calculation

Monitoring Well Series CW-3



Vertical gradient (v.g.) = change in head ÷ vertical distance

v.g. = (292.81' - 292.78')/22'
v.g. = 0.03/22
v.g. = 0.001

*March 17, 1988 Water Level Data
Shallow well was not used in calculation
as the majority of open well screen was unsaturated.

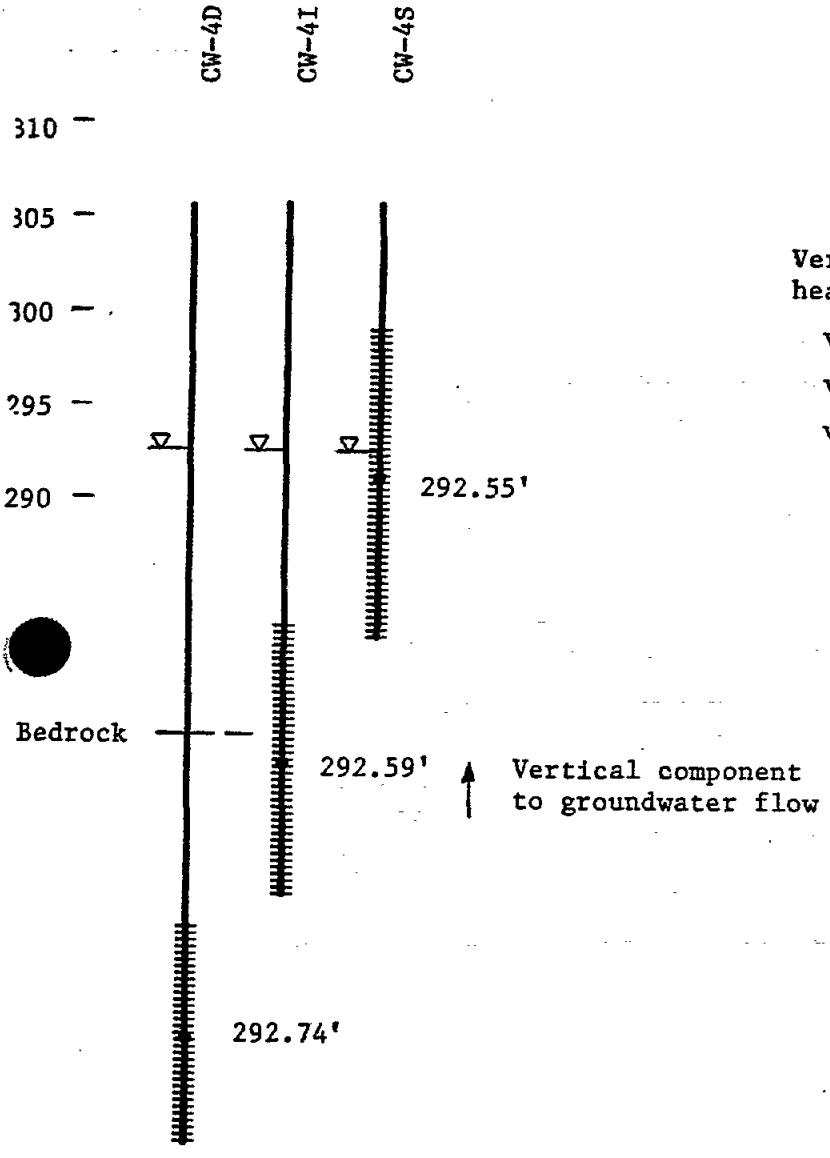
Vertical Scale: 1" = 10'
Horizontal Scale: 1" = 10'

AR300704

r.e. wright associates, inc.

Vertical Gradient Calculation

Monitoring Well Series CW-4



Vertical gradient (v.g.) = change in head ÷ vertical distance

v.g. = (292.59' - 292.74')/30'

v.g. = -0.15/30

v.g. = -0.005

*March 17, 1988 Water Level Data

Vertical Scale: 1" = 10'

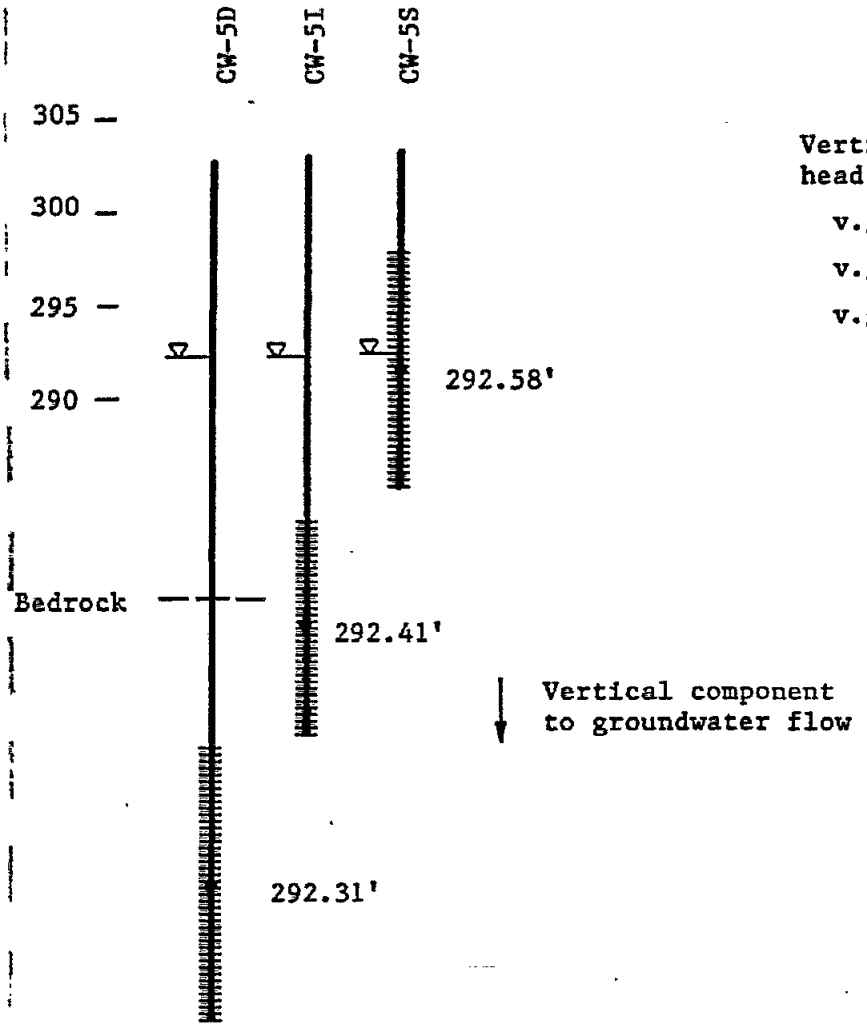
Horizontal Scale: 1" = 10'

AR300705

r.e. wright associates, inc.

Vertical Gradient Calculation

Monitoring Well Series CW-5



Vertical gradient (v.g.) = change in head ÷ vertical distance

v.g. = (292.58' - 292.31)/28'

v.g. = 0.27/28

v.g. = 0.01

*March 17, 1988 Water Level Data

Vertical Scale: 1" = 10'

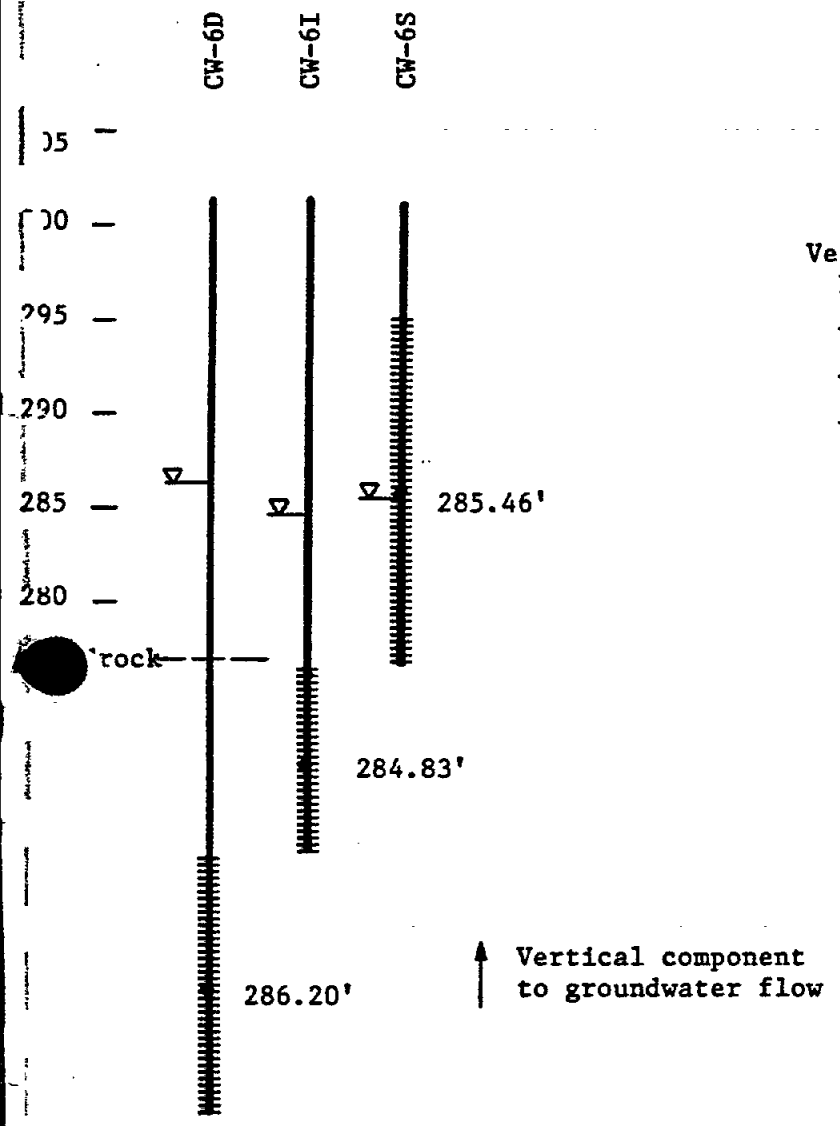
Horizontal Scale: 1" = 10'

AR300706

r.e. wright associates, inc.

Vertical Gradient Calculation

Monitoring Well Series CW-6



Vertical gradient (v.g.) = change in head ÷ vertical distance

v.g. = (284.83' - 286.20')/12'

v.g. = -1.37/12

v.g. = -0.114

*March 17, 1988 Water Level Data
Shallow well was not used in calculation as the majority of open well screen was unsaturated.

Vertical Scale: 1" = 10'

Horizontal Scale: 1" = 10'

AR300707

r.e. wright associates, inc.