

ภาคผนวก

ภาคผนวก ก

ข้อมูลคืนตรวจวัดบริเวณสถานีน้ำร่อง

3 - 19 มิถุนายน พ.ศ.2554

No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)	No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)
1	6/3/11 18:00	15.41	6.0	4.6	222.06	12.1	376	6/11/11 13:30	14.29	35.7	4.6	182.28	6.7
2	6/3/11 18:30	15.57	6.1	4.6	197.29	9.9	377	6/11/11 14:00	14.27	37.2	4.6	186.19	6.0
3	6/3/11 19:00	15.72	6.7	4.6	177.8	5.6	378	6/11/11 14:30	14.27	36.9	4.6	187.37	6.9
4	6/3/11 19:30	15.79	7.1	4.6	182.02	2.4	379	6/11/11 15:00	14.18	39.8	4.6	184.73	5.9
5	6/3/11 20:00	15.81	7.3	4.6	203.78	2.7	380	6/11/11 15:30	14.16	30.9	4.7	186.42	5.1
6	6/3/11 20:30	15.76	8.2	4.6	121.56	4.2	381	6/11/11 16:00	14.13	32.5	4.4	186.7	5.6
7	6/3/11 21:00	15.69	9.6	4.6	188.31	8.0	382	6/11/11 16:30	14.02	29.7	4.4	181.85	4.9
8	6/3/11 21:30	15.55	10.0	4.6	171.79	9.9	383	6/11/11 17:00	14.05	28.4	4.6	186.36	5.3
9	6/3/11 22:00	15.40	12.2	4.6	179.21	8.7	384	6/11/11 17:30	14.12	32.3	4.4	182.63	7.7
10	6/3/11 22:30	15.25	10.4	4.6	183.53	8.4	385	6/11/11 18:00	14.10	32.0	4.6	182.32	6.4
11	6/3/11 23:00	15.13	12.6	4.6	14.76	9.8	386	6/11/11 18:30	14.05	32.4	4.4	180.24	6.7
12	6/3/11 23:30	14.92	11.0	4.6	191.09	6.8	387	6/11/11 19:00	14.05	40.4	4.4	188.04	8.8
13	6/4/11 0:00	14.88	11.7	4.6	188.28	6.4	388	6/11/11 19:30	14.16	49.7	4.4	192.99	10.5
14	6/4/11 0:30	14.74	12.5	4.6	191.75	4.5	389	6/11/11 20:00	14.27	46.4	4.6	189.52	12.9
15	6/4/11 1:00	14.74	16.2	4.4	183.38	3.1	390	6/11/11 20:30	14.45	45.1	4.4	188.65	10.2
16	6/4/11 1:30	14.70	15.3	4.4	185.61	2.8	391	6/11/11 21:00	14.51	40.2	4.4	184.47	10.1
17	6/4/11 2:00	14.70	15.9	4.4	183.02	2.9	392	6/11/11 21:30	14.72	47.0	4.6	182.81	9.8
18	6/4/11 2:30	14.73	14.6	4.4	181.46	4.6	393	6/11/11 22:00	14.87	42.6	4.6	181.15	8.6
19	6/4/11 3:00	14.78	12.3	4.6	179.31	4.3	394	6/11/11 22:30	14.98	45.1	4.6	185.53	8.3
20	6/4/11 3:30	14.83	9.3	4.6	182.86	5.6	395	6/11/11 23:00	14.98	40.5	4.6	189.86	7.0
21	6/4/11 4:00	14.87	14.0	4.6	187.39	4.0	396	6/11/11 23:30	15.13	40.2	4.6	188.13	6.2
22	6/4/11 4:30	14.90	16.1	4.6	188.07	2.8	397	6/12/11 0:00	15.15	36.2	4.9	183.4	5.6
23	6/4/11 5:00	14.89	20.0	4.6	197.73	3.2	398	6/12/11 0:30	15.15	36.6	4.7	184.21	5.8
24	6/4/11 5:30	14.88	20.0	4.6	184.54	6.4	399	6/12/11 1:00	15.07	40.7	4.7	181.34	8.5
25	6/4/11 6:00	14.79	18.9	4.6	190.51	5.0	400	6/12/11 1:30	15.05	40.3	4.6	189.16	9.6
26	6/4/11 6:30	14.70	29.2	4.4	193.71	9.5	401	6/12/11 2:00	14.90	39.2	4.9	186.56	13.9
27	6/4/11 7:00	14.55	30.3	4.4	187.21	12.0	402	6/12/11 2:30	14.75	40.1	5.3	187.86	12.4
28	6/4/11 7:30	14.37	22.6	4.4	181.37	13.1	403	6/12/11 3:00	14.53	43.5	4.7	179.05	19.8
29	6/4/11 8:00	14.16	21.0	4.6	177.35	14.8	404	6/12/11 3:30	14.38	42.2	5.3	180.42	15.0
30	6/4/11 8:30	13.89	19.3	4.4	172.02	15.6	405	6/12/11 4:00	14.11	44.9	4.9	180.3	18.5
31	6/4/11 9:00	13.69	19.9	4.3	177.28	16.2	406	6/12/11 4:30	13.92	48.1	5.3	179.89	15.1
32	6/4/11 9:30	13.48	18.4	4.6	173.58	14.7	407	6/12/11 5:00	13.73	45.5	4.7	184.28	13.5
33	6/4/11 10:00	13.18	15.1	4.3	168.2	14.2	408	6/12/11 5:30	13.57	45.6	4.4	184.29	10.4
34	6/4/11 10:30	13.01	16.1	4.6	175.49	13.7	409	6/12/11 6:00	13.42	45.3	4.4	191.74	11.6
35	6/4/11 11:00	12.82	16.6	4.3	178.9	12.9	410	6/12/11 6:30	13.41	43.9	4.4	184.24	12.1
36	6/4/11 11:30	12.69	19.2	4.6	185.8	8.7	411	6/12/11 7:00	13.28	46.7	4.3	186.5	9.8

No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)	No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)
37	6/4/11 12:00	12.56	21.8	4.3	179.26	5.1	412	6/12/11 7:30	13.22	44.3	4.3	185.95	10.7
38	6/4/11 12:30	12.52	20.9	4.1	176.89	3.4	413	6/12/11 8:00	13.13	49.5	4.4	186.08	10.4
39	6/4/11 13:00	12.53	21.8	4.3	191.3	6.0	414	6/12/11 8:30	13.23	46.8	4.6	191.32	11.6
40	6/4/11 13:30	12.63	21.3	4.1	180.05	10.4	415	6/12/11 9:00	13.28	62.6	4.4	191.48	13.4
41	6/4/11 14:00	12.77	23.9	4.1	179.68	15.1	416	6/12/11 9:30	13.45	75.8	4.7	188.06	15.4
42	6/4/11 14:30	13.00	18.7	4.3	185.88	15.1	417	6/12/11 10:00	13.49	76.9	4.4	186.2	16.3
43	6/4/11 15:00	13.23	21.0	4.3	175.82	19.0	418	6/12/11 10:30	13.69	77.8	4.7	191.69	19.2
44	6/4/11 15:30	13.55	21.7	4.3	187.29	20.0	419	6/12/11 11:00	13.87	87.3	4.4	184.07	16.2
45	6/4/11 16:00	13.82	16.5	4.4	181.32	21.9	420	6/12/11 11:30	14.08	70.5	4.9	185.41	15.9
46	6/4/11 16:30	14.18	18.1	4.4	179.58	21.9	421	6/12/11 12:00	14.18	59.7	4.4	179.79	10.2
47	6/4/11 17:00	14.50	16.6	4.4	177.01	21.0	422	6/12/11 12:30	14.24	68.6	4.7	183.64	11.7
48	6/4/11 17:30	14.81	10.9	4.6	179.79	18.0	423	6/12/11 13:00	14.36	74.0	4.9	190.59	14.9
49	6/4/11 18:00	15.06	12.6	4.6	173.2	16.4	424	6/12/11 13:30	14.33	76.3	4.9	184.47	14.8
50	6/4/11 18:30	15.32	11.4	4.6	194.61	12.7	425	6/12/11 14:00	14.51	70.7	5.1	187.77	14.8
51	6/4/11 19:00	15.49	12.7	4.6	167.34	12.6	426	6/12/11 14:30	14.59	59.7	4.7	187.77	13.3
52	6/4/11 19:30	15.62	10.2	4.6	177.26	7.4	427	6/12/11 15:00	14.63	52.2	4.7	189.14	11.1
53	6/4/11 20:00	15.76	11.3	4.6	171.39	5.0	428	6/12/11 15:30	14.68	49.4	4.9	185.51	12.5
54	6/4/11 20:30	15.82	11.0	4.6	184.17	2.5	429	6/12/11 16:00	14.64	49.4	4.4	192.22	10.3
55	6/4/11 21:00	15.79	16.6	4.6	169.19	4.2	430	6/12/11 16:30	14.63	46.2	5.1	193.49	10.2
56	6/4/11 21:30	15.68	15.4	4.6	189.52	7.2	431	6/12/11 17:00	14.67	48.4	4.7	189.79	10.6
57	6/4/11 22:00	15.63	16.1	4.6	186.07	8.1	432	6/12/11 17:30	14.66	44.9	5.1	190.82	11.0
58	6/4/11 22:30	15.49	17.3	4.6	200.66	10.3	433	6/12/11 18:00	14.57	47.6	5.1	189.75	12.0
59	6/4/11 23:00	15.34	22.8	4.6	192.8	8.3	434	6/12/11 18:30	14.48	45.9	5.3	186.18	10.6
60	6/4/11 23:30	15.23	23.9	4.6	170.64	9.0	435	6/12/11 19:00	14.55	40.1	4.4	187.34	9.1
61	6/5/11 0:00	15.08	34.6	4.6	195.07	6.8	436	6/12/11 19:30	14.49	42.8	5.1	184.95	8.6
62	6/5/11 0:30	14.99	34.8	4.6	193.24	7.2	437	6/12/11 20:00	14.49	33.7	4.6	187.83	7.7
63	6/5/11 1:00	14.89	43.0	4.6	194.14	5.5	438	6/12/11 20:30	14.56	33.8	5.1	188.29	6.3
64	6/5/11 1:30	14.84	45.1	4.6	192.83	6.8	439	6/12/11 21:00	14.59	35.6	4.9	185.6	8.3
65	6/5/11 2:00	14.76	37.6	4.6	191.24	5.8	440	6/12/11 21:30	14.62	33.3	4.4	181.92	9.2
66	6/5/11 2:30	14.80	40.3	4.6	194.98	5.5	441	6/12/11 22:00	14.69	35.4	4.6	188.87	8.4
67	6/5/11 3:00	14.80	45.9	4.6	187.4	5.7	442	6/12/11 22:30	14.77	35.2	4.7	193.8	9.0
68	6/5/11 3:30	14.85	42.0	4.6	187.88	6.2	443	6/12/11 23:00	14.84	33.9	4.6	187.04	7.1
69	6/5/11 4:00	14.93	54.9	4.6	196.54	6.1	444	6/12/11 23:30	14.90	40.4	4.7	192.83	8.6
70	6/5/11 4:30	14.89	60.1	4.6	195.06	7.0	445	6/13/11 0:00	14.92	46.6	4.6	190.16	8.9
71	6/5/11 5:00	15.01	58.8	4.6	193.48	6.5	446	6/13/11 0:30	14.90	50.3	4.7	187.89	9.2
72	6/5/11 5:30	15.00	46.4	4.6	197.91	5.9	447	6/13/11 1:00	14.86	50.0	4.6	188.85	9.7

No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)	No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)
73	6/5/11 6:00	15.00	46.0	4.7	188.33	7.8	448	6/13/11 1:30	14.77	46.3	4.4	182.1	9.5
74	6/5/11 6:30	14.88	43.9	4.7	181.02	8.0	449	6/13/11 2:00	14.67	43.3	4.6	188.15	9.9
75	6/5/11 7:00	14.80	40.8	4.4	190.71	10.8	450	6/13/11 2:30	14.56	43.3	4.9	190.32	13.3
76	6/5/11 7:30	14.62	33.9	4.6	189.92	12.3	451	6/13/11 3:00	14.38	39.8	4.7	184.02	12.2
77	6/5/11 8:00	14.42	37.9	4.4	185.98	12.7	452	6/13/11 3:30	14.21	39.6	4.4	192.01	14.9
78	6/5/11 8:30	14.18	35.6	4.7	183.61	13.8	453	6/13/11 4:00	14.01	36.4	4.7	183.15	13.4
79	6/5/11 9:00	14.00	28.9	4.6	177.17	15.8	454	6/13/11 4:30	13.85	36.1	4.7	187.91	15.2
80	6/5/11 9:30	13.78	28.0	4.6	181.9	14.7	455	6/13/11 5:00	13.66	40.2	4.7	186.34	13.8
81	6/5/11 10:00	13.53	27.9	4.3	180.38	16.7	456	6/13/11 5:30	13.45	33.3	4.6	184.87	11.9
82	6/5/11 10:30	13.30	31.2	4.4	187.19	14.8	457	6/13/11 6:00	13.26	29.6	4.7	182.8	11.3
83	6/5/11 11:00	13.07	30.2	4.3	182.76	13.0	458	6/13/11 6:30	13.07	33.5	4.7	183.85	10.4
84	6/5/11 11:30	12.88	33.9	4.4	176.32	12.6	459	6/13/11 7:00	12.97	29.5	4.6	189.96	8.3
85	6/5/11 12:00	12.72	32.9	4.7	182.15	9.1	460	6/13/11 7:30	12.84	25.2	4.6	190.8	4.2
86	6/5/11 12:30	12.65	35.5	4.1	177.62	6.9	461	6/13/11 8:00	12.81	24.8	4.4	198.74	3.9
87	6/5/11 13:00	12.60	34.6	4.4	187.51	5.8	462	6/13/11 8:30	12.77	29.3	4.3	194.95	4.7
88	6/5/11 13:30	12.58	41.9	4.1	183.1	7.5	463	6/13/11 9:00	12.82	25.7	4.4	196.86	6.1
89	6/5/11 14:00	12.68	39.6	4.3	179.6	9.3	464	6/13/11 9:30	12.89	21.1	4.3	183.02	6.6
90	6/5/11 14:30	12.84	43.0	4.4	178.37	14.1	465	6/13/11 10:00	12.98	21.6	4.3	168.29	11.5
91	6/5/11 15:00	13.01	34.1	4.3	191.25	15.8	466	6/13/11 10:30	13.17	17.2	4.3	179.69	14.9
92	6/5/11 15:30	13.25	40.5	4.3	195.43	19.7	467	6/13/11 11:00	13.30	14.7	4.3	197.28	10.4
93	6/5/11 16:00	13.54	35.6	4.4	178.68	21.1	468	6/13/11 11:30	13.47	14.6	4.4	202.49	15.7
94	6/5/11 16:30	13.86	29.0	4.4	196.96	21.2	469	6/13/11 12:00	13.73	15.0	4.3	199.68	8.0
95	6/5/11 17:00	14.16	31.0	4.4	197.89	20.7	470	6/13/11 12:30	13.85	14.1	4.4	226.19	15.3
96	6/5/11 17:30	14.51	25.1	4.4	179.53	21.9	471	6/13/11 13:00	14.06	12.3	4.4	196.33	9.3
97	6/5/11 18:00	14.73	19.6	4.6	187.67	18.7	472	6/13/11 13:30	14.23	15.2	4.4	204.98	9.7
98	6/5/11 18:30	15.04	24.4	4.6	178.59	16.8	473	6/13/11 14:00	14.41	14.9	4.4	191.44	10.1
99	6/5/11 19:00	15.32	21.7	4.6	186.49	14.3	474	6/13/11 14:30	14.56	18.8	4.4	187.33	12.1
100	6/5/11 19:30	15.54	28.6	4.6	189.55	10.8	475	6/13/11 15:00	14.74	22.8	4.6	188.87	9.1
101	6/5/11 20:00	15.60	30.4	4.6	186.92	7.8	476	6/13/11 15:30	14.87	28.1	4.6	191.45	7.4
102	6/5/11 20:30	15.75	31.5	4.6	187.7	5.0	477	6/13/11 16:00	14.94	24.6	4.6	180.52	7.0
103	6/5/11 21:00	15.77	43.0	4.6	180.19	5.6	478	6/13/11 16:30	15.02	25.4	4.6	186.49	3.6
104	6/5/11 21:30	15.78	34.6	4.7	183.07	5.5	479	6/13/11 17:00	15.06	24.8	4.6	189.17	3.3
105	6/5/11 22:00	15.71	46.3	4.6	177.77	9.6	480	6/13/11 17:30	15.01	28.6	4.6	204.4	5.8
106	6/5/11 22:30	15.63	50.8	4.6	193.61	9.7	481	6/13/11 18:00	14.93	39.6	4.7	192.22	5.2
107	6/5/11 23:00	15.48	50.4	4.6	194.18	10.0	482	6/13/11 18:30	14.96	46.5	4.6	193.83	7.8
108	6/5/11 23:30	15.34	59.4	4.6	171.67	12.5	483	6/13/11 19:00	14.92	45.3	4.6	197.99	5.5

No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)	No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)
109	6/6/11 0:00	15.21	66.4	4.7	183.81	9.4	484	6/13/11 19:30	14.84	35.2	4.6	189.13	4.9
110	6/6/11 0:30	15.02	58.4	4.6	201.36	11.1	485	6/13/11 20:00	14.79	28.5	4.6	189.84	9.2
111	6/6/11 1:00	14.92	68.1	4.7	190.99	11.1	486	6/13/11 20:30	14.70	29.6	4.4	199.23	5.6
112	6/6/11 1:30	14.86	61.6	4.9	187.7	10.0	487	6/13/11 21:00	14.76	15.3	4.6	192.74	3.3
113	6/6/11 2:00	14.72	65.6	4.6	197.93	8.8	488	6/13/11 21:30	14.74	16.8	4.6	183.07	7.1
114	6/6/11 2:30	14.70	50.3	4.6	199.18	7.2	489	6/13/11 22:00	14.82	14.1	4.6	188.86	3.5
115	6/6/11 3:00	14.73	59.0	4.6	200.51	7.4	490	6/13/11 22:30	14.82	11.9	4.6	177.48	9.3
116	6/6/11 3:30	14.72	61.9	4.9	195.17	8.9	491	6/13/11 23:00	14.84	11.0	4.6	170.99	2.7
117	6/6/11 4:00	14.77	47.0	4.6	195.83	7.1	492	6/13/11 23:30	14.86	9.8	4.6	191.78	3.1
118	6/6/11 4:30	14.87	44.5	4.6	200.81	7.4	493	6/14/11 0:00	14.91	7.9	4.6	181.49	2.8
119	6/6/11 5:00	14.95	41.7	4.6	187.15	4.8	494	6/14/11 0:30	14.92	7.5	4.6	96	2.3
120	6/6/11 5:30	14.96	37.9	4.7	189.98	5.3	495	6/14/11 1:00	14.94	6.3	4.6	162.78	4.3
121	6/6/11 6:00	14.94	30.9	4.6	197.86	3.7	496	6/14/11 1:30	14.90	7.2	4.6	139.6	5.1
122	6/6/11 6:30	14.98	33.9	4.6	190.06	4.7	497	6/14/11 2:00	14.83	7.6	4.6	182.19	3.7
123	6/6/11 7:00	14.86	30.4	4.6	192.84	9.8	498	6/14/11 2:30	14.76	8.9	4.4	190.7	6.2
124	6/6/11 7:30	14.79	33.4	4.6	185.55	9.2	499	6/14/11 3:00	14.67	11.3	4.4	184.76	6.7
125	6/6/11 8:00	14.66	37.3	4.4	178.63	11.8	500	6/14/11 3:30	14.52	10.4	4.4	186.96	8.6
126	6/6/11 8:30	14.51	37.1	4.6	180.86	12.2	501	6/14/11 4:00	14.36	10.2	4.4	196.45	13.9
127	6/6/11 9:00	14.29	34.6	4.4	179.54	17.6	502	6/14/11 4:30	14.14	14.3	4.4	178.18	12.1
128	6/6/11 9:30	14.05	30.4	4.4	189.23	16.6	503	6/14/11 5:00	13.96	11.8	4.4	194.66	13.9
129	6/6/11 10:00	13.75	43.5	4.4	180.74	17.9	504	6/14/11 5:30	13.75	14.5	4.3	157.45	12.8
130	6/6/11 10:30	13.55	40.9	4.3	187.21	18.4	505	6/14/11 6:00	13.56	14.9	4.3	204.5	10.7
131	6/6/11 11:00	13.25	40.0	4.7	177.69	18.7	506	6/14/11 6:30	13.36	15.2	4.3	185.13	11.0
132	6/6/11 11:30	13.03	33.7	4.9	182.51	16.0	507	6/14/11 7:00	13.21	13.9	4.3	106.91	13.4
133	6/6/11 12:00	12.81	40.5	4.6	179.77	13.1	508	6/14/11 7:30	13.03	16.9	4.3	223.92	10.2
134	6/6/11 12:30	12.62	32.4	4.7	178.59	9.7	509	6/14/11 8:00	12.93	27.6	4.3	211.74	9.3
135	6/6/11 13:00	12.50	28.6	4.4	179.96	5.6	510	6/14/11 8:30	12.81	42.5	4.1	216.64	8.2
136	6/6/11 13:30	12.47	28.1	4.4	189.2	3.8	511	6/14/11 9:00	12.74	40.1	4.1	215.97	6.0
137	6/6/11 14:00	12.47	26.3	4.3	182.27	6.7	512	6/14/11 9:30	12.73	42.4	4.1	221.96	6.4
138	6/6/11 14:30	12.57	26.0	4.3	169.59	9.0	513	6/14/11 10:00	12.68	28.2	4.1	240.07	4.3
139	6/6/11 15:00	12.71	26.8	4.1	170.02	12.2	514	6/14/11 10:30	12.70	21.9	4.1	204.42	7.3
140	6/6/11 15:30	12.92	23.9	4.4	171.37	17.5	515	6/14/11 11:00	12.82	16.5	4.1	203.27	9.3
141	6/6/11 16:00	13.17	27.9	4.3	176.25	17.7	516	6/14/11 11:30	12.94	11.2	4.3	197.68	15.1
142	6/6/11 16:30	13.42	26.3	4.4	181.13	21.5	517	6/14/11 12:00	13.19	10.3	4.3	188.38	18.2
143	6/6/11 17:00	13.74	21.9	4.4	176.83	21.5	518	6/14/11 12:30	13.42	10.2	4.3	180.21	15.4
144	6/6/11 17:30	14.06	26.8	4.4	171.77	21.9	519	6/14/11 13:00	13.66	12.0	4.6	185.36	14.6

No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)	No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)
145	6/6/11 18:00	14.37	27.5	4.4	183.95	21.0	520	6/14/11 13:30	13.94	11.7	4.6	199.3	16.9
146	6/6/11 18:30	14.68	24.1	4.4	185.32	19.3	521	6/14/11 14:00	14.20	9.6	4.6	171.64	16.8
147	6/6/11 19:00	14.93	17.4	4.6	178.81	17.3	522	6/14/11 14:30	14.46	11.2	4.4	233.09	17.0
148	6/6/11 19:30	15.18	13.6	4.6	150.94	12.8	523	6/14/11 15:00	14.69	9.7	4.4	171.94	13.6
149	6/6/11 20:00	15.33	17.7	4.6	168.13	12.5	524	6/14/11 15:30	14.91	7.4	4.6	187.68	11.7
150	6/6/11 20:30	15.48	18.7	4.6	171.01	8.4	525	6/14/11 16:00	15.09	9.0	4.9	193.53	10.8
151	6/6/11 21:00	15.65	17.3	4.6	171.21	6.1	526	6/14/11 16:30	15.23	11.3	4.6	208.34	7.7
152	6/6/11 21:30	15.66	17.3	4.6	188.22	2.7	527	6/14/11 17:00	15.35	14.0	4.6	175.9	4.9
153	6/6/11 22:00	15.72	18.6	4.6	181.66	4.8	528	6/14/11 17:30	15.40	18.8	4.6	179.54	2.9
154	6/6/11 22:30	15.69	17.3	4.6	177.77	7.3	529	6/14/11 18:00	15.41	18.8	4.6	162.73	4.7
155	6/6/11 23:00	15.57	18.5	4.6	172.46	7.3	530	6/14/11 18:30	15.35	20.5	4.6	127.58	5.2
156	6/6/11 23:30	15.47	20.8	4.6	175.71	9.5	531	6/14/11 19:00	15.30	16.0	4.6	165.24	6.9
157	6/7/11 0:00	15.31	23.2	4.6	138.98	10.1	532	6/14/11 19:30	15.19	17.2	4.6	222.77	5.5
158	6/7/11 0:30	15.18	30.8	4.6	150.11	9.8	533	6/14/11 20:00	15.14	15.2	4.6	74.53	6.6
159	6/7/11 1:00	15.02	21.8	4.6	184.8	10.2	534	6/14/11 20:30	15.03	12.7	4.6	169.41	8.3
160	6/7/11 1:30	14.87	24.7	4.6	182.13	7.4	535	6/14/11 21:00	14.93	13.5	4.6	196.3	5.0
161	6/7/11 2:00	14.76	33.8	4.4	187.03	5.2	536	6/14/11 21:30	14.86	14.1	4.6	45.36	6.2
162	6/7/11 2:30	14.69	34.1	4.4	194.33	5.5	537	6/14/11 22:00	14.80	13.9	4.6	215.68	4.0
163	6/7/11 3:00	14.60	30.4	4.4	185.81	5.1	538	6/14/11 22:30	14.75	19.4	4.4	194.51	4.1
164	6/7/11 3:30	14.54	24.4	4.4	191.63	2.9	539	6/14/11 23:00	14.71	25.1	4.4	188.83	3.1
165	6/7/11 4:00	14.55	23.9	4.4	182.65	3.6	540	6/14/11 23:30	14.69	19.2	4.4	181.26	4.1
166	6/7/11 4:30	14.52	24.0	4.4	183.77	6.3	541	6/15/11 0:00	14.69	16.1	4.4	174.78	3.0
167	6/7/11 5:00	14.58	24.6	4.4	188.23	3.6	542	6/15/11 0:30	14.75	19.1	4.4	200.21	4.7
168	6/7/11 5:30	14.50	25.1	4.4	182.02	2.8	543	6/15/11 1:00	14.78	12.3	4.6	222.17	2.7
169	6/7/11 6:00	14.61	15.7	4.4	183.32	2.9	544	6/15/11 1:30	14.82	15.1	4.6	192.67	4.1
170	6/7/11 6:30	14.56	16.3	4.4	187.28	2.3	545	6/15/11 2:00	14.70	16.3	4.6	216.12	3.5
171	6/7/11 7:00	14.60	14.4	4.4	183.23	3.1	546	6/15/11 2:30	14.75	35.0	4.6	163.64	5.2
172	6/7/11 7:30	14.58	13.8	4.4	181.94	7.0	547	6/15/11 3:00	14.69	42.1	4.6	213.73	5.9
173	6/7/11 8:00	14.48	12.8	4.4	186.47	4.3	548	6/15/11 3:30	14.61	65.9	4.7	215.98	10.7
174	6/7/11 8:30	14.37	12.5	4.4	189.25	10.3	549	6/15/11 4:00	14.49	81.4	4.7	209.12	17.1
175	6/7/11 9:00	14.22	13.4	4.4	181.73	12.6	550	6/15/11 4:30	14.32	71.7	4.9	211.01	15.0
176	6/7/11 9:30	14.03	14.6	4.4	179.1	14.1	551	6/15/11 5:00	14.22	64.0	4.4	211.23	14.3
177	6/7/11 10:00	13.86	12.0	4.4	181.8	13.9	552	6/15/11 5:30	13.98	47.6	4.6	208.05	13.6
178	6/7/11 10:30	13.66	15.2	4.3	180.96	12.9	553	6/15/11 6:00	13.79	44.2	4.6	211	13.7
179	6/7/11 11:00	13.45	13.4	4.3	177.42	12.5	554	6/15/11 6:30	13.56	38.0	4.6	215.57	13.2
180	6/7/11 11:30	13.21	13.7	4.3	177.05	14.7	555	6/15/11 7:00	13.37	35.9	4.4	221.72	15.4

No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)	No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)
181	6/7/11 12:00	13.05	12.0	4.3	168.74	13.4	556	6/15/11 7:30	13.13	28.8	4.4	166.88	15.2
182	6/7/11 12:30	12.86	13.5	4.1	184.83	9.6	557	6/15/11 8:00	12.91	41.8	4.4	199.24	15.3
183	6/7/11 13:00	12.70	13.5	4.1	179.43	10.1	558	6/15/11 8:30	12.74	40.5	4.7	183.17	12.8
184	6/7/11 13:30	12.58	13.4	4.4	181.29	5.5	559	6/15/11 9:00	12.60	55.1	4.7	182.98	13.0
185	6/7/11 14:00	12.47	13.5	4.4	173.54	3.2	560	6/15/11 9:30	12.45	52.7	5.4	185.43	14.0
186	6/7/11 14:30	12.51	15.7	4.4	181.28	4.4	561	6/15/11 10:00	12.49	54.1	5.3	189.13	14.5
187	6/7/11 15:00	12.58	15.8	4.1	182.84	6.5	562	6/15/11 10:30	12.45	50.4	5.1	197.37	14.4
188	6/7/11 15:30	12.70	18.8	4.3	188.86	10.3	563	6/15/11 11:00	12.39	48.3	4.1	188.9	13.2
189	6/7/11 16:00	12.85	17.9	4.3	185.07	12.5	564	6/15/11 11:30	12.47	49.7	4.4	205.37	13.6
190	6/7/11 16:30	13.06	18.5	4.4	170.78	16.0	565	6/15/11 12:00	12.59	46.0	4.1	182.39	13.0
191	6/7/11 17:00	13.29	21.1	4.3	187.61	17.2	566	6/15/11 12:30	12.76	43.8	4.7	193.28	16.7
192	6/7/11 17:30	13.56	20.3	4.3	193.72	20.5	567	6/15/11 13:00	13.01	47.3	4.7	191.6	18.9
193	6/7/11 18:00	13.86	12.2	4.4	201.12	17.7	568	6/15/11 13:30	13.29	37.9	4.4	207.81	20.8
194	6/7/11 18:30	14.16	12.9	4.4	188.55	19.6	569	6/15/11 14:00	13.56	36.6	4.4	194.23	22.7
195	6/7/11 19:00	14.45	13.8	4.4	189.23	18.4	570	6/15/11 14:30	13.91	33.0	4.4	193.8	22.9
196	6/7/11 19:30	14.70	7.7	4.6	202.18	17.2	571	6/15/11 15:00	14.25	29.8	4.4	192.12	19.4
197	6/7/11 20:00	14.95	7.1	4.6	195.74	15.5	572	6/15/11 15:30	14.56	31.3	4.4	183.46	21.3
198	6/7/11 20:30	15.21	6.8	4.6	12.48	13.6	573	6/15/11 16:00	14.82	27.8	4.7	188.2	16.0
199	6/7/11 21:00	15.37	6.1	4.6	218.88	8.7	574	6/15/11 16:30	15.04	39.6	4.6	168.94	17.0
200	6/7/11 21:30	15.50	5.7	4.6	155.8	6.8	575	6/15/11 17:00	15.26	44.0	4.6	199.31	11.0
201	6/7/11 22:00	15.56	11.0	5.8	168.63	3.6	576	6/15/11 17:30	15.36	50.5	5.1	187.64	12.3
202	6/7/11 22:30	15.58	10.7	6.1	151.25	2.4	577	6/15/11 18:00	15.48	52.4	5.3	189.12	9.1
203	6/7/11 23:00	15.53	7.7	4.6	169.28	3.9	578	6/15/11 18:30	15.59	49.2	5.3	181.52	8.6
204	6/7/11 23:30	15.47	9.3	4.6	167.03	6.3	579	6/15/11 19:00	15.61	54.2	4.9	181.47	6.9
205	6/8/11 0:00	15.34	8.7	4.6	203.74	8.1	580	6/15/11 19:30	15.53	56.0	4.7	183.14	6.8
206	6/8/11 0:30	15.26	13.0	4.6	178.41	7.9	581	6/15/11 20:00	15.49	49.7	4.7	187.91	9.0
207	6/8/11 1:00	15.04	20.4	4.6	146.07	19.9	582	6/15/11 20:30	15.37	52.8	4.7	209.57	9.3
208	6/8/11 1:30	14.78	16.8	4.6	156.7	5.4	583	6/15/11 21:00	15.26	43.5	4.6	171.95	10.8
209	6/8/11 2:00	14.68	21.3	4.4	192.25	6.1	584	6/15/11 21:30	15.08	48.6	4.9	197.41	8.5
210	6/8/11 2:30	14.59	20.7	4.4	211.17	4.5	585	6/15/11 22:00	14.94	36.8	5.1	191.02	10.6
211	6/8/11 3:00	14.47	23.4	4.4	188.2	7.3	586	6/15/11 22:30	14.86	41.2	4.6	157.2	9.5
212	6/8/11 3:30	14.37	19.9	4.4	193.6	11.5	587	6/15/11 23:00	14.76	44.0	4.6	191.56	8.2
213	6/8/11 4:00	14.25	19.3	4.4	194.93	3.2	588	6/15/11 23:30	14.70	40.2	4.6	192.34	7.2
214	6/8/11 4:30	14.28	15.0	4.4	194.21	3.5	589	6/16/11 0:00	14.68	39.4	4.7	189.82	8.4
215	6/8/11 5:00	14.31	16.6	4.4	191.45	4.0	590	6/16/11 0:30	14.61	40.2	4.4	197.09	8.6
216	6/8/11 5:30	14.37	13.8	4.4	201.83	5.0	591	6/16/11 1:00	14.58	42.7	4.7	189.25	8.2

No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)	No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)
217	6/8/11 6:00	14.45	10.3	4.4	187.33	2.0	592	6/16/11 1:30	14.61	53.3	4.9	196.9	9.4
218	6/8/11 6:30	14.47	11.1	4.4	182.29	4.4	593	6/16/11 2:00	14.63	58.9	4.9	192.29	8.9
219	6/8/11 7:00	14.53	10.8	4.4	180.96	3.9	594	6/16/11 2:30	14.68	45.8	4.9	191.32	8.3
220	6/8/11 7:30	14.57	9.4	4.4	194.16	3.6	595	6/16/11 3:00	14.65	47.7	4.9	183.06	8.4
221	6/8/11 8:00	14.61	8.8	4.4	190.71	2.3	596	6/16/11 3:30	14.71	48.5	4.9	191.73	10.2
222	6/8/11 8:30	14.61	9.0	4.4	186.88	2.4	597	6/16/11 4:00	14.56	54.2	5.1	190.61	11.0
223	6/8/11 9:00	14.54	8.5	4.4	205.78	6.0	598	6/16/11 4:30	14.48	47.1	5.1	183.1	13.6
224	6/8/11 9:30	14.46	9.3	4.4	189.61	5.4	599	6/16/11 5:00	14.42	44.4	4.9	184.13	13.4
225	6/8/11 10:00	14.36	13.2	4.6	175.56	9.6	600	6/16/11 5:30	14.20	36.7	5.3	181.4	16.3
226	6/8/11 10:30	14.21	13.2	4.4	183.31	10.4	601	6/16/11 6:00	14.04	34.2	5.6	185.05	18.4
227	6/8/11 11:00	14.04	12.9	4.6	176.49	13.9	602	6/16/11 6:30	13.75	38.6	5.6	177.11	19.6
228	6/8/11 11:30	13.84	13.4	4.4	184.46	14.0	603	6/16/11 7:00	13.56	33.9	5.6	186.04	19.8
229	6/8/11 12:00	13.63	17.6	4.3	190.67	13.8	604	6/16/11 7:30	13.25	35.7	5.6	187.6	17.7
230	6/8/11 12:30	13.43	17.0	4.3	174.61	11.4	605	6/16/11 8:00	13.11	38.6	5.7	178.21	21.4
231	6/8/11 13:00	13.26	17.5	4.3	185.32	10.3	606	6/16/11 8:30	12.81	37.3	5.6	185.65	18.3
232	6/8/11 13:30	13.09	15.9	4.3	177.73	8.4	607	6/16/11 9:00	12.62	40.4	5.9	188.97	17.6
233	6/8/11 14:00	12.98	18.6	4.4	180.22	7.3	608	6/16/11 9:30	12.46	36.7	5.8	182.85	16.7
234	6/8/11 14:30	12.90	16.3	4.4	183.71	4.0	609	6/16/11 10:00	12.30	40.7	4.9	198.55	14.9
235	6/8/11 15:00	12.85	18.5	4.3	175.91	3.5	610	6/16/11 10:30	12.23	37.6	5.3	194.96	11.2
236	6/8/11 15:30	12.87	15.5	4.3	186.91	6.6	611	6/16/11 11:00	12.20	37.0	5.3	193.5	11.2
237	6/8/11 16:00	12.99	13.3	4.3	174.54	9.3	612	6/16/11 11:30	12.23	37.3	5.3	195.46	11.2
238	6/8/11 16:30	13.14	13.1	4.3	192.09	11.5	613	6/16/11 12:00	12.32	36.6	5.3	201.77	10.9
239	6/8/11 17:00	13.33	15.6	4.3	119.78	14.9	614	6/16/11 12:30	12.40	37.1	4.9	191.86	15.3
240	6/8/11 17:30	13.57	10.3	4.3	164.62	17.2	615	6/16/11 13:00	12.63	36.5	4.9	167.06	14.4
241	6/8/11 18:00	13.85	9.8	4.4	186.2	17.1	616	6/16/11 13:30	12.79	36.9	4.7	194.99	17.9
242	6/8/11 18:30	14.10	10.8	4.6	179.57	20.2	617	6/16/11 14:00	13.06	34.6	4.3	194.82	19.1
243	6/8/11 19:00	14.38	9.7	4.4	192.95	17.9	618	6/16/11 14:30	13.32	34.8	4.4	189.04	21.0
244	6/8/11 19:30	14.65	11.9	4.4	189.08	17.0	619	6/16/11 15:00	13.68	37.3	4.6	192.16	23.6
245	6/8/11 20:00	14.90	8.7	4.6	196.9	14.8	620	6/16/11 15:30	13.98	38.1	4.7	183.12	24.0
246	6/8/11 20:30	15.12	7.6	4.6	186.3	14.2	621	6/16/11 16:00	14.32	39.4	4.9	187.17	23.1
247	6/8/11 21:00	15.27	7.5	4.6	186.97	10.6	622	6/16/11 16:30	14.68	40.1	4.4	184.43	19.3
248	6/8/11 21:30	15.45	8.5	4.6	162.21	7.9	623	6/16/11 17:00	14.92	48.6	4.9	191.68	16.7
249	6/8/11 22:00	15.57	6.3	4.6	172.44	3.9	624	6/16/11 17:30	15.16	54.6	4.7	173.37	13.7
250	6/8/11 22:30	15.61	7.9	4.6	187.54	2.0	625	6/16/11 18:00	15.36	53.2	4.6	189.56	12.3
251	6/8/11 23:00	15.59	7.6	4.6	184.56	4.5	626	6/16/11 18:30	15.48	55.9	4.6	191.47	7.9
252	6/8/11 23:30	15.55	7.7	4.6	186.55	6.6	627	6/16/11 19:00	15.53	50.3	4.6	195.78	6.9

No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)	No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)
253	6/9/11 0:00	15.43	7.7	4.6	190.85	11.4	628	6/16/11 19:30	15.53	58.0	4.6	189.76	7.2
254	6/9/11 0:30	15.27	7.5	4.6	180.99	11.6	629	6/16/11 20:00	15.50	45.8	4.6	180.16	8.3
255	6/9/11 1:00	15.05	8.6	4.6	177.19	13.1	630	6/16/11 20:30	15.44	58.5	4.7	196.84	9.8
256	6/9/11 1:30	14.89	9.6	4.6	167.28	12.7	631	6/16/11 21:00	15.30	66.8	4.9	199.23	10.8
257	6/9/11 2:00	14.71	10.1	4.4	183.7	9.9	632	6/16/11 21:30	15.19	66.6	4.9	192.58	12.3
258	6/9/11 2:30	14.53	10.1	4.4	180.32	9.9	633	6/16/11 22:00	15.08	59.4	4.7	189.27	10.8
259	6/9/11 3:00	14.43	10.8	4.4	181.78	8.4	634	6/16/11 22:30	14.91	41.0	4.7	198.12	11.0
260	6/9/11 3:30	14.31	9.5	4.4	185.57	8.7	635	6/16/11 23:00	14.80	50.1	5.1	195.49	11.2
261	6/9/11 4:00	14.22	10.6	4.4	186.27	5.9	636	6/16/11 23:30	14.64	45.7	4.7	203.93	9.8
262	6/9/11 4:30	14.14	10.5	4.4	180.37	5.9	637	6/17/11 0:00	14.54	39.9	4.7	204.82	7.8
263	6/9/11 5:00	14.10	8.1	4.4	181.74	2.8	638	6/17/11 0:30	14.49	43.0	4.6	189.95	7.7
264	6/9/11 5:30	14.11	9.1	4.4	187.68	2.7	639	6/17/11 1:00	14.46	41.5	4.4	189.01	6.2
265	6/9/11 6:00	14.13	9.4	4.4	178.26	3.4	640	6/17/11 1:30	14.42	46.0	4.6	198.98	7.7
266	6/9/11 6:30	14.19	11.4	4.4	182.07	3.7	641	6/17/11 2:00	14.49	51.6	4.7	201.37	7.8
267	6/9/11 7:00	14.25	10.7	4.4	183.26	4.7	642	6/17/11 2:30	14.49	58.9	4.7	197.97	9.2
268	6/9/11 7:30	14.31	13.3	4.4	180.75	4.8	643	6/17/11 3:00	14.60	46.8	4.6	191.35	7.4
269	6/9/11 8:00	14.36	16.8	4.4	179.22	5.3	644	6/17/11 3:30	14.64	46.2	4.9	192.15	6.4
270	6/9/11 8:30	14.43	22.1	4.4	177.67	3.6	645	6/17/11 4:00	14.64	43.5	4.7	192.18	6.1
271	6/9/11 9:00	14.43	22.8	4.6	174.77	3.6	646	6/17/11 4:30	14.67	36.2	4.9	195.63	5.8
272	6/9/11 9:30	14.41	25.0	4.6	176.41	4.5	647	6/17/11 5:00	14.60	23.4	4.6	183.15	5.0
273	6/9/11 10:00	14.37	27.3	4.6	183.08	6.1	648	6/17/11 5:30	14.57	29.7	4.6	190.33	8.4
274	6/9/11 10:30	14.33	27.1	4.6	182.54	8.1	649	6/17/11 6:00	14.45	32.3	4.6	185.33	12.4
275	6/9/11 11:00	14.22	21.7	4.9	186.49	8.8	650	6/17/11 6:30	14.32	35.2	4.6	182.58	13.8
276	6/9/11 11:30	14.11	22.1	4.7	183.16	12.8	651	6/17/11 7:00	14.06	33.0	4.7	186.77	16.2
277	6/9/11 12:00	13.94	20.8	4.4	181.05	9.3	652	6/17/11 7:30	13.84	36.4	4.6	185.1	17.5
278	6/9/11 12:30	13.74	24.9	4.7	178.48	13.0	653	6/17/11 8:00	13.60	41.6	5.1	182	15.5
279	6/9/11 13:00	13.58	18.5	4.7	159.6	10.1	654	6/17/11 8:30	13.38	39.6	4.3	191.33	19.7
280	6/9/11 13:30	13.42	23.0	4.3	171.16	9.2	655	6/17/11 9:00	13.07	36.2	4.6	179.53	18.4
281	6/9/11 14:00	13.28	17.4	4.4	171.93	7.6	656	6/17/11 9:30	12.85	38.7	5.3	183.48	16.1
282	6/9/11 14:30	13.19	20.7	4.4	171.29	7.3	657	6/17/11 10:00	12.64	34.0	5.3	184.72	13.9
283	6/9/11 15:00	13.14	14.5	4.3	175.28	4.7	658	6/17/11 10:30	12.42	31.9	5.3	189.55	11.0
284	6/9/11 15:30	13.10	14.6	4.3	169.72	2.3	659	6/17/11 11:00	12.25	35.4	4.7	186.75	10.8
285	6/9/11 16:00	13.12	13.0	4.3	171.38	5.2	660	6/17/11 11:30	12.21	29.1	4.1	190.49	7.5
286	6/9/11 16:30	13.19	13.0	4.3	161.42	8.0	661	6/17/11 12:00	12.14	35.1	4.3	181.91	7.5
287	6/9/11 17:00	13.33	12.2	4.3	166.12	9.9	662	6/17/11 12:30	12.18	41.1	4.1	192.32	9.6
288	6/9/11 17:30	13.46	14.5	4.3	176.48	14.1	663	6/17/11 13:00	12.29	47.7	4.4	189.19	15.4

No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)	No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)
289	6/9/11 18:00	13.68	10.6	4.3	181.95	14.3	664	6/17/11 13:30	12.45	51.9	4.1	194.82	17.8
290	6/9/11 18:30	13.91	12.2	4.4	203.28	19.1	665	6/17/11 14:00	12.66	61.3	4.6	186.98	22.3
291	6/9/11 19:00	14.20	16.6	6.3	182.47	18.7	666	6/17/11 14:30	12.94	55.2	4.3	191.93	24.1
292	6/9/11 19:30	14.45	11.5	4.4	190.42	18.7	667	6/17/11 15:00	13.25	56.6	4.4	194.05	22.1
293	6/9/11 20:00	14.73	11.3	4.6	192.01	16.8	668	6/17/11 15:30	13.64	47.3	4.4	194.87	25.5
294	6/9/11 20:30	14.94	10.8	4.6	219.09	13.7	669	6/17/11 16:00	14.01	37.5	4.6	201.48	24.2
295	6/9/11 21:00	15.18	18.7	4.6	187.27	7.0	670	6/17/11 16:30	14.35	40.6	4.4	192.67	23.9
296	6/9/11 21:30	15.27	20.6	4.6	160.01	14.4	671	6/17/11 17:00	14.70	35.3	4.6	197.92	19.7
297	6/9/11 22:00	15.35	20.3	4.6	199.87	4.3	672	6/17/11 17:30	15.00	38.8	4.6	182.96	16.5
298	6/9/11 22:30	15.29	26.4	4.6	172.37	4.2	673	6/17/11 18:00	15.21	41.7	5.1	178.47	14.8
299	6/9/11 23:00	15.35	35.1	4.6	197.31	7.1	674	6/17/11 18:30	15.39	47.2	5.1	181.64	12.8
300	6/9/11 23:30	15.21	48.0	4.6	184.09	6.9	675	6/17/11 19:00	15.58	47.0	4.9	187.98	10.0
301	6/10/11 0:00	15.12	48.3	4.7	197.35	9.7	676	6/17/11 19:30	15.67	41.2	5.3	189.09	7.4
302	6/10/11 0:30	15.00	45.1	4.7	203.3	10.5	677	6/17/11 20:00	15.73	40.1	5.1	183.9	7.7
303	6/10/11 1:00	14.86	43.4	4.7	197.97	10.0	678	6/17/11 20:30	15.69	50.2	4.6	187.65	8.3
304	6/10/11 1:30	14.69	37.5	4.9	196.05	13.7	679	6/17/11 21:00	15.64	45.0	5.6	182.73	10.5
305	6/10/11 2:00	14.45	44.5	4.6	199.28	14.8	680	6/17/11 21:30	15.54	47.4	5.6	181.64	12.8
306	6/10/11 2:30	14.36	55.7	5.1	191.97	16.4	681	6/17/11 22:00	15.34	43.6	5.3	192.36	12.5
307	6/10/11 3:00	14.20	55.8	5.3	189.78	15.0	682	6/17/11 22:30	15.19	46.9	4.7	182.42	14.6
308	6/10/11 3:30	14.01	52.3	5.6	189.08	16.4	683	6/17/11 23:00	15.00	36.1	5.3	193.87	13.9
309	6/10/11 4:00	13.97	50.1	5.1	185.37	15.5	684	6/17/11 23:30	14.88	33.9	5.8	190.26	13.5
310	6/10/11 4:30	13.76	49.9	5.1	175.69	14.5	685	6/18/11 0:00	14.74	34.4	5.6	189.21	10.5
311	6/10/11 5:00	13.73	44.4	5.1	183.49	13.6	686	6/18/11 0:30	14.65	33.3	5.1	194.09	9.7
312	6/10/11 5:30	13.66	42.2	5.1	186.04	12.3	687	6/18/11 1:00	14.54	33.5	5.3	196.17	7.0
313	6/10/11 6:00	13.66	40.3	5.1	183.26	13.4	688	6/18/11 1:30	14.53	36.1	4.9	188.22	7.1
314	6/10/11 6:30	13.70	39.6	5.6	190.86	13.2	689	6/18/11 2:00	14.56	35.3	5.1	192.16	6.9
315	6/10/11 7:00	13.71	38.1	5.1	189.95	11.0	690	6/18/11 2:30	14.56	34.2	4.9	187.82	6.8
316	6/10/11 7:30	13.78	38.9	5.1	183.7	11.7	691	6/18/11 3:00	14.60	33.4	4.9	189.05	6.8
317	6/10/11 8:00	13.89	34.7	4.9	185.33	11.6	692	6/18/11 3:30	14.67	33.4	4.4	193.25	7.0
318	6/10/11 8:30	14.04	36.1	5.3	187.45	11.3	693	6/18/11 4:00	14.68	39.5	5.6	185.31	7.2
319	6/10/11 9:00	14.10	35.8	4.4	190.93	8.5	694	6/18/11 4:30	14.73	40.7	4.7	188.98	6.6
320	6/10/11 9:30	14.20	35.9	4.9	188.28	8.6	695	6/18/11 5:00	14.74	39.5	5.3	193.25	8.7
321	6/10/11 10:00	14.26	35.5	4.9	187.64	6.3	696	6/18/11 5:30	14.76	37.8	4.9	192.43	8.1
322	6/10/11 10:30	14.31	35.1	4.7	186.08	6.4	697	6/18/11 6:00	14.73	40.1	5.1	187.28	8.5
323	6/10/11 11:00	14.31	32.4	4.7	189.74	6.5	698	6/18/11 6:30	14.58	37.1	5.1	189.5	9.6
324	6/10/11 11:30	14.23	37.2	4.4	188.47	5.6	699	6/18/11 7:00	14.45	39.3	4.4	181.28	13.8

No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)	No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)
325	6/10/11 12:00	14.18	39.8	4.4	187.27	7.4	700	6/18/11 7:30	14.24	42.6	4.9	190.45	15.4
326	6/10/11 12:30	14.15	36.8	4.4	184.02	7.5	701	6/18/11 8:00	14.12	36.7	4.7	183.87	20.7
327	6/10/11 13:00	14.04	30.6	4.7	185.28	10.5	702	6/18/11 8:30	13.90	36.9	4.9	189.98	18.5
328	6/10/11 13:30	13.91	31.5	4.7	188.05	10.5	703	6/18/11 9:00	13.62	40.9	4.9	185.53	16.7
329	6/10/11 14:00	13.80	33.2	4.6	183.43	9.9	704	6/18/11 9:30	13.38	43.2	5.3	191.47	20.2
330	6/10/11 14:30	13.65	31.7	4.9	189.73	7.3	705	6/18/11 10:00	13.11	38.8	4.4	186.03	17.7
331	6/10/11 15:00	13.62	34.1	4.6	185.64	9.3	706	6/18/11 10:30	12.84	35.9	4.9	188.97	17.9
332	6/10/11 15:30	13.51	34.5	4.6	184.91	9.0	707	6/18/11 11:00	12.60	33.5	4.3	186.9	16.9
333	6/10/11 16:00	13.50	34.3	4.4	194.68	6.7	708	6/18/11 11:30	12.36	31.0	5.3	182.56	12.0
334	6/10/11 16:30	13.45	37.7	4.3	200.22	11.2	709	6/18/11 12:00	12.27	34.8	5.3	185.89	11.0
335	6/10/11 17:00	13.60	37.2	4.4	189.28	9.4	710	6/18/11 12:30	12.13	34.2	4.7	190.26	10.0
336	6/10/11 17:30	13.63	36.9	4.3	188.32	6.1	711	6/18/11 13:00	12.13	39.5	5.1	189.47	10.6
337	6/10/11 18:00	13.67	28.6	4.3	183.65	6.3	712	6/18/11 13:30	12.25	48.7	5.1	186.72	15.7
338	6/10/11 18:30	13.74	27.6	4.3	188.76	5.2	713	6/18/11 14:00	12.26	44.5	4.6	194.5	14.7
339	6/10/11 19:00	13.85	41.7	4.4	185.62	12.3	714	6/18/11 14:30	12.55	43.2	5.1	194.22	19.5
340	6/10/11 19:30	14.00	53.5	4.9	186.27	15.9	715	6/18/11 15:00	12.77	47.6	4.9	192.04	19.4
341	6/10/11 20:00	14.21	77.0	4.9	189.16	18.5	716	6/18/11 15:30	13.03	44.2	4.9	188.08	24.1
342	6/10/11 20:30	14.38	58.2	4.6	187.78	18.6	717	6/18/11 16:00	13.36	45.9	4.9	191.74	25.0
343	6/10/11 21:00	14.60	61.5	4.7	188.96	15.4	718	6/18/11 16:30	13.67	43.5	4.6	197.08	22.7
344	6/10/11 21:30	14.80	51.1	4.7	186.91	11.2	719	6/18/11 17:00	14.02	43.9	4.7	191.69	24.4
345	6/10/11 22:00	14.92	56.0	4.7	186.35	11.2	720	6/18/11 17:30	14.39	42.6	4.6	193.92	21.0
346	6/10/11 22:30	15.06	43.7	4.6	180.51	7.3	721	6/18/11 18:00	14.62	47.5	4.7	186.05	19.7
347	6/10/11 23:00	15.16	45.1	4.7	190.86	8.8	722	6/18/11 18:30	14.95	54.2	4.6	176.04	16.3
348	6/10/11 23:30	15.18	45.6	4.7	185.58	8.3	723	6/18/11 19:00	15.17	58.2	4.9	171.51	15.0
349	6/11/11 0:00	15.14	54.5	4.9	184.87	9.5	724	6/18/11 19:30	15.34	56.5	4.9	183.06	11.5
350	6/11/11 0:30	15.14	37.9	4.7	190.52	8.3	725	6/18/11 20:00	15.47	53.6	5.1	183.71	8.4
351	6/11/11 1:00	14.93	34.2	5.1	188.8	7.9	726	6/18/11 20:30	15.49	59.4	4.6	177.5	8.7
352	6/11/11 1:30	14.90	35.5	4.7	185.25	8.9	727	6/18/11 21:00	15.55	59.2	4.6	178.18	9.1
353	6/11/11 2:00	14.71	31.4	4.7	190.6	14.4	728	6/18/11 21:30	15.45	67.7	5.3	181.79	10.2
354	6/11/11 2:30	14.53	30.5	4.7	171.5	15.3	729	6/18/11 22:00	15.38	66.0	4.9	175.97	13.2
355	6/11/11 3:00	14.31	32.0	4.4	189.4	14.2	730	6/18/11 22:30	15.23	57.6	4.9	169.85	13.7
356	6/11/11 3:30	14.17	34.5	4.4	192.42	14.1	731	6/18/11 23:00	15.05	52.9	4.6	177.72	14.0
357	6/11/11 4:00	13.95	36.4	4.4	188.07	15.8	732	6/18/11 23:30	14.89	49.4	4.9	184.27	14.6
358	6/11/11 4:30	13.78	37.1	4.6	190.76	11.7	733	6/19/11 0:00	14.69	43.7	4.4	187.86	11.5
359	6/11/11 5:00	13.65	47.9	4.6	195.39	11.5	734	6/19/11 0:30	14.57	36.0	5.8	189.56	10.3
360	6/11/11 5:30	13.53	54.5	4.4	188.32	9.7	735	6/19/11 1:00	14.42	39.2	5.1	191.92	10.4

No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)	No	m/d/yy hh:mm	WD (m)	H _i (cm)	T _p (s)	Direction (deg)	Ht (cm)
361	6/11/11 6:00	13.49	52.3	4.4	185.35	10.7	736	6/19/11 1:30	14.40	32.1	4.4	180.82	8.7
362	6/11/11 6:30	13.41	47.6	4.3	188.37	9.7	737	6/19/11 2:00	14.39	31.9	5.6	183.67	7.9
363	6/11/11 7:00	13.40	56.6	4.6	189.97	10.4	738	6/19/11 2:30	14.33	34.0	4.7	193.6	7.4
364	6/11/11 7:30	13.41	58.6	4.9	192.75	10.2	739	6/19/11 3:00	14.35	33.3	4.9	188.13	7.6
365	6/11/11 8:00	13.33	56.9	4.7	185.05	11.9	740	6/19/11 3:30	14.41	30.1	5.1	189.67	8.7
366	6/11/11 8:30	13.49	69.0	4.9	190.23	13.6	741	6/19/11 4:00	14.45	30.5	5.1	184.34	7.1
367	6/11/11 9:00	13.54	66.5	5.1	187.29	16.2	742	6/19/11 4:30	14.47	33.7	5.3	180.09	8.7
368	6/11/11 9:30	13.65	60.8	4.9	189.07	14.9	743	6/19/11 5:00	14.57	34.5	4.6	183.92	6.9
369	6/11/11 10:00	13.81	62.0	4.9	190.05	14.9	744	6/19/11 5:30	14.65	36.0	5.3	183.45	7.2
370	6/11/11 10:30	13.93	59.9	4.6	180.09	15.4	745	6/19/11 6:00	14.62	33.8	4.6	188.9	6.7
371	6/11/11 11:00	14.04	67.3	4.6	186.93	15.3	746	6/19/11 6:30	14.68	33.0	4.4	180.87	7.0
372	6/11/11 11:30	14.15	54.4	4.7	186.91	10.3	747	6/19/11 7:00	14.61	36.0	5.1	188.54	10.0
373	6/11/11 12:00	14.20	46.8	4.9	186.29	8.5	748	6/19/11 7:30	14.45	37.6	5.6	181.73	13.8
374	6/11/11 12:30	14.30	42.1	4.7	187.4	7.3	749	6/19/11 8:00	14.31	38.7	4.9	186.81	15.9
375	6/11/11 13:00	14.28	29.4	4.4	188.77	5.5	750	6/19/11 8:30	14.12	36.7	4.7	197.23	13.7

ภาคผนวก ข
ผลวิเคราะห์

กรณีแผงกรองคลื่นทำงาน 2 แผง คลื่นเสียงทำมุม 0 – 45 องศา กับแนวแผงกรองคลื่น

รูปสมการ

$$K_i = 0.377 - 53.064 \frac{H_i}{L} + 2.302 \frac{B}{L} + 654.421 \frac{H_i}{gT^2} \quad (25)$$

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Hi/gT2, Hi/L, B/L		Enter

a. All requested variables entered.

b. Dependent Variable: Kt

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.983 ^a	.967	.947	.057419888189511

a. Predictors: (Constant), Hi/gT2, Hi/L, B/L

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.486	3	.162	49.127	.000 ^a
	Residual	.016	5	.003		
	Total	.502	8			

a. Predictors: (Constant), Hi/gT2, Hi/L, B/L

b. Dependent Variable: Kt

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.377	.259		1.452	.206
	Hi/L	-53.064	12.427	-.507	-4.270	.008
	B/L	2.302	2.309	.139	.997	.364
	Hi/gT2	654.421	147.257	.491	4.444	.007

a. Dependent Variable: Kt

รูปสมการ

$$K_t = 4.088 \frac{Bh}{gd_s T^2} + 0.189 \quad (24)$$

Iteration History^b

Iteration Number ^a	Residual Sum of Squares	Parameter	
		C	A
1.0	1248.687	100.000	.300
1.1	.021	4.088	.189
2.0	.021	4.088	.189
2.1	.021	4.088	.189

Derivatives are calculated numerically.

- a. Major iteration number is displayed to the left of the decimal, and minor iteration number is to the right of the decimal.
- b. Run stopped after 4 model evaluations and 2 derivative evaluations because the relative reduction between successive residual sums of squares is at most SSSCON = 1.00E-008.

Parameter Estimates

Parameter	Estimate	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
C	4.088	.326	3.317	4.860
A	.189	.040	.095	.283

Correlations of Parameter Estimates

	C	A
C	1.000	-.886
A	-.886	1.000

ANOVA^a

Source	Sum of Squares	df	Mean Squares
Regression	4.047	2	2.024
Residual	.021	7	.003
Uncorrected Total	4.069	9	
Corrected Total	.502	8	

Dependent variable: Kt

- a. R squared = 1 - (Residual Sum of Squares) / (Corrected Sum of Squares) = .957.

กรณีแผงกรองคลื่นทำงาน 2 แผง คลื่นเอียงทำมุม 45 – 90 องศา กับแนวแผงกรองคลื่น

รูปสมการ

$$K_i = 0.157 + 534.966 \frac{H_i}{gT^2} - 27.393 \frac{H_i}{L} + 2.154 \frac{B}{L} \quad (27)$$

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Hi/gT2		. Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Hi/L		. Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	B/L		. Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Kt

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.626 ^a	.392	.378	.130971889775923
2	.921 ^b	.849	.842	.066083473652000
3	.930 ^c	.865	.855	.063271200718007

a. Predictors: (Constant), Hi/gT2

b. Predictors: (Constant), Hi/gT2, Hi/L

c. Predictors: (Constant), Hi/gT2, Hi/L, B/L

ANOVA^d

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.475	1	.475	27.705	.000 ^a
	Residual	.738	43	.017		
	Total	1.213	44			
2	Regression	1.029	2	.515	117.865	.000 ^b
	Residual	.183	42	.004		
	Total	1.213	44			
3	Regression	1.049	3	.350	87.323	.000 ^c
	Residual	.164	41	.004		
	Total	1.213	44			

a. Predictors: (Constant), Hi/gT2

b. Predictors: (Constant), Hi/gT2, Hi/L

c. Predictors: (Constant), Hi/gT2, Hi/L, B/L

d. Dependent Variable: Kt

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.105	.057		1.859	.070
	Hi/gT2	414.055	78.664	.626	5.264	.000
2	(Constant)	.340	.035		9.623	.000
	Hi/gT2	558.881	41.721	.845	13.396	.000
	Hi/L	-27.814	2.469	-.711	-11.265	.000
3	(Constant)	.157	.090		1.746	.088
	Hi/gT2	534.966	41.405	.809	12.920	.000
	Hi/L	-27.393	2.372	-.700	-11.550	.000
	B/L	2.154	.982	.131	2.195	.034

a. Dependent Variable: Kt

Excluded Variables^d

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics	
					Tolerance	
1	Hi/L	-.711 ^a	-11.265	.000	-.867	.905
	h/L	.181 ^a	1.485	.145	.223	.929
	ds/h	-.074 ^a	-.609	.546	-.094	.965
	B/L	.186 ^a	1.540	.131	.231	.937
	ds/L	.083 ^a	.654	.517	.100	.899
2	h/L	.129 ^b	2.160	.037	.320	.924
	ds/h	-.022 ^b	-.358	.722	-.056	.959
	B/L	.131 ^b	2.195	.034	.324	.931
	ds/L	.081 ^b	1.290	.204	.198	.899
3	h/L	-.241 ^c	-.312	.756	-.049	.006
	ds/h	-.015 ^c	-.253	.802	-.040	.956
	ds/L	-.027 ^c	-.312	.756	-.049	.445

a. Predictors in the Model: (Constant), Hi/gT2

b. Predictors in the Model: (Constant), Hi/gT2, Hi/L

c. Predictors in the Model: (Constant), Hi/gT2, Hi/L, B/L

d. Dependent Variable: Kt

รูปสมการ

$$K_t = 4.534 \frac{Bh}{gd_s T^2} + 0.088 \quad (28)$$

Iteration History^b

Iteration Number ^a	Residual Sum of Squares	Parameter	
		C	A
1.0	2366.354	100.000	.300
1.1	.107	4.534	.088
2.0	.107	4.534	.088
2.1	.107	4.534	.088

Derivatives are calculated numerically.

- a. Major iteration number is displayed to the left of the decimal, and minor iteration number is to the right of the decimal.
- b. Run stopped after 4 model evaluations and 2 derivative evaluations because the relative reduction between successive residual sums of squares is at most SSSCON = 1.00E-008.

Parameter Estimates

Parameter	Estimate	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
C	4.534	.215	4.100	4.967
A	.088	.016	.056	.120

Correlations of Parameter Estimates

	C	A
C	1.000	-.884
A	-.884	1.000

ANOVA^a

Source	Sum of Squares	df	Mean Squares
Regression	7.756	2	3.878
Residual	.107	43	.002
Uncorrected Total	7.863	45	
Corrected Total	1.213	44	

Dependent variable: Kt

- a. R squared = 1 - (Residual Sum of Squares) / (Corrected Sum of Squares) = .912.

กรณีแผงกรองคลื่นทำงาน 3 แผง คลื่นเอียงทำมุม 0 – 45 องศา กับแนวแผงกรองคลื่น

รูปสมการ

$$K_t = 0.217 - 46.569\left(\frac{H_i}{L}\right) + 878.985\left(\frac{H_i}{gT^2}\right) + 2.724\left(\frac{d_s}{L}\right) \quad (29)$$

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Hi/L		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Hi/gT2		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	ds/L		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Kt

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.520 ^a	.270	.260	.226733537878092
2	.886 ^b	.785	.779	.123953486023126
3	.897 ^c	.804	.795	.119231747478244

a. Predictors: (Constant), Hi/L

b. Predictors: (Constant), Hi/L, Hi/gT2

c. Predictors: (Constant), Hi/L, Hi/gT2, ds/L

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.333	1	1.333	25.930	.000 ^a
	Residual	3.599	70	.051		
	Total	4.932	71			
2	Regression	3.871	2	1.936	125.986	.000 ^b
	Residual	1.060	69	.015		
	Total	4.932	71			
3	Regression	3.965	3	1.322	92.965	.000 ^c
	Residual	.967	68	.014		
	Total	4.932	71			

- a. Predictors: (Constant), Hi/L
b. Predictors: (Constant), Hi/L, Hi/gT2
c. Predictors: (Constant), Hi/L, Hi/gT2, ds/L
d. Dependent Variable: Kt

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.684	.049		13.862	.000
	Hi/L	-27.918	5.483	-.520	-5.092	.000
2	(Constant)	.438	.033		13.228	.000
	Hi/L	-46.419	3.325	-.864	-13.961	.000
	Hi/gT2	837.854	65.185	.796	12.854	.000
3	(Constant)	.217	.092		2.373	.020
	Hi/L	-46.569	3.199	-.867	-14.558	.000
	Hi/gT2	878.985	64.721	.835	13.581	.000
	ds/L	2.724	1.063	.143	2.564	.013

- a. Dependent Variable: Kt

Excluded Variables^d

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics	
					Tolerance	
1	h/L	.175 ^a	1.743	.086	.205	1.000
	ds/h	-.138 ^a	-1.352	.181	-.161	.989
	B/L	.212 ^a	2.128	.037	.248	.999
	ds/L	-.045 ^a	-.433	.666	-.052	.990
	Hi/gT2	.796 ^a	12.854	.000	.840	.813
2	h/L	.094 ^b	1.697	.094	.202	.987
	ds/h	.112 ^b	1.920	.059	.227	.881
	B/L	.044 ^b	.763	.448	.092	.943
	ds/L	.143 ^b	2.564	.013	.297	.929
3	h/L	.040 ^c	.652	.517	.079	.786
	ds/h	-.090 ^c	-.711	.479	-.087	.182
	B/L	.036 ^c	.652	.517	.079	.940

a. Predictors in the Model: (Constant), Hi/L

b. Predictors in the Model: (Constant), Hi/L, Hi/gT2

c. Predictors in the Model: (Constant), Hi/L, Hi/gT2, ds/L

d. Dependent Variable: Kt

รูปสมการ

$$K_i = 15.678 \frac{Bh}{gd_s T^2} + 0.126 \quad (30)$$

Iteration History^b

Iteration Number ^a	Residual Sum of Squares	Parameter	
		C	A
1.0	414.964	100.000	.300
1.1	1.002	15.678	.126
2.0	1.002	15.678	.126
2.1	1.002	15.678	.126

Derivatives are calculated numerically.

- Major iteration number is displayed to the left of the decimal, and minor iteration number is to the right of the decimal.
- Run stopped after 4 model evaluations and 2 derivative evaluations because the relative reduction between successive residual sums of squares is at most SSSCON = 1.00E-008.

Parameter Estimates

Parameter	Estimate	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
C	15.678	.947	13.791	17.566
A	.126	.025	.075	.176

Correlations of Parameter Estimates

	C	A
C	1.000	-.830
A	-.830	1.000

ANOVA^a

Source	Sum of Squares	df	Mean Squares
Regression	20.024	2	10.012
Residual	1.002	70	.014
Uncorrected Total	21.027	72	
Corrected Total	4.932	71	

Dependent variable: Kt

- R squared = 1 - (Residual Sum of Squares) / (Corrected Sum of Squares) = .797.

กรณีแผงกรองคลื่นทำงาน 3 แผง คลื่นเอียงทำมุม 45 – 90 องศา กับแนวแผงกรองคลื่น

รูปสมการ

$$K_t = 0.258 - 33.007 \frac{H_i}{L} + 707.724 \frac{H_i}{gT^2} + 1.314 \frac{d_s}{L} \quad (31)$$

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Hi/L		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Hi/gT2		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	ds/L		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Kt

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.516 ^a	.266	.264	.150695925200279
2	.882 ^b	.778	.776	.083067005679967
3	.887 ^c	.786	.785	.081535286711850

a. Predictors: (Constant), Hi/L

b. Predictors: (Constant), Hi/L, Hi/gT2

c. Predictors: (Constant), Hi/L, Hi/gT2, ds/L

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.177	1	3.177	139.879	.000 ^a
	Residual	8.766	386	.023		
	Total	11.942	387			
2	Regression	9.286	2	4.643	672.870	.000 ^b
	Residual	2.657	385	.007		
	Total	11.942	387			
3	Regression	9.389	3	3.130	470.793	.000 ^c
	Residual	2.553	384	.007		
	Total	11.942	387			

a. Predictors: (Constant), Hi/L

b. Predictors: (Constant), Hi/L, Hi/gT2

c. Predictors: (Constant), Hi/L, Hi/gT2, ds/L

d. Dependent Variable: Kt

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.507	.020		25.776	.000
	Hi/L	-20.748	1.754	-.516	-11.827	.000
2	(Constant)	.350	.012		28.954	.000
	Hi/L	-32.928	1.050	-.819	-31.358	.000
	Hi/gT2	683.148	22.959	.777	29.755	.000
3	(Constant)	.258	.026		9.844	.000
	Hi/L	-33.007	1.031	-.820	-32.018	.000
	Hi/gT2	707.724	23.379	.805	30.272	.000
	ds/L	1.314	.333	.097	3.950	.000

a. Dependent Variable: Kt

Excluded Variables^d

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics	
					Tolerance	
1	h/L	.064 ^a	1.438	.151	.073	.956
	ds/h	-.159 ^a	-3.711	.000	-.186	1.000
	B/L	.110 ^a	2.473	.014	.125	.955
	ds/L	-.101 ^a	-2.318	.021	-.117	.992
	Hi/gT2	.777 ^a	29.755	.000	.835	.848
2	h/L	.076 ^b	3.118	.002	.157	.956
	ds/h	.073 ^b	2.913	.004	.147	.901
	B/L	.056 ^b	2.282	.023	.116	.950
	ds/L	.097 ^b	3.950	.000	.198	.921
3	h/L	.031 ^c	1.033	.302	.053	.631
	ds/h	-.054 ^c	-1.056	.292	-.054	.213
	B/L	.027 ^c	1.033	.302	.053	.841

a. Predictors in the Model: (Constant), Hi/L

b. Predictors in the Model: (Constant), Hi/L, Hi/gT2

c. Predictors in the Model: (Constant), Hi/L, Hi/gT2, ds/L

d. Dependent Variable: Kt

รูปสมการ

$$K_t = 14.979 \frac{Bh}{gd_s T^2} + 0.064 \quad (32)$$

Iteration History^b

Iteration Number ^a	Residual Sum of Squares	Parameter	
		C	A
1.0	1259.286	100.000	.300
1.1	1.369	14.979	.064
2.0	1.369	14.979	.064
2.1	1.369	14.979	.064

Derivatives are calculated numerically.

- a. Major iteration number is displayed to the left of the decimal, and minor iteration number is to the right of the decimal.
- b. Run stopped after 4 model evaluations and 2 derivative evaluations because the relative reduction between successive residual sums of squares is at most SSSCON = 1.00E-008.

Parameter Estimates

Parameter	Estimate	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
C	14.979	.274	14.440	15.519
A	.064	.005	.053	.074

Correlations of Parameter Estimates

	C	A
C	1.000	-.812
A	-.812	1.000

ANOVA^a

Source	Sum of Squares	df	Mean Squares
Regression	43.855	2	21.928
Residual	1.369	386	.004
Uncorrected Total	45.224	388	
Corrected Total	11.942	387	

Dependent variable: Kt

- a. R squared = 1 - (Residual Sum of Squares) / (Corrected Sum of Squares) = .885.

ประวัติผู้วิจัย

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ประวัติการศึกษา	
ระดับมัธยมศึกษา	ระโยคมัธยมศึกษาตอนปลาย โรงเรียนสาธิต มศว.ปทุมวัน
ระดับปริญญาตรี	วิศวกรรมศาสตรบัณฑิต สาขาวิชาวิศวกรรมโยธา จุฬาลงกรณ์มหาวิทยาลัย พ.ศ.2526
ระดับปริญญาโท	วิทยาศาสตรมหาบัณฑิต สาขาวิชาการจัดการการขนส่ง และโลจิสติกส์ มหาวิทยาลัยบูรพา พ.ศ. 2552 วิศวกรรมศาสตรมหาบัณฑิต สาขาวิชาเทคโนโลยีวิศวกรรมโยธา มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี พ.ศ. 2554
ทุนการศึกษา หรือทุนวิจัย	ทุนอุดหนุนสนับสนุนการวิจัยระดับบัณฑิตศึกษา ทบวงมหาวิทยาลัย ปีงบประมาณ 2554
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