

1 **SUPPLEMENTARY MATERIAL**

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4 **Table 1:** Emitters locations, discharges, status and section.

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Sprinkler No.	Actual distance from center (m)	Projected position on FO cable (m)	Actual Discharge (l min ⁻¹)	Emitter status	Section #
1	6.9	N/A	6.1	N/A	1
2	12.6	N/A	6.1	N/A	1
3	18.4	23.5	6.1	N/A	1
4	24.1	30.8	6.1	N/A	1
5	29.9	37.4	8.0	N/A	1
6	35.7	43.7	8.7	N/A	1
7	41.4	49.8	11.0	N/A	1
8	47.2	56.1	11.0	ON	2
9	52.2	61.3	12.1	ON	2
10	57.9	67.2	14.8	ON	2
11	63.7	73.0	15.9	ON	2
12	69.4	78.9	17.4	ON	2
13	75.2	84.7	15.9	OFF	2

Table 1 (Continued) Emitters locations, discharges, status and section

Sprinkler No.	Actual distance from center (m)	Projected position on FO cable (m)	Actual Discharge (l min ⁻¹)	Emitter status	Section #
14	79.0	88.6	13.3	ON	2
15	82.8	92.5	13.3	ON	2
16	86.7	96.4	14.8	ON	2
17	90.5	100.2	14.8	ON	2
18	94.3	104.1	15.9	ON	2
19	98.1	107.8	14.8	OFF	2
20	101.3	111.0	15.9	OFF	3
21	105.1	114.9	17.4	ON	3
22	108.9	118.3	17.4	Paired with 23	3
23	112.7	122.1	19.0	Paired with 22	3
24	116.6	126.5	19.0	OFF	3
25	120.4	129.8	20.5	Paired with 26	3
26	124.3	133.9	20.5	Paired with 25	3
27	128.1	138.2	22.0	OFF	3
28	131.9	141.6	22.0	Paired with 29	3
29	135.8	145.4	23.9	Paired with 28	3
30	139.6	149.3	23.9	Paired with 31	3

Table 1 (Continued) Emitters locations, discharges, status and section

Sprinkler No.	Actual distance from center (m)	Projected position on FO cable (m)	Actual Discharge (l min ⁻¹)	Emitter status	Section #
31	143.5	153.1	23.9	Paired with 30	3
32	147.2	157.3	22.0	OFF	3
33	150.4	160.5	22.0	OFF	4
34	154.2	164.4	25.4	ON	4
35	158.0	168.2	27.3	ON	4
36	161.8	172.0	27.3	OFF	4
37	165.7	175.9	27.3	ON	4
38	169.5	179.7	28.8	OFF	4
39	173.4	183.6	28.8	OFF	4
40	177.2	187.4	28.8	ON	4
41	181.0	191.2	31.1	ON	4
42	184.9	195.1	31.1	OFF	4
43	188.7	198.9	31.1	ON	4
44	192.5	202.8	33.0	OFF	4
45	196.3	206.5	28.8	ON	4
46	199.5	209.7	31.1	OFF	4
47	203.3	213.5	33.0	ON	4
48	207.1	217.4	34.9	OFF	4
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Table 1 (Continued) Emitters locations, discharges, status and section

Sprinkler No.	Actual distance from center (m)	Projected position on FO cable (m)	Actual Discharge (l min ⁻¹)	Emitter status	Section #
50	214.8	225.1	36.8	OFF	4
51	218.6	228.9	36.8	ON	4
52	222.5	232.7	36.8	OFF	4
53	226.3	236.6	38.3	ON	4
54	230.1	240.4	38.3	OFF	4

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Table 2: Time lag at maximum correlation level, maximum correlation value, maximum observed $\Delta\theta$ at the 30 cm depth, and section number for each position along the FO cable transect.

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
4.5	0.00	26	0.01	1
5	0.08	-22	0.01	1
5.5	0.13	15	0.01	1
6	0.33	-2	0.01	1
6.5	0.53	-3	0.02	1
7	0.30	-3	0.02	1
7.5	0.13	-10	0.03	1
8	0.17	-16	0.08	1
8.5	0.35	-4	0.18	1
9	0.30	-10	0.18	1
9.5	0.29	-10	0.10	1
10	0.50	-11	0.04	1
10.5	0.61	-10	0.02	1
11	0.65	-8	0.02	1
11.5	0.48	2	0.02	1
12	0.25	-16	0.02	1
12.5	0.34	11	0.02	1
13	0.39	8	0.03	1
13.5	0.51	6	0.02	1
14	0.27	-10	0.01	1
14.5	0.38	5	0.01	1
15	0.31	17	0.01	1
15.5	0.27	15	0.01	1
16	0.29	-10	0.02	1
16.5	0.30	14	0.02	1
17	0.37	-9	0.03	1
17.5	0.27	-6	0.02	1
18	0.17	-18	0.03	1
18.5	0.18	-18	0.04	1
19	0.31	-4	0.03	1
19.5	0.60	-4	0.04	1

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
20	0.66	0	0.02	1
20.5	0.62	0	0.02	1
21	0.37	-4	0.02	1
21.5	0.25	-5	0.02	1
22	0.27	-13	0.02	1
22.5	0.38	13	0.01	1
23	0.40	13	0.01	1
23.5	0.30	15	0.00	1
24	N/A	26	0.00	1
24.5	N/A	26	0.00	1
25	N/A	26	0.00	1
25.5	0.40	-1	0.01	1
26	0.08	-13	0.01	1
26.5	0.07	-12	0.02	1
27	0.40	5	0.01	1
27.5	0.31	5	0.01	1
28	0.33	6	0.01	1
28.5	0.44	5	0.01	1
29	0.35	6	0.00	1
29.5	0.45	4	0.01	1
30	0.45	3	0.01	1
30.5	0.29	4	0.01	1
31	0.38	-18	0.01	1
31.5	0.35	3	0.01	1
32	0.37	-19	0.02	1
32.5	0.34	-1	0.01	1
33	0.46	-1	0.01	1
33.5	0.33	4	0.01	1
34	0.25	-1	0.01	1
34.5	0.38	-2	0.01	1
35	0.12	8	0.01	1
35.5	0.20	8	0.01	1
36	0.19	-8	0.01	1
36.5	0.42	-8	0.01	1
37	0.35	3	0.01	1
37.5	0.18	18	0.01	1

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
38	0.00	-17	0.00	1
38.5	N/A	26	0.00	1
39	0.00	23	0.01	1
39.5	N/A	26	0.00	1
40	0.35	20	0.01	1
40.5	0.46	-1	0.01	1
41	0.37	-17	0.02	1
41.5	0.33	-2	0.02	1
42	0.57	8	0.01	1
42.5	0.59	8	0.00	1
43	0.64	4	0.00	1
43.5	0.48	8	0.01	1
44	0.37	0	0.01	1
44.5	0.38	-15	0.02	1
45	0.27	9	0.03	1
45.5	0.35	18	0.02	1
46	0.32	18	0.02	1
46.5	0.38	1	0.01	1
47	0.31	3	0.01	1
47.5	0.00	-7	0.01	1
48	0.00	-1	0.01	1
48.5	0.00	10	0.01	1
49	0.33	-2	0.01	1
49.5	0.35	-1	0.01	1
50	0.41	-11	0.02	1
50.5	0.67	0	0.03	1
51	0.85	0	0.03	1
51.5	0.94	0	0.02	1
52	0.92	0	0.02	1
52.5	0.874	0	0.01	2
53	0.667	0	0.01	2
53.5	0.540	1	0.01	2
54	0.560	-3	0.01	2
54.5	0.564	-3	0.01	2
55	0.742	-7	0.03	2
55.5	0.833	-1	0.05	2
56	0.870	-1	0.07	2
56.5	0.926	-1	0.09	2

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
57	0.948	1	0.10	2
57.5	0.921	0	0.10	2
58	0.903	0	0.11	2
58.5	0.915	0	0.12	2
59	0.906	0	0.14	2
59.5	0.902	0	0.15	2
60	0.948	0	0.16	2
60.5	0.905	-1	0.19	2
61	0.960	1	0.12	2
61.5	0.962	1	0.09	2
62	0.945	-2	0.07	2
62.5	0.963	-3	0.07	2
63	0.952	-3	0.05	2
63.5	0.939	-3	0.04	2
64	0.923	-2	0.04	2
64.5	0.906	-2	0.04	2
65	0.870	-2	0.04	2
65.5	0.877	-1	0.03	2
66	0.905	0	0.05	2
66.5	0.924	2	0.10	2
67	0.934	1	0.14	2
67.5	0.946	1	0.13	2
68	0.961	0	0.11	2
68.5	0.937	0	0.07	2
69	0.916	-2	0.05	2
69.5	0.907	0	0.04	2
70	0.929	0	0.04	2
70.5	0.953	0	0.05	2
71	0.962	0	0.07	2
71.5	0.978	0	0.10	2
72	0.971	0	0.11	2
72.5	0.946	0	0.11	2
73	0.933	0	0.10	2
73.5	0.936	0	0.08	2
74	0.930	0	0.06	2
74.5	0.930	1	0.04	2
75	0.827	1	0.02	2

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
75.5	0.510	6	0.01	2
76	0.500	1	0.01	2
76.5	0.686	1	0.01	2
77	0.872	0	0.02	2
77.5	0.950	0	0.06	2
78	0.954	1	0.11	2
78.5	0.958	2	0.25	2
79	0.913	2	0.37	2
79.5	0.920	2	0.23	2
80	0.939	1	0.13	2
80.5	0.971	0	0.10	2
81	0.960	0	0.07	2
81.5	0.900	0	0.06	2
82	0.866	0	0.03	2
82.5	0.522	3	0.01	2
83	0.667	2	0.01	2
83.5	0.522	2	0.01	2
84	0.404	3	0.01	2
84.5	0.588	3	0.03	2
85	0.611	-2	0.03	2
85.5	0.830	-3	0.02	2
86	0.773	-2	0.03	2
86.5	0.880	1	0.04	2
87	0.893	2	0.08	2
87.5	0.918	2	0.15	2
88	0.892	2	0.13	2
88.5	0.899	2	0.05	2
89	0.922	2	0.02	2
89.5	0.881	2	0.01	2
90	0.879	1	0.01	2
90.5	0.883	1	0.02	2
91	0.896	1	0.04	2
91.5	0.971	0	0.07	2
92	0.982	0	0.08	2
92.5	0.971	0	0.06	2
93	0.974	0	0.04	2
93.5	0.942	0	0.03	2

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
94	0.888	0	0.03	2
94.5	0.929	3	0.04	2
95	0.949	1	0.05	2
95.5	0.962	1	0.05	2
96	0.924	0	0.06	2
96.5	0.861	0	0.05	2
97	0.854	0	0.04	2
97.5	0.890	0	0.05	2
98	0.952	0	0.05	2
98.5	0.941	0	0.06	2
99	0.922	3	0.07	2
99.5	0.957	0	0.08	2
100	0.971	0	0.07	2
100.5	0.979	-1	0.06	2
101	0.956	-1	0.04	2
101.5	0.929	-3	0.03	2
102	0.889	-3	0.02	2
102.5	0.840	0	0.03	2
103	0.847	1	0.04	2
103.5	0.891	-1	0.05	2
104	0.921	0	0.05	2
104.5	0.893	1	0.03	2
105	0.718	4	0.02	2
105.5	0.566	5	0.02	2
106	0.480	-3	0.01	2
106.5	0.263	0	0.01	2
107	0.175	-10	0.01	2
107.5	0.105	-19	0.02	2
108	0.448	0	0.03	3
108.5	0.498	8	0.03	3
109	0.479	9	0.02	3
109.5	0.183	9	0.02	3
110	0.077	11	0.02	3
110.5	0.033	15	0.04	3
111	0.309	1	0.05	3
111.5	0.567	1	0.05	3

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
112	0.659	3	0.05	3
112.5	0.733	4	0.06	3
113	0.776	4	0.08	3
113.5	0.823	4	0.13	3
114	0.842	3	0.14	3
114.5	0.841	2	0.13	3
115	0.879	5	0.10	3
115.5	0.883	5	0.08	3
116	0.909	2	0.09	3
116.5	0.912	2	0.13	3
117	0.867	3	0.19	3
117.5	0.836	3	0.20	3
118	0.904	2	0.19	3
118.5	0.931	2	0.19	3
119	0.928	2	0.12	3
119.5	0.942	2	0.09	3
120	0.945	1	0.06	3
120.5	0.958	2	0.04	3
121	0.934	2	0.04	3
121.5	0.950	2	0.04	3
122	0.933	2	0.04	3
122.5	0.888	2	0.04	3
123	0.823	-1	0.04	3
123.5	0.733	-9	0.03	3
124	0.623	2	0.01	3
124.5	0.333	8	0.01	3
125	0.286	2	0.01	3
125.5	0.289	8	0.01	3
126	0.348	7	0.01	3
126.5	0.112	17	0.01	3
127	0.067	16	0.01	3
127.5	0.620	3	0.02	3
128	0.817	5	0.04	3
128.5	0.850	4	0.08	3
129	0.841	0	0.10	3
129.5	0.843	4	0.12	3
130	0.887	4	0.14	3
130.5	0.898	3	0.15	3

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
131	0.861	3	0.18	3
131.5	0.891	2	0.19	3
132	0.955	2	0.16	3
132.5	0.934	2	0.16	3
133	0.903	1	0.21	3
133.5	0.878	4	0.23	3
134	0.900	4	0.15	3
134.5	0.879	2	0.08	3
135	0.742	2	0.05	3
135.5	0.382	8	0.02	3
136	0.816	-4	0.01	3
136.5	0.354	-3	0.01	3
137	0.160	1	0.01	3
137.5	0.134	7	0.01	3
138	0.280	8	0.01	3
138.5	0.571	4	0.02	3
139	0.782	5	0.04	3
139.5	0.857	4	0.09	3
140	0.877	3	0.08	3
140.5	0.931	2	0.05	3
141	0.949	2	0.03	3
141.5	0.938	2	0.03	3
142	0.938	1	0.03	3
142.5	0.910	2	0.03	3
143	0.922	1	0.05	3
143.5	0.928	2	0.08	3
144	0.922	1	0.13	3
144.5	0.923	3	0.20	3
145	0.911	2	0.25	3
145.5	0.946	1	0.19	3
146	0.954	0	0.13	3
146.5	0.955	0	0.10	3
147	0.934	1	0.10	3
147.5	0.940	2	0.13	3
148	0.960	3	0.25	3
148.5	0.943	3	0.26	3
149	0.967	4	0.18	3
149.5	0.965	3	0.17	3

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
150	0.947	3	0.14	3
150.5	0.943	3	0.10	3
151	0.966	2	0.07	3
151.5	0.962	2	0.05	3
152	0.954	3	0.05	3
152.5	0.945	1	0.05	3
153	0.925	1	0.04	3
153.5	0.902	1	0.03	3
154	0.837	5	0.02	3
154.5	0.805	6	0.01	3
155	0.408	-11	0.01	3
155.5	0.286	-2	0.01	3
156	0.263	15	0.01	3
156.5	0.286	15	0.01	3
157	0.445	13	0.01	3
157.5	0.445	13	0.01	3
158	0.615	6	0.01	3
158.5	0.356	6	0.02	4
159	0.492	-12	0.02	4
159.5	0.627	-5	0.03	4
160	0.839	0	0.04	4
160.5	0.873	1	0.05	4
161	0.834	3	0.05	4
161.5	0.767	4	0.04	4
162	0.578	5	0.04	4
162.5	0.624	8	0.03	4
163	0.762	4	0.03	4
163.5	0.890	3	0.03	4
164	0.924	2	0.04	4
164.5	0.904	3	0.06	4
165	0.896	3	0.08	4
165.5	0.887	3	0.11	4
166	0.879	2	0.14	4
166.5	0.940	2	0.12	4
167	0.924	1	0.08	4
167.5	0.891	0	0.06	4
168	0.833	0	0.06	4
168.5	0.850	0	0.06	4

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
169	0.861	0	0.06	4
169.5	0.881	2	0.07	4
170	0.902	2	0.07	4
170.5	0.878	2	0.09	4
171	0.853	3	0.08	4
171.5	0.896	1	0.05	4
172	0.832	-2	0.03	4
172.5	0.738	-3	0.03	4
173	0.660	-3	0.03	4
173.5	0.747	-2	0.05	4
174	0.590	-2	0.06	4
174.5	0.696	1	0.07	4
175	0.778	7	0.07	4
175.5	0.767	8	0.07	4
176	0.854	4	0.10	4
176.5	0.822	4	0.13	4
177	0.825	1	0.10	4
177.5	0.770	1	0.05	4
178	0.564	0	0.02	4
178.5	0.404	5	0.01	4
179	0.169	5	0.01	4
179.5	0.204	5	0.01	4
180	0.333	14	0.01	4
180.5	0.316	17	0.01	4
181	0.213	16	0.01	4
181.5	0.540	-7	0.02	4
182	0.655	-7	0.03	4
182.5	0.632	-7	0.04	4
183	0.535	2	0.05	4
183.5	0.638	2	0.05	4
184	0.742	2	0.05	4
184.5	0.837	0	0.06	4
185	0.847	4	0.09	4
185.5	0.920	2	0.17	4
186	0.969	2	0.30	4
186.5	0.965	2	0.34	4
187	0.916	2	0.41	4
187.5	0.920	2	0.25	4

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
188	0.922	2	0.18	4
188.5	0.914	1	0.14	4
189	0.916	0	0.11	4
189.5	0.939	1	0.09	4
190	0.933	1	0.07	4
190.5	0.935	2	0.06	4
191	0.889	2	0.07	4
191.5	0.888	4	0.08	4
192	0.873	2	0.08	4
192.5	0.848	3	0.07	4
193	0.909	4	0.05	4
193.5	0.879	4	0.04	4
194	0.895	3	0.03	4
194.5	0.872	1	0.04	4
195	0.867	3	0.04	4
195.5	0.869	4	0.05	4
196	0.818	4	0.05	4
196.5	0.841	4	0.07	4
197	0.843	-1	0.09	4
197.5	0.876	3	0.11	4
198	0.912	3	0.11	4
198.5	0.928	2	0.11	4
199	0.920	0	0.10	4
199.5	0.941	0	0.09	4
200	0.925	0	0.09	4
200.5	0.930	1	0.09	4
201	0.933	0	0.07	4
201.5	0.899	0	0.06	4
202	0.878	0	0.04	4
202.5	0.892	1	0.03	4
203	0.809	0	0.02	4
203.5	0.808	3	0.02	4
204	0.791	0	0.03	4
204.5	0.700	0	0.03	4
205	0.735	0	0.04	4
205.5	0.722	0	0.05	4
206	0.782	6	0.05	4
206.5	0.811	2	0.05	4

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
207	0.828	4	0.06	4
207.5	0.819	4	0.07	4
208	0.803	6	0.07	4
208.5	0.833	4	0.06	4
209	0.769	4	0.06	4
209.5	0.724	3	0.06	4
210	0.773	3	0.07	4
210.5	0.776	3	0.08	4
211	0.851	3	0.10	4
211.5	0.898	3	0.11	4
212	0.912	3	0.08	4
212.5	0.895	4	0.05	4
213	0.838	4	0.06	4
213.5	0.855	1	0.06	4
214	0.811	1	0.08	4
214.5	0.842	1	0.10	4
215	0.868	1	0.13	4
215.5	0.877	1	0.17	4
216	0.884	7	0.20	4
216.5	0.866	7	0.19	4
217	0.864	7	0.19	4
217.5	0.777	4	0.14	4
218	0.629	5	0.10	4
218.5	0.773	7	0.10	4
219	0.838	5	0.09	4
219.5	0.901	5	0.06	4
220	0.907	4	0.04	4
220.5	0.884	4	0.03	4
221	0.809	4	0.04	4
221.5	0.856	4	0.05	4
222	0.785	3	0.10	4
222.5	0.704	4	0.15	4
223	0.702	3	0.13	4
223.5	0.644	4	0.09	4
224	0.680	7	0.09	4
224.5	0.666	7	0.08	4
225	0.731	7	0.08	4
225.5	0.817	5	0.11	4

Position (m)	Corr. Coef.	Time Lag (h)	Max $\Delta\theta$ (m³/m³)	Section
226	0.938	3	0.12	4
226.5	0.963	2	0.12	4
227	0.961	2	0.11	4
227.5	0.939	2	0.11	4
228	0.883	2	0.13	4
228.5	0.892	2	0.14	4
229	0.696	6	0.10	4
229.5	0.626	5	0.07	4
230	0.572	0	0.06	4
230.5	0.383	6	0.06	4
231	0.055	11	0.07	4
231.5	0.021	11	0.07	4
232	0.074	15	0.07	4
232.5	0.220	14	0.08	4
233	0.662	9	0.12	4
233.5	0.856	9	0.20	4
234	0.840	6	0.24	4
234.5	0.856	5	0.21	4
235	0.875	4	0.17	4
235.5	0.891	4	0.18	4
236	0.879	4	0.17	4
236.5	1.000	0	0.01	4
237	1.000	0	0.01	4
237.5	1.000	0	0.01	4
238	1.000	0	0.01	4
238.5	1.000	0	0.01	4
239	1.000	0	0.01	4
239.5	N/A	26	0.00	4
240	N/A	26	0.00	4
240.5	N/A	26	0.00	4

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44 **Figure 1** Photograph from September 2007 showing the “lift-plow” in operation.

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47 **Figure 2** Bagged emitters in Section 2.

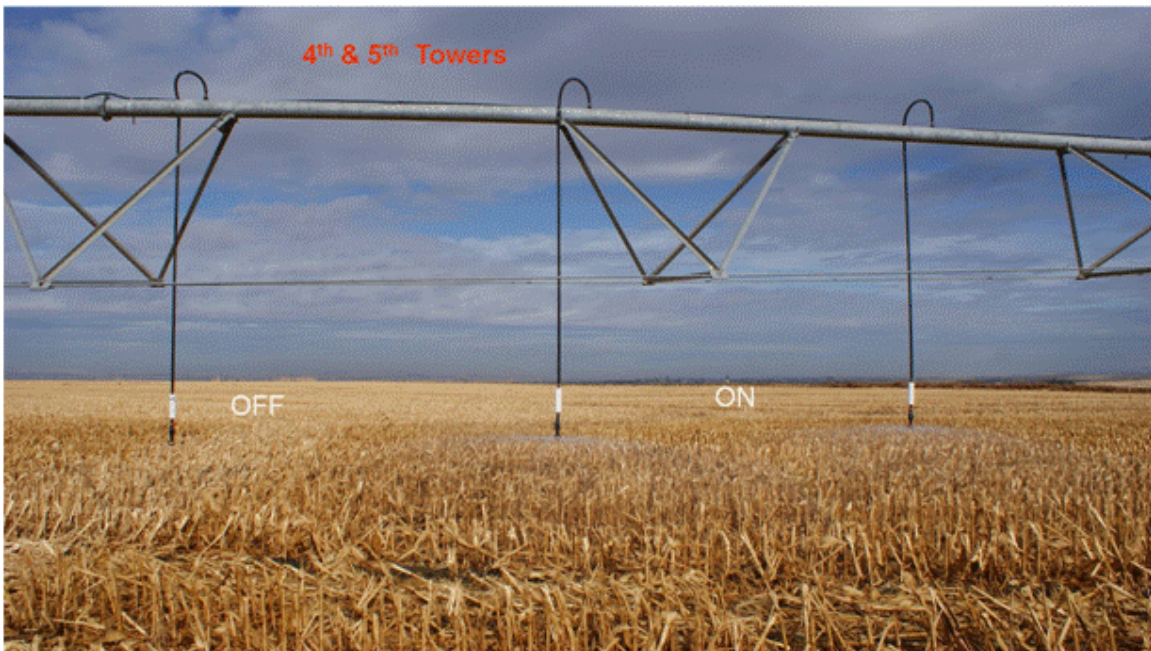
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50 **Figure 3** A pair of emitters joined in Section 3.

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53 **Figure 4** Example of emitters status in Section 4.

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