



National Transportation Safety Board

**Office of Aviation Safety
Washington, D.C. 20594-2000
October 24, 2016**

**ATTACHMENT 4 to the WEATHER STUDY
CEN16FA276**

Total lightning activity detected by the Vaisala's National Lightning Detection Network in the accident region between 1030 and 1200 CDT.

*Submitted by: Mike Richards
NTSB, AS-30*

<u>Date</u>	<u>Time(UTC)</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Peak Current (kilo-amps, with polarity)</u>	<u>C=cloud pulse, G=cloud-to-ground stroke)</u>
7/21/2016	16:31:23	41.5323	-88.1152	8.7	C
7/21/2016	16:31:23	41.5338	-88.1205	4	C
7/21/2016	16:31:50	41.4631	-88.1498	5.9	C
7/21/2016	16:32:27	41.5155	-88.0848	8.2	C
7/21/2016	16:32:27	41.5156	-88.079	3.5	C
7/21/2016	16:33:05	41.5187	-88.0784	16.5	C
7/21/2016	16:33:45	41.5545	-88.0799	-8.4	C
7/21/2016	16:34:00	41.5176	-88.0991	4.5	C
7/21/2016	16:34:20	41.5083	-88.0641	2.6	C
7/21/2016	16:34:40	41.5166	-88.0871	-6.6	C
7/21/2016	16:34:51	41.5184	-88.1112	7.7	C
7/21/2016	16:35:35	41.5208	-88.0869	9.2	C
7/21/2016	16:35:35	41.5068	-88.0629	-4.5	C
7/21/2016	16:36:06	41.5197	-88.0883	6.7	C
7/21/2016	16:36:06	41.5225	-88.0856	8.3	C
7/21/2016	16:36:06	41.5221	-88.0792	-9.2	G
7/21/2016	16:36:06	41.5202	-88.0892	4.1	C
7/21/2016	16:36:06	41.5277	-88.083	-3.1	G
7/21/2016	16:36:21	41.5342	-88.1091	4	C
7/21/2016	16:36:21	41.4976	-88.0763	-3.7	C
7/21/2016	16:36:46	41.5158	-88.0932	8	C
7/21/2016	16:37:18	41.5047	-88.0665	6.8	C
7/21/2016	16:37:18	41.5109	-88.0934	3.9	C
7/21/2016	16:37:58	41.5079	-88.0934	10.6	C
7/21/2016	16:37:58	41.4848	-88.1135	-73.4	G
7/21/2016	16:37:58	41.4847	-88.1132	-5.8	G
7/21/2016	16:37:58	41.4849	-88.1136	-38.3	G
7/21/2016	16:38:28	41.5208	-88.1243	5.5	C
7/21/2016	16:38:29	41.5559	-88.1677	-29.4	G
7/21/2016	16:38:49	41.5141	-88.199	-29.1	G
7/21/2016	16:40:02	41.5	-88.0673	4.9	C
7/21/2016	16:40:19	41.5287	-88.0532	5.6	C
7/21/2016	16:40:19	41.5068	-88.0769	3.2	C
7/21/2016	16:40:33	41.5038	-88.0907	4.6	C
7/21/2016	16:41:01	41.5249	-88.0438	11.1	C
7/21/2016	16:41:02	41.5233	-88.0471	3.4	C
7/21/2016	16:41:19	41.5034	-88.0456	3.1	C
7/21/2016	16:42:13	41.5249	-88.0264	4.9	C
7/21/2016	16:42:13	41.5261	-88.0254	7	C
7/21/2016	16:42:13	41.5248	-88.0295	5.6	C
7/21/2016	16:42:13	41.5257	-88.0306	10.1	C
7/21/2016	16:42:13	41.5201	-88.0266	5.8	C
7/21/2016	16:42:52	41.5214	-88.0122	15.7	C
7/21/2016	16:42:52	41.5209	-88.017	12.4	C
7/21/2016	16:42:52	41.5212	-88.0152	8	C
7/21/2016	16:42:52	41.5208	-88.0244	-3.8	C
7/21/2016	16:42:52	41.5177	-88.0168	6.2	C
7/21/2016	16:43:41	41.502	-88.046	5.6	C
7/21/2016	16:43:59	41.5321	-88.1192	-36	G
7/21/2016	16:44:38	41.5173	-88.0437	5	C
7/21/2016	16:44:38	41.5152	-88.0452	7.3	C
7/21/2016	16:44:38	41.5216	-88.0378	6.4	C
7/21/2016	16:44:38	41.5163	-88.0408	6.3	C
7/21/2016	16:44:38	41.5177	-88.022	3.8	C

7/21/2016	16:45:07	41.5122	-88.0095	6.5	C
7/21/2016	16:45:07	41.5132	-88.0105	4.7	C
7/21/2016	16:45:07	41.5823	-87.9817	-24.7	G
7/21/2016	16:45:07	41.5815	-87.9805	-8.6	G
7/21/2016	16:45:26	41.5214	-88.0049	5.8	C
7/21/2016	16:45:26	41.5207	-88.0054	4.5	C
7/21/2016	16:45:39	41.4906	-88.0147	6.6	C
7/21/2016	16:45:53	41.5169	-87.9953	4.4	C
7/21/2016	16:46:11	41.529	-88.0266	5.9	C
7/21/2016	16:46:31	41.5056	-88.0012	7.6	C
7/21/2016	16:47:18	41.5146	-88.0006	4.7	C
7/21/2016	16:47:56	41.4994	-87.9879	7.3	C
7/21/2016	16:47:56	41.4986	-87.9853	6.1	C
7/21/2016	16:47:56	41.4979	-87.984	14.2	C
7/21/2016	16:47:56	41.5064	-88.0078	16.6	C
7/21/2016	16:48:45	41.5251	-88.0105	6.8	C
7/21/2016	16:49:08	41.5124	-87.9934	4.3	C
7/21/2016	16:49:09	41.5053	-88.0035	5.9	C
7/21/2016	16:49:25	41.527	-87.991	9.5	C
7/21/2016	16:49:43	41.4977	-87.9875	4.1	C
7/21/2016	16:49:43	41.5013	-87.9887	6.5	C
7/21/2016	16:49:59	41.5363	-88.019	4.2	C
7/21/2016	16:50:12	41.513	-88.0197	-19.4	G
7/21/2016	16:50:12	41.5389	-87.9722	-12.5	G
7/21/2016	16:50:12	41.4997	-87.9967	-12.1	G
7/21/2016	16:50:12	41.5369	-87.9731	-8.6	G
7/21/2016	16:50:13	41.5365	-87.9731	-15.7	G
7/21/2016	16:50:51	41.4948	-87.9776	7	C
7/21/2016	16:51:10	41.5295	-87.9839	19.1	G
7/21/2016	16:51:27	41.515	-87.9839	3.9	C
7/21/2016	16:51:28	41.4874	-87.999	-3.3	C
7/21/2016	16:51:41	41.5468	-87.9827	4.6	C
7/21/2016	16:51:41	41.5329	-87.9838	4.8	C
7/21/2016	16:51:52	41.5476	-87.9857	6.4	C
7/21/2016	16:53:05	41.5086	-87.9661	8.2	C
7/21/2016	16:53:21	41.521	-87.9801	3.8	C
7/21/2016	16:53:21	41.5197	-87.9772	4.5	C
7/21/2016	16:53:53	41.5643	-87.9461	-7.4	C
7/21/2016	16:54:13	41.5634	-87.9585	-3.9	C
7/21/2016	16:54:23	41.5555	-87.9812	10.3	C
7/21/2016	16:54:52	41.6527	-88.0184	-5	G
7/21/2016	16:55:10	41.5392	-87.9407	-6	C
7/21/2016	16:55:28	41.5478	-87.962	5.8	C
7/21/2016	16:55:29	41.5475	-87.9487	-6.9	C
7/21/2016	16:55:29	41.6146	-87.9453	-18.3	G
7/21/2016	16:55:29	41.0912	-88.525	-8.5	G
7/21/2016	16:55:29	41.5667	-87.9881	-8.4	G
7/21/2016	16:55:29	41.5812	-87.9616	3.9	C
7/21/2016	16:55:29	41.615	-87.9452	-5.8	G
7/21/2016	16:55:45	41.5571	-87.9438	4.5	C
7/21/2016	16:55:55	41.5282	-87.956	10.3	C
7/21/2016	16:56:17	41.5573	-87.9682	3.2	C
7/21/2016	16:56:22	41.5357	-87.9451	7.3	C
7/21/2016	16:56:22	41.5353	-87.9472	5.1	C
7/21/2016	16:56:22	41.5375	-87.9452	7.2	C

7/21/2016	16:56:38	41.5268	-87.9533	5.9	C
7/21/2016	16:56:44	41.5354	-87.9435	7.6	C
7/21/2016	16:56:58	41.5288	-87.9332	4.6	C
7/21/2016	16:56:58	41.5192	-87.9523	5.7	C
7/21/2016	16:57:05	41.4711	-88.0567	5.4	G
7/21/2016	16:57:34	41.5352	-87.9563	4.7	C
7/21/2016	16:57:34	41.5417	-87.9557	6.9	C
7/21/2016	16:57:39	41.5512	-87.9216	7.5	C
7/21/2016	16:57:46	41.5277	-87.9353	4.9	C
7/21/2016	16:57:55	41.5248	-87.9314	3.5	C
7/21/2016	16:57:55	41.5226	-87.9299	-4.7	C
7/21/2016	16:58:11	41.5421	-87.9436	6.8	C
7/21/2016	16:58:11	41.5465	-87.9431	3.1	C
7/21/2016	16:58:15	41.5366	-87.9343	8.9	C
7/21/2016	16:58:20	41.5282	-87.9481	4.2	C
7/21/2016	16:58:32	41.5415	-87.9312	5.4	C
7/21/2016	16:58:40	41.5532	-87.9346	8.5	C
7/21/2016	16:58:44	41.5416	-87.9493	4.5	C
7/21/2016	16:58:50	41.5429	-87.9437	8.1	C
7/21/2016	16:58:51	41.5377	-87.9559	5.1	C
7/21/2016	16:59:08	41.5532	-87.9292	6	C
7/21/2016	16:59:08	41.5713	-87.9484	4.4	C
7/21/2016	16:59:14	41.5455	-87.929	3.2	C
7/21/2016	16:59:14	41.5283	-87.9263	2.7	C
7/21/2016	16:59:26	41.5361	-87.9614	-3.5	C
7/21/2016	16:59:26	41.5329	-87.9925	-18.2	G
7/21/2016	16:59:30	41.5452	-87.9399	3.3	C
7/21/2016	16:59:30	41.541	-87.9352	7.7	C
7/21/2016	16:59:38	41.5337	-87.9362	6.6	C
7/21/2016	16:59:38	41.5341	-87.9393	3.1	C
7/21/2016	16:59:43	41.561	-87.9321	4	C
7/21/2016	16:59:44	41.5156	-87.9415	6.5	C
7/21/2016	16:59:58	41.5497	-87.9537	-6.1	C