

Joel J. Kinlow

W G L B ( A M ), 1560 KHz, Elm Grove, Wisconsin  
FCC Form 301 Section III-A #10c Supporting Exhibit 19  
Critical Hours Study, November 2014

Mueller Broadcast Design

613 S. La Grange Road  
La Grange, Illinois 60525  
(708) 352-2166

WQEW 100 uV/m Groundwave Contour Points				WGLB TO WQEW Referenced to 100 mV/m at 1 KM				
Point ID	Kilometers	Coordinates		Kilometers	Bearing	Theta	Max Rad.	Proposed
WQEW-0°	172.71	42-16-12	/ 73-54-54	1156.4	89.3°	9.1°	316.90	251.22
WQEW-5°	172.90	42-15-56	/ 73-44-03	1171.2	89.2°	8.9°	322.10	251.40
WQEW-10°	169.02	42-12-47	/ 73-33-40	1186.2	89.3°	8.7°	327.28	251.58
WQEW-15°	152.84	42-02-36	/ 73-26-18	1199.3	90.2°	8.6°	331.59	251.72
WQEW-20°	139.35	41-53-34	/ 73-20-30	1210.2	90.9°	8.4°	332.81	251.84
WQEW-25°	139.35	41-51-01	/ 73-12-23	1222.1	91.0°	8.3°	341.48	251.97
WQEW-30°	141.06	41-48-44	/ 73-03-59	1234.3	91.1°	8.2°	346.56	252.09
WQEW-35°	148.57	41-48-24	/ 72-53-21	1248.8	91.0°	8.0°	352.49	252.23
WQEW-40°	164.09	41-50-25	/ 72-38-39	1268.0	90.6°	7.8°	360.20	252.42
WQEW-45°	180.69	41-51-20	/ 72-22-28	1289.6	90.4°	7.6°	369.01	252.61
WQEW-50°	198.99	41-51-09	/ 72-04-36	1313.9	90.2°	7.3°	379.77	252.82
WQEW-55°	220.84	41-50-08	/ 71-44-01	1342.1	90.0°	7.1°	392.66	253.04
WQEW-60°	229.72	41-43-30	/ 71-31-11	1361.9	90.4°	6.9°	402.10	253.19
WQEW-65°	261.02	41-40-26	/ 71-04-06	1399.7	90.3°	6.5°	419.56	253.46
WQEW-70°	300.70	41-35-31	/ 70-31-06	1446.3	90.3°	6.1°	443.71	253.75
WQEW-75°	122.15	40-59-33	/ 72-30-41	1300.1	94.6°	7.5°	375.71	252.70
WQEW-80°	122.41	40-53-56	/ 72-28-58	1305.1	95.1°	7.4°	378.32	252.74
WQEW-85°	150.65	40-49-15	/ 72-08-01	1335.8	95.1°	7.1°	392.48	252.99
WQEW-90°	294.47	40-39-50	/ 70-25-29	1479.0	94.2°	5.8°	462.75	253.94
WQEW-95°	384.07	40-19-38	/ 69-24-05	1572.6	94.6°	5.1°	516.59	254.40
WQEW-100°	429.02	39-56-23	/ 68-57-31	1621.5	95.7°	4.7°	550.21	254.61
WQEW-105°	455.76	39-32-26	/ 68-46-49	1650.4	97.0°	4.5°	573.22	254.72
WQEW-110°	463.19	39-10-48	/ 68-51-54	1657.6	98.4°	4.5°	580.44	254.75
WQEW-115°	458.52	38-52-21	/ 69-06-54	1650.1	99.8°	4.5°	576.90	254.72
WQEW-120°	448.28	38-36-46	/ 69-26-52	1634.7	101.1°	4.6°	567.57	254.66
WQEW-125°	469.69	38-12-29	/ 69-30-47	1647.8	102.6°	4.5°	580.63	254.71
WQEW-130°	499.32	37-44-46	/ 69-34-01	1665.7	104.3°	4.4°	598.75	254.77
WQEW-135°	552.66	37-06-56	/ 69-30-39	1702.4	106.4°	4.1°	636.01	254.90
WQEW-140°	614.17	36-23-54	/ 69-30-30	1741.8	108.7°	3.9°	684.44	255.02
WQEW-145°	687.80	35-33-50	/ 69-33-35	1787.0	111.4°	3.6°	742.64	255.15
WQEW-150°	694.89	35-14-18	/ 70-05-46	1766.8	113.3°	3.7°	732.08	255.09
WQEW-155°	659.51	35-17-54	/ 70-50-59	1706.9	114.4°	4.1°	675.88	254.91
WQEW-160°	656.21	35-08-35	/ 71-27-08	1672.7	116.0°	4.4°	651.04	254.80
WQEW-165°	585.65	35-36-57	/ 72-14-33	1583.9	116.0°	5.0°	575.31	254.45
WQEW-170°	556.86	35-46-44	/ 72-50-48	1529.1	116.6°	5.4°	539.94	254.20
WQEW-175°	561.77	35-40-54	/ 73-22-33	1497.4	118.0°	5.7°	521.30	254.04

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Point ID	Kilometers	Coordinates		Kilometers	Bearing	Theta	Max Rad.	Proposed
WQEW-180°	563.56	35-38-51	/ 73-55-19	1460.8	119.3°	6.0°	502.90	253.84
WQEW-185°	562.10	35-40-43	/ 74-27-35	1420.7	120.5°	6.3°	481.32	253.59
WQEW-190°	212.14	38-50-12	/ 74-20-35	1238.4	107.4°	8.1°	362.07	252.13
WQEW-195°	121.00	39-39-53	/ 74-17-01	1205.0	103.3°	8.5°	343.57	251.78
WQEW-200°	120.27	39-41-56	/ 74-23-55	1194.4	103.3°	8.6°	339.31	251.67
WQEW-205°	118.89	39-44-45	/ 74-30-20	1184.0	103.3°	8.7°	335.67	251.55
WQEW-210°	123.30	39-45-14	/ 74-38-21	1173.1	103.4°	8.9°	331.96	251.42
WQEW-215°	130.84	39-44-57	/ 74-47-45	1160.9	103.7°	9.0°	327.99	251.28
WQEW-220°	134.55	39-47-06	/ 74-55-48	1148.8	103.7°	9.2°	323.75	251.13
WQEW-225°	134.31	39-51-25	/ 75-01-50	1137.8	103.5°	9.3°	319.69	250.99
WQEW-230°	137.83	39-54-47	/ 75-09-22	1125.6	103.4°	9.4°	319.59	250.83
WQEW-235°	139.96	39-59-12	/ 75-15-49	1114.0	103.2°	9.6°	311.05	250.67
WQEW-240°	148.76	40-02-15	/ 75-25-53	1098.6	103.2°	9.8°	305.52	250.46
WQEW-245°	155.34	40-06-51	/ 75-34-25	1084.3	103.0°	10.0°	301.34	250.24
WQEW-250°	160.71	40-12-30	/ 75-41-48	1070.7	102.7°	10.2°	297.26	250.04
WQEW-255°	165.25	40-18-59	/ 75-48-03	1058.2	102.3°	10.3°	293.40	249.84
WQEW-260°	168.12	40-26-15	/ 75-52-28	1047.7	101.7°	10.5°	289.94	249.67
WQEW-265°	171.66	40-33-51	/ 75-56-34	1037.6	101.1°	10.6°	286.60	249.50
WQEW-270°	171.25	40-41-55	/ 75-56-59	1032.2	100.3°	10.7°	284.41	249.41
WQEW-275°	166.05	40-49-48	/ 75-53-04	1033.0	99.4°	10.7°	283.93	249.42
WQEW-280°	161.50	40-57-12	/ 75-48-44	1034.7	98.6°	10.7°	283.82	249.45
WQEW-285°	157.80	41-04-11	/ 75-44-11	1037.1	97.8°	10.6°	283.92	249.49
WQEW-290°	156.57	41-11-06	/ 75-40-35	1038.5	97.1°	10.6°	283.89	249.52
WQEW-295°	158.79	41-18-27	/ 75-38-28	1037.8	96.3°	10.6°	283.24	249.51
WQEW-300°	160.52	41-25-35	/ 75-35-08	1039.1	95.5°	10.6°	283.16	249.53
WQEW-305°	161.88	41-32-27	/ 75-30-41	1042.1	94.7°	10.6°	283.57	249.58
WQEW-310°	163.03	41-38-58	/ 75-25-16	1046.7	94.0°	10.5°	284.41	249.65
WQEW-315°	163.87	41-45-01	/ 75-18-53	1053.0	93.3°	10.4°	285.82	249.76
WQEW-320°	164.08	41-50-24	/ 75-11-28	1061.0	92.7°	10.3°	287.68	249.89
WQEW-325°	164.76	41-55-30	/ 75-03-37	1069.8	92.0°	10.2°	289.68	250.03
WQEW-330°	166.10	42-00-22	/ 74-55-23	1079.3	91.5°	10.0°	292.00	250.17
WQEW-335°	174.29	42-08-02	/ 74-48-40	1086.0	90.6°	10.0°	293.35	250.27
WQEW-340°	173.86	42-11-02	/ 74-38-22	1099.0	90.2°	9.8°	296.62	250.46
WQEW-345°	173.60	42-13-25	/ 74-27-49	1112.6	89.9°	9.6°	301.33	250.65
WQEW-350°	173.01	42-14-54	/ 74-16-58	1126.9	89.6°	9.4°	306.46	250.85
WQEW-355°	172.75	42-15-51	/ 74-06-03	1141.4	89.4°	9.2°	311.62	251.04