

Exhibit 18.1 Proposed Allocation Study

Munn-Reese, Inc.
Coldwater, MI 49036

Exhibit 18.1 - Tabulation of Proposed Allocation Study

REFERENCE		CH# 215C1 - 90.9 MHz, Pwr= 100 kW DA, HAAT= 79.7 M, COR= 374 M								DISPLAY DATES	
45 53 05.0 N.		Average Protected F(50-50)= 46.69 km								DATA	06-06-13
87 29 19.0 W.		Standard Directional								SEARCH	06-07-13
CH	CALL	TYPE	ANT	AZI	DIST	LAT	PWR(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY		STATE		<--	FILE #	LNG	HAAT(M)	COR(M)	LICENSEE	(Overlap	in km)
215C1	WUPJ	CP	DVX	115.6	0.28	45 53 01.0	100.000	85.4	22.4	-137.0*	-169.4*
Escanaba		MI		295.6	BNPED20071018AKU	87 29 07.0	66	360	West Central Michigan Medi		
215C2	WTCK	LIC	DCX	101.7	195.60	45 30 05.2	5.500	116.2	47.4	27.7	0.9
Charlevoix		MI		283.5	BLED20120511ABC	85 01 48.7	304	540	Baraga Broadcasting, Inc.		
214C3	WMVM	LIC	_CX	260.5	72.49	45 46 23.0	7.000	49.6	32.5	3.7	12.0
Goodman		WI		79.8	BLED20041122AAF	88 24 38.0	87	525	Wrvn, Inc.		
268C1	WJNR-FM«	LIC	_CX	260.8	43.61	45 49 16.0	100.000	3.4	35.6	33.5R	10.1M
Iron Mountain		MI		80.4	BLH20040213ABR	88 02 34.0	187	532	Results Broadcasting Of Ir		
215B	AL4199	AL	___	72.7	253.41	46 31 00.0	50.000	177.5	65.0	27.2	10.2
Sault Ste Marie		ON		255.0		84 20 00.0	150	386			
215C0	WHRM	LIC	_CY	238.8	202.59	44 55 14.0	82.000	168.9	71.6	12.9	60.2
Wausau		WI		57.3	BLED20031023AAF	89 41 28.0	329	715	State of Wisconsin - Educa		
216C1	WGGL-FM	LIC	_C_	324.6	157.82	47 02 08.0	100.000	103.8	71.3	18.8	28.8
Houghton		MI		143.7	BMLED19961108KA	88 41 43.0	262	564	Minnesota Public Radio		
218A	WVCM	LIC	DVX	260.8	43.30	45 49 15.0	0.500	0.3	9.7	23.8	31.7
Iron Mountain		MI		80.4	BLED20020327ABE	88 02 25.0	183	525	Vcy America, Inc.		
218A	WUPX	LIC	_CX	0.2	70.01	46 30 52.0	1.700	1.9	20.2	25.7	45.3
Marquette		MI		180.2	BLED20120418ACM	87 29 07.0	133	470	Board Of Trustees Of North		
213C1	WPFF	LIC	_CN	175.1	109.43	44 54 14.0	100.000	8.4	64.5	59.0	40.4
Sturgeon Bay		WI		355.2	BLED19950914KA	87 22 13.0	195	390	Bethesda Christian Broadca		

Terrain database is NGDC 30 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
 Contour distances are on direct line to and from reference station. Reference zone= - Zone 2, Co to 3rd adjacent.
 All separation margins (if shown) include rounding
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
 "*"affixed to 'IN' or 'OUT' values = site inside protected contour.
 « = Station meets FCC minimum distance spacing for its class.
 < = Contour Overlap
 Reference station has protected zone issue:

Exhibit 18.2

Protection to WTCK - Charlevoix, MI

Protection to WTCK - Charlevoix, MI
West Central Michigan Media Ministries

FMCommander Single Allocation Study - 06-11-2013 - NGDC 30 SEC
WUPJ.C's Overlaps (In= 27.67 km, Out= 0.95 km)

WUPJ.C CH 215 C1 DA
Lat= 45 53 05.0, Lng= 87 29 19.0
100.0 kW 79.7 M HAAT, 374 M COR
Prot.= 60 dBu, Intef.= 40 dBu

WTCK CH 215 C2 DA BLED20120511ABC
Lat= 45 30 05.2, Lng= 85 01 48.7
5.5 kW 303.6 M HAAT, 539.6 M COR
Prot.= 60 dBu, Intef.= 40 dBu



Exhibit 18.2

FMOver Study for WTCK

06-11-2013 Terrain Data: NGDC 30 SEC FMOver Analysis

WUPJ.C

WTCK BLED20120511ABC

Channel = 215C1
Max ERP = 100 kW
RCAMSL = 374 M
N. Lat. 45 53 05.0
W. Lng. 87 29 19.0
Protected
60 dBu

Channel = 215C2
Max ERP = 5.5 kW
RCAMSL = 539.6 M
N. Lat. 45 30 05.2
W. Lng. 85 01 48.7
Interfering
40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
042.0	100.0000	0076.9	046.1	296.4	005.5000	0335.1	177.3	27.21	
043.0	100.0000	0076.9	046.1	296.4	005.5000	0335.2	176.4	27.36	
044.0	100.0000	0077.1	046.1	296.3	005.5000	0335.3	175.7	27.51	
045.0	100.0000	0077.6	046.2	296.2	005.5000	0335.3	174.9	27.65	
046.0	100.0000	0078.2	046.4	296.2	005.5000	0335.4	174.1	27.79	
047.0	100.0000	0079.0	046.5	296.1	005.5000	0335.4	173.3	27.94	
048.0	100.0000	0080.0	046.8	296.1	005.5000	0335.5	172.4	28.09	
049.0	100.0000	0081.1	047.0	296.1	005.5000	0335.5	171.6	28.24	
050.0	100.0000	0082.2	047.2	296.0	005.5000	0335.5	170.8	28.39	
051.0	100.0000	0083.2	047.4	296.0	005.5000	0335.6	169.9	28.54	
052.0	100.0000	0083.9	047.6	295.9	005.5000	0335.7	169.1	28.68	
053.0	100.0000	0084.5	047.7	295.8	005.5000	0335.8	168.3	28.82	
054.0	100.0000	0085.1	047.9	295.7	005.5000	0335.9	167.5	28.97	
055.0	100.0000	0085.9	048.0	295.6	005.5000	0336.0	166.7	29.11	
056.0	100.0000	0086.8	048.2	295.5	005.5000	0336.0	165.9	29.26	
057.0	100.0000	0087.6	048.4	295.4	005.5000	0336.1	165.1	29.40	
058.0	100.0000	0088.2	048.5	295.3	005.5000	0336.3	164.4	29.54	
059.0	100.0000	0088.6	048.6	295.1	005.5000	0336.4	163.6	29.68	
060.0	100.0000	0088.9	048.7	294.9	005.5000	0336.5	162.9	29.81	
061.0	100.0000	0089.2	048.7	294.8	005.5000	0336.7	162.2	29.94	
062.0	100.0000	0089.5	048.8	294.6	005.5000	0336.8	161.5	30.07	
063.0	100.0000	0089.6	048.8	294.4	005.5000	0337.0	160.8	30.20	
064.0	100.0000	0089.6	048.8	294.2	005.5000	0337.1	160.2	30.32	
065.0	100.0000	0089.5	048.8	294.0	005.5000	0337.3	159.6	30.44	
066.0	100.0000	0089.2	048.7	293.8	005.5000	0337.5	159.0	30.55	
067.0	100.0000	0089.1	048.7	293.6	005.5000	0337.6	158.4	30.66	
068.0	100.0000	0089.4	048.8	293.4	005.5000	0337.8	157.8	30.78	
069.0	100.0000	0089.9	048.9	293.2	005.5000	0337.9	157.1	30.91	
070.0	100.0000	0090.6	049.0	293.0	005.5000	0338.1	156.4	31.04	
071.0	100.0000	0091.2	049.1	292.8	005.5000	0338.2	155.8	31.17	
072.0	100.0000	0091.6	049.2	292.5	005.5000	0338.4	155.2	31.29	
073.0	100.0000	0092.0	049.3	292.3	005.5000	0338.5	154.6	31.40	
074.0	100.0000	0092.3	049.4	292.1	005.5000	0338.7	154.0	31.51	
075.0	100.0000	0092.5	049.4	291.8	005.5000	0338.9	153.5	31.62	
076.0	100.0000	0092.8	049.5	291.6	005.5000	0339.0	153.0	31.73	
077.0	100.0000	0093.0	049.5	291.3	005.5000	0339.2	152.4	31.83	
078.0	100.0000	0093.1	049.5	291.0	005.5000	0339.4	152.0	31.93	
079.0	100.0000	0093.3	049.6	290.8	005.5000	0339.6	151.5	32.03	
080.0	100.0000	0093.4	049.6	290.5	005.5000	0339.8	151.0	32.12	
081.0	100.0000	0093.5	049.6	290.2	005.5000	0340.0	150.6	32.20	
082.0	100.0000	0093.5	049.6	289.9	005.5000	0340.1	150.2	32.28	
083.0	100.0000	0093.5	049.6	289.6	005.5000	0340.3	149.8	32.36	
084.0	100.0000	0093.6	049.6	289.3	005.5000	0340.5	149.5	32.44	
085.0	100.0000	0093.8	049.7	289.0	005.5000	0340.7	149.1	32.52	
086.0	100.0000	0094.0	049.7	288.7	005.5000	0340.9	148.7	32.59	

Exhibit 18.2
FMOver Study for WTCK

087.0	100.0000	0094.6	049.8	288.4	005.5000	0341.1	148.3	32.68
088.0	100.0000	0095.2	050.0	288.1	005.5000	0341.3	147.9	32.76
089.0	100.0000	0095.9	050.1	287.8	005.5000	0341.5	147.5	32.84
090.0	100.0000	0096.5	050.2	287.5	005.5000	0341.8	147.2	32.92
091.0	100.0000	0097.3	050.3	287.2	005.5000	0342.0	146.8	33.00
092.0	100.0000	0098.1	050.5	286.8	005.5000	0342.2	146.4	33.07
093.0	100.0000	0098.8	050.6	286.5	005.5000	0342.4	146.1	33.15
094.0	100.0000	0099.5	050.8	286.2	005.5000	0342.6	145.8	33.21
095.0	100.0000	0100.2	050.9	285.9	005.5000	0342.9	145.5	33.27
096.0	100.0000	0100.9	051.0	285.5	005.5000	0343.1	145.3	33.33
097.0	100.0000	0101.6	051.2	285.2	005.5000	0343.3	145.0	33.38
098.0	100.0000	0102.4	051.3	284.8	005.5000	0343.6	144.8	33.44
099.0	100.0000	0103.2	051.5	284.5	005.5000	0343.8	144.6	33.48
100.0	100.0000	0103.9	051.6	284.1	005.5000	0344.0	144.4	33.53
101.0	100.0000	0104.5	051.7	283.8	005.5000	0344.3	144.2	33.56
102.0	100.0000	0105.0	051.8	283.4	005.5000	0344.5	144.1	33.59
103.0	100.0000	0105.3	051.8	283.0	005.5000	0344.7	144.1	33.60
104.0	100.0000	0105.5	051.9	282.7	005.5000	0344.9	144.1	33.60
105.0	100.0000	0105.7	051.9	282.3	005.5000	0345.2	144.1	33.61
106.0	100.0000	0105.9	051.9	282.0	005.5000	0345.4	144.2	33.60
107.0	100.0000	0105.9	051.9	281.6	005.5000	0345.6	144.2	33.59
108.0	100.0000	0105.6	051.9	281.3	005.5000	0345.8	144.4	33.56
109.0	100.0000	0105.2	051.8	280.9	005.5000	0346.0	144.6	33.53
110.0	100.0000	0104.9	051.8	280.6	005.5000	0346.2	144.8	33.49
111.0	100.0000	0104.8	051.7	280.2	005.5000	0346.4	145.0	33.46
112.0	100.0000	0104.8	051.8	279.9	005.5000	0346.6	145.2	33.42
113.0	100.0000	0105.0	051.8	279.5	005.5000	0346.8	145.4	33.39
114.0	100.0000	0105.1	051.8	279.2	005.5000	0347.0	145.7	33.35
115.0	100.0000	0105.1	051.8	278.8	005.5000	0347.2	145.9	33.31
116.0	100.0000	0105.1	051.8	278.5	005.5000	0347.4	146.2	33.26
117.0	100.0000	0105.2	051.8	278.1	005.5000	0347.6	146.5	33.21
118.0	100.0000	0105.5	051.9	277.8	005.5000	0347.8	146.8	33.16
119.0	100.0000	0105.9	051.9	277.5	005.5000	0348.0	147.0	33.11
120.0	100.0000	0106.3	052.0	277.1	005.5000	0348.2	147.3	33.06
121.0	100.0000	0106.6	052.1	276.8	005.5000	0348.3	147.7	33.00
122.0	100.0000	0106.8	052.1	276.5	005.5000	0348.5	148.0	32.93
123.0	100.0000	0107.0	052.1	276.2	005.5000	0348.6	148.4	32.86
124.0	100.0000	0107.0	052.2	275.9	005.5000	0348.8	148.9	32.78
125.0	100.0000	0106.9	052.1	275.6	005.5000	0348.9	149.3	32.69
126.0	100.0000	0106.8	052.1	275.3	005.5000	0349.1	149.8	32.60
127.0	100.0000	0106.8	052.1	275.0	005.5000	0349.2	150.3	32.51
128.0	100.0000	0107.1	052.2	274.7	005.5000	0349.3	150.8	32.42
129.0	100.0000	0107.7	052.3	274.4	005.5000	0349.5	151.2	32.34
130.0	100.0000	0108.5	052.4	274.1	005.5000	0349.6	151.7	32.27
131.0	100.0000	0109.4	052.6	273.8	005.5000	0349.7	152.1	32.18
132.0	100.0000	0110.0	052.7	273.5	005.5000	0349.9	152.6	32.09
133.0	100.0000	0110.4	052.7	273.2	005.5000	0350.0	153.2	31.99
134.0	100.0000	0110.7	052.8	272.9	005.5000	0350.1	153.7	31.88
135.0	100.0000	0110.7	052.8	272.7	005.5000	0350.2	154.4	31.77
136.0	100.0000	0110.3	052.7	272.4	005.5000	0350.3	155.1	31.64
137.0	100.0000	0109.8	052.6	272.2	005.5000	0350.4	155.8	31.51
138.0	100.0000	0109.6	052.6	272.0	005.5000	0350.5	156.5	31.38
139.0	100.0000	0109.7	052.6	271.8	005.5000	0350.6	157.1	31.25
140.0	100.0000	0110.0	052.7	271.5	005.5000	0350.7	157.8	31.13
141.0	100.0000	0110.1	052.7	271.3	005.5000	0350.8	158.5	31.00
142.0	100.0000	0109.8	052.6	271.1	005.5000	0350.8	159.3	30.86
143.0	100.0000	0109.2	052.5	271.0	005.5000	0350.9	160.0	30.72
144.0	100.0000	0108.8	052.5	270.8	005.5000	0351.0	160.8	30.57
145.0	100.0000	0108.7	052.4	270.6	005.5000	0351.0	161.6	30.44
146.0	100.0000	0108.9	052.5	270.4	005.5000	0351.1	162.3	30.30
147.0	100.0000	0109.0	052.5	270.2	005.5000	0351.2	163.1	30.16
148.0	100.0000	0108.9	052.5	270.1	005.5000	0351.2	163.9	30.02

Exhibit 18.2

FMOver Study for WTCK

149.0	100.0000	0109.0	052.5	269.9	005.5000	0351.3	164.7	29.88
150.0	100.0000	0109.1	052.5	269.8	005.5000	0351.4	165.5	29.73
151.0	097.7132	0108.7	052.2	269.7	005.5000	0351.4	166.4	29.56
152.0	095.4529	0107.9	051.9	269.7	005.5000	0351.4	167.4	29.39
153.0	093.2190	0107.2	051.5	269.6	005.5000	0351.4	168.3	29.22
154.0	091.0116	0106.5	051.2	269.6	005.5000	0351.4	169.3	29.04
155.0	088.8306	0105.5	050.8	269.6	005.5000	0351.4	170.2	28.87
156.0	086.6761	0104.4	050.4	269.6	005.5000	0351.4	171.2	28.69
157.0	084.5480	0103.9	050.1	269.6	005.5000	0351.4	172.1	28.52
158.0	082.4464	0104.0	049.9	269.6	005.5000	0351.4	173.0	28.36
159.0	080.3712	0104.0	049.6	269.6	005.5000	0351.5	173.9	28.20
160.0	078.3225	0103.7	049.4	269.6	005.5000	0351.5	174.8	28.03
161.0	075.1342	0103.4	048.9	269.6	005.5000	0351.4	175.8	27.86

06-11-2013 Terrain Data: NGDC 30 SEC FMOver Analysis

WTCK BLED20120511ABC

WUPJ.C

Channel = 215C2
 Max ERP = 5.5 kW
 RCAMSL = 539.6 M
 N. Lat. 45 30 05.2
 W. Lng. 85 01 48.7
 Protected
 60 dBu

Channel = 215C1
 Max ERP = 100 kW
 RCAMSL = 374 M
 N. Lat. 45 53 05.0
 W. Lng. 87 29 19.0
 Interfering
 40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)

223.0	005.5000	0353.8	048.0	115.4	100.0000	0105.1	176.7	34.83	
224.0	005.5000	0353.8	048.0	115.3	100.0000	0105.1	176.0	34.96	
225.0	005.5000	0353.8	048.0	115.2	100.0000	0105.1	175.2	35.11	
226.0	005.5000	0353.7	048.0	115.1	100.0000	0105.1	174.4	35.25	
227.0	005.5000	0353.6	048.0	115.0	100.0000	0105.1	173.6	35.40	
228.0	005.5000	0353.5	048.0	114.9	100.0000	0105.1	172.8	35.54	
229.0	005.5000	0353.5	048.0	114.8	100.0000	0105.1	172.1	35.68	
230.0	005.5000	0353.4	048.0	114.7	100.0000	0105.1	171.3	35.82	
231.0	005.5000	0353.3	048.0	114.6	100.0000	0105.1	170.5	35.96	
232.0	005.5000	0353.2	048.0	114.4	100.0000	0105.1	169.8	36.09	
233.0	005.5000	0353.2	048.0	114.3	100.0000	0105.1	169.0	36.23	
234.0	005.5000	0353.1	048.0	114.2	100.0000	0105.1	168.3	36.36	
235.0	005.5000	0352.9	048.0	114.0	100.0000	0105.1	167.6	36.49	
236.0	005.5000	0352.7	047.9	113.9	100.0000	0105.1	166.8	36.62	
237.0	005.5000	0352.4	047.9	113.7	100.0000	0105.1	166.1	36.75	
238.0	005.5000	0352.1	047.9	113.6	100.0000	0105.0	165.4	36.88	
239.0	005.5000	0351.8	047.9	113.4	100.0000	0105.0	164.7	37.00	
240.0	005.5000	0351.5	047.9	113.2	100.0000	0105.0	164.1	37.12	
241.0	005.5000	0351.3	047.9	113.1	100.0000	0105.0	163.4	37.25	
242.0	005.5000	0351.1	047.8	112.9	100.0000	0105.0	162.7	37.36	
243.0	005.5000	0351.1	047.8	112.7	100.0000	0104.9	162.1	37.48	
244.0	005.5000	0351.1	047.8	112.5	100.0000	0104.9	161.4	37.60	
245.0	005.5000	0351.2	047.9	112.3	100.0000	0104.9	160.8	37.71	
246.0	005.5000	0351.3	047.9	112.1	100.0000	0104.8	160.1	37.83	
247.0	005.5000	0351.5	047.9	111.9	100.0000	0104.8	159.5	37.93	
248.0	005.5000	0351.7	047.9	111.7	100.0000	0104.8	158.9	38.04	
249.0	005.5000	0351.9	047.9	111.5	100.0000	0104.8	158.3	38.14	
250.0	005.5000	0352.1	047.9	111.3	100.0000	0104.8	157.7	38.24	
251.0	005.5000	0352.2	047.9	111.1	100.0000	0104.7	157.2	38.34	

Exhibit 18.2
FMOver Study for WTCK

252.0	005.5000	0352.3	047.9	110.8	100.0000	0104.8	156.6	38.43
253.0	005.5000	0352.4	047.9	110.6	100.0000	0104.8	156.1	38.52
254.0	005.5000	0352.4	047.9	110.4	100.0000	0104.8	155.6	38.61
255.0	005.5000	0352.3	047.9	110.1	100.0000	0104.9	155.0	38.70
256.0	005.5000	0352.3	047.9	109.9	100.0000	0105.0	154.6	38.78
257.0	005.5000	0352.3	047.9	109.6	100.0000	0105.0	154.1	38.86
258.0	005.5000	0352.4	047.9	109.3	100.0000	0105.1	153.6	38.94
259.0	005.5000	0352.4	047.9	109.1	100.0000	0105.2	153.2	39.02
260.0	005.5000	0352.4	047.9	108.8	100.0000	0105.3	152.7	39.09
261.0	005.5000	0352.4	047.9	108.5	100.0000	0105.4	152.3	39.16
262.0	005.5000	0352.3	047.9	108.3	100.0000	0105.5	151.9	39.23
263.0	005.5000	0352.3	047.9	108.0	100.0000	0105.6	151.5	39.30
264.0	005.5000	0352.2	047.9	107.7	100.0000	0105.7	151.2	39.36
265.0	005.5000	0352.2	047.9	107.4	100.0000	0105.8	150.8	39.42
266.0	005.5000	0352.1	047.9	107.1	100.0000	0105.9	150.5	39.48
267.0	005.5000	0352.0	047.9	106.8	100.0000	0105.9	150.2	39.53
268.0	005.5000	0352.0	047.9	106.5	100.0000	0105.9	149.9	39.58
269.0	005.5000	0351.7	047.9	106.2	100.0000	0105.9	149.6	39.62
270.0	005.5000	0351.3	047.9	105.9	100.0000	0105.9	149.4	39.66
271.0	005.5000	0350.9	047.8	105.6	100.0000	0105.8	149.2	39.69
272.0	005.5000	0350.5	047.8	105.3	100.0000	0105.7	149.0	39.72
273.0	005.5000	0350.1	047.8	105.0	100.0000	0105.7	148.8	39.75
274.0	005.5000	0349.6	047.8	104.7	100.0000	0105.6	148.7	39.78
275.0	005.5000	0349.2	047.7	104.3	100.0000	0105.5	148.5	39.80
276.0	005.5000	0348.7	047.7	104.0	100.0000	0105.5	148.4	39.82
277.0	005.5000	0348.2	047.7	103.7	100.0000	0105.4	148.3	39.83
278.0	005.5000	0347.7	047.6	103.4	100.0000	0105.4	148.2	39.84
279.0	005.5000	0347.1	047.6	103.1	100.0000	0105.3	148.2	39.85
280.0	005.5000	0346.5	047.6	102.7	100.0000	0105.2	148.1	39.86
281.0	005.5000	0345.9	047.5	102.4	100.0000	0105.2	148.1	39.86
282.0	005.5000	0345.4	047.5	102.1	100.0000	0105.0	148.1	39.85
283.0	005.5000	0344.7	047.5	101.8	100.0000	0104.9	148.1	39.85
284.0	005.5000	0344.1	047.4	101.5	100.0000	0104.7	148.2	39.83
285.0	005.5000	0343.5	047.4	101.1	100.0000	0104.6	148.2	39.82
286.0	005.5000	0342.8	047.3	100.8	100.0000	0104.4	148.3	39.80
287.0	005.5000	0342.1	047.3	100.5	100.0000	0104.2	148.4	39.77
288.0	005.5000	0341.4	047.3	100.2	100.0000	0104.0	148.6	39.75
289.0	005.5000	0340.7	047.2	99.9	100.0000	0103.8	148.7	39.72
290.0	005.5000	0340.1	047.2	99.6	100.0000	0103.6	148.9	39.68
291.0	005.5000	0339.4	047.1	99.3	100.0000	0103.4	149.0	39.65
292.0	005.5000	0338.7	047.1	99.0	100.0000	0103.1	149.2	39.61
293.0	005.5000	0338.1	047.0	98.6	100.0000	0102.9	149.4	39.57
294.0	005.5000	0337.3	047.0	98.3	100.0000	0102.7	149.7	39.52
295.0	005.5000	0336.5	046.9	98.0	100.0000	0102.4	149.9	39.47
296.0	005.5000	0335.6	046.9	97.8	100.0000	0102.2	150.2	39.42
297.0	005.5000	0334.5	046.8	97.5	100.0000	0102.0	150.5	39.36
298.0	005.5000	0333.3	046.8	97.2	100.0000	0101.7	150.8	39.30
299.0	005.5000	0332.0	046.7	96.9	100.0000	0101.5	151.2	39.23
300.0	005.5000	0330.7	046.6	96.6	100.0000	0101.3	151.6	39.16
301.0	005.5000	0329.3	046.5	96.4	100.0000	0101.1	152.0	39.09
302.0	005.5000	0327.9	046.4	96.1	100.0000	0100.9	152.4	39.02
303.0	005.5000	0326.6	046.3	95.8	100.0000	0100.7	152.8	38.95
304.0	005.5000	0325.3	046.3	95.6	100.0000	0100.6	153.2	38.87
305.0	005.5000	0324.1	046.2	95.3	100.0000	0100.4	153.6	38.79
306.0	005.5000	0323.0	046.1	95.1	100.0000	0100.2	154.1	38.71
307.0	005.5000	0321.8	046.0	94.8	100.0000	0100.0	154.5	38.63
308.0	005.5000	0320.7	046.0	94.6	100.0000	0099.9	155.0	38.55
309.0	005.5000	0319.5	045.9	94.3	100.0000	0099.7	155.5	38.46
310.0	005.5000	0318.3	045.8	94.1	100.0000	0099.6	156.0	38.37
311.0	005.5000	0317.0	045.8	93.9	100.0000	0099.4	156.5	38.28
312.0	005.5000	0315.6	045.7	93.7	100.0000	0099.3	157.1	38.18
313.0	005.5000	0314.1	045.6	93.5	100.0000	0099.1	157.6	38.08

Exhibit 18.2
FMOver Study for WTCK

314.0	005.5000	0312.4	045.5	093.3	100.0000	0099.0	158.2	37.98
315.0	005.5000	0310.5	045.4	093.1	100.0000	0098.9	158.8	37.87
316.0	005.5000	0308.4	045.2	092.9	100.0000	0098.7	159.4	37.76
317.0	005.5000	0306.4	045.1	092.7	100.0000	0098.6	160.0	37.64
318.0	005.5000	0304.4	045.0	092.5	100.0000	0098.5	160.7	37.53
319.0	005.5000	0302.4	044.9	092.4	100.0000	0098.3	161.3	37.41
320.0	005.5000	0300.5	044.8	092.2	100.0000	0098.2	161.9	37.29
321.0	005.5000	0298.6	044.6	092.0	100.0000	0098.1	162.6	37.17
322.0	005.5000	0296.8	044.5	091.9	100.0000	0098.0	163.2	37.05
323.0	005.5000	0294.9	044.4	091.7	100.0000	0097.8	163.9	36.92
324.0	005.5000	0292.8	044.3	091.6	100.0000	0097.7	164.5	36.79
325.0	005.5000	0290.8	044.2	091.5	100.0000	0097.6	165.2	36.67
326.0	005.5000	0288.9	044.0	091.3	100.0000	0097.5	165.9	36.54
327.0	005.5000	0287.3	043.9	091.2	100.0000	0097.4	166.6	36.41
328.0	005.5000	0285.9	043.9	091.1	100.0000	0097.3	167.3	36.29
329.0	005.5000	0284.7	043.8	091.0	100.0000	0097.2	167.9	36.16
330.0	005.5000	0283.3	043.7	090.8	100.0000	0097.1	168.6	36.04
331.0	005.5000	0281.7	043.6	090.7	100.0000	0097.0	169.3	35.91
332.0	005.5000	0279.9	043.5	090.6	100.0000	0097.0	170.0	35.78
333.0	005.5000	0277.6	043.3	090.5	100.0000	0096.9	170.7	35.64
334.0	005.5000	0275.0	043.2	090.5	100.0000	0096.8	171.5	35.51
335.0	005.5000	0272.3	043.0	090.4	100.0000	0096.8	172.2	35.37
336.0	005.5000	0270.0	042.9	090.3	100.0000	0096.8	173.0	35.23
337.0	005.5000	0268.0	042.7	090.3	100.0000	0096.7	173.7	35.10
338.0	005.5000	0266.1	042.6	090.2	100.0000	0096.7	174.4	34.97
339.0	005.5000	0264.1	042.5	090.1	100.0000	0096.6	175.1	34.83
340.0	005.5000	0262.3	042.4	090.1	100.0000	0096.6	175.9	34.70
341.0	005.5000	0261.1	042.3	090.0	100.0000	0096.6	176.6	34.57
342.0	005.5000	0260.8	042.3	089.9	100.0000	0096.5	177.3	34.44

Exhibit 18.3

Protection to WMVM - Goodman, WI

Protection to WMVM - Goodman, WI
West Central Michigan Media Ministries

FMCommander Single Allocation Study - 06-11-2013 - NGDC 30 SEC
WUPJ.C's Overlaps (In= 3.73 km, Out= 12.02 km)

WUPJ.C CH 215 C1 DA
Lat= 45 53 05.0, Lng= 87 29 19.0
100.0 kW 79.7 M HAAT, 374 M COR
Prot.= 60 dBu, Intef.= 54 dBu

WMVM CH 214 C3 BLED20041122AAF
Lat= 45 46 23.0, Lng= 88 24 38.0
7.0 kW 87 M HAAT, 525 M COR
Prot.= 60 dBu, Intef.= 54 dBu



Exhibit 18.3 **FMOver Study for WMVM(FM)**

06-11-2013 Terrain Data: NGDC 30 SEC FMOver Analysis

WUPJ.C

WMVM BLED20041122AAF

Channel = 215C1
 Max ERP = 100 kW
 RCAMSL = 374 M
 N. Lat. 45 53 05.0
 W. Lng. 87 29 19.0
 Protected
 60 dBu

Channel = 214C3
 Max ERP = 7 kW
 RCAMSL = 525 M
 N. Lat. 45 46 23.0
 W. Lng. 88 24 38.0
 Interfering
 54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
200.0	012.4609	0095.4	032.8	106.7	007.0000	0108.6	063.1	48.00	
201.0	011.9578	0094.4	032.3	106.2	007.0000	0109.1	062.6	48.20	
202.0	011.4650	0093.8	031.9	105.8	007.0000	0109.5	062.1	48.40	
203.0	010.9826	0093.8	031.5	105.4	007.0000	0110.0	061.6	48.60	
204.0	010.5106	0094.3	031.3	105.1	007.0000	0110.3	061.1	48.80	
205.0	010.0489	0095.0	031.1	104.8	007.0000	0110.7	060.6	49.00	
206.0	009.5976	0095.2	030.8	104.4	007.0000	0111.2	060.1	49.20	
207.0	009.1567	0095.0	030.4	104.0	007.0000	0111.8	059.7	49.40	
208.0	008.7261	0094.4	030.0	103.5	007.0000	0112.5	059.2	49.59	
209.0	008.3059	0093.6	029.5	102.9	007.0000	0113.3	058.9	49.78	
210.0	007.8961	0092.7	029.0	102.3	007.0000	0114.2	058.5	49.96	
211.0	007.5790	0091.9	028.7	101.8	007.0000	0115.0	058.1	50.14	
212.0	007.2684	0091.4	028.3	101.3	007.0000	0115.7	057.8	50.32	
213.0	006.9643	0090.5	027.9	100.8	007.0000	0116.5	057.5	50.49	
214.0	006.6667	0089.1	027.4	100.2	007.0000	0117.5	057.2	50.64	
215.0	006.3756	0087.5	026.9	099.5	007.0000	0118.5	057.0	50.78	
216.0	006.0910	0086.2	026.5	098.9	007.0000	0119.5	056.8	50.93	
217.0	005.8129	0085.6	026.1	098.3	007.0000	0120.5	056.5	51.07	
218.0	005.5413	0085.1	025.8	097.8	007.0000	0121.5	056.3	51.21	
219.0	005.2762	0084.3	025.4	097.2	007.0000	0122.5	056.1	51.34	
220.0	005.0176	0083.1	024.9	096.6	007.0000	0123.2	056.0	51.43	
221.0	004.8136	0081.5	024.5	096.0	007.0000	0123.6	055.9	51.49	
222.0	004.6139	0079.9	024.0	095.3	007.0000	0123.5	055.8	51.51	
223.0	004.4184	0078.5	023.6	094.7	007.0000	0123.3	055.7	51.53	
224.0	004.2271	0077.4	023.2	094.1	007.0000	0123.0	055.6	51.54	
225.0	004.0401	0076.6	022.8	093.6	007.0000	0122.6	055.6	51.55	
226.0	003.8573	0076.2	022.5	093.1	007.0000	0122.2	055.5	51.57	
227.0	003.6787	0076.0	022.2	092.6	007.0000	0122.2	055.4	51.61	
228.0	003.5044	0075.6	021.9	092.1	007.0000	0122.2	055.3	51.63	
229.0	003.3343	0075.1	021.6	091.6	007.0000	0122.2	055.3	51.64	
230.0	003.1684	0074.5	021.3	091.1	007.0000	0122.2	055.3	51.64	
231.0	003.1684	0073.7	021.2	090.7	007.0000	0122.2	055.1	51.70	
232.0	003.1684	0073.0	021.1	090.3	007.0000	0122.1	054.9	51.76	
233.0	003.1684	0072.4	021.0	090.0	007.0000	0122.1	054.8	51.82	
234.0	003.1684	0071.8	020.9	089.6	007.0000	0122.1	054.6	51.88	
235.0	003.1684	0071.5	020.9	089.3	007.0000	0122.1	054.5	51.95	
236.0	003.1684	0071.3	020.8	088.9	007.0000	0122.1	054.3	52.02	
237.0	003.1684	0071.3	020.8	088.6	007.0000	0122.2	054.1	52.10	
238.0	003.1684	0071.2	020.8	088.3	007.0000	0122.3	053.9	52.18	
239.0	003.1684	0071.2	020.8	087.9	007.0000	0122.5	053.7	52.26	
240.0	003.1684	0071.1	020.8	087.6	007.0000	0122.6	053.6	52.33	
241.0	003.1684	0070.9	020.8	087.2	007.0000	0122.7	053.4	52.39	
242.0	003.1684	0070.6	020.7	086.9	007.0000	0122.7	053.3	52.44	
243.0	003.1684	0069.9	020.6	086.5	007.0000	0122.8	053.2	52.47	
244.0	003.1684	0068.9	020.5	086.1	007.0000	0122.8	053.2	52.48	

Exhibit 18.3
FMOver Study for WMVM(FM)

245.0	003.1684	0067.7	020.3	085.6	007.0000	0123.0	053.2	52.47
246.0	003.1684	0066.3	020.1	085.2	007.0000	0123.3	053.3	52.47
247.0	003.1684	0065.2	020.0	084.8	007.0000	0123.4	053.3	52.46
248.0	003.1684	0064.4	019.9	084.4	007.0000	0123.4	053.3	52.46
249.0	003.1684	0063.8	019.8	084.0	007.0000	0123.5	053.3	52.47
250.0	003.1684	0063.1	019.7	083.6	007.0000	0123.7	053.3	52.48
251.0	003.1684	0062.3	019.6	083.3	007.0000	0123.9	053.4	52.48
252.0	003.1684	0061.5	019.5	082.9	007.0000	0124.1	053.4	52.47
253.0	003.1684	0060.7	019.4	082.5	007.0000	0124.3	053.4	52.47
254.0	003.1684	0059.8	019.2	082.1	007.0000	0124.4	053.5	52.44
255.0	003.1684	0058.7	019.0	081.7	007.0000	0124.5	053.6	52.40
256.0	003.1684	0057.9	018.9	081.4	007.0000	0124.6	053.7	52.37
257.0	003.1684	0057.3	018.8	081.0	007.0000	0124.8	053.8	52.35
258.0	003.1684	0057.5	018.9	080.7	007.0000	0124.9	053.7	52.38
259.0	003.1684	0058.2	019.0	080.3	007.0000	0125.0	053.6	52.44
260.0	003.1684	0059.0	019.1	080.0	007.0000	0125.1	053.5	52.49
261.0	003.1684	0059.6	019.2	079.6	007.0000	0125.0	053.4	52.53
262.0	003.1684	0059.8	019.2	079.2	007.0000	0124.9	053.4	52.52
263.0	003.1684	0059.5	019.2	078.9	007.0000	0124.6	053.4	52.49
264.0	003.1684	0059.6	019.2	078.5	007.0000	0124.2	053.4	52.46
265.0	003.1684	0060.1	019.3	078.2	007.0000	0123.8	053.4	52.45
266.0	003.1684	0060.4	019.3	077.8	007.0000	0123.3	053.4	52.43
267.0	003.1684	0060.6	019.3	077.4	007.0000	0122.9	053.4	52.40
268.0	003.1684	0060.8	019.4	077.1	007.0000	0122.6	053.4	52.37
269.0	003.1684	0061.1	019.4	076.7	007.0000	0122.4	053.5	52.35
270.0	003.1684	0060.7	019.3	076.4	007.0000	0122.3	053.6	52.30
271.0	003.3343	0059.8	019.5	076.0	007.0000	0122.1	053.6	52.30
272.0	003.5044	0059.0	019.6	075.6	007.0000	0122.0	053.5	52.30
273.0	003.6787	0058.2	019.7	075.2	007.0000	0122.0	053.5	52.31
274.0	003.8573	0057.6	019.8	074.8	007.0000	0122.0	053.5	52.31
275.0	004.0401	0057.2	020.0	074.4	007.0000	0122.1	053.5	52.33
276.0	004.2271	0057.1	020.2	074.0	007.0000	0122.2	053.4	52.37
277.0	004.4184	0057.1	020.4	073.5	007.0000	0122.6	053.3	52.42
278.0	004.6139	0057.7	020.7	073.0	007.0000	0123.0	053.2	52.50
279.0	004.8136	0058.3	021.0	072.5	007.0000	0123.6	053.1	52.57
280.0	005.0176	0058.7	021.3	072.1	007.0000	0124.4	053.0	52.65
281.0	005.2762	0058.7	021.6	071.6	007.0000	0125.4	052.9	52.73
282.0	005.5413	0058.3	021.8	071.1	007.0000	0126.4	053.0	52.77
283.0	005.8129	0057.9	021.9	070.7	007.0000	0127.3	053.0	52.80
284.0	006.0910	0057.7	022.2	070.2	007.0000	0128.2	053.0	52.84
285.0	006.3756	0058.0	022.4	069.7	007.0000	0129.1	053.0	52.89
286.0	006.6667	0058.3	022.7	069.1	007.0000	0129.8	053.0	52.93
287.0	006.9643	0058.4	023.0	068.6	007.0000	0130.3	053.1	52.94
288.0	007.2684	0058.2	023.2	068.2	007.0000	0130.5	053.2	52.91
289.0	007.5790	0057.8	023.3	067.7	007.0000	0130.6	053.3	52.86
290.0	007.8961	0057.2	023.4	067.3	007.0000	0130.7	053.5	52.79
291.0	008.3059	0057.0	023.7	066.8	007.0000	0130.8	053.6	52.76
292.0	008.7261	0057.0	023.9	066.3	007.0000	0130.9	053.7	52.72
293.0	009.1567	0057.2	024.2	065.8	007.0000	0130.6	053.8	52.67
294.0	009.5976	0057.7	024.6	065.2	007.0000	0130.2	053.9	52.62
295.0	010.0489	0058.4	025.0	064.6	007.0000	0129.6	053.9	52.56
296.0	010.5106	0059.2	025.4	063.9	007.0000	0128.8	054.0	52.48
297.0	010.9826	0060.0	025.8	063.3	007.0000	0127.6	054.1	52.37
298.0	011.4650	0060.7	026.1	062.7	007.0000	0126.3	054.3	52.24
299.0	011.9578	0061.0	026.4	062.2	007.0000	0125.2	054.5	52.11
300.0	012.4609	0061.1	026.7	061.7	007.0000	0124.2	054.7	51.95
301.0	013.1189	0061.0	027.0	061.2	007.0000	0123.1	055.0	51.80
302.0	013.7938	0060.9	027.3	060.7	007.0000	0121.9	055.3	51.63
303.0	014.4856	0060.6	027.5	060.2	007.0000	0120.8	055.6	51.45
304.0	015.1944	0060.0	027.7	059.8	007.0000	0119.8	055.9	51.27
305.0	015.9201	0059.1	027.8	059.5	007.0000	0119.0	056.3	51.08
306.0	016.6627	0058.1	027.9	059.2	007.0000	0118.4	056.7	50.88

Exhibit 18.3 **FMOver Study for WMVM(FM)**

307.0	017.4223	0057.6	028.1	058.9	007.0000	0117.5	057.1	50.69
308.0	018.1988	0057.6	028.4	058.4	007.0000	0116.7	057.4	50.51
309.0	018.9922	0058.1	028.7	057.9	007.0000	0115.8	057.8	50.33
310.0	019.8025	0058.6	029.1	057.4	007.0000	0115.1	058.1	50.16
311.0	020.8392	0059.0	029.5	056.8	007.0000	0114.7	058.5	50.00
312.0	021.9024	0058.8	029.8	056.4	007.0000	0114.5	058.9	49.83
313.0	022.9920	0058.1	030.0	056.1	007.0000	0114.5	059.4	49.66
314.0	024.1081	0057.5	030.2	055.8	007.0000	0114.5	059.8	49.49
315.0	025.2506	0057.4	030.5	055.4	007.0000	0114.5	060.3	49.33
316.0	026.4196	0057.8	030.9	055.0	007.0000	0114.7	060.7	49.18
317.0	027.6150	0058.3	031.4	054.5	007.0000	0114.9	061.2	49.03
318.0	028.8369	0058.8	031.8	054.0	007.0000	0115.0	061.7	48.86
319.0	030.0852	0059.4	032.3	053.5	007.0000	0115.1	062.2	48.69

06-11-2013 Terrain Data: NGDC 30 SEC FMOver Analysis

WMVM BLED20041122AAF

WUPJ.C

Channel = 214C3
Max ERP = 7 kW
RCAMSL = 525 M
N. Lat. 45 46 23.0
W. Lng. 88 24 38.0
Protected
60 dBu

Channel = 215C1
Max ERP = 100 kW
RCAMSL = 374 M
N. Lat. 45 53 05.0
W. Lng. 87 29 19.0
Interfering
54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)

020.0	007.0000	0102.5	029.6	284.5	006.2191	0057.8	063.1	44.03	
021.0	007.0000	0104.4	029.9	284.6	006.2748	0057.8	062.5	44.23	
022.0	007.0000	0107.3	030.3	284.9	006.3577	0057.9	062.0	44.45	
023.0	007.0000	0110.3	030.7	285.2	006.4430	0058.0	061.4	44.67	
024.0	007.0000	0113.3	031.1	285.5	006.5231	0058.1	060.8	44.90	
025.0	007.0000	0116.3	031.4	285.8	006.5987	0058.2	060.2	45.13	
026.0	007.0000	0119.4	031.8	286.0	006.6728	0058.3	059.6	45.36	
027.0	007.0000	0122.6	032.2	286.3	006.7448	0058.3	059.0	45.59	
028.0	007.0000	0125.3	032.5	286.4	006.7991	0058.4	058.4	45.81	
029.0	007.0000	0126.5	032.6	286.5	006.8023	0058.4	057.8	45.99	
030.0	007.0000	0126.2	032.6	286.3	006.7540	0058.3	057.2	46.12	
031.0	007.0000	0125.3	032.5	286.0	006.6812	0058.3	056.7	46.23	
032.0	007.0000	0124.6	032.4	285.8	006.6095	0058.2	056.2	46.33	
033.0	007.0000	0123.4	032.3	285.5	006.5201	0058.1	055.7	46.42	
034.0	007.0000	0121.4	032.0	285.1	006.4003	0058.0	055.3	46.47	
035.0	007.0000	0119.4	031.8	284.7	006.2808	0057.9	054.8	46.51	
036.0	007.0000	0119.0	031.8	284.4	006.2048	0057.8	054.3	46.60	
037.0	007.0000	0119.4	031.8	284.2	006.1555	0057.8	053.8	46.73	
038.0	007.0000	0120.5	031.9	284.1	006.1211	0057.8	053.2	46.88	
039.0	007.0000	0121.9	032.1	284.0	006.0948	0057.7	052.7	47.04	
040.0	007.0000	0123.6	032.3	283.9	006.0702	0057.7	052.1	47.20	
041.0	007.0000	0124.6	032.4	283.8	006.0232	0057.7	051.5	47.34	
042.0	007.0000	0124.5	032.4	283.4	005.9347	0057.8	051.0	47.43	
043.0	007.0000	0123.1	032.2	283.0	005.8050	0057.9	050.6	47.48	
044.0	007.0000	0120.9	032.0	282.4	005.6489	0058.1	050.3	47.49	
045.0	007.0000	0118.6	031.7	281.8	005.4869	0058.4	049.9	47.49	
046.0	007.0000	0116.6	031.5	281.2	005.3292	0058.6	049.6	47.49	
047.0	007.0000	0115.1	031.3	280.7	005.1874	0058.8	049.3	47.50	
048.0	007.0000	0114.3	031.2	280.2	005.0635	0058.8	048.9	47.51	

Exhibit 18.3
FMOver Study for WMVM(FM)

049.0	007.0000	0114.1	031.2	279.8	004.9670	0058.6	048.5	47.53
050.0	007.0000	0114.2	031.2	279.4	004.8849	0058.5	048.1	47.57
051.0	007.0000	0114.4	031.2	278.9	004.8020	0058.2	047.7	47.61
052.0	007.0000	0114.8	031.3	278.5	004.7197	0058.0	047.3	47.65
053.0	007.0000	0115.1	031.3	278.1	004.6317	0057.8	046.8	47.66
054.0	007.0000	0115.0	031.3	277.6	004.5364	0057.5	046.5	47.66
055.0	007.0000	0114.7	031.2	277.1	004.4325	0057.1	046.1	47.63
056.0	007.0000	0114.5	031.2	276.5	004.3286	0057.1	045.8	47.62
057.0	007.0000	0114.8	031.2	276.0	004.2333	0057.1	045.4	47.65
058.0	007.0000	0115.9	031.4	275.6	004.1513	0057.1	045.0	47.72
059.0	007.0000	0117.8	031.6	275.2	004.0783	0057.1	044.5	47.81
060.0	007.0000	0120.2	031.9	274.8	004.0086	0057.2	043.9	47.94
061.0	007.0000	0122.6	032.2	274.4	003.9332	0057.3	043.4	48.06
062.0	007.0000	0124.8	032.4	274.0	003.8505	0057.6	042.9	48.18
063.0	007.0000	0126.9	032.7	273.5	003.7618	0057.9	042.4	48.29
064.0	007.0000	0128.9	032.9	272.9	003.6686	0058.2	041.9	48.39
065.0	007.0000	0130.0	033.0	272.3	003.5609	0058.7	041.5	48.46
066.0	007.0000	0130.8	033.1	271.7	003.4465	0059.3	041.2	48.51
067.0	007.0000	0130.8	033.1	270.9	003.3223	0059.9	041.0	48.51
068.0	007.0000	0130.5	033.1	270.2	003.1953	0060.5	040.8	48.49
069.0	007.0000	0130.0	033.0	269.4	003.1684	0061.1	040.6	48.58
070.0	007.0000	0128.5	032.9	268.5	003.1684	0060.9	040.6	48.56
071.0	007.0000	0126.6	032.6	267.7	003.1684	0060.7	040.6	48.53
072.0	007.0000	0124.5	032.4	266.8	003.1684	0060.6	040.7	48.48
073.0	007.0000	0123.0	032.2	266.0	003.1684	0060.4	040.8	48.45
074.0	007.0000	0122.2	032.1	265.2	003.1684	0060.1	040.7	48.42
075.0	007.0000	0122.0	032.1	264.4	003.1684	0059.8	040.7	48.40
076.0	007.0000	0122.1	032.1	263.6	003.1684	0059.6	040.6	48.41
077.0	007.0000	0122.6	032.2	262.8	003.1684	0059.5	040.5	48.45
078.0	007.0000	0123.6	032.3	262.1	003.1684	0059.8	040.3	48.54
079.0	007.0000	0124.7	032.4	261.3	003.1684	0059.7	040.1	48.59
080.0	007.0000	0125.1	032.5	260.5	003.1684	0059.3	040.1	48.56
081.0	007.0000	0124.8	032.4	259.6	003.1684	0058.8	040.1	48.48
082.0	007.0000	0124.4	032.4	258.8	003.1684	0058.1	040.2	48.36
083.0	007.0000	0124.1	032.3	258.0	003.1684	0057.5	040.3	48.26
084.0	007.0000	0123.5	032.3	257.3	003.1684	0057.2	040.4	48.18
085.0	007.0000	0123.3	032.3	256.5	003.1684	0057.5	040.5	48.18
086.0	007.0000	0122.9	032.2	255.7	003.1684	0058.1	040.7	48.19
087.0	007.0000	0122.7	032.2	254.9	003.1684	0058.8	040.8	48.23
088.0	007.0000	0122.4	032.2	254.2	003.1684	0059.6	041.0	48.27
089.0	007.0000	0122.1	032.1	253.4	003.1684	0060.4	041.1	48.29
090.0	007.0000	0122.1	032.1	252.7	003.1684	0061.0	041.3	48.30
091.0	007.0000	0122.2	032.1	252.0	003.1684	0061.5	041.5	48.30
092.0	007.0000	0122.2	032.1	251.2	003.1684	0062.1	041.7	48.30
093.0	007.0000	0122.2	032.1	250.5	003.1684	0062.7	041.9	48.28
094.0	007.0000	0122.9	032.2	249.8	003.1684	0063.3	042.0	48.29
095.0	007.0000	0123.4	032.3	249.0	003.1684	0063.8	042.2	48.27
096.0	007.0000	0123.6	032.3	248.4	003.1684	0064.2	042.5	48.23
097.0	007.0000	0122.8	032.2	247.8	003.1684	0064.6	042.8	48.15
098.0	007.0000	0121.1	032.0	247.2	003.1684	0065.0	043.3	48.03
099.0	007.0000	0119.3	031.8	246.8	003.1684	0065.4	043.7	47.91
100.0	007.0000	0117.7	031.6	246.3	003.1684	0066.0	044.2	47.80
101.0	007.0000	0116.2	031.4	245.8	003.1684	0066.5	044.7	47.69
102.0	007.0000	0114.7	031.2	245.4	003.1684	0067.1	045.1	47.59
103.0	007.0000	0113.2	031.1	245.0	003.1684	0067.6	045.6	47.48
104.0	007.0000	0111.8	030.9	244.6	003.1684	0068.1	046.1	47.36
105.0	007.0000	0110.4	030.7	244.3	003.1684	0068.6	046.6	47.25
106.0	007.0000	0109.3	030.6	243.9	003.1684	0069.0	047.1	47.13
107.0	007.0000	0108.3	030.4	243.5	003.1684	0069.4	047.5	47.02
108.0	007.0000	0107.2	030.3	243.2	003.1684	0069.7	048.0	46.89
109.0	007.0000	0106.0	030.1	242.9	003.1684	0070.0	048.5	46.75
110.0	007.0000	0105.0	030.0	242.6	003.1684	0070.2	049.0	46.62

Exhibit 18.3
FMOver Study for WMVM(FM)

111.0	007.0000	0104.3	029.9	242.3	003.1684	0070.4	049.4	46.49
112.0	007.0000	0103.7	029.8	242.0	003.1684	0070.6	049.9	46.35
113.0	007.0000	0103.3	029.8	241.6	003.1684	0070.7	050.3	46.22
114.0	007.0000	0103.0	029.7	241.3	003.1684	0070.9	050.7	46.08
115.0	007.0000	0102.8	029.7	241.0	003.1684	0070.9	051.2	45.94
116.0	007.0000	0102.6	029.7	240.7	003.1684	0071.0	051.6	45.80
117.0	007.0000	0102.3	029.6	240.4	003.1684	0071.0	052.1	45.65
118.0	007.0000	0101.9	029.6	240.2	003.1684	0071.1	052.5	45.50
119.0	007.0000	0101.5	029.5	239.9	003.1684	0071.1	053.0	45.34
120.0	007.0000	0100.9	029.4	239.7	003.1684	0071.1	053.5	45.17
121.0	007.0000	0100.1	029.3	239.6	003.1684	0071.1	054.0	45.01
122.0	007.0000	0099.3	029.2	239.4	003.1684	0071.1	054.5	44.84
123.0	007.0000	0098.7	029.1	239.3	003.1684	0071.2	055.0	44.67
124.0	007.0000	0098.3	029.1	239.1	003.1684	0071.2	055.5	44.51
125.0	007.0000	0098.2	029.1	238.9	003.1684	0071.2	055.9	44.35
126.0	007.0000	0098.4	029.1	238.7	003.1684	0071.2	056.4	44.20
127.0	007.0000	0098.8	029.1	238.4	003.1684	0071.2	056.9	44.05
128.0	007.0000	0099.2	029.2	238.2	003.1684	0071.2	057.3	43.90
129.0	007.0000	0099.6	029.2	238.0	003.1684	0071.2	057.8	43.75
130.0	007.0000	0100.2	029.3	237.7	003.1684	0071.2	058.2	43.60
131.0	007.0000	0101.2	029.5	237.5	003.1684	0071.3	058.7	43.46
132.0	007.0000	0102.1	029.6	237.2	003.1684	0071.3	059.2	43.31
133.0	007.0000	0102.4	029.6	237.1	003.1684	0071.3	059.7	43.15
134.0	007.0000	0101.7	029.5	237.0	003.1684	0071.3	060.2	42.99
135.0	007.0000	0100.3	029.3	237.1	003.1684	0071.3	060.7	42.82
136.0	007.0000	0098.5	029.1	237.3	003.1684	0071.3	061.3	42.65
137.0	007.0000	0096.6	028.8	237.4	003.1684	0071.3	061.8	42.49
138.0	007.0000	0094.9	028.6	237.6	003.1684	0071.2	062.3	42.33
139.0	007.0000	0093.3	028.3	237.7	003.1684	0071.2	062.9	42.17

Exhibit 18.4

Proposed Directional Antenna Pattern

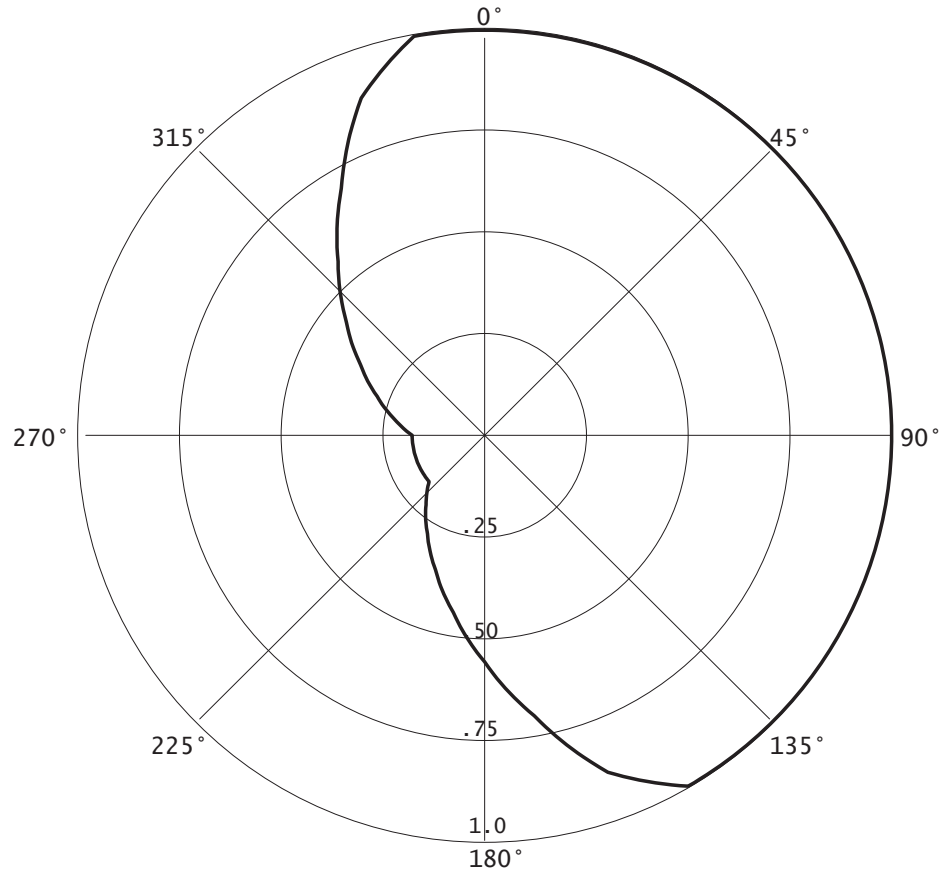
WUPJ.A

06-11-2013

RMS(V)= .768

Graph is Relative Field

Azi	Field	dBk	kw
000	1.000	20.000	100.000
010	1.000	20.000	100.000
020	1.000	20.000	100.000
030	1.000	20.000	100.000
040	1.000	20.000	100.000
050	1.000	20.000	100.000
060	1.000	20.000	100.000
070	1.000	20.000	100.000
080	1.000	20.000	100.000
090	1.000	20.000	100.000
100	1.000	20.000	100.000
110	1.000	20.000	100.000
120	1.000	20.000	100.000
130	1.000	20.000	100.000
140	1.000	20.000	100.000
150	1.000	20.000	100.000
160	0.885	18.939	78.322
170	0.703	16.939	49.421
180	0.559	14.948	31.248
190	0.444	12.948	19.714
200	0.353	10.955	12.461
210	0.281	08.974	7.896
220	0.224	07.005	5.018
230	0.178	05.008	3.168
240	0.178	05.008	3.168
250	0.178	05.008	3.168
260	0.178	05.008	3.168
270	0.178	05.008	3.168
280	0.224	07.005	5.018
290	0.281	08.974	7.896
300	0.353	10.955	12.461
310	0.445	12.967	19.802
320	0.560	14.964	31.360
330	0.704	16.951	49.562
340	0.886	18.949	78.500
350	1.000	20.000	100.000



The antenna proposed in this application will be mounted in accordance with specific instructions provided by the antenna manufacturer. The antenna will be tested by the manufacturer using the type of mounting which will be employed in the field.

The directional antenna will be mounted on the tower which is of uniform cross section. No other antennas of any type are or will be mounted on the same tower level as the directional antenna.

No antenna is or will be mounted within any vertical or horizontal distance specified by the antenna manufacturer as being necessary for proper operation of the directional antenna. The antenna will be assembled under the supervision of a qualified engineer, who will provide the required certification. This statement will certify that the antenna has been installed pursuant to the manufacturer's instructions. Also upon completion of antenna construction, a statement from a licensed surveyor will be submitted with the application for license certifying the antenna has been installed in the proper orientation.

The directional antenna pattern will be produced by means of parasitic elements, adjusted to produce the required pattern.

The antenna pattern will be measured by the manufacturer on the test range, and the measurement results will be supplied to the Commission at the time Form 302-FM is filed covering the construction.