

Minnesota Public Radio - WIRC Ely, MN Modification of CP - Move to #1023187 CH# 207C3 - 89.3 MHz, Pwr= 18.5 kW, HAAT= 116.2 M, COR= 553.2 M Average Protected F(50-50)= 32.48 km Omni-directional											
REFERENCE		DISPLAY DATES								DATA 07-31-09	
47 53 01.0 N.		SEARCH 07-31-09									
91 50 32.0 W.											
CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DI ST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
207C3 WIRC Ely		CP MN	_CX	306.6 126.6	2.0 BNPED20071016AHI	47 53 39.9 91 51 50.0	19.000 103	107.3 541	36.8 Minnesota Public Radio	-146.0*	-146.4*
205A ATI KOKAN« Ati kokan		AL ON	_HN	10.3 190.5	95.1 0	48 43 28.0 91 36 39.0	6.000 100	5.0 1504	38.0 Ati kokan	63.5R 46	31.6M
205A LRRP-228« Ati kokan		LR ON	_HN	9.7 189.9	100.4	48 46 23.0 91 36 39.0	6.000 100	5.0 1503	90.3 Lrrp-228	63.5R	36.9M
207B CBON-FM-2^ Thunder Bay		OP ON	_HN	68.1 250.1	208.3 2351	48 33 02.0 89 13 25.0	50.000 150	134.3 532	65.0 Cbon-fm-20	33.4	2.0
206A NEW Gunflint Lake		CP MN	_CX	74.6 255.4	83.7 BNPED20071019AVI	48 04 40.0 90 45 34.0	1.000 79	23.4 613	15.7 Cook County Communi ty Radi	19.3	6.1
207C2 1282129 Ironwood		APP MI	_CX	140.0 321.3	202.2 BNPED20071017AJP	46 28 45.0 90 08 52.0	80.000 121	154.7 544	60.6 Korkee Inc.	9.0	33.1
205C3 WQRN Cook		CP MN	DCX	270.5 89.9	61.4 BMPED20080728AAU	47 53 09.0 92 39 47.0	16.000 70	2.9 484	28.6 Vcy Ameri ca Inc.	19.3	28.5
206B CKSB-9-FM« Fort Frances		OP ON	_HN	301.8 120.4	162.8 2106	48 38 22.0 93 43 15.0	50.000 142	77.0 494	64.0 Cksb-9-fm	148.5R	14.4M
209C3 1203043 Virginia		APP MN	_EX	237.6 57.1	62.8 BNPED20071012ADE	47 34 47.0 92 32 54.0	9.000 99	3.2 551	32.5 Vcy Ameri ca Inc.	23.4	26.5
206C2 WGZS Cloquet		CP MN	DEX	209.4 28.8	133.3 BNPED20071017ADS	46 50 10.7 92 42 08.1	25.000 134	65.2 537	43.2 Fond Du Lac Band Of Lake S	29.4	31.1
208C3 WJRF Duluth		LIC MN	_VX	189.8 9.6	123.5 BMLED20050204ABB	46 47 21.0 92 07 09.0	2.850 156	24.4 463	16.5 Refuge Medi a Group (new Bo	59.9	42.2
210A NEW Nett Lake		CP MN	_CX	285.7 104.8	96.8 BNPED20071018AOK	48 06 41.0 93 05 37.0	0.100 15	0.7 422	5.6 Bois Forte Tribal Council	55.6	86.9
204A 1251932 Hibbing		APP MN	_CX	239.0 58.2	96.7 BNPED20071022BCW	47 25 54.0 92 56 33.0	4.000 56	1.8 500	18.0 We Have This Hope Christia	58.8	74.7
210VL CHIX-FM« Seine River (i.r.)		OP ON	_HN	335.3 154.8	102.7 5654	48 43 13.0 92 25 37.0	0.010 12	0.2 112	4.4 Chi x-fm	50.5R	52.2M
209C3 WLSN Grand Marais		LIC MN	_CX	96.0 277.1	112.7 BLED20020411AAL	47 46 04.0 90 20 47.0	6.000 194	2.2 537	21.7 Minnesota Public Radi o	71.3	87.0
204C3 WMLS Grand Marais		LIC MN	_CX	96.0 277.1	112.7 BLED20020411AAK	47 46 04.0 90 20 47.0	6.000 194	2.2 537	21.7 Minnesota Public Radi o	71.3	87.0
207C1 KOPJ Sebeka		LIC MN	_C_	236.1 54.1	259.2 BLED20051005AAI	46 33 08.0 94 39 03.0	100.000 143	149.8 560	54.2 Li fetal k Radi o, Inc.	71.7	97.7

Terrain database is USGS 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
 In & Out distances between contours are shown at closest points. Reference zone = 2, Co to 3rd adjacent.
 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.
 ^ = Power and antenna height 'Max classed' as per Sec 73.215 protection requirements
 Reference station has protected zone issue: Canada

HOW TO READ THE FM COMPUTER PRINT-OUT

Full Service Stations

The computer printout should be self-explanatory for the most part. The parameters of the station being checked, (reference station) are printed in the heading. Contour distances are in kilometers and are predicted using the Commission's TVFMINT FORTRAN subroutine. When interference contour distances are less than 16 kilometers the F(50-50) tables are used. If signal contour distances are less than 1.6 km the free-space equation is used.

The column listed "IN " is the difference in kilometers between of the reference station's protected contour and the data file station's interference contour at the closest point between the contours. (All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90.) Therefore, "IN" column is a measure of incoming interference. Negative distances in this column indicate the presence of contour overlap. Listed antenna heights and power are those given in the FCC database. The column labeled "OUT " shows the greatest distance in kilometers of overlap or smallest of clearance between the reference station's interference contour and the database station's protected contour. Negative distance figures in this column indicate outgoing contour overlap.

Under the "AZI" column, the first row of numbers indicate the True North bearings from the reference station toward the database stations, while the numbers in the second row indicate the reverse bearings from the database stations to the reference station.

The columns labeled "INT" and "PRO" contain the distance in kilometers of the appropriate interference contour and the protected contour of a data base station.

For I.F. relationships, some channel-six TV relationships and relationships with commercial channel stations providing clearance the minimum spacings values the "IN" and "OUT" columns can change their significance. The letter "R" stands for the minimum **required** distance in kilometers, while the letter "M" in the next column follows the **available clear space** (or lack of it) in kilometers. Minimum separation distances when displayed are taken from Sec 73.207 of the rules as amended. Canadian and Mexican separation distances, U/D ratios and protected contour values are from the US/Mexican Working Agreement and the US/Canada Working Agreement".

The call letters of stations meeting the minimum separation distances under the rules will be flagged by the characters "<<" appended to the right-hand side of the call sign. The "^" character appended to the call sign means the station has been "max-classed" according to the provisions of section 73.525 of the Rules.

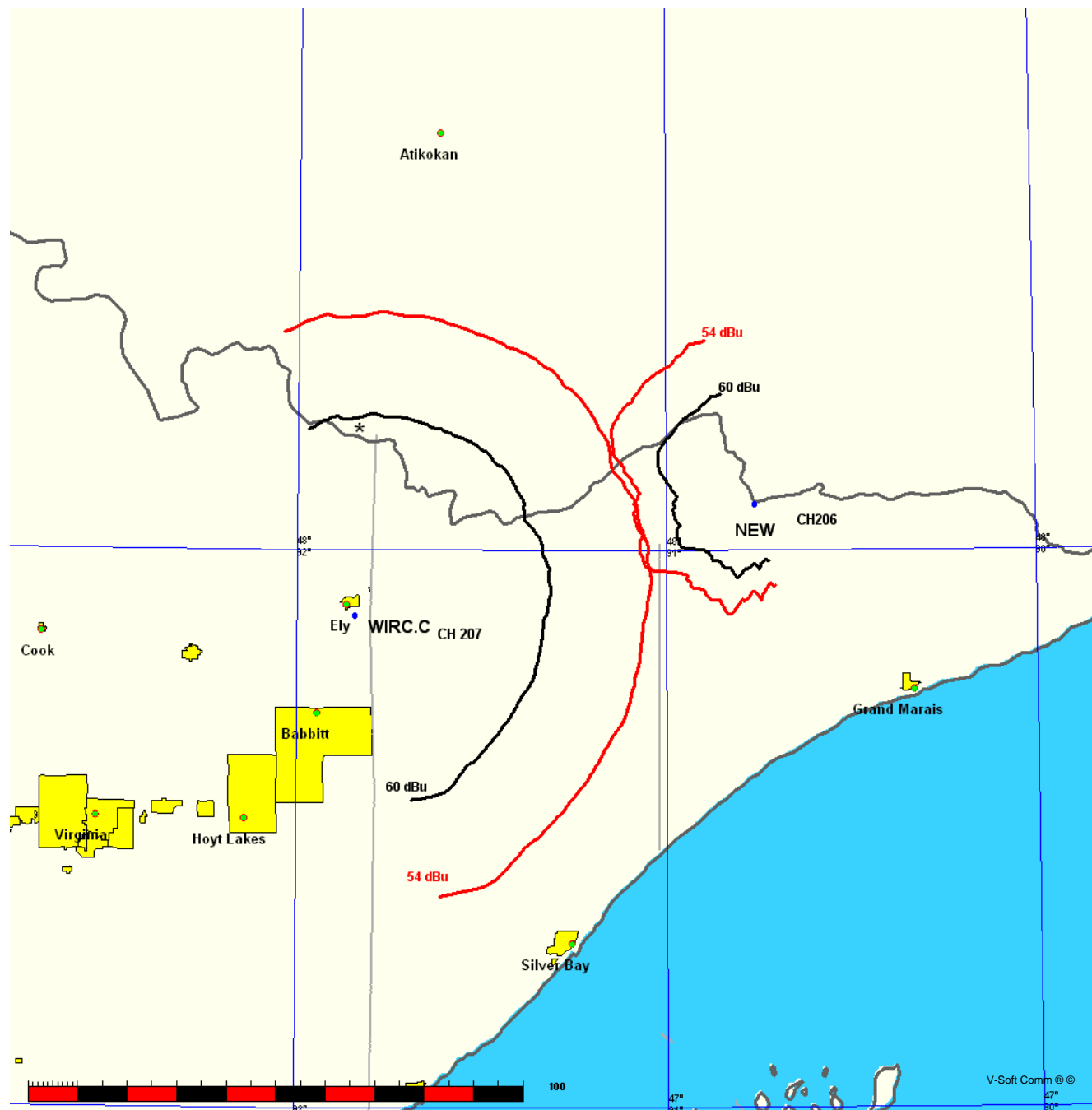
The first three letters of the "TYPE" column identify the current FCC status of the stations. The fourth letter will be a "D" if the facility is directional. "Z" indicates a 73.215 directional. An "N" indicates it is a 73.215 station that operates with an omni-directional antenna. The fifth letter will be an E, H or V depending on the type of antenna polarization. The sixth letter will be a "Y" if the antenna uses beam tilt or an "X" if the commission is not sure, otherwise it will be an "N" or left blank.

Minnesota Public Radio - WIRC Ely, MN
WIRC (New) v. New Gunflint Lake CP

FMCommander Single Allocation Study - 07-31-2009 - USGS 03 SEC
WIRC.C's Overlaps (In= 19.34 km, Out= 6.1 km)

WIRC.C CH 207 C3
Lat= 47 53 01.0, Lng= 91 50 32.0
18.5 kW 116.2 M HAAT, 553.2 M COR
Prot.= 60 dBu, Intef.= 54 dBu

NEW CH 206 A BNPED20071019AVI
Lat= 48 04 40.0, Lng= 90 45 34.0
1.0 kW 79 M HAAT, 613 M COR
Prot.= 60 dBu, Intef.= 54 dBu



07-31-2009

USGS 03 SEC Terrain Data

FMOver Analysis

WIRC.C

Channel = 207C3

Max ERP = 18.5 kW

RCAMSL = 553.2 M

N. Lat. 47 53 01.0

W. Lng. 91 50 32.0

Protected

60 dBu

NEW BNPED20071019AVI

Channel = 206A

Max ERP = 1 kW

RCAMSL = 613 M

N. Lat. 48 04 40.0

W. Lng. 90 45 34.0

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
015.0	018.5000	0128.6	040.6	284.5	001.0000	0097.1	072.3	36.11	
016.0	018.5000	0129.4	040.7	284.6	001.0000	0097.1	071.5	36.33	
017.0	018.5000	0129.3	040.7	284.6	001.0000	0097.1	070.8	36.54	
018.0	018.5000	0128.4	040.6	284.4	001.0000	0097.0	070.1	36.74	
019.0	018.5000	0128.5	040.6	284.4	001.0000	0097.0	069.4	36.95	
020.0	018.5000	0128.6	040.7	284.4	001.0000	0097.0	068.7	37.15	
021.0	018.5000	0128.7	040.7	284.3	001.0000	0097.0	068.0	37.36	
022.0	018.5000	0128.7	040.7	284.2	001.0000	0097.0	067.3	37.57	
023.0	018.5000	0129.1	040.7	284.2	001.0000	0097.1	066.6	37.78	
024.0	018.5000	0129.5	040.8	284.1	001.0000	0097.1	065.9	38.00	
025.0	018.5000	0130.9	040.9	284.1	001.0000	0097.1	065.1	38.22	
026.0	018.5000	0130.9	040.9	284.0	001.0000	0097.1	064.4	38.43	
027.0	018.5000	0131.8	041.0	283.9	001.0000	0097.1	063.7	38.66	
028.0	018.5000	0132.3	041.1	283.9	001.0000	0097.1	063.0	38.88	
029.0	018.5000	0131.5	041.0	283.6	001.0000	0096.8	062.4	39.07	
030.0	018.5000	0132.2	041.1	283.5	001.0000	0096.6	061.6	39.29	
031.0	018.5000	0133.6	041.3	283.4	001.0000	0096.5	060.9	39.54	
032.0	018.5000	0134.9	041.4	283.4	001.0000	0096.3	060.2	39.77	
033.0	018.5000	0135.8	041.6	283.2	001.0000	0095.8	059.4	40.00	
034.0	018.5000	0137.3	041.8	283.2	001.0000	0095.5	058.7	40.24	
035.0	018.5000	0137.9	041.8	282.9	001.0000	0094.6	058.0	40.43	
036.0	018.5000	0138.4	041.9	282.7	001.0000	0093.5	057.3	40.60	
037.0	018.5000	0137.0	041.7	282.3	001.0000	0090.6	056.7	40.60	
038.0	018.5000	0137.1	041.7	281.9	001.0000	0088.5	056.1	40.69	
039.0	018.5000	0139.4	042.0	281.9	001.0000	0088.1	055.3	40.94	
040.0	018.5000	0139.6	042.0	281.5	001.0000	0086.9	054.6	41.09	
041.0	018.5000	0138.6	041.9	281.0	001.0000	0086.1	054.0	41.23	
042.0	018.5000	0137.2	041.7	280.4	001.0000	0085.7	053.5	41.39	
043.0	018.5000	0135.3	041.5	279.8	001.0000	0084.9	053.0	41.50	
044.0	018.5000	0136.9	041.7	279.5	001.0000	0084.1	052.3	41.69	
045.0	018.5000	0139.0	042.0	279.3	001.0000	0083.3	051.6	41.89	
046.0	018.5000	0139.1	042.0	278.8	001.0000	0081.6	051.0	41.96	
047.0	018.5000	0138.7	041.9	278.3	001.0000	0079.8	050.5	41.99	
048.0	018.5000	0137.6	041.8	277.6	001.0000	0078.2	050.0	42.01	
049.0	018.5000	0137.2	041.7	277.0	001.0000	0077.1	049.5	42.08	
050.0	018.5000	0136.6	041.7	276.3	001.0000	0076.4	049.0	42.18	
051.0	018.5000	0134.9	041.4	275.6	001.0000	0074.4	048.6	42.12	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
052.0	018.5000	0133.6	041.3	274.8	001.0000	0072.7	048.3	42.08
053.0	018.5000	0132.4	041.1	274.0	001.0000	0074.8	047.9	42.40
054.0	018.5000	0131.6	041.0	273.3	001.0000	0074.7	047.5	42.52
055.0	018.5000	0131.8	041.0	272.6	001.0000	0073.7	047.1	42.58
056.0	018.5000	0131.4	041.0	271.9	001.0000	0074.7	046.7	42.82
057.0	018.5000	0129.6	040.8	271.0	001.0000	0077.7	046.5	43.18
058.0	018.5000	0125.9	040.3	270.0	001.0000	0079.7	046.5	43.37
059.0	018.5000	0122.6	039.9	268.9	001.0000	0078.6	046.5	43.26
060.0	018.5000	0119.6	039.5	268.0	001.0000	0075.8	046.5	42.99
061.0	018.5000	0117.8	039.3	267.1	001.0000	0076.4	046.4	43.09
062.0	018.5000	0118.8	039.4	266.4	001.0000	0078.3	046.0	43.41
063.0	018.5000	0120.6	039.7	265.7	001.0000	0080.5	045.5	43.80
064.0	018.5000	0122.3	039.9	265.0	001.0000	0080.6	045.1	43.97
065.0	018.5000	0123.0	040.0	264.2	001.0000	0079.6	044.8	43.99
066.0	018.5000	0124.2	040.1	263.4	001.0000	0079.8	044.4	44.14
067.0	018.5000	0125.3	040.2	262.5	001.0000	0079.5	044.1	44.24
068.0	018.5000	0126.7	040.4	261.7	001.0000	0079.0	043.7	44.31
069.0	018.5000	0127.0	040.4	260.8	001.0000	0077.8	043.6	44.26
070.0	018.5000	0126.3	040.4	259.9	001.0000	0079.0	043.5	44.40
071.0	018.5000	0124.2	040.1	258.9	001.0000	0078.7	043.7	44.31
072.0	018.5000	0122.7	039.9	258.0	001.0000	0077.1	043.8	44.11
073.0	018.5000	0122.8	039.9	257.1	001.0000	0076.4	043.7	44.07
074.0	018.5000	0124.2	040.1	256.2	001.0000	0076.1	043.5	44.11
075.0	018.5000	0124.6	040.1	255.2	001.0000	0073.8	043.4	43.90
076.0	018.5000	0125.8	040.3	254.3	001.0000	0073.2	043.3	43.89
077.0	018.5000	0126.6	040.4	253.4	001.0000	0074.3	043.2	44.02
078.0	018.5000	0124.9	040.2	252.5	001.0000	0077.7	043.5	44.26
079.0	018.5000	0122.8	039.9	251.6	001.0000	0080.3	043.9	44.39
080.0	018.5000	0121.5	039.8	250.7	001.0000	0080.9	044.1	44.35
081.0	018.5000	0122.5	039.9	249.8	001.0000	0081.2	044.1	44.38
082.0	018.5000	0123.5	040.0	248.9	001.0000	0082.1	044.2	44.45
083.0	018.5000	0123.2	040.0	248.0	001.0000	0082.8	044.4	44.44
084.0	018.5000	0122.1	039.8	247.2	001.0000	0083.7	044.7	44.40
085.0	018.5000	0120.4	039.6	246.4	001.0000	0084.4	045.1	44.31
086.0	018.5000	0118.6	039.4	245.7	001.0000	0084.2	045.6	44.13
087.0	018.5000	0116.9	039.2	245.0	001.0000	0083.8	046.0	43.92
088.0	018.5000	0115.6	039.0	244.3	001.0000	0083.7	046.5	43.75
089.0	018.5000	0115.7	039.0	243.6	001.0000	0084.1	046.7	43.69
090.0	018.5000	0113.8	038.8	243.0	001.0000	0084.6	047.3	43.54
091.0	018.5000	0111.5	038.4	242.4	001.0000	0085.1	047.9	43.37
092.0	018.5000	0110.2	038.3	241.9	001.0000	0085.5	048.4	43.23
093.0	018.5000	0110.3	038.3	241.2	001.0000	0086.0	048.7	43.15
094.0	018.5000	0109.9	038.2	240.6	001.0000	0085.7	049.1	42.98
095.0	018.5000	0109.5	038.2	240.0	001.0000	0084.9	049.6	42.75
096.0	018.5000	0109.8	038.2	239.3	001.0000	0084.4	049.9	42.58
097.0	018.5000	0109.6	038.2	238.7	001.0000	0083.8	050.4	42.38
098.0	018.5000	0109.1	038.1	238.2	001.0000	0083.0	050.8	42.14
099.0	018.5000	0109.7	038.2	237.6	001.0000	0081.7	051.2	41.89
100.0	018.5000	0109.6	038.2	237.0	001.0000	0080.7	051.7	41.64
101.0	018.5000	0109.5	038.2	236.5	001.0000	0079.2	052.1	41.34
102.0	018.5000	0108.8	038.1	236.1	001.0000	0077.8	052.7	41.03

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
103.0	018.5000	0108.7	038.0	235.6	001.0000	0076.6	053.2	40.74
104.0	018.5000	0109.3	038.1	235.1	001.0000	0075.1	053.6	40.46
105.0	018.5000	0109.1	038.1	234.6	001.0000	0074.0	054.2	40.18
106.0	018.5000	0109.1	038.1	234.2	001.0000	0072.8	054.7	39.91
107.0	018.5000	0109.3	038.1	233.8	001.0000	0071.3	055.2	39.60
108.0	018.5000	0109.8	038.2	233.3	001.0000	0069.5	055.7	39.29
109.0	018.5000	0109.8	038.2	232.9	001.0000	0068.4	056.3	39.01
110.0	018.5000	0109.8	038.2	232.5	001.0000	0067.3	056.8	38.74
111.0	018.5000	0109.9	038.2	232.2	001.0000	0066.3	057.4	38.47
112.0	018.5000	0109.4	038.2	231.9	001.0000	0065.5	058.0	38.21
113.0	018.5000	0108.3	038.0	231.7	001.0000	0065.1	058.7	37.96
114.0	018.5000	0106.7	037.7	231.7	001.0000	0064.8	059.4	37.73
115.0	018.5000	0105.5	037.6	231.5	001.0000	0064.5	060.0	37.50
116.0	018.5000	0105.0	037.5	231.3	001.0000	0063.9	060.7	37.26
117.0	018.5000	0104.7	037.4	231.1	001.0000	0063.3	061.3	37.04
118.0	018.5000	0104.6	037.4	230.9	001.0000	0062.6	061.9	36.81
119.0	018.5000	0104.7	037.4	230.7	001.0000	0062.0	062.5	36.59
120.0	018.5000	0105.0	037.5	230.4	001.0000	0061.3	063.1	36.37
121.0	018.5000	0105.1	037.5	230.2	001.0000	0060.8	063.7	36.17
122.0	018.5000	0105.0	037.5	230.0	001.0000	0060.4	064.3	35.97
123.0	018.5000	0104.8	037.5	229.9	001.0000	0060.0	065.0	35.78
124.0	018.5000	0104.9	037.5	229.7	001.0000	0059.7	065.6	35.59
125.0	018.5000	0105.1	037.5	229.6	001.0000	0059.2	066.2	35.39
126.0	018.5000	0104.9	037.5	229.4	001.0000	0059.0	066.9	35.21
127.0	018.5000	0104.6	037.4	229.4	001.0000	0058.9	067.5	35.03
128.0	018.5000	0104.7	037.4	229.2	001.0000	0058.6	068.1	34.85
129.0	018.5000	0104.9	037.5	229.1	001.0000	0058.5	068.8	34.68
130.0	018.5000	0104.9	037.5	229.0	001.0000	0058.3	069.4	34.50
131.0	018.5000	0105.0	037.5	229.0	001.0000	0058.2	070.1	34.33
132.0	018.5000	0105.3	037.5	228.8	001.0000	0058.1	070.7	34.16
133.0	018.5000	0105.7	037.6	228.7	001.0000	0058.0	071.4	33.99
134.0	018.5000	0105.8	037.6	228.7	001.0000	0057.9	072.0	33.82
135.0	018.5000	0100.9	036.8	229.3	001.0000	0058.7	072.7	33.69

07-31-2009 USGS 03 SEC Terrain Data

NEW BNPED20071019AVI

Channel = 206A

Max ERP = 1 kW

RCAMSL = 613 M

N. Lat. 48 04 40.0

W. Lng. 90 45 34.0

Protected

60 dBu

WIRC.C

Channel = 207C3

Max ERP = 18.5 kW

RCAMSL = 553.2 M

N. Lat. 47 53 01.0

W. Lng. 91 50 32.0

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
195.0	001.0000	0065.9	014.8	084.2	018.5000	0121.8	077.5	48.55	
196.0	001.0000	0063.2	014.5	083.9	018.5000	0122.2	077.3	48.61	
197.0	001.0000	0060.9	014.3	083.7	018.5000	0122.5	077.2	48.66	
198.0	001.0000	0058.3	014.0	083.4	018.5000	0122.8	077.1	48.71	
199.0	001.0000	0056.0	013.7	083.2	018.5000	0123.1	076.9	48.76	
200.0	001.0000	0055.9	013.7	083.1	018.5000	0123.1	076.7	48.82	
201.0	001.0000	0056.3	013.8	083.0	018.5000	0123.2	076.5	48.90	
202.0	001.0000	0057.9	013.9	083.1	018.5000	0123.1	076.2	48.98	
203.0	001.0000	0058.5	014.0	083.0	018.5000	0123.2	076.0	49.06	
204.0	001.0000	0058.8	014.0	083.0	018.5000	0123.2	075.7	49.13	
205.0	001.0000	0058.7	014.0	082.9	018.5000	0123.3	075.5	49.19	
206.0	001.0000	0057.2	013.9	082.6	018.5000	0123.4	075.4	49.24	
207.0	001.0000	0057.2	013.9	082.5	018.5000	0123.5	075.2	49.30	
208.0	001.0000	0056.5	013.8	082.4	018.5000	0123.5	075.0	49.35	
209.0	001.0000	0055.3	013.6	082.2	018.5000	0123.5	074.9	49.38	
210.0	001.0000	0053.6	013.4	082.0	018.5000	0123.5	074.9	49.40	
211.0	001.0000	0053.7	013.4	081.9	018.5000	0123.4	074.7	49.45	
212.0	001.0000	0054.0	013.5	081.8	018.5000	0123.4	074.5	49.51	
213.0	001.0000	0054.5	013.5	081.7	018.5000	0123.3	074.2	49.57	
214.0	001.0000	0055.7	013.7	081.7	018.5000	0123.3	074.0	49.66	
215.0	001.0000	0056.6	013.8	081.6	018.5000	0123.2	073.7	49.73	
216.0	001.0000	0057.6	013.9	081.5	018.5000	0123.1	073.5	49.80	
217.0	001.0000	0058.7	014.0	081.5	018.5000	0123.1	073.2	49.87	
218.0	001.0000	0056.7	013.8	081.2	018.5000	0122.8	073.2	49.86	
219.0	001.0000	0054.2	013.5	080.9	018.5000	0122.3	073.3	49.82	
220.0	001.0000	0053.8	013.5	080.7	018.5000	0122.0	073.1	49.84	
221.0	001.0000	0055.1	013.6	080.7	018.5000	0121.9	072.9	49.92	
222.0	001.0000	0055.0	013.6	080.5	018.5000	0121.7	072.7	49.96	
223.0	001.0000	0052.4	013.3	080.2	018.5000	0121.5	072.8	49.92	
224.0	001.0000	0052.3	013.3	080.1	018.5000	0121.5	072.7	49.95	
225.0	001.0000	0053.9	013.5	080.0	018.5000	0121.5	072.4	50.04	
226.0	001.0000	0054.1	013.5	079.9	018.5000	0121.6	072.2	50.10	
227.0	001.0000	0054.8	013.6	079.8	018.5000	0121.8	072.0	50.17	
228.0	001.0000	0056.9	013.8	079.7	018.5000	0121.9	071.7	50.28	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
229.0	001.0000	0058.3	014.0	079.6	018.5000	0122.0	071.4	50.36
230.0	001.0000	0060.3	014.2	079.5	018.5000	0122.1	071.1	50.46
231.0	001.0000	0063.0	014.5	079.5	018.5000	0122.2	070.8	50.58
232.0	001.0000	0065.7	014.8	079.4	018.5000	0122.3	070.4	50.70
233.0	001.0000	0068.6	015.1	079.3	018.5000	0122.3	070.0	50.82
234.0	001.0000	0072.1	015.5	079.3	018.5000	0122.4	069.5	50.97
235.0	001.0000	0074.9	015.8	079.2	018.5000	0122.5	069.1	51.10
236.0	001.0000	0077.6	016.1	079.1	018.5000	0122.7	068.7	51.23
237.0	001.0000	0080.6	016.4	079.0	018.5000	0122.8	068.3	51.38
238.0	001.0000	0082.6	016.7	078.8	018.5000	0123.1	068.0	51.50
239.0	001.0000	0084.1	016.9	078.6	018.5000	0123.5	067.7	51.60
240.0	001.0000	0084.9	017.0	078.4	018.5000	0123.9	067.5	51.68
241.0	001.0000	0086.0	017.1	078.2	018.5000	0124.4	067.3	51.77
242.0	001.0000	0085.5	017.0	078.0	018.5000	0125.0	067.3	51.81
243.0	001.0000	0084.6	016.9	077.7	018.5000	0125.3	067.3	51.83
244.0	001.0000	0083.8	016.8	077.4	018.5000	0125.6	067.3	51.84
245.0	001.0000	0083.8	016.8	077.2	018.5000	0126.2	067.2	51.89
246.0	001.0000	0084.4	016.9	077.0	018.5000	0126.7	067.1	51.96
247.0	001.0000	0083.9	016.8	076.7	018.5000	0127.0	067.1	51.97
248.0	001.0000	0082.9	016.7	076.4	018.5000	0126.7	067.2	51.94
249.0	001.0000	0082.0	016.6	076.2	018.5000	0126.2	067.2	51.89
250.0	001.0000	0081.1	016.5	075.9	018.5000	0125.7	067.3	51.84
251.0	001.0000	0080.8	016.5	075.7	018.5000	0125.2	067.3	51.82
252.0	001.0000	0079.3	016.3	075.4	018.5000	0124.9	067.4	51.75
253.0	001.0000	0075.5	015.8	075.2	018.5000	0124.7	067.9	51.60
254.0	001.0000	0073.3	015.6	074.9	018.5000	0124.6	068.1	51.52
255.0	001.0000	0073.6	015.6	074.7	018.5000	0124.5	068.1	51.53
256.0	001.0000	0075.8	015.9	074.5	018.5000	0124.4	067.8	51.61
257.0	001.0000	0076.5	016.0	074.2	018.5000	0124.4	067.8	51.63
258.0	001.0000	0077.1	016.0	074.0	018.5000	0124.1	067.7	51.63
259.0	001.0000	0078.8	016.2	073.7	018.5000	0123.7	067.5	51.67
260.0	001.0000	0078.8	016.2	073.5	018.5000	0123.3	067.5	51.64
261.0	001.0000	0077.9	016.1	073.3	018.5000	0123.1	067.7	51.58
262.0	001.0000	0079.4	016.3	073.0	018.5000	0122.8	067.5	51.61
263.0	001.0000	0079.7	016.3	072.8	018.5000	0122.6	067.5	51.60
264.0	001.0000	0079.7	016.3	072.5	018.5000	0122.5	067.6	51.58
265.0	001.0000	0080.6	016.5	072.3	018.5000	0122.6	067.5	51.60
266.0	001.0000	0079.7	016.3	072.0	018.5000	0122.7	067.7	51.55
267.0	001.0000	0076.6	016.0	071.9	018.5000	0122.8	068.1	51.42
268.0	001.0000	0075.8	015.9	071.7	018.5000	0123.0	068.3	51.38
269.0	001.0000	0078.7	016.2	071.4	018.5000	0123.4	068.0	51.48
270.0	001.0000	0079.7	016.3	071.1	018.5000	0124.0	068.0	51.52
271.0	001.0000	0077.7	016.1	071.0	018.5000	0124.3	068.3	51.44
272.0	001.0000	0074.5	015.7	070.8	018.5000	0124.5	068.8	51.31
273.0	001.0000	0074.3	015.7	070.6	018.5000	0125.0	068.9	51.30
274.0	001.0000	0074.8	015.8	070.4	018.5000	0125.6	068.9	51.32
275.0	001.0000	0072.8	015.5	070.3	018.5000	0125.9	069.3	51.23
276.0	001.0000	0075.6	015.9	070.0	018.5000	0126.4	069.1	51.31
277.0	001.0000	0077.1	016.0	069.7	018.5000	0126.8	069.1	51.35
278.0	001.0000	0079.1	016.3	069.4	018.5000	0127.0	069.0	51.38
279.0	001.0000	0082.3	016.6	069.0	018.5000	0127.0	068.8	51.44

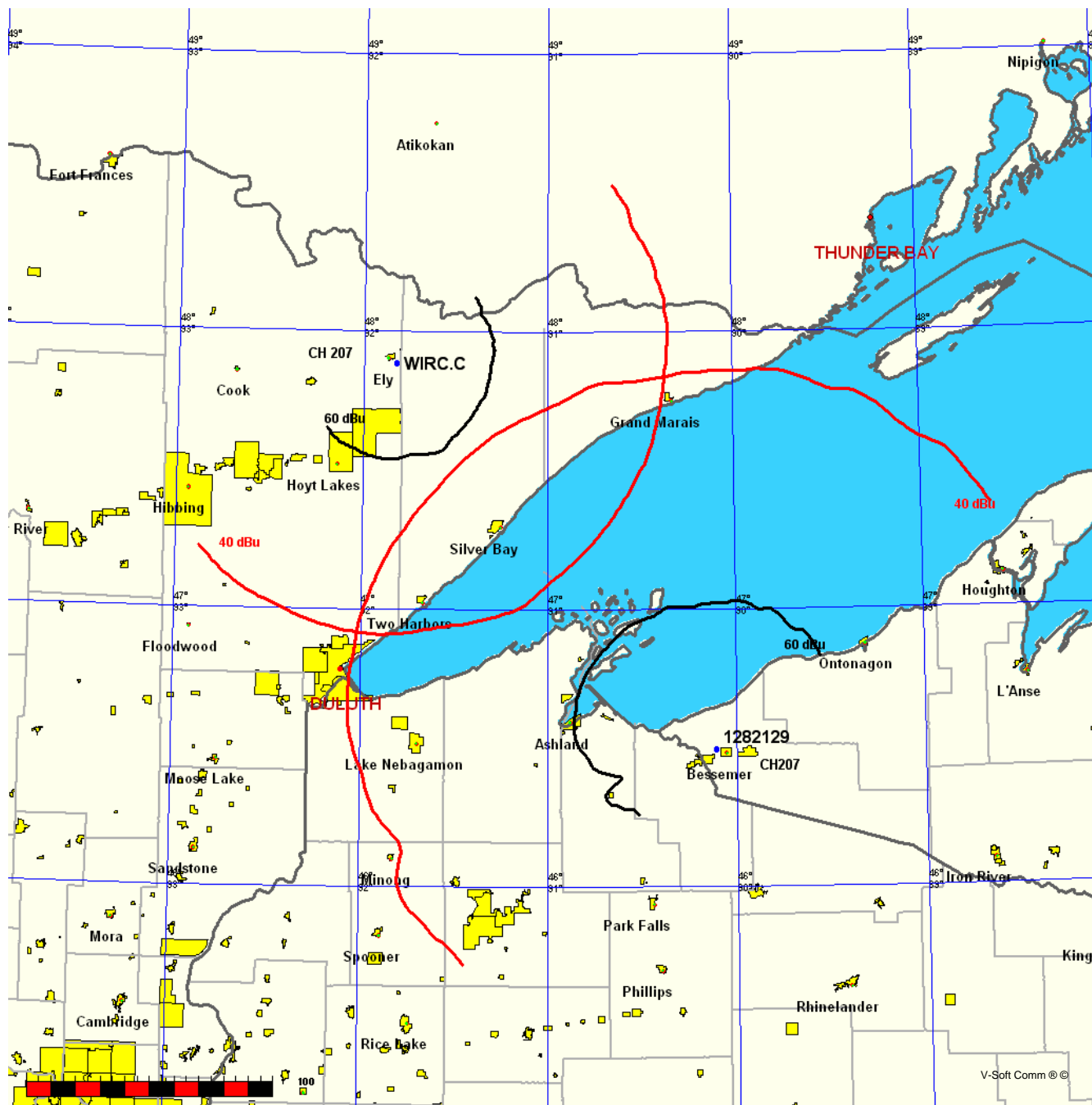
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
280.0	001.0000	0085.2	017.0	068.7	018.5000	0126.9	068.6	51.48
281.0	001.0000	0086.1	017.1	068.4	018.5000	0126.8	068.7	51.46
282.0	001.0000	0088.9	017.4	068.1	018.5000	0126.7	068.6	51.49
283.0	001.0000	0094.8	018.1	067.5	018.5000	0126.2	068.2	51.58
284.0	001.0000	0097.1	018.3	067.2	018.5000	0125.6	068.2	51.55
285.0	001.0000	0097.8	018.4	066.9	018.5000	0125.2	068.3	51.49
286.0	001.0000	0102.5	018.8	066.5	018.5000	0124.5	068.2	51.50
287.0	001.0000	0107.2	019.3	066.0	018.5000	0124.2	068.0	51.53
288.0	001.0000	0114.3	019.9	065.5	018.5000	0123.6	067.8	51.58
289.0	001.0000	0119.3	020.3	065.0	018.5000	0123.0	067.7	51.57
290.0	001.0000	0121.2	020.5	064.7	018.5000	0122.7	067.8	51.51
291.0	001.0000	0123.4	020.7	064.4	018.5000	0122.5	068.0	51.45
292.0	001.0000	0126.4	020.9	064.0	018.5000	0122.3	068.1	51.41
293.0	001.0000	0128.1	021.0	063.7	018.5000	0122.0	068.3	51.34
294.0	001.0000	0130.7	021.2	063.4	018.5000	0121.6	068.4	51.26
295.0	001.0000	0134.2	021.5	063.1	018.5000	0120.8	068.6	51.18
296.0	001.0000	0137.0	021.7	062.7	018.5000	0120.0	068.7	51.09
297.0	001.0000	0138.9	021.8	062.5	018.5000	0119.5	069.0	51.00
298.0	001.0000	0140.2	021.9	062.2	018.5000	0119.2	069.2	50.90
299.0	001.0000	0140.1	021.9	062.0	018.5000	0118.8	069.5	50.79
300.0	001.0000	0139.6	021.9	061.9	018.5000	0118.6	069.9	50.67
301.0	001.0000	0139.3	021.8	061.7	018.5000	0118.3	070.2	50.55
302.0	001.0000	0139.7	021.9	061.5	018.5000	0118.1	070.5	50.44
303.0	001.0000	0140.3	021.9	061.4	018.5000	0117.9	070.8	50.34
304.0	001.0000	0140.4	021.9	061.2	018.5000	0117.8	071.1	50.23
305.0	001.0000	0140.3	021.9	061.1	018.5000	0117.8	071.5	50.13
306.0	001.0000	0139.9	021.9	061.0	018.5000	0117.8	071.8	50.02
307.0	001.0000	0138.6	021.8	060.9	018.5000	0117.9	072.2	49.91
308.0	001.0000	0137.1	021.7	060.9	018.5000	0117.9	072.6	49.80
309.0	001.0000	0135.2	021.5	060.8	018.5000	0118.0	073.0	49.68
310.0	001.0000	0135.6	021.6	060.7	018.5000	0118.2	073.4	49.59
311.0	001.0000	0136.9	021.7	060.5	018.5000	0118.4	073.7	49.50
312.0	001.0000	0137.1	021.7	060.4	018.5000	0118.6	074.0	49.41
313.0	001.0000	0137.8	021.7	060.3	018.5000	0118.9	074.4	49.32
314.0	001.0000	0138.9	021.8	060.1	018.5000	0119.2	074.7	49.24
315.0	001.0000	0160.7	023.3	058.9	018.5000	0122.8	074.7	49.42

Minnesota Public Radio - WIRC Ely, MN
WIRC (New) v. App ID 1282129 Ironwood

FMCommander Single Allocation Study - 07-31-2009 - USGS 03 SEC
WIRC.C's Overlaps (In= 8.95 km, Out= 33.13 km)

WIRC.C CH 207 C3
Lat= 47 53 01.0, Lng= 91 50 32.0
18.5 kW 116.2 M HAAT, 553.2 M COR
Prot.= 60 dBu, Intef.= 40 dBu

1282129 CH 207 C2 BNPED20071017AJP
Lat= 46 28 45.0, Lng= 90 08 52.0
80.0 kW 121 M HAAT, 544 M COR
Prot.= 60 dBu, Intef.= 40 dBu



07-31-2009

USGS 03 SEC Terrain Data

FMOver Analysis

WIRC.C

Channel = 207C3

Max ERP = 18.5 kW

RCAMSL = 553.2 M

N. Lat. 47 53 01.0

W. Lng. 91 50 32.0

Protected

60 dBu

1282129 BNPED20071017AJP

Channel = 207C2

Max ERP = 80 kW

RCAMSL = 544 M

N. Lat. 46 28 45.0

W. Lng. 90 08 52.0

Interfering

40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
080.0	018.5000	0121.5	039.8	331.8	080.0000	0175.6	185.9	34.12	
081.0	018.5000	0122.5	039.9	331.8	080.0000	0175.6	185.2	34.25	
082.0	018.5000	0123.5	040.0	331.7	080.0000	0175.6	184.5	34.38	
083.0	018.5000	0123.2	040.0	331.7	080.0000	0175.7	183.8	34.50	
084.0	018.5000	0122.1	039.8	331.5	080.0000	0175.8	183.2	34.61	
085.0	018.5000	0120.4	039.6	331.4	080.0000	0175.9	182.7	34.72	
086.0	018.5000	0118.6	039.4	331.2	080.0000	0176.2	182.2	34.82	
087.0	018.5000	0116.9	039.2	331.1	080.0000	0176.4	181.6	34.92	
088.0	018.5000	0115.6	039.0	330.9	080.0000	0176.6	181.1	35.03	
089.0	018.5000	0115.7	039.0	330.8	080.0000	0176.7	180.5	35.14	
090.0	018.5000	0113.8	038.8	330.6	080.0000	0177.0	180.1	35.23	
091.0	018.5000	0111.5	038.4	330.4	080.0000	0177.3	179.6	35.32	
092.0	018.5000	0110.2	038.3	330.3	080.0000	0177.5	179.2	35.41	
093.0	018.5000	0110.3	038.3	330.2	080.0000	0177.7	178.6	35.52	
094.0	018.5000	0109.9	038.2	330.0	080.0000	0178.0	178.1	35.62	
095.0	018.5000	0109.5	038.2	329.9	080.0000	0178.3	177.6	35.72	
096.0	018.5000	0109.8	038.2	329.8	080.0000	0178.6	177.0	35.83	
097.0	018.5000	0109.6	038.2	329.6	080.0000	0179.1	176.5	35.94	
098.0	018.5000	0109.1	038.1	329.5	080.0000	0179.5	176.0	36.03	
099.0	018.5000	0109.7	038.2	329.4	080.0000	0179.8	175.5	36.14	
100.0	018.5000	0109.6	038.2	329.2	080.0000	0180.1	175.0	36.24	
101.0	018.5000	0109.5	038.2	329.1	080.0000	0180.5	174.5	36.34	
102.0	018.5000	0108.8	038.1	328.9	080.0000	0180.8	174.1	36.42	
103.0	018.5000	0108.7	038.0	328.7	080.0000	0181.1	173.6	36.51	
104.0	018.5000	0109.3	038.1	328.6	080.0000	0181.4	173.1	36.62	
105.0	018.5000	0109.1	038.1	328.4	080.0000	0181.7	172.7	36.70	
106.0	018.5000	0109.1	038.1	328.3	080.0000	0182.1	172.2	36.79	
107.0	018.5000	0109.3	038.1	328.1	080.0000	0182.4	171.8	36.88	
108.0	018.5000	0109.8	038.2	327.9	080.0000	0182.7	171.3	36.98	
109.0	018.5000	0109.8	038.2	327.8	080.0000	0183.0	170.9	37.06	
110.0	018.5000	0109.8	038.2	327.6	080.0000	0183.3	170.5	37.14	
111.0	018.5000	0109.9	038.2	327.4	080.0000	0183.7	170.1	37.22	
112.0	018.5000	0109.4	038.2	327.2	080.0000	0184.1	169.7	37.29	
113.0	018.5000	0108.3	038.0	327.0	080.0000	0184.4	169.5	37.33	
114.0	018.5000	0106.7	037.7	326.8	080.0000	0184.8	169.3	37.37	
115.0	018.5000	0105.5	037.6	326.5	080.0000	0185.1	169.2	37.41	
116.0	018.5000	0105.0	037.5	326.3	080.0000	0185.4	168.9	37.47	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
117.0	018.5000	0104.7	037.4	326.1	080.0000	0185.8	168.6	37.52
118.0	018.5000	0104.6	037.4	325.9	080.0000	0186.1	168.3	37.58
119.0	018.5000	0104.7	037.4	325.7	080.0000	0186.3	168.0	37.64
120.0	018.5000	0105.0	037.5	325.6	080.0000	0186.5	167.7	37.70
121.0	018.5000	0105.1	037.5	325.4	080.0000	0186.8	167.4	37.76
122.0	018.5000	0105.0	037.5	325.1	080.0000	0187.0	167.2	37.81
123.0	018.5000	0104.8	037.5	324.9	080.0000	0187.3	167.0	37.85
124.0	018.5000	0104.9	037.5	324.7	080.0000	0187.4	166.7	37.90
125.0	018.5000	0105.1	037.5	324.5	080.0000	0187.6	166.5	37.94
126.0	018.5000	0104.9	037.5	324.3	080.0000	0187.8	166.3	37.98
127.0	018.5000	0104.6	037.4	324.1	080.0000	0187.9	166.2	38.01
128.0	018.5000	0104.7	037.4	323.9	080.0000	0187.9	166.0	38.04
129.0	018.5000	0104.9	037.5	323.7	080.0000	0187.8	165.8	38.07
130.0	018.5000	0104.9	037.5	323.4	080.0000	0187.7	165.6	38.10
131.0	018.5000	0105.0	037.5	323.2	080.0000	0187.6	165.5	38.12
132.0	018.5000	0105.3	037.5	323.0	080.0000	0187.6	165.3	38.15
133.0	018.5000	0105.7	037.6	322.8	080.0000	0187.5	165.1	38.18
134.0	018.5000	0105.8	037.6	322.6	080.0000	0187.6	165.0	38.20
135.0	018.5000	0105.8	037.6	322.3	080.0000	0187.7	165.0	38.22
136.0	018.5000	0105.8	037.6	322.1	080.0000	0188.0	164.9	38.24
137.0	018.5000	0106.1	037.7	321.9	080.0000	0188.2	164.8	38.26
138.0	018.5000	0106.7	037.7	321.6	080.0000	0188.3	164.7	38.28
139.0	018.5000	0107.3	037.8	321.4	080.0000	0188.4	164.6	38.31
140.0	018.5000	0107.7	037.9	321.2	080.0000	0188.4	164.5	38.32
141.0	018.5000	0107.3	037.8	321.0	080.0000	0188.5	164.5	38.31
142.0	018.5000	0106.3	037.7	320.7	080.0000	0188.4	164.7	38.28
143.0	018.5000	0106.7	037.7	320.5	080.0000	0188.3	164.7	38.28
144.0	018.5000	0107.7	037.9	320.3	080.0000	0188.2	164.6	38.30
145.0	018.5000	0109.5	038.2	320.0	080.0000	0188.1	164.4	38.33
146.0	018.5000	0111.3	038.4	319.8	080.0000	0188.0	164.2	38.36
147.0	018.5000	0112.8	038.6	319.6	080.0000	0188.0	164.1	38.38
148.0	018.5000	0114.4	038.8	319.3	080.0000	0188.1	164.0	38.40
149.0	018.5000	0116.7	039.2	319.1	080.0000	0188.1	163.8	38.44
150.0	018.5000	0118.9	039.4	318.8	080.0000	0188.1	163.6	38.46
151.0	018.5000	0120.6	039.7	318.6	080.0000	0188.0	163.6	38.47
152.0	018.5000	0121.1	039.7	318.3	080.0000	0187.6	163.7	38.44
153.0	018.5000	0121.9	039.8	318.1	080.0000	0187.3	163.8	38.42
154.0	018.5000	0121.6	039.8	317.8	080.0000	0187.0	164.0	38.37
155.0	018.5000	0121.3	039.7	317.6	080.0000	0186.7	164.3	38.32
156.0	018.5000	0120.4	039.6	317.4	080.0000	0186.6	164.6	38.26
157.0	018.5000	0119.1	039.5	317.2	080.0000	0186.5	165.0	38.19
158.0	018.5000	0117.5	039.3	317.0	080.0000	0186.4	165.4	38.11
159.0	018.5000	0116.5	039.1	316.8	080.0000	0186.3	165.8	38.04
160.0	018.5000	0115.7	039.0	316.6	080.0000	0186.3	166.2	37.98
161.0	018.5000	0114.5	038.9	316.4	080.0000	0186.4	166.6	37.90
162.0	018.5000	0113.5	038.7	316.2	080.0000	0186.4	167.0	37.83
163.0	018.5000	0112.6	038.6	316.1	080.0000	0186.4	167.4	37.75
164.0	018.5000	0111.7	038.5	315.9	080.0000	0186.4	167.9	37.67
165.0	018.5000	0110.7	038.3	315.7	080.0000	0186.3	168.3	37.59
166.0	018.5000	0109.2	038.1	315.6	080.0000	0186.1	168.8	37.49
167.0	018.5000	0107.6	037.9	315.4	080.0000	0186.0	169.4	37.39

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
168.0	018.5000	0105.8	037.6	315.3	080.0000	0185.8	170.0	37.28
169.0	018.5000	0104.9	037.5	315.1	080.0000	0185.7	170.5	37.19
170.0	018.5000	0104.8	037.5	314.9	080.0000	0185.4	170.8	37.12
171.0	018.5000	0104.9	037.5	314.8	080.0000	0185.3	171.2	37.05
172.0	018.5000	0104.9	037.5	314.6	080.0000	0185.2	171.6	36.97
173.0	018.5000	0105.3	037.5	314.4	080.0000	0185.1	172.0	36.91
174.0	018.5000	0105.9	037.6	314.2	080.0000	0185.0	172.3	36.84
175.0	018.5000	0107.0	037.8	314.0	080.0000	0185.0	172.6	36.78
176.0	018.5000	0108.1	038.0	313.8	080.0000	0185.1	173.0	36.73
177.0	018.5000	0109.2	038.1	313.6	080.0000	0185.1	173.3	36.66
178.0	018.5000	0110.4	038.3	313.4	080.0000	0185.1	173.6	36.60
179.0	018.5000	0111.5	038.4	313.3	080.0000	0185.1	174.0	36.53
180.0	018.5000	0111.9	038.5	313.1	080.0000	0185.0	174.5	36.45
181.0	018.5000	0112.2	038.5	312.9	080.0000	0185.0	174.9	36.36
182.0	018.5000	0113.0	038.7	312.8	080.0000	0184.9	175.4	36.28
183.0	018.5000	0114.4	038.8	312.6	080.0000	0184.8	175.8	36.20
184.0	018.5000	0114.8	038.9	312.4	080.0000	0184.8	176.3	36.11
185.0	018.5000	0114.6	038.9	312.3	080.0000	0184.9	176.8	36.01
186.0	018.5000	0114.7	038.9	312.2	080.0000	0184.9	177.4	35.91
187.0	018.5000	0114.9	038.9	312.1	080.0000	0185.0	177.9	35.81
188.0	018.5000	0115.0	038.9	311.9	080.0000	0185.0	178.5	35.71
189.0	018.5000	0114.9	038.9	311.8	080.0000	0185.1	179.1	35.61
190.0	018.5000	0115.0	038.9	311.7	080.0000	0185.1	179.6	35.50
191.0	018.5000	0115.0	038.9	311.6	080.0000	0185.1	180.2	35.39
192.0	018.5000	0115.0	038.9	311.5	080.0000	0185.2	180.8	35.28
193.0	018.5000	0114.8	038.9	311.4	080.0000	0185.2	181.4	35.17
194.0	018.5000	0114.2	038.8	311.3	080.0000	0185.3	182.1	35.05
195.0	018.5000	0114.3	038.8	311.3	080.0000	0185.3	182.7	34.94
196.0	018.5000	0114.3	038.8	311.2	080.0000	0185.4	183.3	34.82
197.0	018.5000	0114.3	038.8	311.1	080.0000	0185.5	183.9	34.71
198.0	018.5000	0113.9	038.8	311.0	080.0000	0185.5	184.5	34.59
199.0	018.5000	0113.5	038.7	311.0	080.0000	0185.5	185.2	34.47
200.0	018.5000	0100.9	036.8	311.4	080.0000	0185.2	186.4	34.22

07-31-2009 USGS 03 SEC Terrain Data

1282129 BNPED20071017AJP

Channel = 207C2

Max ERP = 80 kW

RCAMSL = 544 M

N. Lat. 46 28 45.0

W. Lng. 90 08 52.0

Protected

60 dBu

WIRC.C

Channel = 207C3

Max ERP = 18.5 kW

RCAMSL = 553.2 M

N. Lat. 47 53 01.0

W. Lng. 91 50 32.0

Interfering

40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
261.0	080.0000	0109.1	050.5	154.1	018.5000	0121.6	181.9	27.08	
262.0	080.0000	0112.3	051.0	154.2	018.5000	0121.6	180.9	27.26	
263.0	080.0000	0114.8	051.4	154.2	018.5000	0121.5	179.9	27.44	
264.0	080.0000	0117.3	051.8	154.2	018.5000	0121.5	178.9	27.61	
265.0	080.0000	0120.0	052.2	154.3	018.5000	0121.5	178.0	27.79	
266.0	080.0000	0122.6	052.6	154.3	018.5000	0121.5	177.0	27.97	
267.0	080.0000	0126.1	053.1	154.3	018.5000	0121.5	175.9	28.16	
268.0	080.0000	0132.5	054.0	154.5	018.5000	0121.5	174.7	28.38	
269.0	080.0000	0139.0	054.9	154.6	018.5000	0121.4	173.5	28.60	
270.0	080.0000	0144.2	055.6	154.7	018.5000	0121.4	172.3	28.81	
271.0	080.0000	0148.1	056.2	154.7	018.5000	0121.4	171.2	29.01	
272.0	080.0000	0152.1	056.7	154.8	018.5000	0121.4	170.0	29.22	
273.0	080.0000	0156.3	057.2	154.8	018.5000	0121.4	168.9	29.42	
274.0	080.0000	0159.0	057.6	154.7	018.5000	0121.4	167.9	29.61	
275.0	080.0000	0161.5	057.9	154.6	018.5000	0121.4	166.8	29.79	
276.0	080.0000	0163.7	058.1	154.5	018.5000	0121.4	165.8	29.98	
277.0	080.0000	0165.2	058.3	154.4	018.5000	0121.5	164.9	30.15	
278.0	080.0000	0166.9	058.5	154.3	018.5000	0121.5	163.9	30.32	
279.0	080.0000	0168.6	058.7	154.1	018.5000	0121.6	162.9	30.50	
280.0	080.0000	0170.4	058.9	154.0	018.5000	0121.6	162.0	30.67	
281.0	080.0000	0171.9	059.0	153.8	018.5000	0121.7	161.1	30.84	
282.0	080.0000	0172.1	059.1	153.6	018.5000	0121.8	160.2	30.99	
283.0	080.0000	0173.1	059.2	153.4	018.5000	0121.8	159.4	31.15	
284.0	080.0000	0172.6	059.1	153.2	018.5000	0121.9	158.6	31.28	
285.0	080.0000	0173.3	059.2	152.9	018.5000	0121.9	157.8	31.42	
286.0	080.0000	0175.5	059.4	152.7	018.5000	0121.7	156.8	31.57	
287.0	080.0000	0178.8	059.7	152.6	018.5000	0121.6	155.9	31.73	
288.0	080.0000	0182.4	060.1	152.4	018.5000	0121.4	154.9	31.89	
289.0	080.0000	0184.9	060.3	152.2	018.5000	0121.2	154.0	32.03	
290.0	080.0000	0185.6	060.4	151.9	018.5000	0121.1	153.2	32.15	
291.0	080.0000	0185.4	060.3	151.6	018.5000	0121.0	152.5	32.26	
292.0	080.0000	0185.6	060.4	151.3	018.5000	0120.8	151.8	32.36	
293.0	080.0000	0185.7	060.4	151.0	018.5000	0120.6	151.1	32.47	
294.0	080.0000	0185.8	060.4	150.7	018.5000	0120.1	150.5	32.56	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
295.0	080.0000	0186.5	060.4	150.4	018.5000	0119.7	149.8	32.66
296.0	080.0000	0188.0	060.6	150.1	018.5000	0119.1	149.1	32.76
297.0	080.0000	0189.5	060.7	149.8	018.5000	0118.5	148.4	32.87
298.0	080.0000	0190.2	060.8	149.4	018.5000	0117.8	147.7	32.95
299.0	080.0000	0191.1	060.9	149.1	018.5000	0117.0	147.1	33.04
300.0	080.0000	0191.3	060.9	148.8	018.5000	0116.1	146.6	33.11
301.0	080.0000	0190.7	060.8	148.4	018.5000	0115.1	146.1	33.16
302.0	080.0000	0190.2	060.8	148.0	018.5000	0114.4	145.7	33.22
303.0	080.0000	0189.5	060.7	147.6	018.5000	0113.6	145.3	33.27
304.0	080.0000	0188.6	060.6	147.2	018.5000	0113.1	144.9	33.32
305.0	080.0000	0187.6	060.5	146.8	018.5000	0112.5	144.6	33.36
306.0	080.0000	0187.4	060.5	146.4	018.5000	0112.0	144.2	33.41
307.0	080.0000	0187.7	060.6	146.0	018.5000	0111.4	143.8	33.47
308.0	080.0000	0187.7	060.5	145.6	018.5000	0110.7	143.5	33.51
309.0	080.0000	0187.1	060.5	145.2	018.5000	0110.0	143.2	33.54
310.0	080.0000	0186.3	060.4	144.8	018.5000	0109.2	143.0	33.56
311.0	080.0000	0185.5	060.3	144.4	018.5000	0108.4	142.8	33.58
312.0	080.0000	0185.0	060.3	144.0	018.5000	0107.7	142.6	33.59
313.0	080.0000	0185.0	060.3	143.6	018.5000	0107.0	142.4	33.61
314.0	080.0000	0185.0	060.3	143.2	018.5000	0106.8	142.2	33.64
315.0	080.0000	0185.5	060.3	142.7	018.5000	0106.5	142.0	33.67
316.0	080.0000	0186.4	060.4	142.3	018.5000	0106.4	141.7	33.71
317.0	080.0000	0186.4	060.4	141.9	018.5000	0106.4	141.6	33.73
318.0	080.0000	0187.3	060.5	141.5	018.5000	0106.7	141.5	33.77
319.0	080.0000	0188.1	060.6	141.0	018.5000	0107.3	141.3	33.82
320.0	080.0000	0188.0	060.6	140.6	018.5000	0107.7	141.3	33.83
321.0	080.0000	0188.5	060.6	140.2	018.5000	0107.8	141.2	33.85
322.0	080.0000	0188.1	060.6	139.7	018.5000	0107.7	141.3	33.83
323.0	080.0000	0187.6	060.5	139.3	018.5000	0107.6	141.4	33.81
324.0	080.0000	0187.9	060.6	138.9	018.5000	0107.2	141.4	33.79
325.0	080.0000	0187.2	060.5	138.5	018.5000	0106.9	141.6	33.76
326.0	080.0000	0186.0	060.4	138.0	018.5000	0106.7	141.8	33.71
327.0	080.0000	0184.4	060.2	137.6	018.5000	0106.5	142.1	33.64
328.0	080.0000	0182.6	060.1	137.2	018.5000	0106.3	142.4	33.58
329.0	080.0000	0180.6	059.9	136.8	018.5000	0106.0	142.8	33.50
330.0	080.0000	0178.1	059.7	136.4	018.5000	0105.9	143.3	33.41
331.0	080.0000	0176.5	059.5	136.0	018.5000	0105.8	143.7	33.33
332.0	080.0000	0175.4	059.4	135.6	018.5000	0105.7	144.1	33.26
333.0	080.0000	0174.3	059.3	135.3	018.5000	0105.8	144.5	33.19
334.0	080.0000	0173.6	059.2	134.9	018.5000	0105.8	144.8	33.12
335.0	080.0000	0173.7	059.2	134.5	018.5000	0105.8	145.2	33.06
336.0	080.0000	0174.6	059.3	134.1	018.5000	0105.8	145.4	33.01
337.0	080.0000	0175.5	059.4	133.7	018.5000	0105.8	145.8	32.96
338.0	080.0000	0177.4	059.6	133.3	018.5000	0105.9	146.0	32.92
339.0	080.0000	0179.8	059.8	132.9	018.5000	0105.7	146.2	32.87
340.0	080.0000	0182.3	060.1	132.5	018.5000	0105.5	146.5	32.82
341.0	080.0000	0183.0	060.1	132.1	018.5000	0105.4	146.9	32.74
342.0	080.0000	0181.2	060.0	131.8	018.5000	0105.3	147.6	32.63
343.0	080.0000	0178.0	059.7	131.5	018.5000	0105.2	148.3	32.49
344.0	080.0000	0173.6	059.2	131.2	018.5000	0105.0	149.3	32.33
345.0	080.0000	0170.2	058.9	130.9	018.5000	0105.0	150.1	32.19

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
346.0	080.0000	0167.5	058.6	130.7	018.5000	0104.9	150.9	32.05
347.0	080.0000	0164.5	058.2	130.4	018.5000	0104.9	151.8	31.90
348.0	080.0000	0163.3	058.1	130.2	018.5000	0104.9	152.5	31.78
349.0	080.0000	0162.6	058.0	129.9	018.5000	0104.9	153.2	31.67
350.0	080.0000	0161.2	057.8	129.6	018.5000	0104.9	154.0	31.55
351.0	080.0000	0160.6	057.8	129.3	018.5000	0104.9	154.7	31.43
352.0	080.0000	0161.3	057.8	129.0	018.5000	0104.9	155.3	31.33
353.0	080.0000	0163.3	058.1	128.7	018.5000	0104.8	155.8	31.24
354.0	080.0000	0165.4	058.3	128.4	018.5000	0104.7	156.4	31.15
355.0	080.0000	0166.0	058.4	128.1	018.5000	0104.7	157.0	31.03
356.0	080.0000	0165.8	058.4	127.8	018.5000	0104.6	157.8	30.90
357.0	080.0000	0165.9	058.4	127.6	018.5000	0104.6	158.5	30.77
358.0	080.0000	0167.0	058.5	127.3	018.5000	0104.6	159.2	30.65
359.0	080.0000	0168.0	058.6	127.0	018.5000	0104.6	160.0	30.52
000.0	080.0000	0169.2	058.7	126.8	018.5000	0104.7	160.7	30.40
001.0	080.0000	0169.8	058.8	126.5	018.5000	0104.8	161.5	30.26
002.0	080.0000	0169.1	058.7	126.3	018.5000	0104.8	162.4	30.10
003.0	080.0000	0169.6	058.8	126.1	018.5000	0104.9	163.2	29.95
004.0	080.0000	0171.2	059.0	125.9	018.5000	0104.9	163.9	29.81
005.0	080.0000	0174.7	059.3	125.6	018.5000	0105.0	164.6	29.69
006.0	080.0000	0178.4	059.7	125.3	018.5000	0105.0	165.3	29.57
007.0	080.0000	0180.3	059.9	125.0	018.5000	0105.1	166.1	29.42
008.0	080.0000	0182.0	060.0	124.8	018.5000	0105.1	167.0	29.27
009.0	080.0000	0182.9	060.1	124.6	018.5000	0105.0	167.9	29.10
010.0	080.0000	0183.1	060.1	124.4	018.5000	0105.0	168.8	28.93
011.0	080.0000	0182.6	060.1	124.3	018.5000	0104.9	169.8	28.75
012.0	080.0000	0180.8	059.9	124.2	018.5000	0104.9	170.8	28.57
013.0	080.0000	0178.5	059.7	124.1	018.5000	0104.9	171.9	28.37
014.0	080.0000	0175.4	059.4	124.1	018.5000	0104.9	173.0	28.18
015.0	080.0000	0172.2	059.1	124.1	018.5000	0104.9	174.1	27.98
016.0	080.0000	0169.9	058.8	124.0	018.5000	0104.9	175.1	27.79
017.0	080.0000	0167.7	058.6	124.0	018.5000	0104.9	176.2	27.60
018.0	080.0000	0170.0	058.8	123.8	018.5000	0104.8	177.1	27.43
019.0	080.0000	0176.6	059.5	123.5	018.5000	0104.8	177.9	27.29
020.0	080.0000	0180.8	059.9	123.3	018.5000	0104.8	178.8	27.12
021.0	080.0000	0091.7	047.3	127.1	018.5000	0104.6	183.2	26.33